

A Strategic Food Security Agenda for the Netherlands: Building resilience at the scale and pace required for a changing world

Dr Helen Harwatt

Climate change is already affecting food security through increasing temperatures, changing precipitation patterns, and greater frequency of some extreme events. Food security will be increasingly affected by projected future climate change.¹ Europe will continue to warm faster than the global mean, exacerbating the adverse impacts of extreme heat, floods and droughts. Substantive agricultural production losses are projected for most European areas this century. Simultaneously, geopolitical instability is exposing vulnerabilities in global supply chains for food, feed, fertiliser and energy², while biodiversity loss, soil degradation and water pressures are weakening the ecological foundations on which food production ultimately depends.

Food systems must be robust and sustainable.³ Yet, food systems are the single largest pressure across Earth system processes and now operate outside of planetary boundaries, undermining the capability for food production.⁴ The defining question for the coming years is whether food systems can provide healthy, affordable food in the face of increasingly frequent and interconnected shocks.

Food security depends on functioning ecosystems

Agriculture depends on ecosystems that regulate water, maintain soil fertility, support biodiversity and help landscapes withstand droughts and floods. The Netherlands already faces a growing freshwater challenge. This will become increasingly important as climate change accelerates.

The Netherlands is already one of the world's most intensively transformed landscapes. More than half of its land is used for agriculture, while estimates of biodiversity intactness suggest that only around half of its biodiversity abundance remains - well below the global average and far below the level proposed as necessary to maintain healthy ecosystem functioning.

In an era of accelerating climate change and biodiversity loss, restoring ecological systems that regulate water, maintain soils, build biodiversity and support resilient agricultural production must become part of the country's food security strategy. As these changes require land, they create a strategic question about how land in the Netherlands should be used to produce food, restore ecosystems and limit the impacts of climate change.

Reducing animal agriculture is the key enabler

At least 35% of the country's entire land area is currently grassland or used for green fodder crops, directly supporting animal agriculture – which also depends heavily on imported feed and overseas agricultural land. Efficiency improvements are insufficient alone – a large scale reduction in the production and consumption of animal sourced foods is unavoidable. Leading climate scientists and agriculture experts estimate a reduction of 61% from 2025 levels by 2036 is required to align with

¹ Mbow, C., C. Rosenzweig, L.G. Barioni, et al: Food Security. In: Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems <https://doi.org/10.1017/9781009157988.007>

² Bednar-Friedl, B., R. Biesbroek, D.N. Schmidt, et al: Europe. In: Climate Change 2022: Impacts, Adaptation and Vulnerability. IPCC AR6 doi:10.1017/9781009325844.015.

³ Bezner Kerr, R., T. Hasegawa, R. Lasco, et al: Food, Fibre, and Other Ecosystem Products. In: Climate Change 2022: Impacts, Adaptation and Vulnerability. IPCC AR6. doi:10.1017/9781009325844.007.

⁴ te Wierik, S., DeClerck, F., Beusen, A. et al. Identifying the safe operating space for food systems. Nat Food 6, 1153–1163 (2025). <https://doi.org/10.1038/s43016-025-01252-6>

the Paris Agreement, led by high-income countries.⁵ Additional benefits of such a measure include a substantial reduction in land, water, fertiliser and pesticide use, and pollution.

A transition towards plant-rich diets, such as the Planetary Health Diet, is an opportunity to address these challenges simultaneously.⁶ The Netherlands' new dietary guidance is already moving in this direction, recommending a more plant-based and less animal-based dietary pattern, with more legumes and nuts and less meat. However, the scale and pace of transformation must match the scale and pace of the challenges ahead. As an example of increasing ambition, we recently assessed protein targets related to the Planetary Health Diet. For the Netherlands, we found that protein consumption would shift from the current 58% animal-sourced to 75% plant-sourced. As a result, greenhouse gas emissions (GHGs) from food consumption decline by 71%, and land use by 60%. In terms of protein production, the shift is from 82% to 66% animal-sourced.⁷ This would reduce GHGs from food production by ~59% and land used for food production by ~46%.

Five priorities for a Strategic Food Security Agenda

1. Make food-system resilience a national strategic objective.

Assess food security against future climate, ecological and geopolitical risks, including dependence on imported feed, fertiliser and other critical inputs.

2. Accelerate the transition towards plant-rich diets and diversified protein production.

Build on the Netherlands' new dietary guidance and existing protein-transition objectives, with greater ambition where required to align consumption and production with planetary health.

3. Reduce animal agriculture to create space for ecosystem recovery and climate adaptation.

Align livestock reduction, nitrogen policy, land-use planning and nature restoration so that reductions in agricultural pressure translate into measurable gains in ecological resilience.

4. Treat soils, water, wetlands and biodiversity as essential food-security infrastructure.

Integrate ecosystem restoration and climate adaptation into agricultural and food-security planning, recognising natural systems as critical infrastructure for future production.

5. Align agriculture, dietary guidance, retail, innovation and public procurement.

Create a coherent food-system transition in which government, farmers, retailers, manufacturers and consumers are working towards a shared dietary and production trajectory and target.

Achieving this will require completing the policy architecture already underway, but with raised ambition where needed to ensure it matches the scale and pace of the challenges ahead, including 2030 climate and nature goals. This is an enabling strategy rather than a competing priority.

A plant-rich food system, with substantially reduced livestock production and consumption, reduces pressure on land and imported feed while creating space for ecosystem restoration, water resilience and diversified food production. Building resilient food systems increases the prospects of a food secure future against increasingly severe climate impacts, ecological disruption and global commodity and supply chain shocks. Food security and planetary health are not competing objectives. In an increasingly unstable world, they are increasingly inseparable.

⁵ Harwatt, H. Hayek, M.N, Behrens, P. et al. Options for a Paris-Compliant Livestock Sector. Timeframes, Targets and Trajectories for Livestock Sector Emissions from a Survey of Climate Scientists. 2024. <https://animal.law.harvard.edu/wp-content/uploads/Paris-compliant-livestock-report.pdf>

⁶ Rockström J, Thilsted S, Willett W et al. The EAT–Lancet Commission on healthy, sustainable, and just food systems. The Lancet, 2025; 406, 1625-1700

⁷ Harwatt, H. Kortleve, A. Mogollón, J et al. Planetary health protein targets for national and retailer food strategies, 28 June 2026, PREPRINT (Version 1) available at Research Square [<https://doi.org/10.21203/rs.3.rs-9916871/v1>]