

SWITCH OFF PUTIN

HOW ONE MAN IS STARVING THE WORLD

And what Europe must do to stop him

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SWITCH OFF PUTIN



REPLANET

EXECUTIVE SUMMARY

Fresh from its efforts to blackmail Europe with oil and gas exports, Russia is now trying to blackmail the world with food. By blockading Ukrainian ports and stopping exports of the country's grain to world markets, Vladimir Putin is using the threat of starvation in the Global South as a tactic to gain leverage for the easing of sanctions.

We must not give in to blackmail, but nor can we allow people in vulnerable developing countries to face famine. RePlanet is therefore calling for immediate and ambitious measures by the European Union to free up food supplies and face down Putin. This report outlines those important measures and proposes ways forward both to tackle this urgent crisis and for more positive outcomes over the longer term.

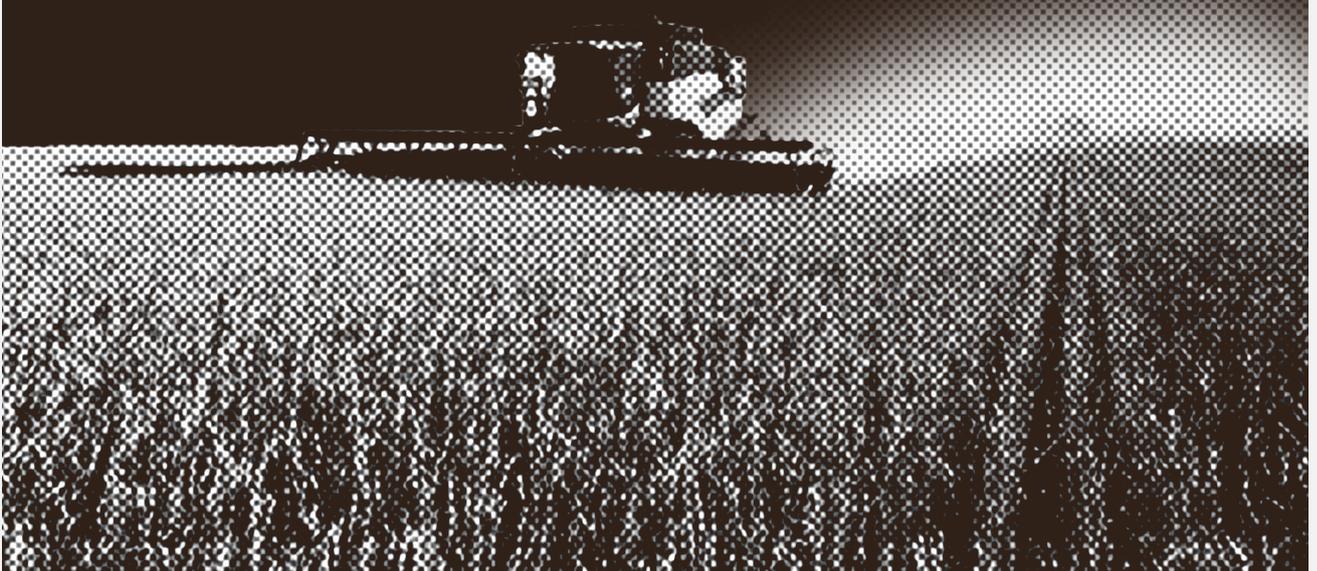
First and foremost, **we join the international community in calling for the Russian Federation to immediately lift the blockade on Ukrainian ports.** It may not be surprising given Russia's war crimes and aggression in Ukraine, but it is still unconscionable that millions of tonnes of desperately needed grain supplies are being left to rot in Ukrainian stores because this food cannot be exported by sea due to Putin's blockade.



Second, if Russia remains intransigent, Europe must alter its own behaviour to free up food supplies and put a downward pressure on global prices. **Most immediately the EU must cease all use of biofuels** originating from sources which can be used instead as food or feed. Scrapping biofuels in the EU would free up 10 million tonnes of grain, and thereby relieve some of the crisis straight away. It is simply outrageous that Europe is burning food in cars while people in the Global South are starving. Europe must also strongly encourage other countries – particularly the United States and Brazil – to move rapidly away from biofuels at the same time.

Third, **Europe must urgently move towards encouraging people to adopt more plant-based diets.** A reduction in meat-eating, particularly beef and pork, can free up large amounts of grain to help relieve the world food crisis, reduce greenhouse gas emissions, and spare large amounts of land for rewilding and conservation. Europeans eat far more meat than is healthy, and contribute to horrific conditions in industrialised livestock farms. Just **reducing European meat consumption by half could free up 80 million tonnes of grains.** This transition can also begin immediately, boosted by the ongoing rapid shift towards plant-based alternatives to meat.

Fourth, and looking into the medium term, **the European Union must lift its anti-science prohibitory regime on biotech crops.** This should include both transgenic and gene edited crops, which



can help make European farming more productive and sustainable. Given the worldwide scientific consensus that such crops are just as safe as any other, there is no excuse for continuing to pander to the objections of a small but vocal minority about new crop breeding technologies. Scientists suggest **20% yield increases for both transgenic and gene edited crops, which would equate to gains totalling more than Russia's and Ukraine's wheat exports combined.**

Finally, **Europe must reconsider the mandates in its Farm to Fork strategy.** Given that organic systems are substantially less productive than conventional, **pushing for a quarter of Europe's farming to be organic could reduce grains production by an estimated 20 million tonnes and**

REPLANET'S VISION

Europe's overall aim must be for high-productivity ecological agriculture, focused on **maximising food production and sparing land for rewilding** over a significant fraction of the continent's land, for carbon sequestration and to restore biodiversity. This vision must be science-driven, not based on arbitrary choices made in the past. RePlanet supports moves towards **farm-free foods such as production of proteins based on precision fermentation** and other vegan alternatives to animal production. Using technology driven by state support, we believe Europe can feed its population more healthily using much less land.



*"THE CONFLICT IN UKRAINE IS COMPOUNDING WHAT IS ALREADY A YEAR OF CATASTROPHIC HUNGER, UNLEASHING A WAVE OF COLLATERAL HUNGER THAT IS SPREADING ACROSS THE GLOBE."*¹

UN's World Food Programme (WFP)

lead to more land clearance for agriculture either in the continent or abroad, potentially threatening rainforests in countries like Brazil. Likewise there must be no more moves to bring rewilded land into production even to deal with the immediate crisis, which can be better addressed by eliminating biofuels, reducing animal feeds via more plant-based diets, and increasing the productivity of European agriculture.

Even in the context of the immediate Ukraine crisis, we believe it is vital to focus on this longer-term goal. However, with famine now threatening tens of millions worldwide, the most urgent immediate problem is to shift food to where it is most urgently needed. **Europe must support the World Food Programme** to ensure that any famine situations do not worsen and result in outright starvation. If Ukraine's grain does become available it should immediately be diverted to WFP for this purpose.

Europe has already failed Ukraine in too many ways. As detailed in our [Switch Off Putin report](#), Europe continues to send billions to Putin in return for oil and gas. Some European leaders are pushing to reward Russian aggression by suggesting Ukraine concede territory seized by force. We cannot fail Ukraine again by allowing Putin to use starvation in the Global South as a way to gain sanctions relief. We must defeat Russia and feed the world at the same time.





ABOUT REPLANET

RePlanet is a newly founded NGO that represents a network of grassroots charitable organisations across Europe. These are driven by science-based solutions to climate change, biodiversity collapse and the need to eliminate poverty.

We fight for a thriving natural world and a thriving human world. Radically better policies, technologies and strategies allow for this. We must do many things at once. Employ clean energy and reverse climate change. Reform food production and spare the land. Bring back lost species and rewild. Support the aspirations of emerging countries to get ahead in life.

RePlanet is partly supported by grants from private charitable foundations who share our values, partly from individual contributions and from the time donated by our volunteers in each member country. RePlanet accepts no industry or corporate funding.

REPORT AUTHOR



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PUTIN'S FOOD CRISIS

According to the UN's World Food Programme (WFP), "the conflict in Ukraine is compounding what is already a year of catastrophic hunger, unleashing a wave of collateral hunger that is spreading across the globe"¹. Climate shocks are also driving acute hunger as harvests fail due to intense drought and heat, and as countries impose export controls in order to safeguard domestic food supplies.

In its most recent 'Hunger Hotspots' report, WFP states that "an all-time high of up to 49 million people in 46 countries could now be at risk of falling into famine or famine-like conditions, unless they receive immediate life and livelihoods-saving assistance"². These include "a total of 750,000 people already facing starvation and death in Ethiopia, Yemen, South Sudan, Somalia and Afghanistan"³.

The WFP is clear that Russia's aggression in Ukraine is to blame. In May WFP Executive Director David Beasley said: "Right now, Ukraine's grain silos are full. At the same time, 44 million people around the world are marching towards starvation. We have to open up these ports so that food can move in and out of Ukraine. The world demands it because hundreds of millions of people globally depend on these supplies".

This is no exaggeration. In the eight months before the war, 51 million tonnes of grain was exported through Ukraine's seven Black Sea ports⁴. In an average year, Ukraine's fertile soils produce enough food to support 400 million people. Russia's blockade has pushed up world food prices by more than a fifth, putting their daily bread out of the reach of hundreds of millions of the world's poorest people, particularly in sub-Saharan Africa.



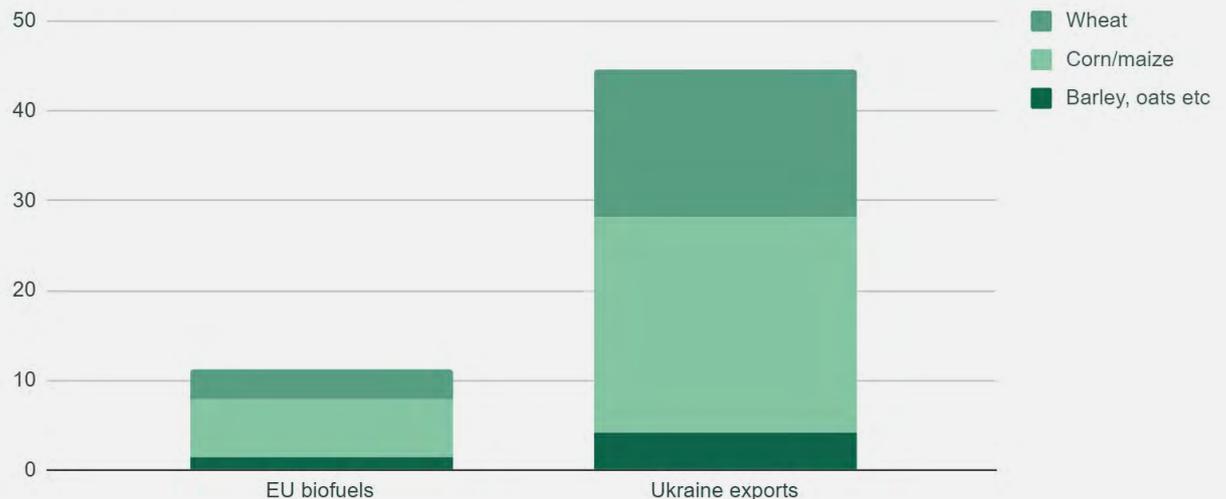
The largest export destinations for grain exported from Ukraine and Russia (also a big exporter) include Egypt, Bangladesh, Pakistan and India. When governments of these countries put bans on exports to protect their domestic supplies, this in turn reduces grain available for even more vulnerable and food insecure countries like Eritrea, Somalia and Yemen.

BURNING FOOD

This critical global food shortage makes it even more abhorrent that, as calculated by the NGO Transport & Environment, Europe burns the equivalent of 15 million loaves of bread every day to power its cars⁵. This is because biofuels mandates force producers to turn 10,000 tonnes of wheat daily into ethanol to use as a supposedly 'renewable' additive to petrol.

EU biofuels production vs Ukraine grain exports

in 2020 in million tonnes - source OECD-FAO



Using the latest published figures we estimate that about a fifth (20%) of total Ukraine wheat exports could be substituted by the ending of European wheat being diverted to ethanol for cars. This is because 3.3 million tonnes of wheat were used in 2020 as a feedstock in EU biofuels, while Ukraine's 2020 global wheat exports were 16.4 million tonnes. For maize, the figures are 6.5 million tonnes used in EU biofuels, while 24 million tonnes were exported from Ukraine. Thus the equivalent of 27% of Ukraine's maize exports are burned in European cars⁶.

The original idea behind biofuels was to move away from fossil fuels and towards renewable fuels grown on farms. However it has become abundantly clear that once indirect effects of land clearance abroad and carbon sequestration opportunity costs are accounted for, biofuels are no better than fossil fuels and may even be worse⁷. In



our view, the future of private transport is electric. There is no moral or even climate justification to burn bread in cars while elsewhere people starve.

The environmental costs of biofuels overall are dire. While bioethanol consumes food in the form of wheat, sugar and maize as a feedstock, biodiesel uses large quantities of palm oil and rapeseed oil. With sunflower oil now facing a critical shortage due to Ukraine also being a large producer, the use of biodiesel from edible oils is equally as unconscionable as the use of wheat and maize for bioethanol.

The EU itself has calculated that biofuels consumption in Europe – which it insists on still calling ‘renewable’ – used 7.4 million hectares of land in 2018, with just over half of that outside the continent⁸. This is land that could be used for growing actual food for humans, or spared for rewilding or carbon sequestration. The immediate end of biofuels mandates in Europe is important not just for addressing the critical food security needs of the Global South, but also in addressing the broader ecological emergency.

RePlanet is therefore calling for an immediate end to the use of grains as feedstocks for biofuels in Europe.

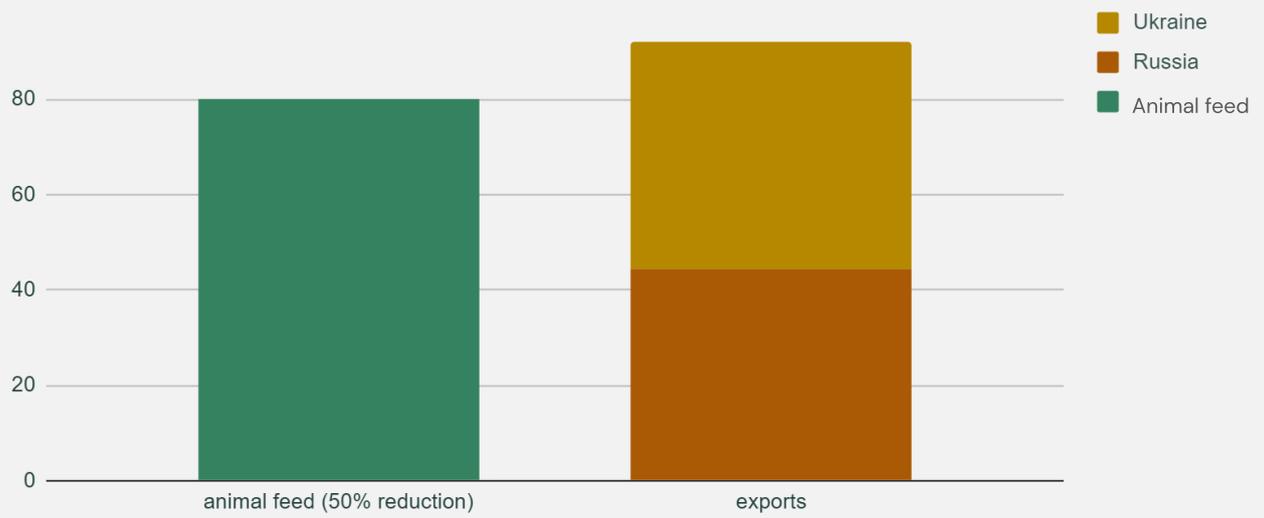
The United States is even worse, however. Roughly a third of the US corn (maize) crop goes into producing bioethanol – about 5 billion of the total 15 billion bushels produced⁹ – raising food prices worldwide and putting pressure on scarce farmland. The ending of biofuels mandates in the United States would have an immediate impact on world food prices, allowing hundreds of millions of the world’s poorest people to become more food secure. Europe must therefore also push for the ending of biofuels mandates in the US.



PLANT-BASED DIETS

Less than half the world's cereals – about 48% – are directly eaten by humans. Of the rest, 11% are used for biofuels (addressed above) and 41% used in animal feed. This is a global average: in high meat-consuming industrialised countries the ratio is even more skewed. In Europe less than a third of cereal production is used for direct human consumption, and only 10% in the United States¹⁰.

EU cereals saved from animal feed vs grain exports from Ukraine & Russia in 2020 in million tonnes - source OECD-FAO



With these figures in mind, clearly even more dramatic tonnages of cereals could be saved through the widespread adoption in Europe of more plant-based diets. It has been calculated by Our World in Data that the global use of land for agriculture could be reduced by 75% if everyone shifted to a plant-based diet¹¹. With the ongoing revolution in alternative proteins and precision fermentation, it will become ever easier and cheaper to eliminate meat, milk and eggs from the diet.

Even without full-scale veganism, however, substantial reductions in meat-eating can free up very large amounts of cropland and food. The average European eats about 75 kg of meat every year¹². If this were reduced by half – to about 37 kg – not only would major health benefits be realised, but there would be dramatic reductions in the use of cereals for animal feed.

Of a total of 274 million tonnes of cereals produced by the EU, 160 million tonnes are currently fed to animals. Wheat alone makes up 40 million tonnes of animal feeds¹³. Reducing the amount of cereals diverted to animal feeds in Europe by half would therefore free up about 80 million tonnes of cereals for humans to eat directly.



This is assuming different varieties of wheat are sown more suited to human consumption than animal feeds, and ignoring animal feeds produced as by-products of biofuels and human foodstuffs. There are other factors to consider as well, but this back-of-the-envelope exercise at least helps illustrate the scale of the issue.



CROP BREEDING

Europe must also do more to produce more food on its own farmland rather than importing from abroad. Relying on imports reduces our own food security, risks putting pressure on other countries to clear their rainforests, and puts us into competition with other importers, thus bidding up prices and increasing food insecurity in the Global South.

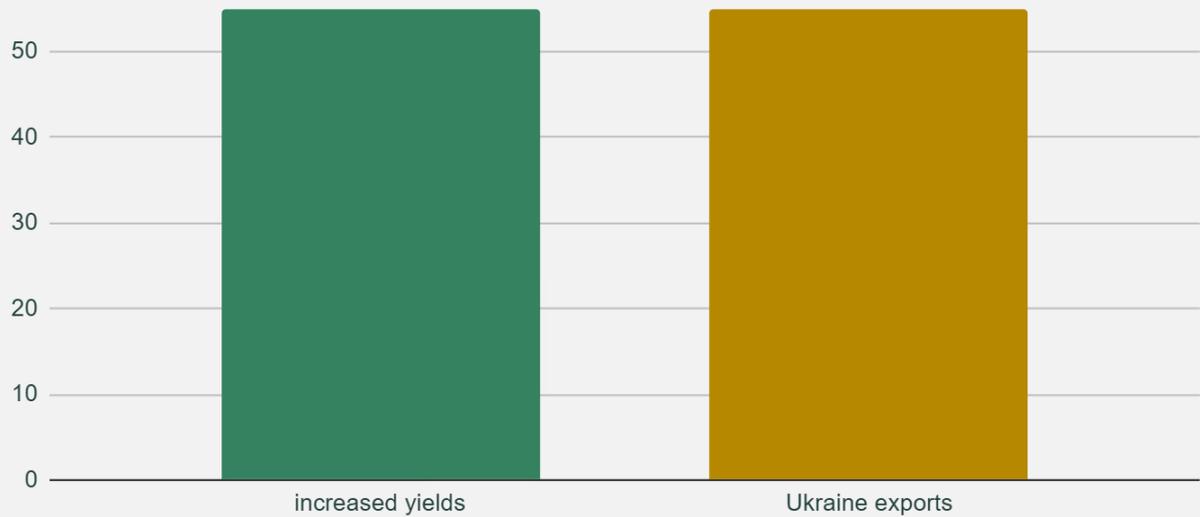
However, Europe has lost out on productivity gains realised elsewhere because of its prohibitory approach to modern crop breeding technologies which utilise genetic tools. A global meta-analysis has shown the average yield benefits of first-generation GM crops to be 22%, with the benefits strongest in developing countries¹⁴. Had Europe commercialised GM crops as have North and South America, it could have saved 33 million tonnes of greenhouse gas emissions, according to a study published in February 2022¹⁵.

These yield benefits foregone can also be quantified in terms of an actual tonnage of crops not produced. Europe produced 274 million tonnes of cereals in 2022¹⁶. In a hypothetical scenario assuming a 20% yield increase in European grains production thanks to the adoption of first-generation GM crops, this would result in productivity gains of 55 million tonnes, exactly equivalent to Ukraine's pre-war grain exports¹⁷.



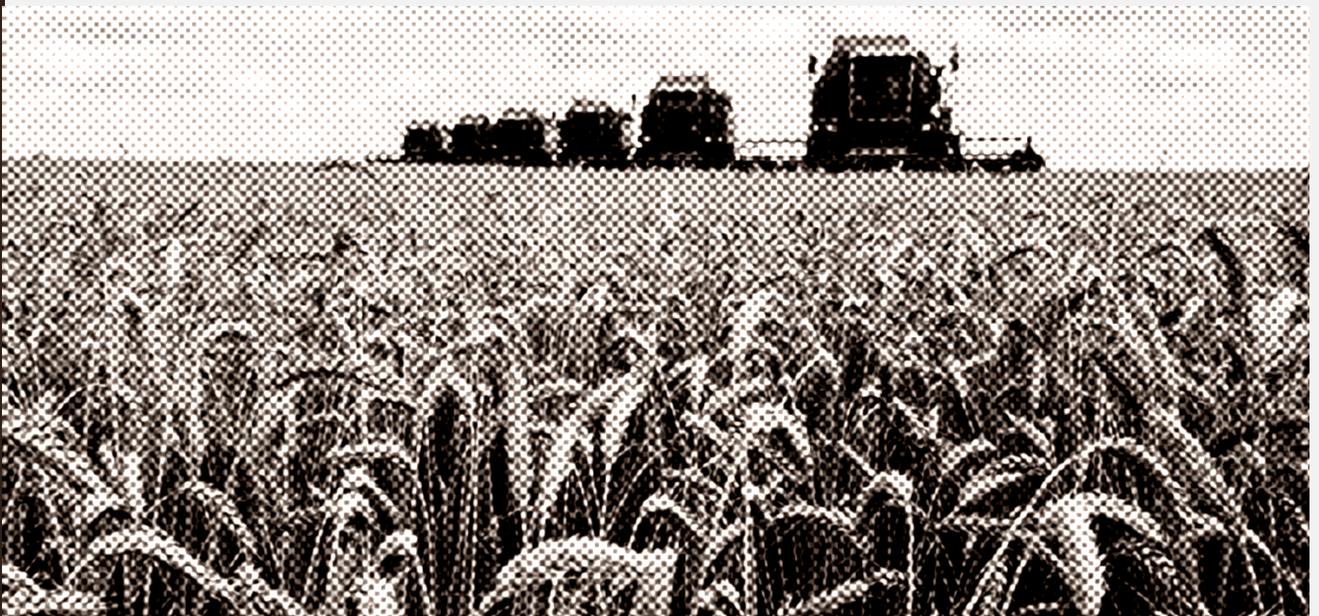
Increased yields from plant breeding vs Ukraine cereals exports

in 2020 in million tonnes - source OECD-FAO



While first-generation GM crops deliver yield benefits due to insect resistance (reducing crop losses to pests and also reducing pesticide use) and herbicide tolerance (reducing competition from weeds), newer gene editing technologies – particularly if combined with transgenics – can improve crop breeding in numerous ways. Drought and heat tolerance traits delivered via molecular genetics can help improve yields even as climate impacts worsen, while improvements in photosynthesis can improve yields directly. Recent transgenic wheat trials in Brazil have pointed to an average 20% gain in grain yield thanks to its HB4 drought-resistance gene¹⁸.

Europe is currently conducting a policy review of whether to continue to regulate gene editing in crops in the same way as transgenics, namely a de facto prohibition of any domestic production. **RePlanet strongly believes that the European Union should relax the prohibitory regime regulating the use of genetic technologies in crop breeding.**



FARM TO FORK STRATEGY

The EU's Farm to Fork Strategy promotes a target that 25% of the EU's agricultural land shall be under organic farming by 2030 (the current extent is 7.5%). However, the assumption that this will be better overall for the environment is not scientifically supported. As stated in a scientific paper published in 2021 in the peer-reviewed journal *Trends in Plant Science*, "a large-scale switch to organic farming in the EU could possibly turn out to be a disservice to global sustainability"¹⁹.

The reason is not difficult to discern. Organic farming is justified by an appeal to 'naturalness' rather than to any scientifically-determined principles of ecological harm and benefit. Moreover, organic's refusal to use synthetically-derived pesticides and fertilisers, while potentially of benefit to on-farm biodiversity, depresses overall productivity, requiring - all other things being equal - substantially more land to be used to produce the same amount of food.

Organic's prohibition of biotech has no ecological benefits at all, moreover, being based merely on an emotional rejection of what two decades ago was considered by some as risky new technology. Indeed, the use of biotech in crop breeding can help to reduce pesticides and fertilisers while safeguarding yields, providing a win-win²⁰. 'Organic-biotech' might therefore be the best combination of all, but is rejected out of hand by the organic lobby. The current world food crisis, exacerbated by Russia's invasion of Ukraine, provides an opportunity for the urgent reconsideration of these outdated positions.

A recent paper calculated a drop in total food production of 40% in organic systems compared to a conventional farming baseline²¹. If we use this as an illustrative example (note: in the real world productivity will be different for different crops, and the increase in organic farmland area would not necessarily be proportionally applied to wheat) the drop in production of wheat would be 9 million tonnes based on the original 2020 wheat production of 123 million tonnes. For maize, if we repeat the same exercise based on 2020 production of 63 million tonnes, a conversion to 25% organic would reduce output by 5 million tonnes²². For other coarse grains (barley, oats etc), with a 2020 production figure of 88 million tonnes, organic conversion would reduce output by 6 million tonnes. For all cereals, the original 2020 production is 274 million tonnes, and a 25% organic proportion would reduce overall output by 20 million tonnes.

CROP	2020 Production	Projected organic losses in 'F2F'
Wheat	123	9
Corn/maize	63	5
Barley/oats/etc	88	6
Total	274	20



CONCLUSION

In an upcoming report we will more fully address the land-sparing benefits of higher yield agriculture. For now, the figures above show – in our illustrative scenarios with necessary caveats – that current European policy is pushing yields far below what they might otherwise be in a more science-driven policy environment.

While our figures should not necessarily be interpreted cumulatively, they do suggest that this could be in the order of 150 million tonnes annually if the biofuels issue is not dealt with, Europeans do not adopt more plant-based diets, crop genetic improvements delivered by modern molecular biology continue to be banned, and the ill-advised conversion to organic continues.

While Europe itself might not starve due to the opportunity cost of all this food not produced domestically, it will very likely lead to big increases in land use elsewhere (which may in turn lead to rainforest destruction and the like) and put an upward pressure on world food prices thus leading to higher rates of food insecurity, malnutrition and even starvation in less privileged countries and regions.

A cautionary tale comes from Sri Lanka, where a government ban on the import of synthetic nitrogen fertilisers led to a crash in domestic food production, triggering widespread hunger, exacerbating a sovereign debt default and helping drive massive protests which toppled the prime minister²³. Europe is not about to follow such a capricious and ill-advised path, but the Sri Lankan experience does at least indicate the risks of such a direction of travel.

If Europe continues to move away from scientific evidence in its policy choices regarding food and agriculture, the outcome will be worse for the climate, for biodiversity and for the world's poor. It will also make it harder to face down Vladimir Putin's aggression in Ukraine without increasing the risk of large-scale famine and starvation in the Global South. Europe can and must do better.



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