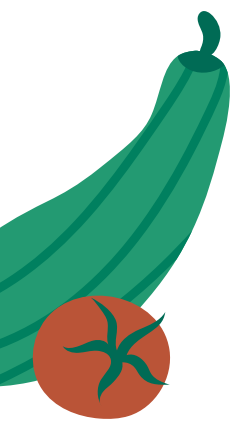




**Nature restoration
and food security:**

Why bringing back nature cannot wait

June 2022



Nature restoration and food security: Why bringing back nature cannot wait

What does food security mean?

According to the World Food Summit [definition of 1996](#), “food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life”. On the basis of this definition, the UN Food and Agriculture Organisation (FAO) spells out four dimensions: **food availability, food access, utilisation and stability**.

As the Institute for European Environmental Policy (IEEP) [puts it](#): “Just the availability (or increased production) of food is therefore not sufficient to ensure food security. In fact, there is consensus that the **real challenge relates to food distribution and inequity in access because of poverty**, rather than a shortage of production. Focusing on increasing food production is therefore unlikely to solve the problem of food insecurity”.

Does the EU face food shortages because of the war in Ukraine?

No, the EU does not face food shortages or a food availability problem, as is also recognised in the European Commission’s own [food security communication](#).

In economic terms, the EU is a net exporter of agri-food products to [Russia](#) and [Ukraine](#): the EU exports agri-food products worth €9.7 billion while importing agri-food products worth €7.6 billion. While the EU generally exports higher-value products, the main products imported from Russia and Ukraine are lower value commodities, such as residues and waste from the food industries, oil cakes and other feed components, oilseeds, cereals and vegetable oils. Those products are [mostly used for feeding animals](#), not people: 70% of all oilseeds and 60% of the cereals consumed in the EU go to livestock farms.

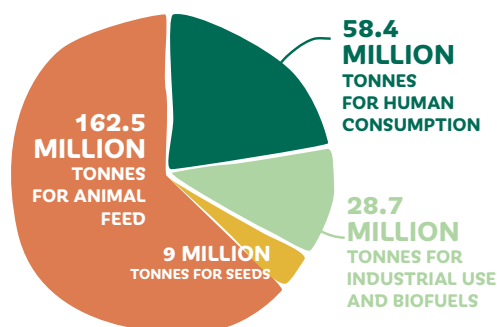
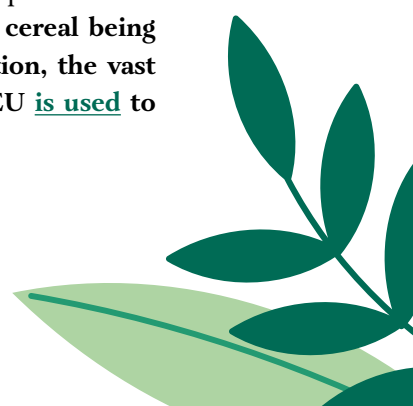


Figure 1: Cereal use in the EU

To take cereals as an example: In 2020, the EU [produced](#) 281 million tonnes of cereal and [used](#) 258.6 million tonnes. 162.5 million tonnes [were used](#) for animal feed, 28.7 million tonnes for industrial use and biofuels, and 58.4 million tonnes for human consumption. **With only 20% of the produced cereal being used for human consumption, the vast majority of cereal in the EU [is used](#) to feed animals or burned.**



What about global food security?

Russia and Ukraine produce around 12% of the calories traded in the world. Traded calories are however different to available calories. Taking wheat as an example, while exports from Ukraine and Russia combined may be a large percentage of the *traded* wheat, they are only a small proportion of the *overall available* wheat. The **main issue is therefore making sure that the wheat gets to the people who need it for human consumption, rather than if enough is being produced.**

On a global scale, the war in Ukraine is leading to complications for the distribution of available food, as supply chains between Ukraine and Russia and the rest of the world are cut off. Besides the Ukrainian war zone, which is heavily affected by food shortages, food availability is also impacting the Middle East and North Africa. The war has also led to panic and speculation on world commodity markets, leading to food price increases, which will hit poorer nations and households the most. The UN Food price index jumped up by almost 13% from February to March to an all-time high. As Oliver de Schutter, UN Special Rapporteur on Extreme Poverty and Human Rights and co-chair of IPES-Food, put it: “Speculative activity by powerful institutional investors who are generally unconcerned with agricultural market fundamentals are indeed betting on hunger, and exacerbating it”.

However, **the problem is not that we don't have enough food or space to grow food, but what the food grown is used for.** Only 55% of the calories produced globally through crops is directly consumed by humans; 36% is used for animal feed; and crops used for industrial use make up 9%. Production of animal-based foods accounts for more than three-quarters of global agricultural land use. Directly feeding humans with those crops and growing crops for human consumption instead of feeding animals to in turn feed humans (or even burning crops for energy) would be a much more efficient use of the land and crops.

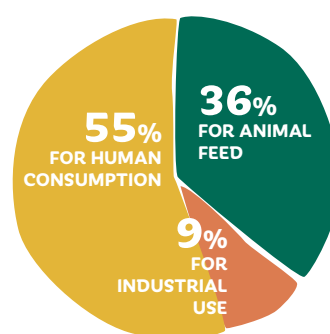


Figure 2:
Annual crop calories use

Food loss and waste are another major factor. Globally, up to 40% of total food produced is lost or wasted. In the EU, around 88 million tonnes of food are wasted annually, the cost of which is estimated to be €143 billion. According to the calculations of a group of scientists, whose letter on food system transformation has received over 650 individual signatures, “the amount of wheat wasted in the EU is approximately half the amount of Ukraine’s wheat exports and a quarter of other grain exports”.

In a ‘business as usual’ scenario, we would need a 119% increase in edible crops by 2050 to meet current demands. The same study however found that we are currently producing enough to provide food for the projected global population of 2050 (9.7 billion) with dietary changes, especially by reducing the consumption of meat and dairy to healthy and sustainable levels.

This means that at a global scale, **we do not have a food availability problem, but a food utilisation and access problem.** In other words, there is an **extreme injustice of how land is used, and how food is distributed.**

What is needed to support poor households and countries?

While there is no food availability problem, poor households are affected by the price increases. Therefore, **social support measures are needed to protect consumers against food poverty**. Consumer support organisations have, for example, [demanded food vouchers](#) for vulnerable households or 0% VAT on vegetables, fruit and pulses. For long-term food accessibility, a transition to a socially and environmentally sustainable agri-food system that supports healthy and sustainable diets is urgently needed.

To support vulnerable countries and communities at a global level, Oxfam [says](#), **rich countries must provide emergency aid to low-income countries that is additional to existing aid budgets**. Further, Oxfam recommends **government measures to control food and energy prices to protect the poorest** from inflation impacts, the cancellation of debt, and the taxation of wealth.

On top of that, the **diversion of production from fuel and feed to food for human consumption** and an increase in support for the development of sustainable, self-sufficient food systems that support local production and healthy, sustainable and nutritious diets is needed.

Do biodiversity loss and the climate crisis threaten food security?

Yes, the climate and biodiversity crises are [drastically affecting](#) food production. If we keep failing to take serious action to tackle this dual crisis, these risks will increase. Already today, climate-induced droughts, floods and cold spells are impacting food yield, globally and in Europe.

Globally, 26% of the total damage and losses from climate-related disasters [are from within the agricultural sector](#). In Africa, agricultural productivity growth has reduced by 34% since 1961 [due to](#) the climate crisis, according to the Intergovernmental Panel on Climate Change (IPCC).

The IPCC also warns that, with high confidence, the climate crisis and extreme weather events [will push](#) current food-growing areas 'beyond the safe climate space for production'. It further refers to a study [that estimates](#) an almost 10% yield reduction in four major crops between 1850 and 2010.

In Europe, impacts on yield depend on the produce and region, but in a 2°C warming scenario, wheat yield [could be halved](#) in some regions with average estimated reductions of -12% in southern regions. Droughts and heatwaves [have already reduced](#) European yields on average by 9% and 7.3% between 1961 and 2018. Land degradation [has reduced](#) the productivity of 23% of the global land surface, representing an annual loss of up to 577 billion USD. Global crops are also [at risk](#) from pollinator loss.

Food production fundamentally depends upon healthy ecosystems [due to the many ecosystem services](#) biodiversity provides, including healthy soils, abundant fish stocks and

pollination. 85% of the main types of global food crops, mostly fruits and vegetable crops, [rely on pollination](#) for yield and/or quality. At EU level, a [Joint Research Centre \(JRC\) study](#) found that the absence of insect pollination would mean a 25% to 32% reduction of the total production of crops which are partially dependent on insect pollination for reproduction. Pollinators are in drastic decline; a [German study](#) found a 75% decline of flying insect populations in protected areas over 27 years between 1989 and 2016.

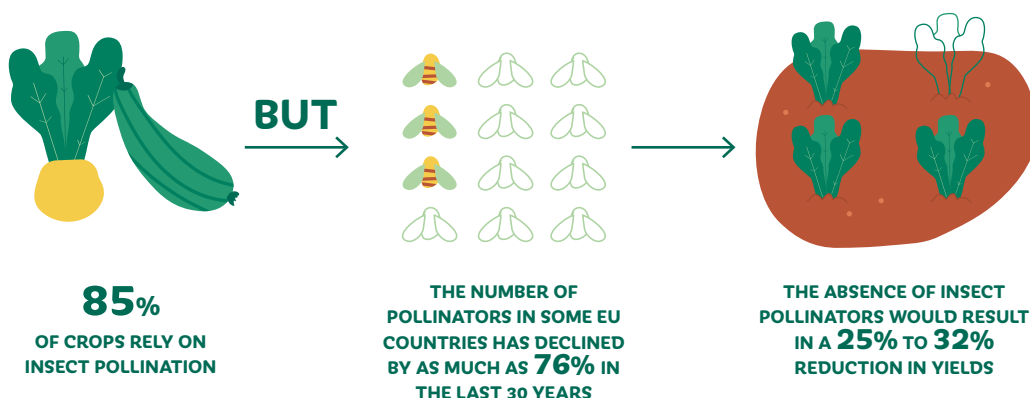


Figure 3: Impact of pollinator loss on food production

To avoid even worse food security threats, with potentially disastrous effects on the economy of the EU and the livelihoods of its citizens, **we must properly tackle the drivers of biodiversity loss and the climate crisis** through coordinated legal and political action, not exacerbate them. As one of the industries [most heavily affected](#) by the twin biodiversity and climate crises, the agricultural sector should be championing climate- and biodiversity-positive solutions to safeguard its future interests and economic viability.

Are current agricultural practices driving the climate and biodiversity crisis?

Yes, food systems [are responsible](#) for [around a third](#) of all greenhouse gas emissions. According to IPBES, land use change and unsustainable land management are the [main driver](#) of biodiversity loss. Farmland birds as well as grassland butterflies are [in drastic decline](#) in Europe, with losses of 32% and 39%, respectively (between 1990 – 2016/17).

As the IPCC recently [put it](#): “while agricultural development contributes to food security, unsustainable agricultural expansion, driven in part by unbalanced diets, increases ecosystem and human vulnerability and leads to competition for land and/or water resources”.

Food production is at risk due to the climate and biodiversity crises which are in turn fuelled by current industrial agricultural practices and consumption patterns. **To ensure food security, a radical shift to agro-ecological practices and a transition to sustainable diets**, particularly by [drastically cutting](#) meat and dairy consumption in the Global North is needed. This, alongside the exclusion of crop-based biofuels [could free up](#) to 30 million hectares of crop land for food and nature restoration purposes.



Does using additional land to plant crops help to avoid food security threats?

No, it does not. Instead, it makes things worse in the long-term, increasing food security threats, especially as food availability is not actually the problem, as outlined above. Intensive agriculture is one of the [major drivers](#) of biodiversity loss and also a [key contributor](#)

Farming on land that has been set aside for biodiversity would have minimal food production benefits while exacerbating the climate and biodiversity crisis.

to the climate crisis. Putting additional land under intensive production, especially land that is currently set aside for biodiversity, further exacerbates the twin biodiversity and climate crises, steering the EU and its Member States further away from fulfilling their international commitments and legal obligations.

On top of the biodiversity and climate implications, **land that has been set aside for biodiversity is often marginal land that is not very productive**, resulting in limited yield. Cultivating this land would therefore not help to address the

alleged “food security threats”. It is [estimated](#) that using fallow land would only contribute 1,8% of arable land in the EU (1,4% without Spain) which would amount to less than 10% of the missing Ukrainian exports of grains. This [would equate](#) to less than the amount of grain the EU used for ‘industrial use’ alone (i.e. mostly bioethanol) in 2019. In other words, **biodiversity would be destroyed with limited food production benefits.**

Does setting aside farmland for nature help biodiversity thrive without reducing production?

Yes, studies from across Europe show that **if a minimum of 10-14% of agricultural land were left as non-productive, then birds, and other wildlife, [would recover](#)**. At landscape level, 26-33% of set-aside land [may be required](#) for landscape-level recovery.

While studies suggest that intensification of farming and related loss of natural habitat and species are reducing crop yields, **providing space for nature [can improve](#) yields** while also enhancing ecosystem resilience to climate change.

Can nature restoration help to address the climate and biodiversity crises, and enhance food security?

Restoring ecosystems [can mitigate](#) the climate crisis by capturing and storing carbon, bring back biodiversity and help us adapt to the climate crisis. It can [bring many benefits](#), such as regulating floods, enhancing water quality or reducing soil erosion.

More specifically, a recent IEEP study found that restoring degraded terrestrial habitats across the EU to full recovery [could capture and store](#) as much as 300 million tonnes of



carbon dioxide a year. This is in the same order of magnitude as the EU's annual greenhouse gas emissions from agriculture (excluding energy), and equal to the annual emissions of Spain or the current carbon sequestration of the entire EU land use, land-use change and forestry (LULUCF) sector and illustrates the big potential that nature restoration can have for climate mitigation.



Figure 4: Carbon capture potential of nature restoration

Another study found that the EU could reduce up to 25% of its agricultural emissions by rewetting 3% of the EU's agricultural land which are currently drained peatlands used for agriculture.

Restoration is not only effective in helping us to address the climate crisis, it is also efficient and cost-effective as it is “among the cheapest and rapidly implemented nature-based climate mitigation measures”. According to IPBES, **the benefits of restoration are on average 10 times higher than the costs** of the measure.

As the climate and biodiversity crises are threats to food security, **nature restoration is therefore crucial for long-term sustainable food systems** as well as for climate mitigation and adaptation more broadly.

What does this mean for the EU Nature Restoration Law?

Given the potential of ecosystem restoration to tackle the twin biodiversity and climate crises, **the EU Nature Restoration Law is the opportunity to take serious climate and biodiversity action**. It is also **an opportunity to contribute to long-term food security, to the resilience of our food production and to ecosystem resilience more broadly**. Restoring and preserving nature can bring many socio-economic benefits on top of bringing down the costs of the twin crises, such as sustainable jobs, recreation opportunities and broader human health benefits.

For this to happen, the law must include **area-based restoration targets that lead to real land-use change on at least 15% of the EU land and sea area, as well as river length by 2030**. The law must include enforceable targets at Member State level, ensuring that all Member States contribute fairly to an overarching EU objective. It must further ensure that the bulk of restoration measures are taken by 2030 to avoid further delaying the needed action to tackle biodiversity loss and climate change and to avoid increased future financial burdens. The new law must thus be ambitious, timely and enforceable to be a real game changer for our nature and climate.



But is now a good time for this law?

Yes, absolutely. First of all, we have no more time to lose to seriously tackle the **biodiversity and climate crisis**. The latest IPCC assessment report [states clearly](#) that “any further delay in concerted anticipatory global action on adaptation and mitigation will miss a brief and rapidly closing window of opportunity to secure a liveable and sustainable future for all”. Similarly, further ecosystem degradation may lead to the extinction of a series of [endangered species](#) found in the EU, in the context of their “unprecedented” rate of decline [which has been](#) “accelerating” due to land use degradation and intensification.

The proposal is only the starting point of the legislative process.

In addition, the European Commission’s proposal is only the starting point of the legislative process which will still take years. The obligations set out in the proposal will only apply once the three institutions have agreed on the text of the new law and have adopted it, which will take until at least 2023, if not 2024. The launch of the proposal therefore does not have any immediate effect for farmers and other land users.

Abstaining from the adoption and delivery of concretely quantified restoration targets prior to 2030 would reduce the credibility of the EU as a global frontrunner in biodiversity governance. It would also be inconsistent with the EU’s ambitious positions on an area-based restoration target during the ongoing negotiations for the post-2020 Global Biodiversity Framework.

Europe made strong commitments for a sustainable future in its Green Deal, we need to make it work now and adopt legally binding nature restoration targets.

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