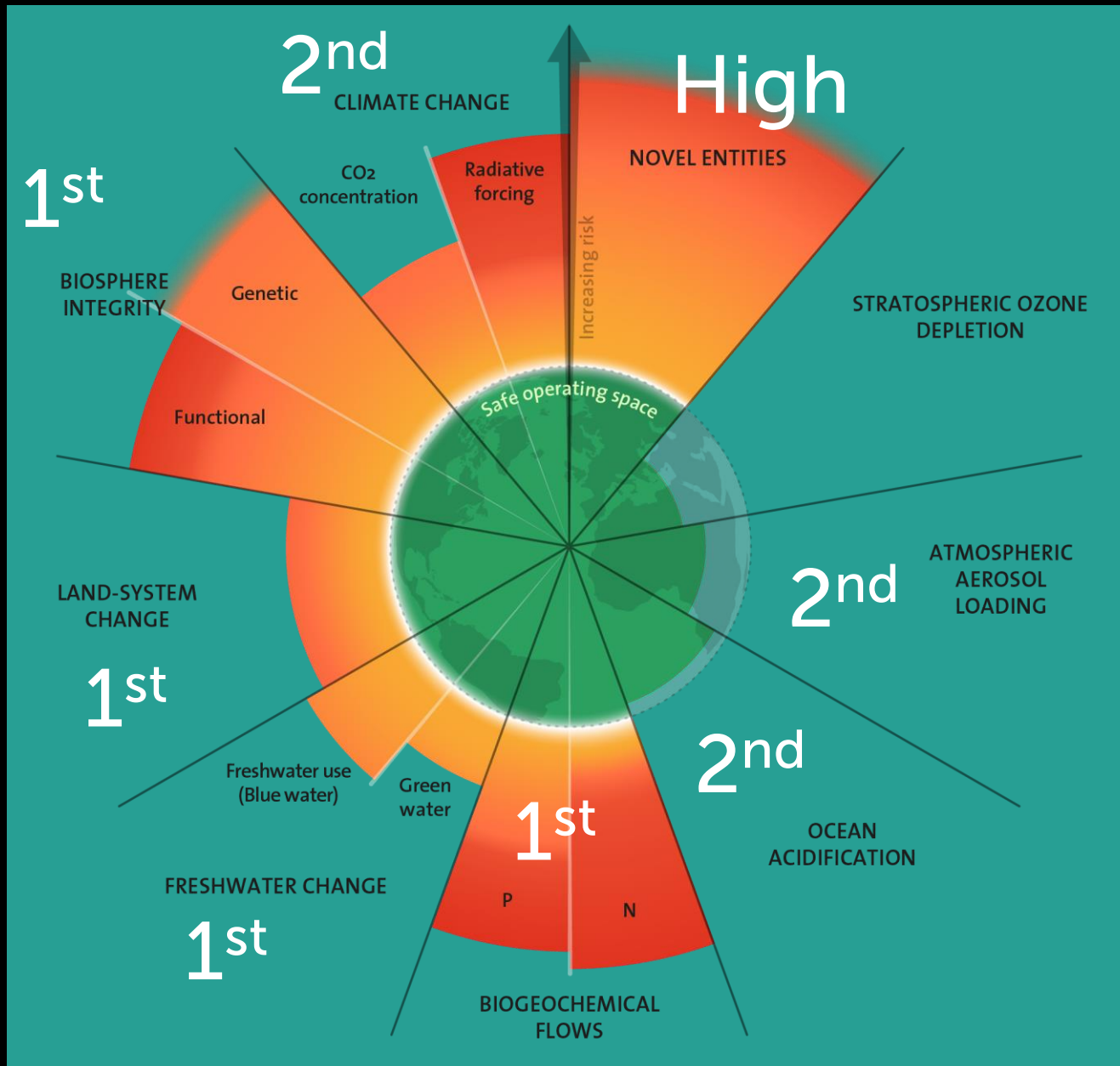


Plant-rich resilience: is it necessary?

Paul Behrens, 1 July, 2026



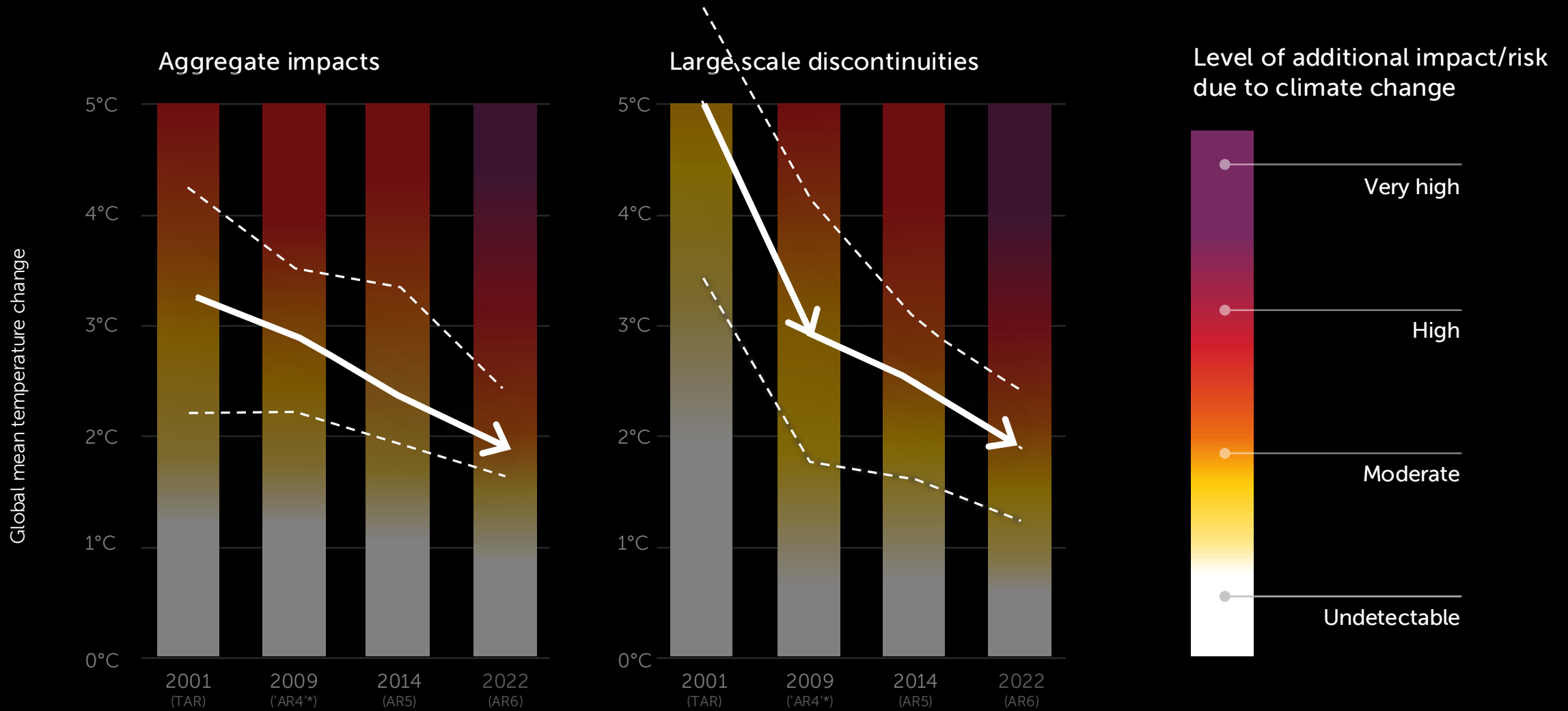


Food system environmental damage

...and:

- 1st for zoonotic diseases
- Likely 1st for antimicrobial resistance

The majority of agricultural pressures driven by animal agriculture



Based on Zommers, Z. et al. 'Burning Embers: Towards More Transparent and Robust Climate-Change Risk Assessments'.
Nature Reviews Earth & Environment 1, no. October (2020). <https://doi.org/10.1038/s43017-020-0088-0>. with help from Marbaix P.

UKCCRA3 (2021): “Better representation of the landscape and urban areas in the kilometre-scale model have highlighted that there is a very small chance (less than 0.02%) of exceeding 40°C by 2040”

UK's 2022 weather - which saw 40C temperature record - to become 'typical'

Last year homes caught fire and vulnerable people died from the heat, and experts say the UK is not prepared for this to become more common.



Victoria Seabrook
Climate reporter @SeabrookClimate

🕒 Thursday 27 July 2023 16:23, UK



Climate crisis

🕒 This article is more than 2 years old

Day of 40C shocks scientists as UK heat record 'absolutely obliterated'

Experts worried that extreme heatwaves in Europe happening quicker than expected, suggesting climate crisis worse than feared

📌 UK extreme weather: latest updates

Damian Carrington
Environment editor

Tue 19 Jul 2022 16:07 BST

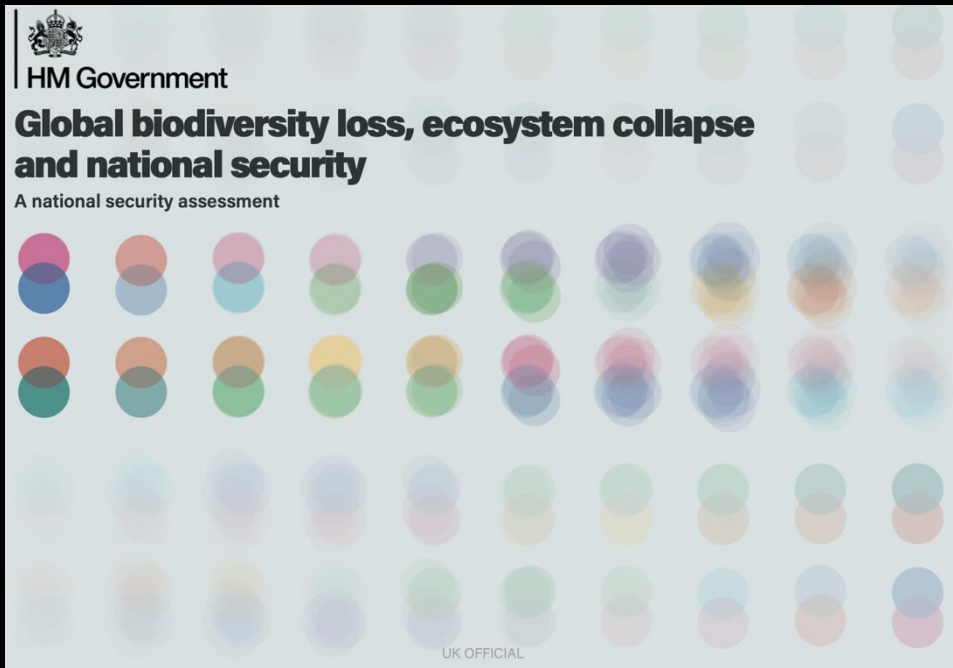
🔗 Share



📷 A construction worker in Manchester wipes sweat from his face. Photograph: Joel Goodman/The Guardian

Climate scientists have expressed shock at the UK's smashed temperature record, with the heat soaring above 40C for the first time ever on Tuesday.

Researchers are also increasingly concerned that extreme heatwaves in Europe are occurring more rapidly than models had suggested, indicating



<https://www.gov.uk/government/publications/nature-security-assessment-on-global-biodiversity-loss-ecosystem-collapse-and-national-security>

Global ecosystem degradation and collapse threaten UK national security and prosperity.

“ The UK does not have enough land to feed its population and rear livestock: a wholesale change in consumer diets would be required.”

Britain's food supply 'at risk of catastrophic failure by 2030'

A report written before the 2024 election says climate change, habitat loss and geopolitical instability are a danger to food security — and it has been ignored

https://www.thetimes.com/uk/environment/article/britains-food-supply-at-risk-of-catastrophic-failure-by-2030-bxbgzkmlp?eafs_enabled=false

Whistleblowers warn UK food industry heading for climate disaster

By Ian Quinn | 3 April 2025

Inside Track x Food claims the UK food industry has ‘reached a moment of threat to food security like none other we have seen’

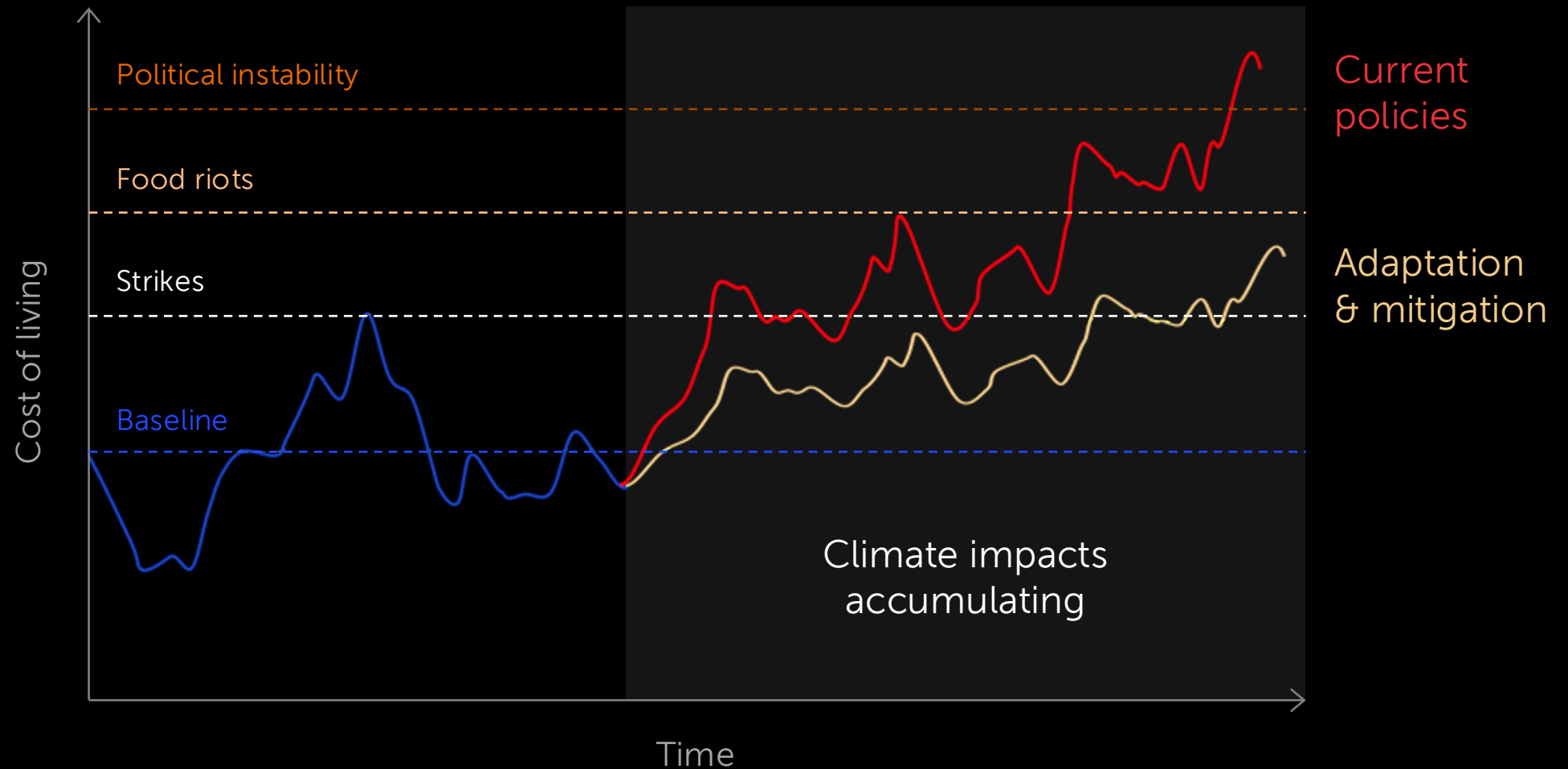
An explosive whistleblowing memo from an anonymous group of food industry executives has today warned the sector is heading for an economic disaster bigger than the pandemic, with companies’ resilience planning based on “wishful thinking” and “false reassurances” to investors.



Source: Getty Images

“We are releasing this Memo because we have reached a moment of threat to food security like none other we have seen. Yield, quality, and predictability of supply from many of our most critical sourcing regions is not something we will be able to rely upon over the coming years. The data on degrading soil health, water scarcity, global heating and extreme weather events back up what we are seeing from within the system: an interconnected set of crises.”

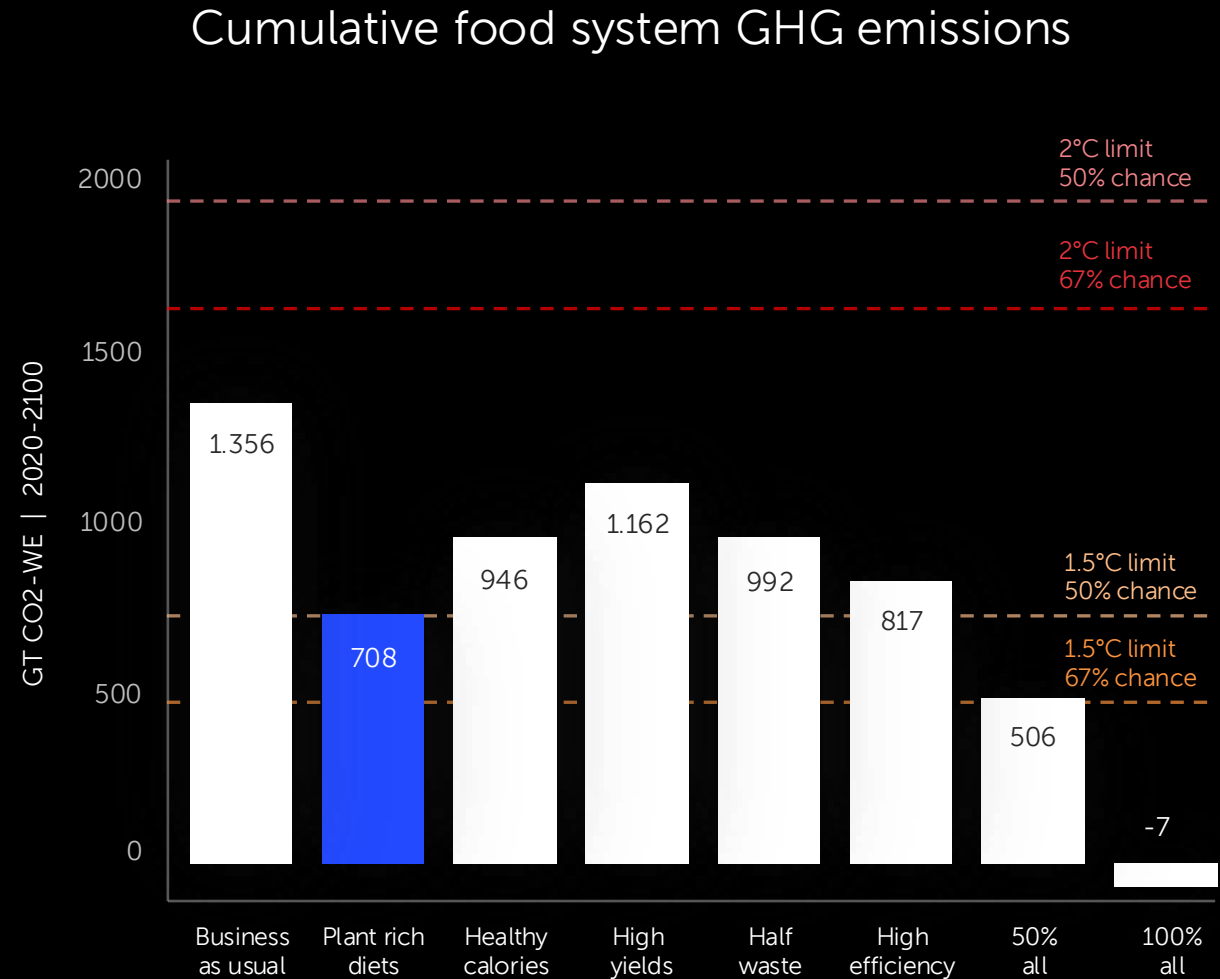
- An estimated third of UK food price inflation in 2023 from climate alone (bird flu etc.)
- 2022 extreme summer heat alone increased inflation 0.43-0.93 % points (+30-50% 2035)
- Persistent annual cli-flation of 0.9-3% per year by 2035



Shifting to a plant-rich diet would save the most emissions

Critically important in high-income nations

Clark, Michael A, Nina GG Domingo, Kimberly Colgan, Sumil K Thakrar, David Tilman, John Lynch, Inês L Azevedo, and Jason D Hill et al 2020



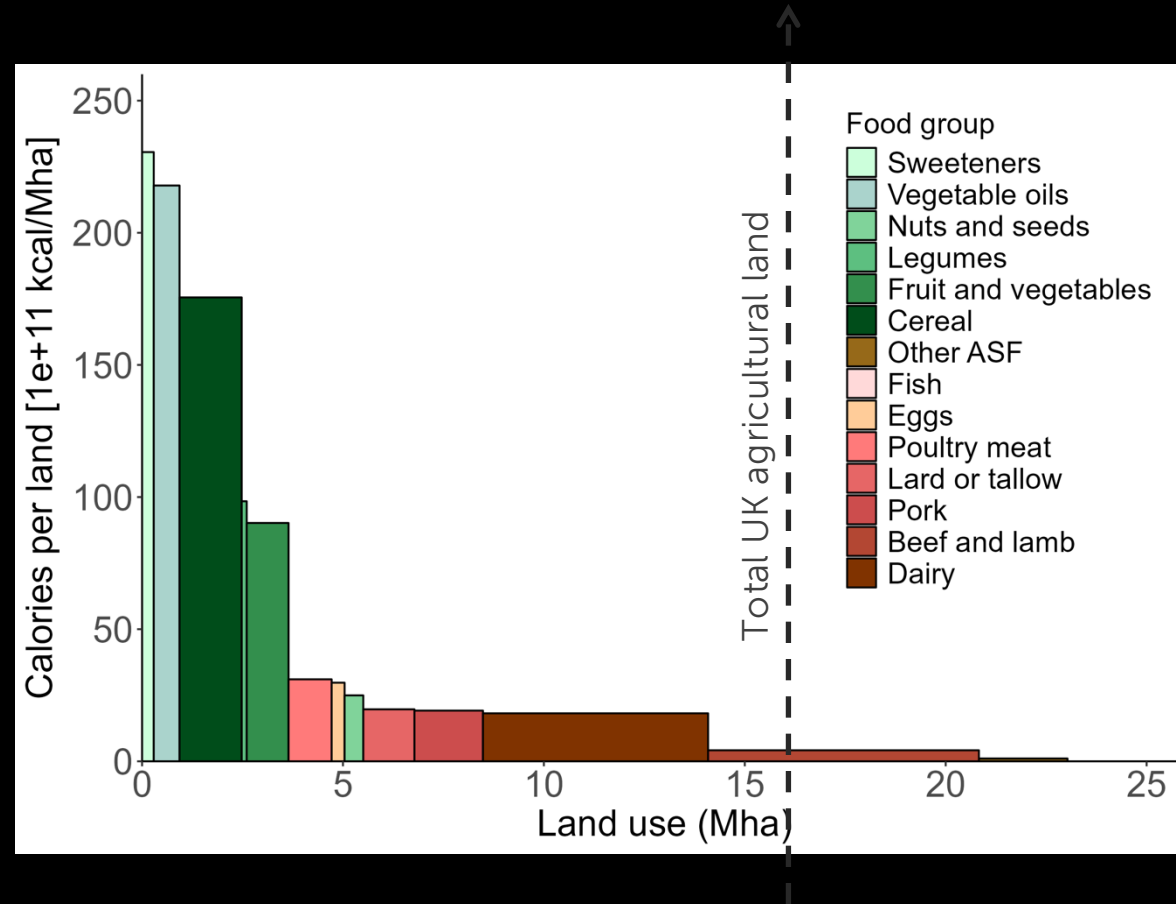
If the UK ate a plant-rich diet, we would save an area almost the size of Scotland and be (much) healthier for it.

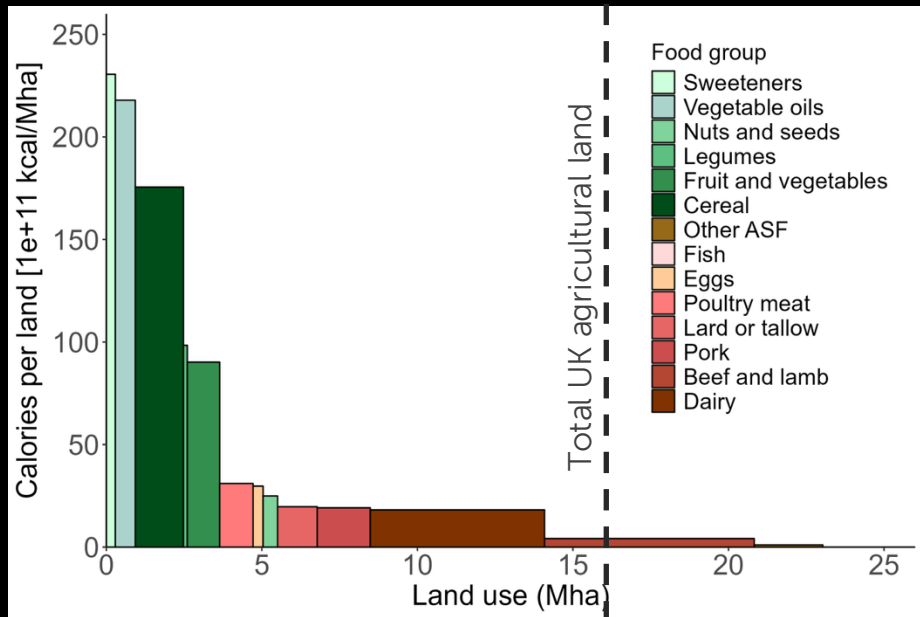
Land will increasingly be related to resilience at individual, community, and national levels...

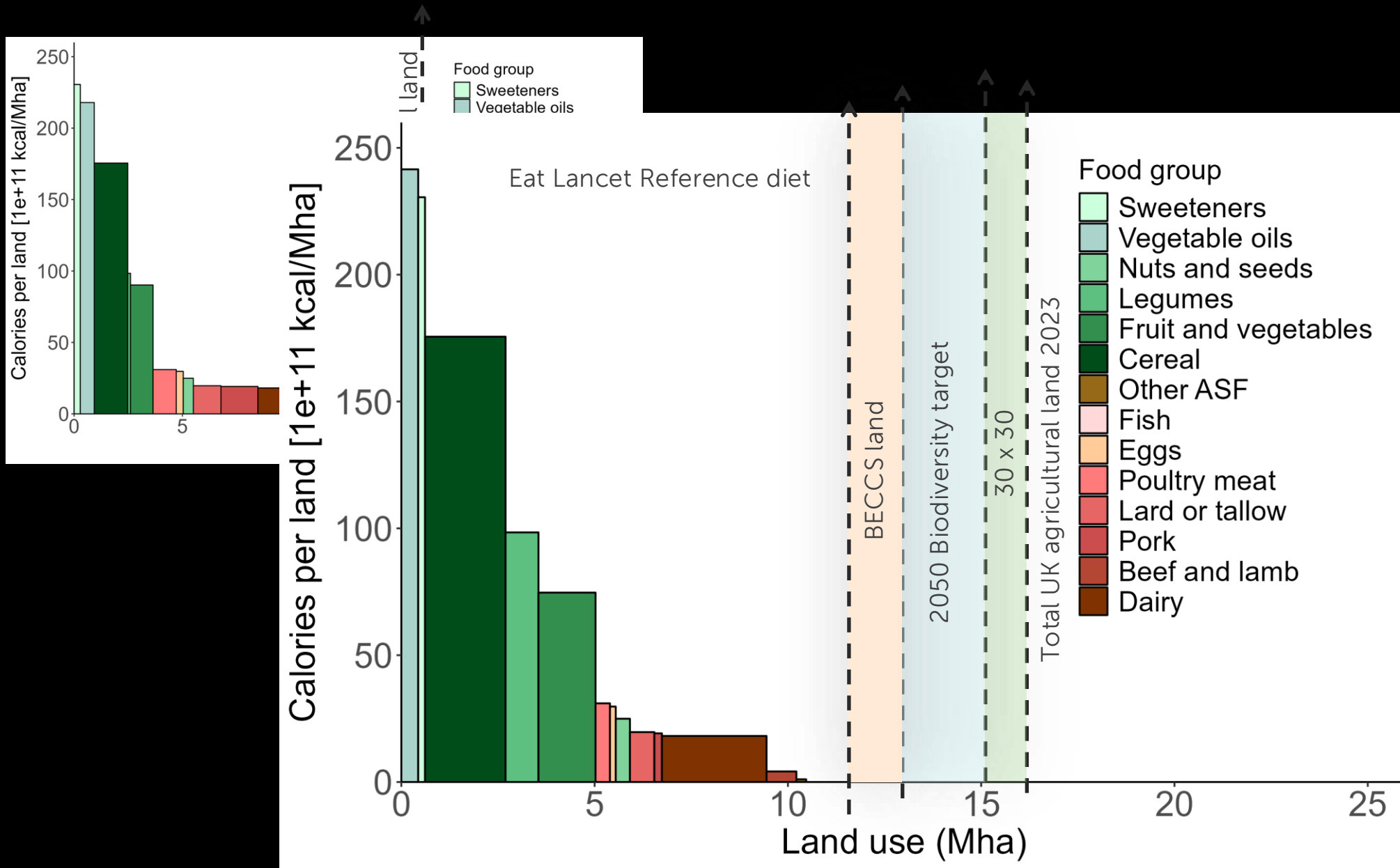


One way or another we're likely to go plant-based

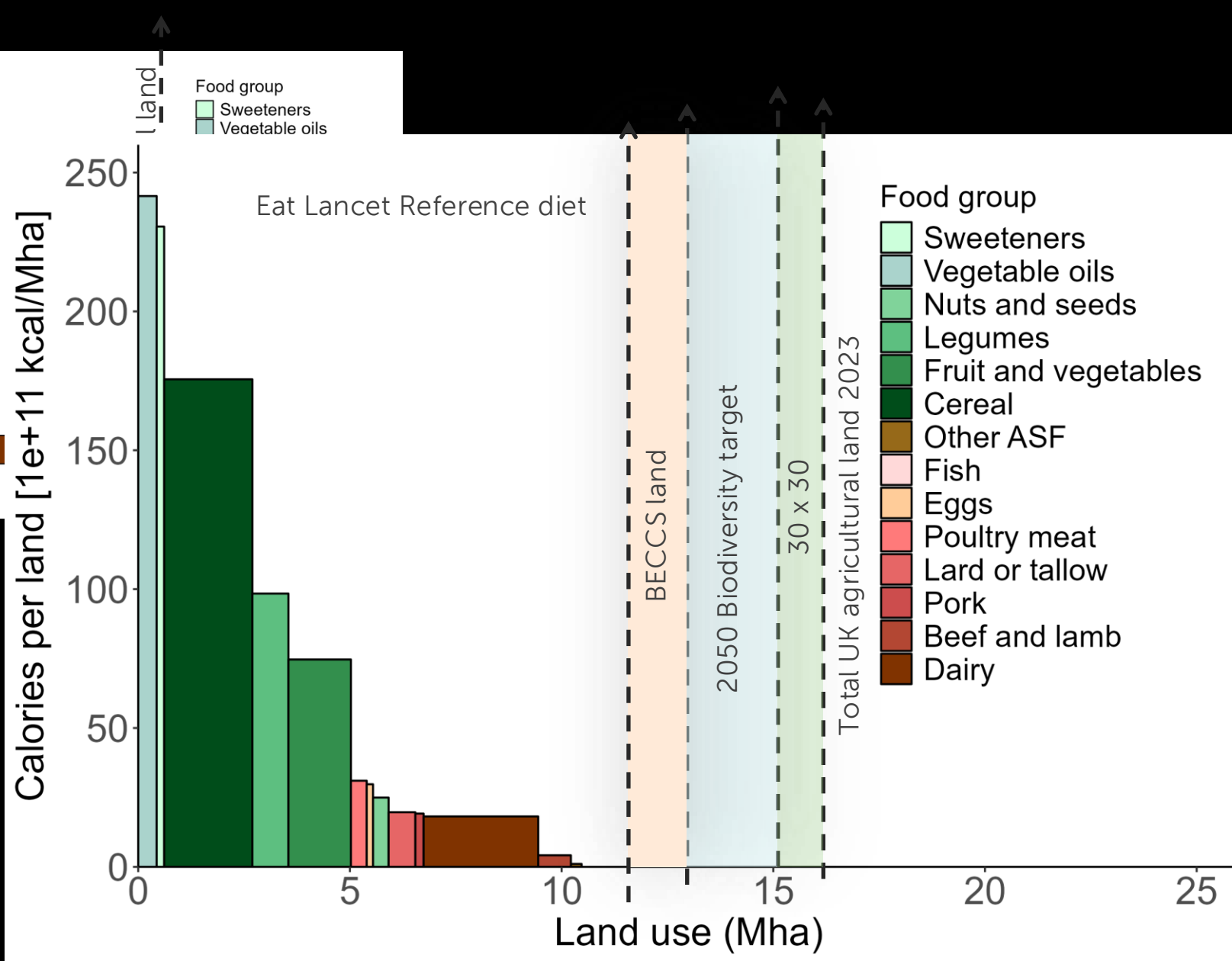
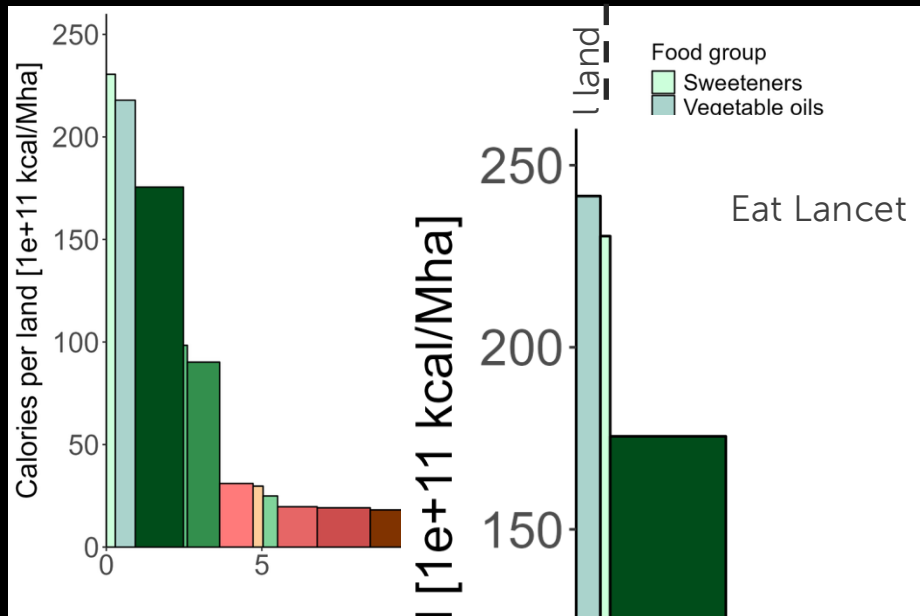
(and we absolutely need to meet government nature and climate targets)

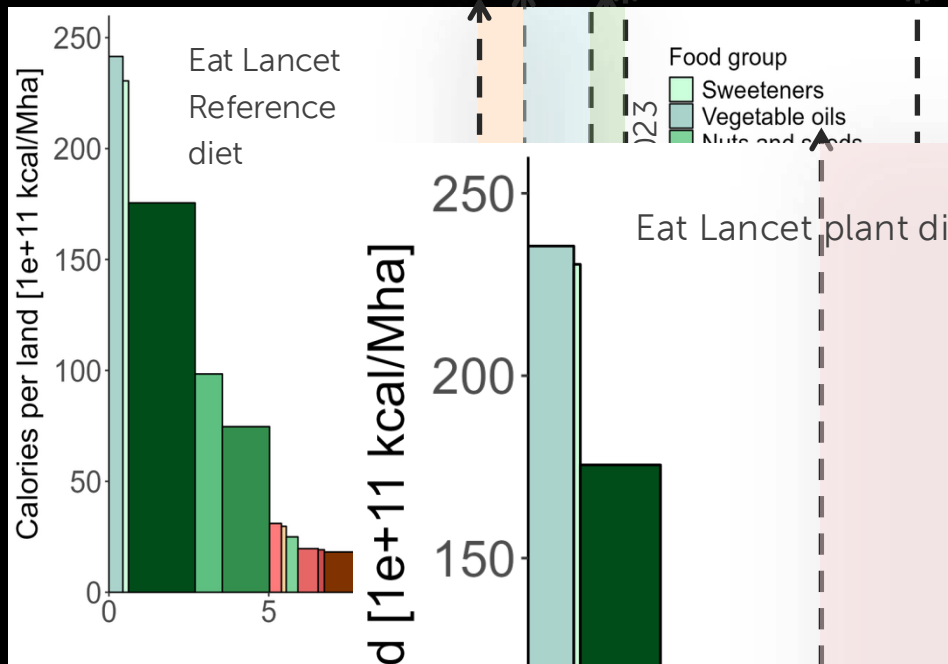




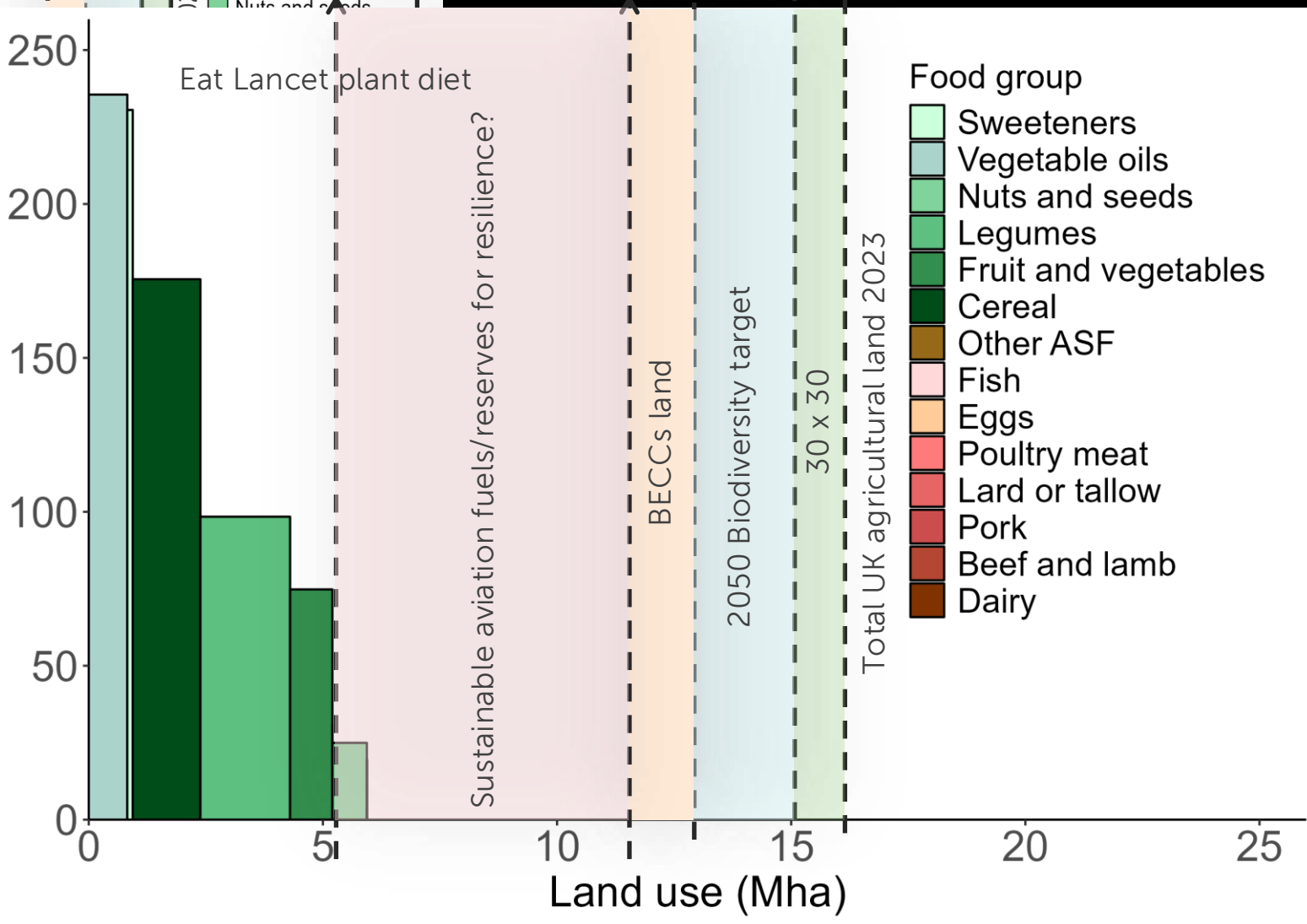


...and theoretically be completely self sufficient





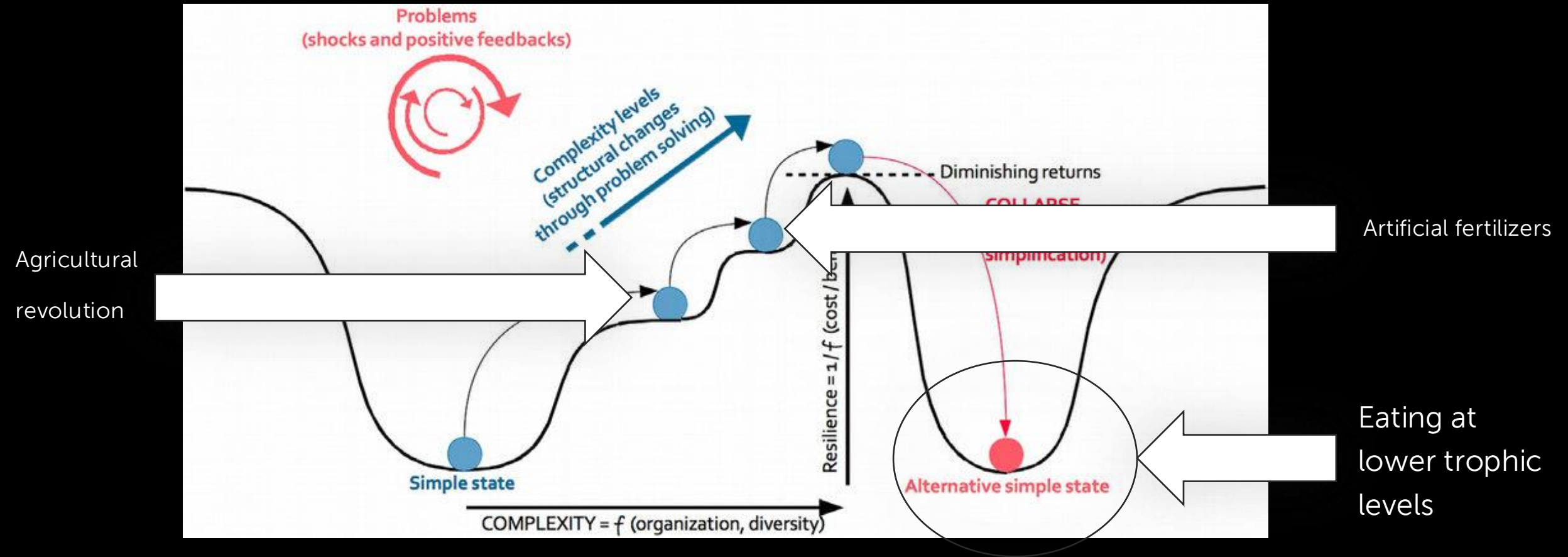
Calories per land [1e+11 kcal/Mha]



Food group

- Sweeteners
- Vegetable oils
- Nuts and seeds
- Legumes
- Fruit and vegetables
- Cereal
- Other ASF
- Fish
- Eggs
- Poultry meat
- Lard or tallow
- Pork
- Beef and lamb
- Dairy

Collapse = simplification



Reduce agricultural
emissions 60%



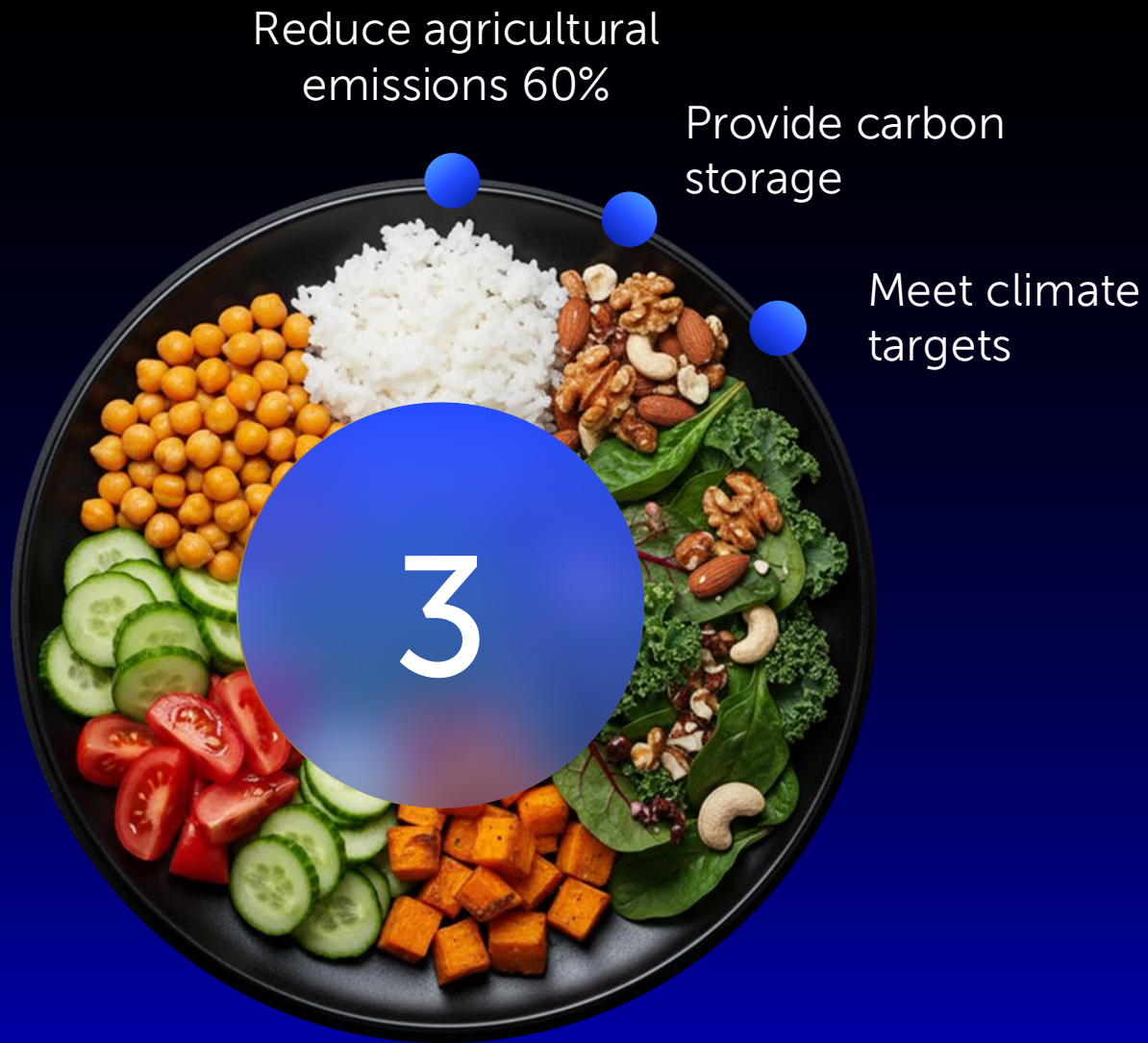
Plant-rich
win counter

Reduce agricultural
emissions 60%

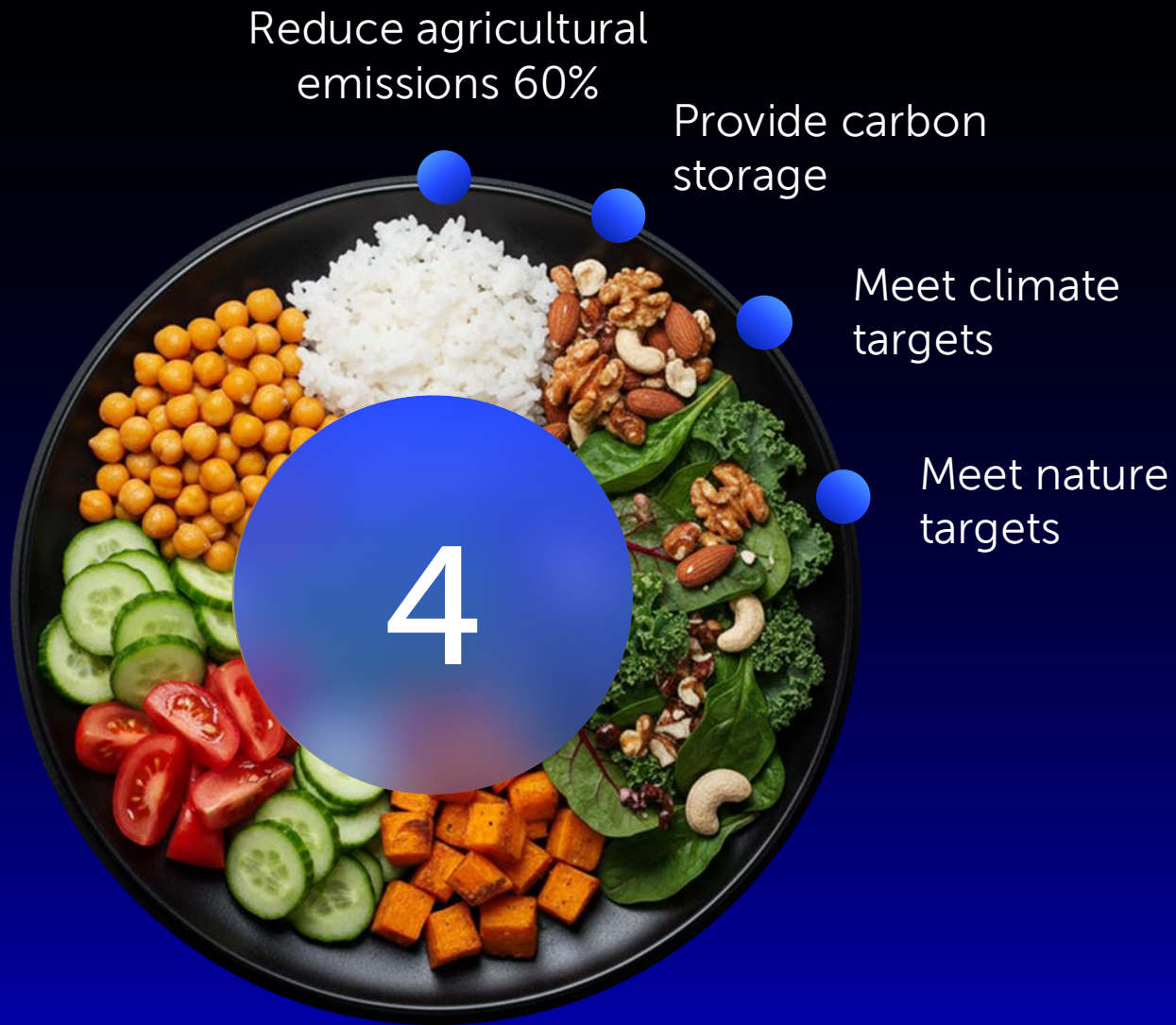
Provide carbon
storage



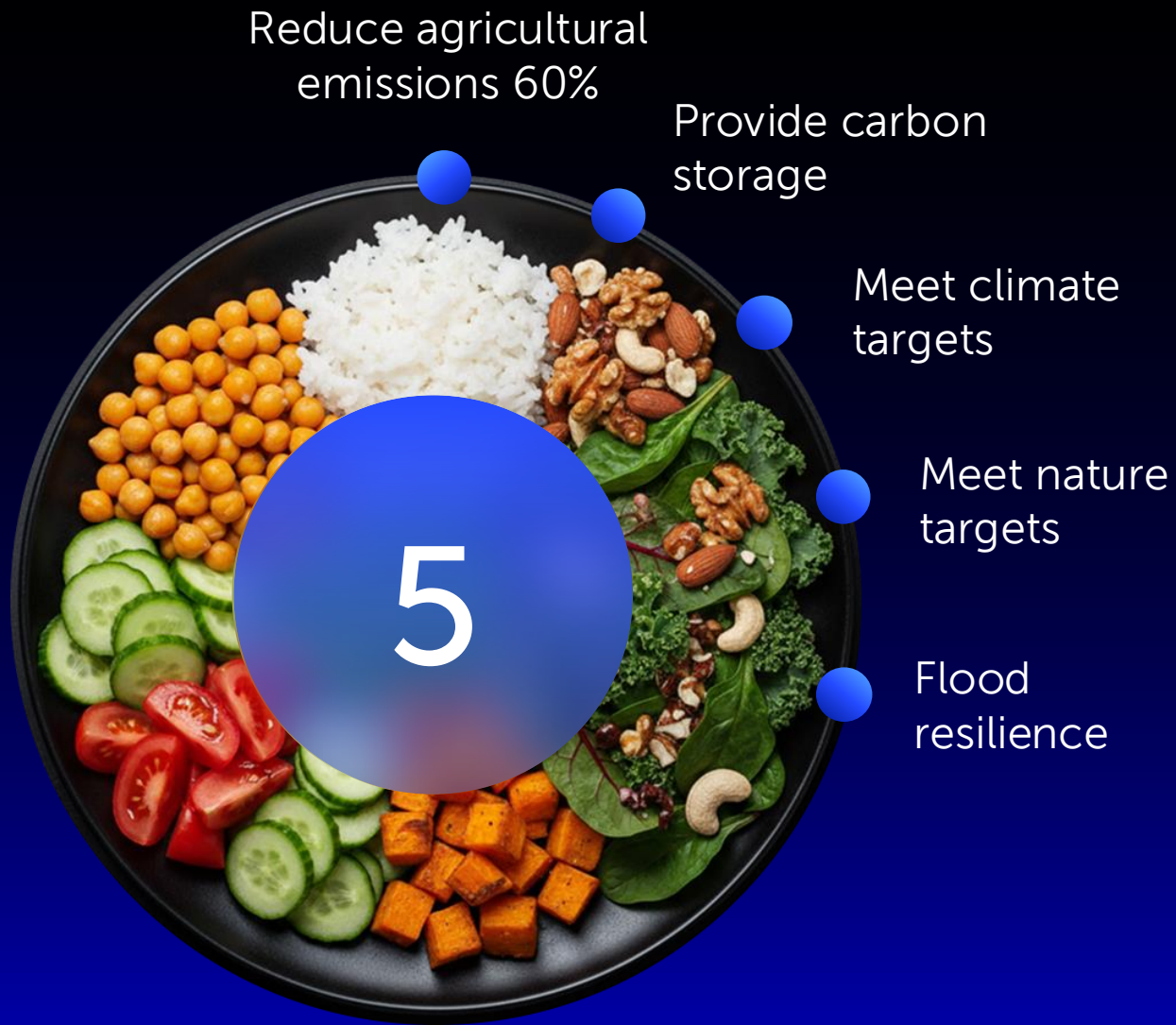
Plant-rich
win counter



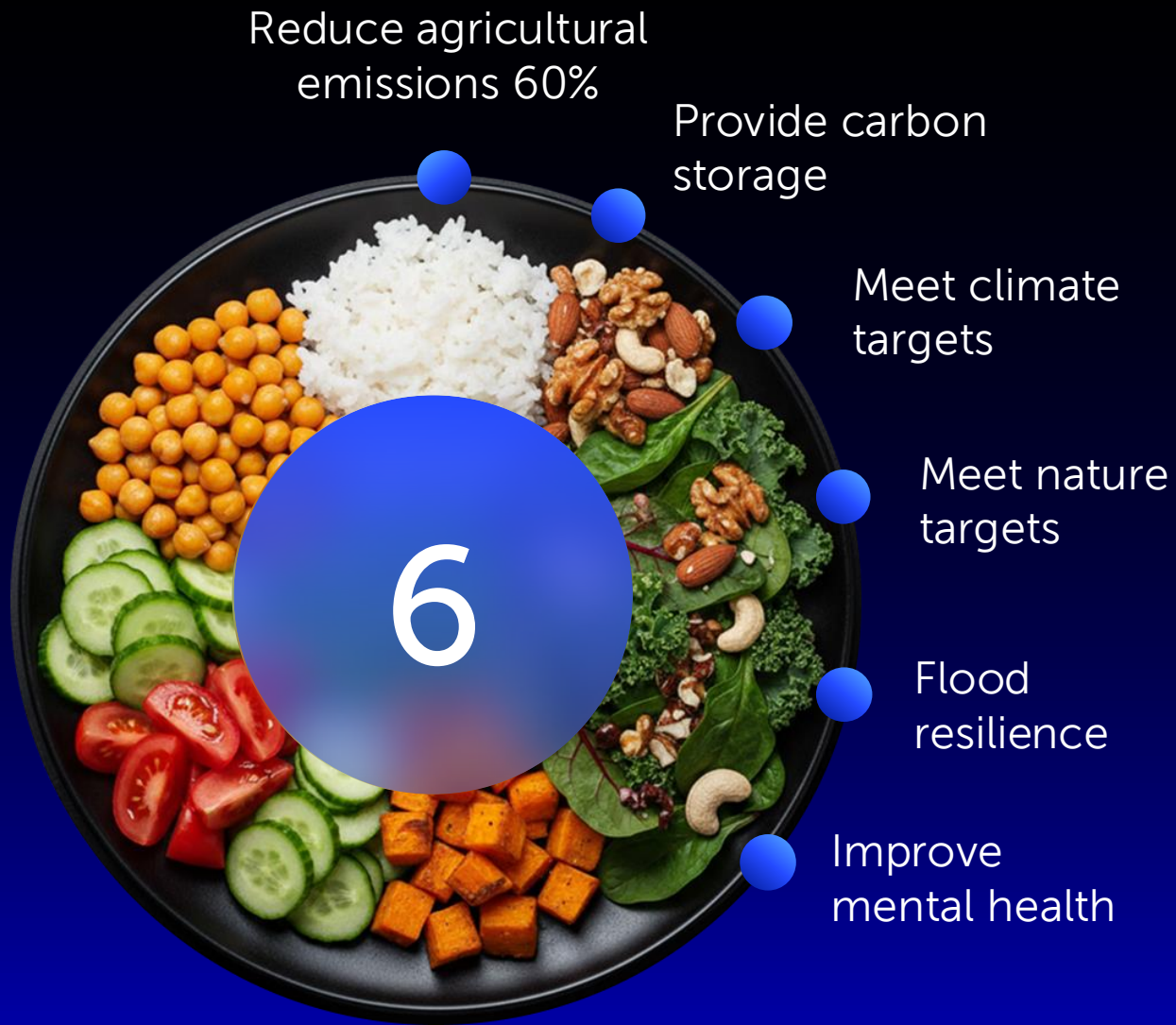
Plant-rich
win counter



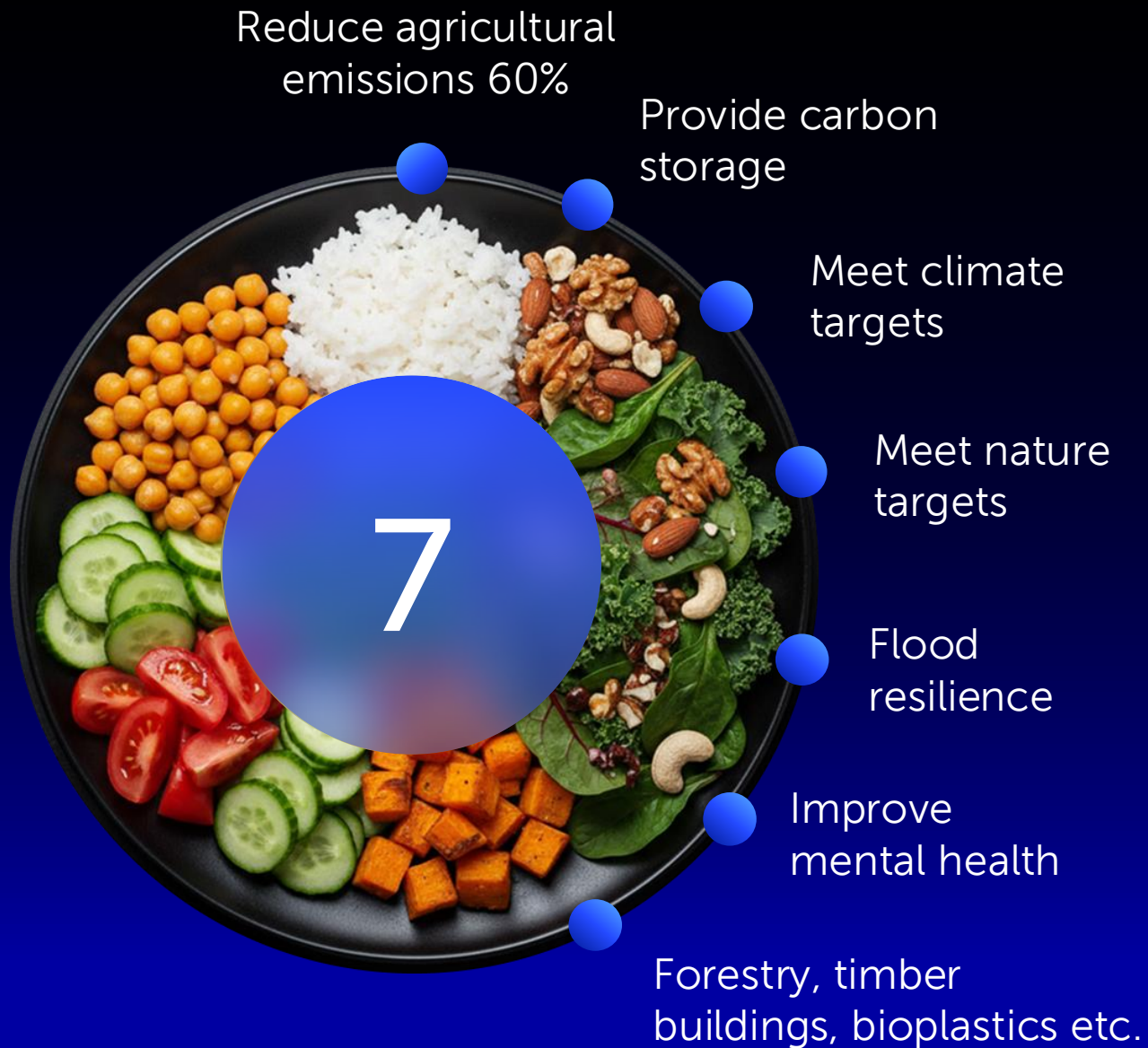
**Plant-rich
win counter**



Plant-rich win counter



Plant-rich win counter



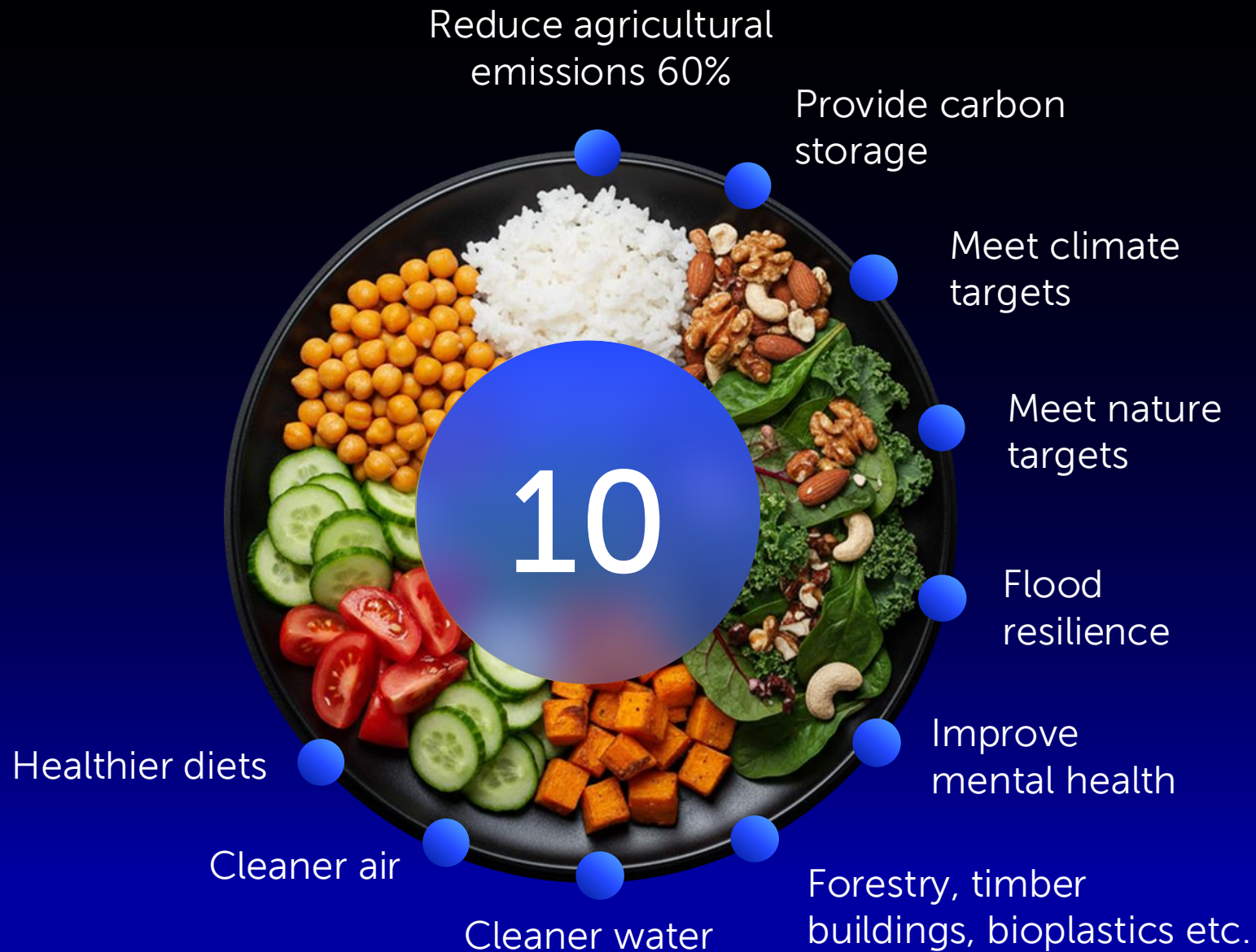
Plant-rich win counter



Plant-rich win counter



Plant-rich win counter



Plant-rich win counter



Plant-rich win counter



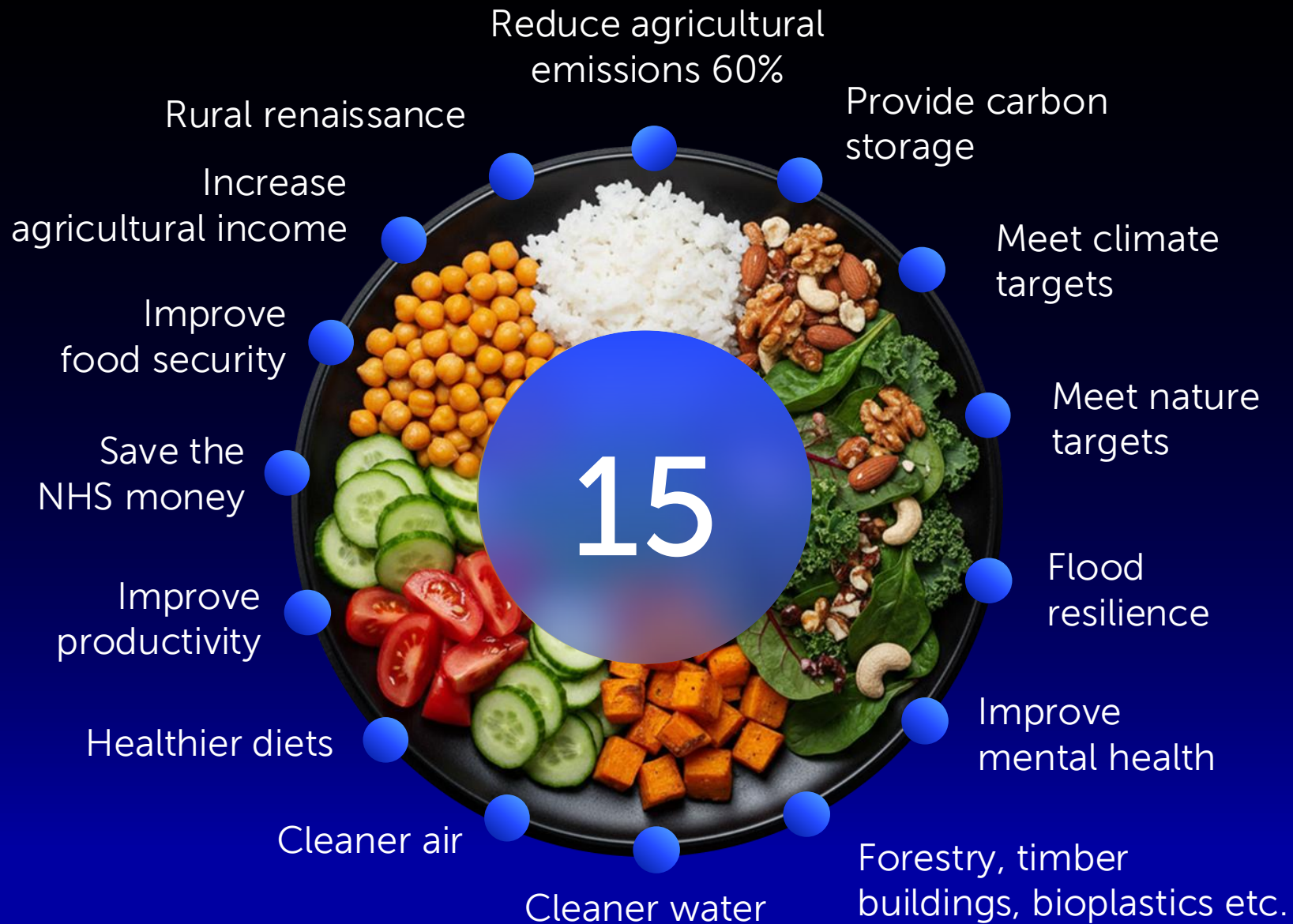
Plant-rich win counter



Plant-rich win counter



Plant-rich win counter



Plant-rich win counter

Benefits: more options for farmers and resilience

Analogous to energy transition for EAT-reference:

- 65% labour inputs for other work
- 50% lower land for farming
- 70% subsidy inputs redirected to farmers
- 75% lower assets needed for farmers

Kortleve, A. J... Behrens P. *et al.* Stranded assets in European agriculture during food system transformations. *Nat Food* 7, 38–44 (2026).

Kortleve, A. J., Mogollón, J. M., Harwatt, H. & Behrens, P. Over 80% of the European Union's Common Agricultural Policy supports emissions-intensive animal products. *Nat Food* 5, 288–292 (2024).

Kortleve, A. J... Behrens P. Dietary shifts reshape land use and farm economics in Europe, *In review*



Absorption of climate yield losses



Mixed systems with very low stocking density



Inter/multicropping



Greater food diversity and risk taking (perennials)

Misinformation: The same old story...

The New Merchants of Doubt: How Big Meat and Dairy Avoid Climate Action

JULY 2024 REPORT



“discredit the science, disseminate false information, spread confusion, and promote doubt”

Same arguments and tactics:

- Economic fear mongering
- Scientific interference
- False/limited solutions
- Green/health washing
- Denial, distract, delay

In addition: industry convergence (biogas)



Dairy Checkoff Reconnects with YouTube Star MrBeast

National Dairy Checkoff announced that they will continue their partnership with MrBeast. The YouTube star has a huge following with one video view count surpassing the total number of Netflix subscribers.

KAREN BOHNERT • October 25, 2022 08:47 AM



...smaller, struggling farmers and lower-income public get caught in the crossfire in a system that is not providing