



The promissory narratives of the Dutch National Protein Strategy

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Abstract. In the wake of increasing geopolitical tensions and the disruption of supply chains, the EU has asked member states to develop a *National Protein Strategy* (NPS). This paper investigates the National Protein Strategy of the Netherlands, an important producer and global exporter of meat and dairy products that largely relies on the import of plant-based proteins from across the globe. The paper analyses the promissory narratives of protein futures as outlined in the NPS. It shows that the strategy is riddled with techno-optimist narratives that are promising to resolve the strategic deficit of proteins through a combination of increased legume production, innovative novel proteins, a scale leap in insect farming, and the optimization of waste flows. Only a surprisingly small role is reserved for a protein transition towards more plant-based consumption. A reduction in the production of meat and dairy for export is completely ignored. The paper concludes that the NPS primarily sustains and stabilizes the existing intensive livestock regime rather than transforming it.

1 Introduction

Over the last few decades the global consumption of meat and dairy products has been increasing rapidly. This “meatification” of diets is sustained by the production and global flows of feed crops such as corn and soy (Weis, 2013). The European Union is one of the hotspots for the production of meat, dairy, and eggs but depends heavily on the import of protein-rich grains and oilseeds, especially soy from across the Atlantic (European Commission 2018). This lack of strategic autonomy in vegetable proteins is referred to as Europe’s *protein deficit*, which is a key geopolitical concern of the European Union (European Parliament, 2018). In the wake of increasing geopolitical tensions and the disruption of global supply chains, the European Commission has asked member states to develop *national protein strategies* (NPSs) addressing this protein deficit. These national strategies should stimulate the growth of protein-rich crops to increase Europe’s self-sufficiency while also contributing to environmental, climate, and health goals.

In response, governments of the member states have worked on National Protein Strategies as part of their strategic plans within the Common Agricultural Policy (CAP),

which were approved by the European Commission in 2022. While the NPS originated from the issue of food security and strategic autonomy rooted in global food crises, including war, Covid-19, and increasing competition for feed commodities, it gradually also became integrated with other policy agenda’s related to environmental impact, rural development, and climate change as, for instance, covered in the Green Deal and the European Farm to Fork agenda (Candel and Daugbjerg, 2025). These national protein strategies are interesting cases for studying how geopolitical policy goals related to food security and greater self-sufficiency crucially intersect with other key challenges of the agro-food system. One way of analysing this is by studying the dominant narratives used in the national protein strategies. Food system narratives are crucial for assembling political and business coalitions and stabilizing contested transitions, reconciling (seemingly) incompatible policy ambitions (Wittmayer et al., 2019; Anderson, 2024). Such food narratives are often fraught with high expectations about synergies and promises about technological innovation (Sexton et al., 2019; Cusworth et al., 2021). Promissory narratives of precision farming, novel proteins, and metabolic circularity can project an agro-food fu-

ture in which intensification and sustainability are mutually compatible. However, this narrative coherence can also mask underlying tensions and systemic inconsistencies, protecting existing agri-food regimes (Guthman and Biltekoff, 2021; Duluins and Baret, 2024b). This paper studies the NPS of one of the agricultural hubs of the European Union: the Netherlands. In recent years the ecological impact of livestock farming has risen to the centre stage of mainstream politics in the Netherlands (Van der Ploeg, 2023; Gort and Loftus, 2024). The Netherlands presents an extreme case for both the European protein deficit and how these geopolitical issues intersect with environmental and political crisis of the current agro-food system. The paper first describes the dominant and counternarratives of the NPS and then connects them to the political ecologies of the protein transition in the Netherlands (Gort and Loftus, 2024). It aims to demonstrate how the NPS, through promissory narratives (Sexton et al., 2019; Cusworth et al., 2021), frames Dutch protein futures, reconciling ecological crises with strategic efforts to secure the Dutch agro-industrial complex against geopolitical uncertainty.

Drawing on an analysis of the NPS report itself, supplemented with analysis of policy reports and transactions of parliamentary debates, this paper asks the following: what are the main narratives of the Dutch National Protein Strategy and how do the promises about the future of agro-food connect to the political ecological crises of intensive livestock farming?

The structure of the paper is as follows: in the next section I discuss the relevant literature on protein narratives, and then I discuss the data and methods. The fourth section introduces the Dutch case in more detail, followed by a section outlining the main content of the NPS. The sixth and main section of the paper analyses the promissory narratives of the main report of the Dutch National Protein Strategy. The subsequent section analyses the political reception and debates of the NPS. Finally, I summarize the main findings and discuss them in the context of the broader political ecological crisis.

2 Protein narratives

Narratives about food are the stories and frameworks through which individuals and societies understand and explain how the food system works (Béné et al., 2019). These narratives shape our perceptions, influence policy decisions, and guide actions within food systems (Anderson, 2024; Katz-Rosene et al., 2023). Narratives can be promoted by different actors within food systems: policymakers, corporations, activists, media, or researchers. Most work on food narratives has been concerned with how producers and retailers are drawing on specific narratives to convince consumers to buy their product. Also, interest groups such as NGO's and business lobby groups are drawing on specific narratives to influence consumers and public and scientific debates and

also try to sway policymakers and other regulators. Such narratives thus shape public perception and can impact policy decisions, thereby affecting the direction and nature of food system transformations, framing the problems and solutions and, hence, connecting to theories of change. Wittmayer et al. (2019:2), refer to such “sets of ideas, concepts, metaphors, discourses or story-lines about societal transformation” as *narratives of change*.

One of the most central set of narratives of change concerning the agro-food system revolves around the so-called “protein transition” (Duluins and Baret, 2024a, b). While the protein transition is not a neatly defined policy agenda, it generally refers to a transformation of the current agro-food system, which heavily revolves around the industrial production of meat, dairy, and eggs, sustained by large-scale growing of protein-rich grains and oilseeds for animal feed (Aiking and de Boer, 2020). The protein transition agenda pivots on a substantial reduction in industrially produced animal proteins and a shift to more plant-based diets, relying on a range of old and novel proteins.

The narratives surrounding the necessity of a protein transition away from animal-based proteins revolve around several core issues, which all stress the unsustainable nature of the current agro-food system (Katz-Rosene et al., 2023). First, a core narrative emphasizes the untenable growth in the consumption of meat, dairy, and eggs in combination with a growing global population (Guthman et al., 2022). This neo-Malthusian narrative of food insecurity and the global crisis of proteins directly connect to a second set of narratives that underscore the inefficiency of animal protein production due to the metabolic losses when converting grains and oilseeds into animal products. These inefficiencies are also part of a third set of narratives that centre on the environmental degradation, such as large-scale deforestation and other ecosystem destruction, caused by the global grain–oilseed–livestock complex (Weis, 2013). In recent decades, a fourth central narrative about climate change has emerged in parallel as livestock farming has been demonstrated to be responsible for a big share of greenhouse gases (FAO, 2006; Poore and Nemecek, 2018). A fifth production-related narrative concerns the vast-scale suffering of animals that is inherent in industrial livestock farming. While this narrative is not new, growing awareness of non-human intelligence and pain perception has broadened and emboldened these narratives (Singer, 1975; Oliver, 2021). Finally, the Covid-19 pandemic has fuelled the narratives about the role of intensive livestock farming in the outbreak of zoonotic diseases (Post et al., 2020). These narratives about zoonotic diseases link to narratives about the (un)healthiness of the consumption of meat and dairy. Frequent consumption of (red) meat is linked to a range of health issues, such as cardiovascular disease and cancer (Godfray et al., 2018). However, in order to successfully make the protein transition, changing the production side is not enough. The protein transition's success is also largely contingent on dietary changes by which people in Eu-

rope would have to drastically reduce their intake of dairy, eggs, and meat. In recent years a substantial body of literature has started to investigate the narratives surrounding the alternatives to conventional meat and dairy products and the fundamental transformation of the current agro-food system (Lonkila and Kaljonen, 2021; Goodman, 2023; Duluins and Baret, 2024b). These narratives play a crucial role in shaping public perception, policy, and investment in emerging food innovations. They are referred to as promissory narratives in the context of future food systems: the forward-looking claims and visions that advocate for alternative food technologies and practices as solutions to current environmental, ethical, and health challenges.

Promissory narratives of protein

An emerging body of academic literature has critically examined such promissory narratives, particularly concerning the role of alternative proteins in the protein transition (Sexton et al., 2019; Guthman and Biltekoff, 2023). This research demonstrates how promissory narratives craft an image of alternative proteins as systemic solutions to ecological, ethical, and health crises (Lonkila and Kaljonen, 2021; Duluins and Baret, 2024a). Promissory narratives revolve around various aspects of the food system: first, a set of promises offers that alternative proteins are the solution to the inefficiencies and, hence, the untenability of the current food system revolving around the grain–oilseed–livestock complex. Given the projected global population growth and rising consumption of animal-based proteins, substituting meat and dairy with alternative proteins promises to feed the world sustainably (Sexton et al., 2019; Cusworth et al., 2021). Second, and closely related, alternative proteins allow for producing *better*, not only because of the greater efficiency of land and other resources but also because they remedy the problems of animal suffering, climate change, and environmental degradation by replacing proteins from intensive livestock farming with those from vegetal sources. Third, alternative proteins are promised to allow for greater control over the production system, which offers advantages for biosecurity and food safety but also for capital investors (Guthman et al., 2022). Fourth, narratives of alternative proteins are revolving around public and personal health, promising that less meat and dairy and more plant-based diets prevent disease and build healthier bodies (Cusworth et al., 2021).

The promissory-narrative literature further outlines how different alternative proteins are promising for agro-food futures (Duluins and Baret, 2024b; Lonkila and Kaljonen, 2021). Cusworth et al. (2021), for instance, show how leguminous plants, such as pulses and legumes, are rebranded and refashioned as a key solution to the problems of meatified diets and production systems. These “legume dreams” combine promissory narratives of producing better (reducing the environmental impact of livestock farming) with “sustainable intensification”: the promise that high-tech legume farming can

actually increase the intensity of current food systems, boosting production and export. Furthermore, legumes and pulses, which, for have been a part of human diets for a long time, are healthier while also improving biodiversity and restoring the balance between agriculture and nature.

Insects are another source of alternative proteins that is promised to play an important role in the protein transition. Although insect farming raises new concerns in relation to animal welfare, several papers analyse how insects are heralded as a healthy, efficient, and sustainable source of proteins for both animal feed and human consumption (House, 2019; Sexton, 2018). Despite the lack of consumer acceptance of insects as food in a Western context, one of the main promises of insects is that their amino-acid profile is very suitable both for human consumption and for replacing soy in animal feed. What is more, insects are vowed to be excellent waste processors, opening new avenues for circular agriculture as waste flows can be more easily turned into high-quality protein. Insect proteins in their isolated form hold great promise as building blocks for meat substitutes and even 3D food printing (Lupton and Tuner, 2018). Additionally, 3D printing of food also holds the promise to enable the making of novel and creative food shapes; to create palatable and nutritious foods for people with oral disabilities and the elderly; and to meet food requirements in difficult conditions such as combat zones, disaster areas, or space travel.

Furthermore, 3D printing seamlessly fits into the broader set of promissory narratives around alternative proteins that pivot on the potential of new technologies. These narratives collectively configure a techno-optimistic horizon in which innovation cultures link entrepreneurial activity to planetary challenges, framing technological intervention as the primary mode through which environmental and social crises can be resolved (Guthman and Biltekoff, 2021). In addition, novel meat replacement products made from processed vegetal sources such as peas and soy had attracted substantial investment in the 2010s. Perhaps the most powerful promissory narratives are, however, emerging around cellular agriculture, such as *in vitro* meat (IVM), created from animal cells grown in bioreactors on a growth medium. The narratives about cultivated meat are promising real taste with equal or superior nutritional quality without animal suffering and killing. Furthermore, businesses in cellular agriculture also vow that their products are slashing the environmental impact of meat or dairy production (Stephens and Ruivenkamp, 2016; Jönsson, 2016). Although the massive market introduction of cultivated meat is still pending in major markets, the promise of fundamental transformation of agro-food without having to give up on meatified diets is a siren’s song that has investors and governments enchanted (Guthman and Biltekoff, 2023). The promissory narratives of IVM created a consensus in which media, policymakers, and consumers take the potential benefits of IVM for granted, only focusing on the technical aspects of IVM production while neglecting critical considerations of how, for instance, fund-

ing imperatives are shaping the narratives' representations of this emerging technology (Jönsson, 2016). However, rising consumer fear over "Frankenstein food" and political resistance from conservative and radical right-wing governments challenge this promise (Muller and Rooney, 2025; Salvatore et al., 2024).

Across these varied strands, promissory narratives perform three central functions. First, they foreground specific technological pathways by framing them as solutions to urgent problems, thereby legitimating investment, policy attention, and political commitment. Second, they mask uncertainties and trade-offs, overselling the promises of techno-fixes while obscuring the contested political, ecological, and social landscapes within which these innovations must unfold. Third, they reshape cultural expectations by cultivating imaginaries of what future food systems should look like, often privileging technologically intensive solutions over systemic socio-political change. This paper employs these three key functions to analyse the Dutch National Protein Strategy and its political reception.

3 Data and methods

The promissory narratives of the NPS are primarily analysed through a detailed analysis of the main report on the NPS in 2020. The analysis furthermore relies on policy reports and transactions of parliamentary debates that preceded and followed the NPS. The data are derived from the repository officielebekendmakingen.nl (*official announcements*) which contains the transactions of parliamentary debates and policy documents, as well as disclosed files (*WOO-requests*) containing, for instance, minutes, contracts, and email conversations between policymakers. I selected all documents that contain the term "protein strategy", "National protein strategy", or "protein plan" for the years 2018–2025. The final dataset on policy documents contains 211 documents. I performed a frame analysis of these documents with the help of qualitative research software (Atlas TI 25.0). The entire NPS report was inductively coded in detail, with a particular focus on the explicit promises, expectations, or future references that were expressed. For the other documents, I was primarily interested in the origin of these narratives as they relate to the NPS. The primary cue I used to select relevant sections of those documents was anything related to the term "protein strategy" or "protein plan" or just "protein". Within those sections of the documents, I used inductive coding focussing on the narratives within those documents related to the reception, ambitions and aims, and strategies and measures related to the NPS. For the period following the presentation of the NPS (2020–2025) the analysis revolved mainly around how the NPS was framed politically by different actors and political parties and how it was implemented by the successive responsible ministers. The documents that were

primarily used for studying the evolution of the NPS are directly cited in the text.

4 Context: political ecological crises of proteins in the Netherlands

The Netherlands is a small country with high population densities of humans and non-human animals. Along with a population of 18 million people, in 2020, approximately 4 million cows, 12 million pigs, and 100 million chickens lived in very high densities (Ministry of Agriculture, Nature, and Food Quality, 2020). Livestock farming is intensive, relying on up-to-the-minute technological agronomic knowledge and infrastructures, widely available finance, and consistent political support (Van Der Ploeg, 2020). The Netherlands produces a significant part of the EU's meat and dairy, which is only, in minor part, consumed domestically (Smulders et al., 2025). Dutch dairy conglomerates (Friesland/Campina) and meat industries (Vion, Van Drie Group) are among the bigger players in European protein markets. Being situated at a key node of global trade in commodities and processed foods, the Netherlands is one of the world's central protein hubs (Westhoek et al., 2011; NPS 2020). Large flows of protein-rich commodities are channelled through and metabolized in the country.

While most dairy farms still have a partial self-sustaining relationship with land, meat, poultry, and egg production depend heavily on the import of feed from elsewhere. While, prior to the signing of the Blair House Agreement (1992), protein-rich crops amounted to a significant share of EU agriculture, the free-trade agreement opened the European market to cheaper and abundant grains and soy from the US and, later, from South America (Van der Vleuten and de Hoop 2022). This made it economically much less attractive for crop farmers to grow grains and legumes for animal feed, resulting in a rapid decline in nationally grown protein-rich crops in the Dutch landscape (Ministry for Agriculture, Nature, and Food Quality, 2020; Haalboom, 2024; Van der Ploeg, 2023). The Dutch livestock sector has hence become largely decoupled from land (Van der Vleuten and de Hoop, 2022). The massive use of imported feed products in the Dutch livestock sector is causing several interrelated political ecological crises:

1. Soy production is causing severe environmental degradation in countries of origin. Most pertinently, the deforestation of the Amazon and the Cerrado is directly linked to soy production for global markets, causing biodiversity loss and droughts due to disrupted water cycles and also contributing to rising greenhouse gas emissions (Van der Vleuten and de Hoop, 2022; Haalboom, 2024).
2. Massive use of import soy and other compound feeds has enabled the ever-greater intensification of livestock

farming (Haalboom, 2024), causing problems associated with animal welfare in general and presenting risks for antibiotic resistance, as well as outbreaks and the spread of zoonotic diseases (Smit and Heederik, 2017; Post et al., 2020).

3. The use of protein-rich feed and addition to the use of artificial fertilizer have caused a huge surplus of nitrogen, which, through leakage and deposits, is building up in the environment (Van der Ploeg, 2023). Although nitrogen emissions from livestock farming have actually declined significantly in recent decades, the cumulative deposits are now causing major problems for specific species living in European protected nature areas (Natura2000). This has culminated in what is referred to as the Nitrogen Crisis, which is a huge political issue in Dutch politics (Vogel, 2025; Van Der Ploeg, 2020). The immediate legal requirement for a reduction in the emissions of nitrogen was (and still is) a central political ecological crisis, which largely revolves around the metabolic politics of proteins.
4. The disruptions of the supply chains of crucial ingredients of compound feed due to the Covid-19 pandemic, the war of Russia against Ukraine, and other geopolitical tensions have exposed the vulnerabilities of the global food system and of European animal agriculture in particular. Reliance on imports of crucial plant-based proteins is causing tensions and insecurities in European and Dutch food supply. The Dutch National Protein Strategy was drafted to deal with this geopolitical dimension but inevitably also connects to the other outlined political–ecological crises (Gort and Loftus, 2024).

These political ecological crises have become highly salient issues in regional and national election cycles, particularly in the years 2019–2024 (Gort and Loftus, 2024). In 2019, as a response to the critique of intensive livestock farming, agro-business consultants founded a new political party, Farmer Citizen Movement (BBB). This agro-populist party, running on a pro-farming, nationalist–conservative platform, won a landslide victory, making it the largest fraction in all 12 provincial chambers (Otjes and de Jonge, 2024). In 2024, after parliamentary elections, the BBB even joined the national coalition government, consisting of two centre-right parties and two populist right-wing parties, in which they negotiated to deliver the minister for agriculture. The BBB, which was founded to defend the interests of intensive livestock farming, has played an important role in politicizing livestock farming and meat consumption/reduction, drafting new narratives of agro-food futures, thereby emphasizing the original premise of food security (for humans but, moreover, also for non-human animals). It was in this context of the politicization and increased salience of agro-food futures that the Dutch National Protein Strategy was first introduced and

politically discussed. The next section briefly introduces the contents of the report on the National Protein Strategy. Subsequently, I analyse the main promissory narratives of the NPS and discuss how it was politically received in the period after publication.

5 Introducing the National Protein Strategy

The origins of the National Protein Strategy were shaped by geopolitical narratives, revolving around food security through greater self-sufficiency of vegetable proteins within the EU. The Dutch NPS has, as its primary goal, to “to contribute to the self-sufficiency of the Netherlands and the EU regarding proteins, in a sustainable fashion, contributing to the well-being of people, animals and the natural environment” (Ministry of Agriculture, Nature, and Food Quality, 2020:1). However, it became clear that food security was primarily understood in relation to the interest of meat and dairy industries. Introducing the NPS report in December 2020, the responsible minister described the situation as follows: “in case of the complete disruption in the flow of soy, serious effects can be expected, in particular with regards to the production and consumption of meat. Food supply is not endangered, but direct adjustments in human and animal diets are required” (Parliamentary paper, 2018a).

The report, presenting the various considerations and goals of the strategy, was the culmination of a multiple-year policy process in which several actors, interest groups, industry representatives, policymakers, and politicians had debated the production and consumption and import and export of proteins in the Netherlands. The publication of this report was followed by political debate about the implementation of the protein strategy itself but was also connected to salient agro-food issues in Dutch public debate: the transition away from an animal-based food system towards a more plant-based food system, the *protein transition*, and the environmental sustainability of livestock farming which had culminated in the Dutch Nitrogen Crisis.

The report of the NPS reads as a collection of rather unbalanced sections that appear to have originated from the input of different stakeholders. Some sections are very detailed and provide specific information on promising Dutch companies that fit the ambitions of the NPS, while other sections are more contemplative and very general. The NPS report starts with a problem analysis and then moves to policy solutions based on five “tracks”: (1) growing more local protein-rich crops, (2) innovation of alternative proteins, (3) insect farming, (4) reducing and optimizing the use of waste flows, and (5) shifts in consumption towards more plant-based diets. These tracks consist of more specific elements which are formulated in the conclusion of the report. Figure 1 summarizes these policy ambitions of the NPS as they were published in the report (Ministry of Agriculture, Nature and Food Quality, 2020:47). The pie chart (Fig. 1) seems to quantify the policy

Policy solutions of the National Protein Strategy

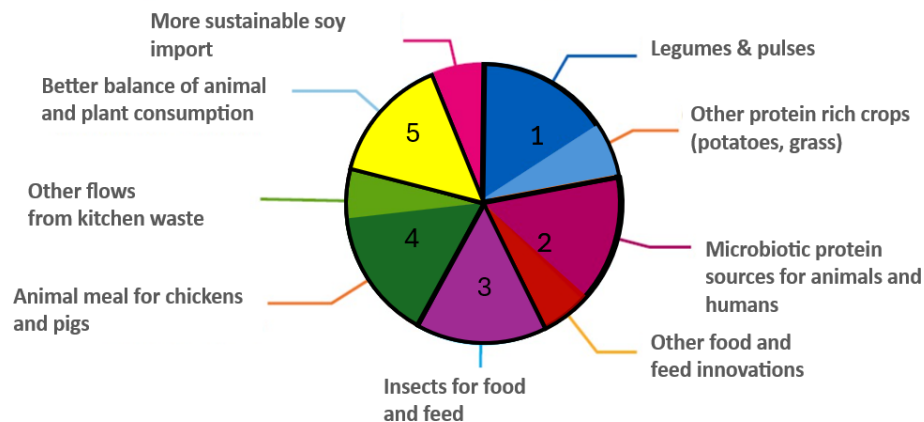


Figure 1. The policy solutions (tracks) of the National Protein Strategy. Adapted from Ministry of Agriculture, Nature and Food Quality (2020:47).

goal (reducing reliance on the import of protein-rich crops from abroad), suggesting that some solutions contribute more to achieving this goal than others. However, no official quantitative target is published, nor does the report contain any calculations of how each track contributes. The Figure should thus be interpreted as a rough estimation of which solution track can do what.

The pie chart suggests that about 20 % of the problem can be addressed by the first track: growing more legumes, pulses, and other protein-rich crops (two top-right slices). The second track, represented in the slices “microbiotic protein sources for animals and humans” and “other food and feed innovations” is also projected to account for about 20 % of the solution. The third track, the use of insects as a source of protein for animal feed and human consumption, ought to remedy about 15 % of the protein gap (fifth slice). The fourth track of the NPS, the better use of waste flows, ensuring a greater degree of circularity in the food economy, is expected to solve about 20 % of the puzzle. This includes the use of kitchen waste to feed animals (especially pigs) and, moreover, the reintroduction of using animals to feed other species of animals (mainly meal from bones).

The fifth track, pivoting on dietary change towards more plant-based foods, is expected to reduce dependence on foreign proteins, solving about 15 %. Finally, the graph suggests that more sustainable soy could offer a piece of the puzzle (about 5 %). How sustainable soy can reduce the use of plant-based proteins is, however, unclear.

The next section presents the main promissory narratives that are used to frame the different solutions as they are outlined in the five tracks.

6 Promissory narratives of the NPS

The main narrative about the necessity of drafting a national strategy reflects the original goals of the European Commission: become more geopolitically self-sufficient in terms of protein-rich crops. However, how this geopolitical goal can be achieved through the solutions of the five tracks (see Fig. 1) is framed in various narratives that are not necessarily consistent. Generally, the NPS primarily provides solutions on the production side: focusing on ways to change production to reduce the reliance on imported protein rich crops. Most of the NPS is larded with narratives that Cusworth et al. (2021) refer to as “techno-optimistic”. The solutions to the protein deficit offered in the NPS are promises, in the sense of anticipating technological advances that will allow the substitution of soy imports in the future. Policy plans are, of course, always about things yet to come, but many of the promissory narratives of the NPS capitalize on a range of quite uncertain future developments. Those developments are contingent on regulatory, technological, financial, and political conditions that are often not crystalized yet and, moreover, not stable over time. The promises of the NPS, however, ignore many of those uncertainties and rather focus on the opportunities, promising to solve many issues at once.

6.1 Techno-optimism

First of all, the NPS envisions technology and innovation as the primary drivers of sustainable food production. First, the dominant narratives of the NPS foreground techno-optimistic pathways as the most viable and even inevitable solution while downplaying uncertainties and inconsistencies. In all five tracks of the NPS, technological innovation is the primary imaginary for protein futures: consumers need to be seduced into eating newly developed alternative protein prod-

ucts that are as tasty and nutritious as current animal products, newly developed breeds of legumes will be able to produce better results in Dutch climatological and soil conditions, new technologies to extract proteins from underused sources and feeding them to animals will improve conversion rates, microbiotic processing will produce proteins that have better amino-acid compositions and taste better, and cultivated meat will disrupt markets as a novel “flagship” food. Technological innovation is thus a means of producing better, aligning with the logic of sustainable intensification that promises lifting environmental pressures and improving animal welfare while maintaining or improving agri-food business models.

The second track in particular outlines different technological innovations that can contribute to the main aims of the NPS while further bolstering the strong position of the Netherlands in agro-innovation and biotechnology. First, it suggests developing new plant-based protein sources for both human and animal consumption, such as from beet leaves and duckweed. Second, it has high hopes for the development of cultivated meat by two Dutch-based companies, Mosa Meat and Meatable. Third, it aims to explore the potential of seaweed as a source of proteins, which can be grown in open water, combined with the development of wind turbine parks in the North Sea. Fourth, it also lists the possibility of expanding the production of shellfish as an “alternative” protein source. Fifth, another key element of future foods is seen in single-cell proteins (SCPs), that is, proteins generated by microbial metabolisms, such as fungi and bacteria. This also includes the use of fermentation for turning inedible waste flows into animal feed. According to the NPS, “this is an important source of protein for the future, for which already within current legal frameworks substantial growth can be realized” (Ministry of Agriculture, Nature, and Food Quality, 2020:29).

Technological innovation is the dominant narrative, permeating almost all other aspects of the NPS. The techno-optimist narrative connects crucially with other main narratives: what Cusworth et al. (2021) refer to as “produce better” and what they call “sustainable intensification”. Furthermore, techno-optimist perspectives also connect to narratives about eating fewer animal proteins.

6.2 Producing better and sustainable intensification

Narratives of producing better and intensification in a sustainable way emerge as main narratives in different tracks of the NPS. The first track focuses on the idea that “To reduce the dependency on import of plant-based proteins the most logical solution would seem to be growing more protein-rich crops ourselves” (Parliamentary paper, 2018b).

The summary graph of the report (see Fig. 1) suggests that up to about 20 % of the total protein deficit might be remedied by growing more protein crops in the Netherlands. The NPS proposes a significant increase in hectares

of protein-rich crops for the years 2020–2030 (100 000 ha) and ultimately sees space for up to 125 000 ha (up from about 20 000 ha in 2020). Here, the report, in fact, suggests a return to a more diversified and self-sufficient agricultural sector of the Netherlands. However, also according to the NPS, current producers indicate that, with current regulations, alternative plant sources cannot compete with soy in terms of price and environmental impact. Furthermore, the amino acid composition of European soy, as well as of native legumes and pulses, is less favourable for use in compound feed in livestock farming. Notwithstanding, the NPS argues that plant-based proteins are in high demand in the food industry, which offers “huge potential for producers, if all partners from seed to processing industries collaborate closely within the entire production chain”. Also, pulses and legumes can contribute to improving soil and water quality and can boost biodiversity, as well as provide nitrogen without artificial fertilizers. This solution track of boosting Dutch protein crops thus becomes clearly linked with solving environmental issues, as well as providing economic benefits to producers in the plant crop supply chain.

6.3 Insects as panacea for the food system

While the original argument about “producing better” referred to legumes and pulses, the NPS also frames insect farming as part of the solution. In the third and fourth track of the NPS, insects are presented as a panacea for the whole protein puzzle. The NPS is extremely hopeful about the role of insects in addressing the protein challenges ahead: “an innovative source of protein that has a lot of potential as game changer”. Citing reports from Wageningen University, it is estimated that 10 % of the animal-based proteins in animal feed and 20 % in human food could be replaced by insect-based proteins already by 2025. The buzzing recommendations of insects as a silver bullet continue: “insects bring the food chain back into balance with nature” and “insects fit seamlessly with circular agriculture”. Proteins from insects are envisaged as replacements for soy and fish meal but also as protein sources from “higher animals”, which can help in “preventing overfishing and deforestation for soy production”. Insects are forwarded as the crucial link in connecting the development of novel protein sources with circular agriculture, enabling the use of hitherto unusable waste flows. Insects are promised to restore the metabolic gaps of livestock farming and even to restore this to a “natural order of things”. Insects are expected to kill more than two birds with one stone as they recycle valuable nutrients, provide suitable amino acids for livestock feed, and provide economic opportunities to expand the economic and research and development (R&D) cluster of insect businesses in the Netherlands. The NPS seeks to fortify and expand the leading position of the Netherlands in insect research, development, and production.

6.4 Waste and circularity

The narratives around the promises of insect farming closely connect with the broader promise of circularity that occupies a central position in the NPS. The entire fourth track of policy solutions revolves around the benefits of a circular economy. This track is primarily looking for solutions through another policy goal: increasing the circularity of the entire economy. The NPS suggests that recycling in the Netherlands is generally at a high level but that this does not apply to agriculture. According to the report, Dutch livestock farming could become “entirely circular, supplying the animal-sourced proteins for the diet according to the dietary advice of the *Voedingscentrum* [food center]. However, current European regulations make this impossible as much kitchen waste (SWILL) is not permitted for feed use. Waste could contain elements from animal sources, which increases the risk for infectious diseases, such as African swine flu. Also, since the BSE outbreak, the use of bone meal and other animal products has not been allowed in compound feed for poultry, cattle, and pigs. According to the NPS, “With this ban bone meal was replaced by imported soy. Furthermore, this prohibition took away an important opportunity for circularity for poultry and pigs. Feeding pig meal [processed animal protein] to chickens, or chicken meal to pigs contributes to sustainable animal feed”. The Dutch government has consistently lobbied to readmit some of those products: “to safely use kitchen waste and animal meal in a circular way as sustainable alternative for soy, the Netherlands continues to stress the importance of integrating more waste flows from the supply chains to the European Commission”.

These promises about insects and circulating waste back into the system are thus contingent on the regulatory framework, as well as consumer acceptance. Furthermore, insect farming, still very niche at the time of drafting the plan, also requires a very substantial upscaling to meet the promised goals, which requires not just start-ups but also large-scale capital investments and developed commodity chains. The same applies to cultivated meat. It is clear that meat grown from stem cells holds a big promise, but it is unclear what the chances of success are. To scale up and to live up to its potential, the Dutch government has been lobbying for re-regulating the legal framework for the use of lower-grade waste flows from food industries and agriculture for insects. The NPS is clearly hopeful about this possibility and claims that a consensus in Europe is emerging on this topic. Furthermore, lifting the ban on the use of animal meal also opens the door for the use of insect meal in compound feed. However, potential risks related to regulations, scaling, and funding, let alone consumer acceptance, are discussed little. A potential consumer backlash feeding into political contestations is not even mentioned. This is surprising given the substantial consumer resistance to eating insects or insect products (House, 2019). Moreover, across different national contexts, substantial political polarization is emerging around the issue

of (cultivated) meat (Boterman, 2026; de Boer and Aiking, 2023).

6.5 Eating less: narratives of dietary change?

The final track of the NPS proposes a lower consumption of proteins generally (minus 10 %–15 %) and a shift towards a higher share of plant-based proteins in Dutch diets as this can improve the “conversion rate of proteins and reduce import demand”. The final track of the strategy focussing on consumption is, in some ways, inconsistent. The original policy solutions of the NPS were merely focussed on production. However, as several stakeholders had indicated during consultation rounds (Woo-request, 2022), a viable strategy on proteins would have to include a perspective on consumption too. In political debates preceding the presentation of the NPS, several political parties had also pushed for the inclusion of consumption but were ignored. Consumption was ultimately added to the ambitions of the NPS in the course of 2019–2020, but the half-heartedness of this track still shimmers through. The NPS oscillates between optimistic frames that “everything starts with consumption” and that changing diet can have a real impact and more negative frames that “it is very hard to change consumption habits”, which are combined with a general reluctance to interfere with consumer freedom. The stated aims of a shift from 60 % animal-sourced protein in Dutch diets to 50 %, consistent with health recommendations, are promising that dietary shifts will benefit health, sustainability, and the earning capacity of the Netherlands, providing better income to farmers and (new) economic players.

Concretely, in line with the recommendations of the Food Centre (*Voedingscentrum*), the ambition is to go from 60 % animal-sourced proteins to 50%. One of the ways to stimulate consumption of plant-based proteins is through changing the food environment, for instance, through offering more sustainable, local, plant-based proteins in government buildings. Another track is to investigate the possibility of adding a levy on meat, which can be funnelled to sustainable livestock farmers.

The NPS acknowledges that food habits are difficult to change and are primarily based on social–cultural routines rather than individual conscious choice. It suggests focusing on changing the food environment and improving food preparation skills. It is recognized that this requires a two-interrelated-track approach of *innovation* and *normalization*. Innovation refers to creating “break-through products” that are “at least on par with current and trusted products, that are affordable, user friendly, stimulate a varied diet, and that are available, prominently on display in stores”. Normalization refers to creating new food cultures through an integral approach. However, currently, a few good initiatives have been started, but there is “no coherent strategy. For this it is necessary that all partners in the entire supply chain that affect food routines, choose direction and collaborate closely: su-

permarkets, hospitality, caterers, food industry, farmers and their suppliers. According to the Environmental Assessment Agency (PBL) the state should set the goals, forge coalitions, and monitor progress” (Ministry of Agriculture, Nature, and Food Quality, 2020:43).

6.6 Business as usual

Similarly to what Cusworth et al. (2021) argue about maintaining the status quo, the central message the NPS conveys is a return to business as usual. The National Protein Strategy is not aimed at a systemic transformation of the food system but is more a way to optimize “the strengths” of Dutch agriculture while addressing a number of what are perceived as key weaknesses. The ideas of producing better, primarily through technological innovation, by “players in the field” (market actors) stands in contrast to the idea of “consuming less”, which Cusworth et al. (2021) see as the opposite narrative. Moreover, the NPS certainly does not entertain the possibility of reducing the capacity of meat and dairy production for export. The first track of the NPS, growing more domestic protein-rich crops and modifying them to improve nutritional qualities for animal feed, is not about producing less meat and dairy but about producing better: grow cattle, pigs, and chickens more sustainably; make European and Dutch agriculture more profitable; and decrease the dependency on imported foods. It is evident that, in government policy, at least up till 2020, intensive livestock farming in the Netherlands itself is not challenged. In fact, the NPS is presented as a win-win situation, where the meat and dairy sectors can continue to be intensive and export-oriented while improving the sustainability of the sector through circular agriculture. Expanding crops such as legumes and protein-rich potatoes but also the other technological innovation and waste-optimizing tracks are strategies to maintain the strong economic interests of this largely export-reliant sector. It seems that most of the promissory narratives around circularity and sustainability are derived from other policy goals that are used to make the NPS as a whole more politically palatable. By aligning some of the policy goals regarding biodiversity, water quality, and reducing nitrogen deposits leading to eutrophication with the main aims of the NPS, the NPS also fosters policy integration between several domains, building a broader coalition of political support.

7 Political narratives of the NPS

After the presentation of the NPS report in 2020, agro-food futures in general and the role of protein in particular have been regularly discussed in parliamentary debates. In a general debate regarding the goals of the NPS in June 2022, the minister presented how much progress has been made in the five different tracks of the NPS. The debate also revealed that some of the goal posts had shifted, and new promises were added, while others had been watered down. The government

is particularly happy about the progress that has been made at the European level regarding the regulatory framework for the use of different waste flows: “With active support of the Netherlands, the use of animal bone meal in animal feed – which was prohibited since January first 2001 – the European Commission has been re-permitted, albeit under strict conditions. This contributes significantly to the reduction of the dependency of protein-imports” (parliamentary paper, 2018a:2). Furthermore, insect proteins have also been admitted for use in feed for non-ruminant animals. Also, the use of grasshoppers is – next to meal worms – also permissible for foods for human consumption. This provides “new opportunities for insect farming”, while “the insect sector can play a bigger role in the protein strategy, as well as contribute to circular agriculture” (parliamentary paper, 2018a:6). It is claimed that, in time, 28 % of all proteins imported for animal feed could be replaced by insects using waste flows. The earlier stated promise of 20 % of all animal proteins in human diets is not mentioned anymore. The other waste flows coming from recycling animal waste products such as bones for use in omnivore diets (pigs and chickens) could replace another 6 % according to the report from Wageningen University that the minister based this on. Finally, the minister promises that, if kitchen waste flows could also be used (currently not permitted), 17 %–34 % of all imported soy could be substituted. The tracks dedicated to using waste and insects continue to demonstrate progress and maintain their promise. Also, the development of novel proteins such as cultivated meat is also still presented as potentially very interesting. The developments in cultivated meat, however, have not concretely changed. What is added to the narrative, however, is the potential of proteins from marine sources. While fish or shellfish do not feature at all in the original NPS, now proteins from the sea “could play a significant role in protein production” (Parliamentary paper, 2018a:5).

With regards to the first proposed track, increasing the crop yield of protein-rich plants within the EU, the government is somewhat less optimistic, backtracking on some of the original promises. The minister admits that “in practice the scaling up of these crops proved stubborn, because yields are not robust and the breeding and profitability of new variants cannot compete with traditional crops” (parliamentary paper, 2018a:3). To stimulate this, in 2022, a Green Deal regarding protein-rich crops (the Bean Deal, GD 237) was signed by several actors within the commodity chain, as well as the local and national state. Signed parties of the Bean Deal committed themselves to various obligations, such as the creation of new full supply chains from “soil to mouth”, coordinated and stimulated by the ministry and regional authorities (parliamentary paper, 2018e). Interestingly, this deal is dedicated to the growing of legumes that are primarily for direct human consumption, which couples this ambition directly to the fifth track of shifting human diets towards more plant-based protein consumption. While consumption appears to have been only added to the NPS a month before the final version, in the

years following its presentation, new narratives surrounding consumption have emerged. The government recommitted itself to the target of 50 % plant-based proteins in Dutch diets in 2030, in accordance with the advice of the Food Centre. What is more, this protein transition is presented as offering great opportunities for Dutch farmers: “The protein transition has been a catalyst for new initiatives on farms and in the food industry, such as in the production and development of new plant-based alternatives. Self-evidently the transition to more plant-based diets also contributes to our health and environment” (parliamentary paper, 2018d). It appears that consumption is no longer seen merely as an appendix but is becoming increasingly central to the NPS, especially because of its economic potential for farmers and food industry. The policy alignment of health, food security, and economic potential reflects the broadening of the political coalitions in support of the protein transition. Notwithstanding, in response to the advice from the National Health Council (Gezondheidsraad) to transition Dutch diets to a 60 % plant-based protein content, the minister postponed any decision and delegated this to a new government (parliamentary paper, 2018c).

However, this new government, including the agropopulist party BBB, is much more concerned with the interests of livestock farmers and their suppliers. The agropopulist party became responsible for the Ministry of Agriculture, changing its name from “Agriculture, Food Quality and Nature” to “Agriculture, Fishery, Food security, and Nature”. The name change is an omen for how the winds have changed. In recent debates on protein strategies, animal-based proteins are now, for instance, presented as “indispensable”:

Ministries of Defense and Justice and Security are working on a plan to prepare the Netherlands for crises and military conflict. To secure food supply, the government aims to become more self-sufficient and reduce dependency on imports. The availability of animal-based protein remains indispensable.” (Parliamentary paper, 2018f:8)

This quote fits a broader picture in which right-wing populist parties, including BBB, are increasingly turned against agro-food reforms. This does not only relate to the economic interests of vested actors, such as the meat and dairy industry, and the compound-feed businesses. The narratives about the detrimental effect of livestock farming on climate, biodiversity, and human health are drowned out by narratives about securing food supply and protecting national (European) strategic autonomy. Reducing livestock farming is framed as economic and geopolitical folly, while dietary change is framed as an elite (urban) project (Boterman, 2026). The new minister thus appears to be less inclined to connect the protein *strategy* with the protein *transition* away from animal sources.

8 Conclusions: political ecologies of the NPS

This paper set out to answer the following question: what are the main narratives of the Dutch National Protein Strategy and how do the promises about the future of agro-food connect to the political ecological crises of intensive livestock farming?

Drawing on the conceptual framework of promissory narratives (Sexton et al., 2019; Guthman and Bilteckoff, 2021) and the literature on protein transitions (Aiking and de Boer, 2020; Duluins and Baret, 2024a, b), the analysis demonstrates that the Dutch NPS operates less as a strategy for systemic transformation and more as a project of non-disruptive transformation, a mode of agri-food transition that seeks environmental improvement while avoiding structural disruption to livestock-centred production systems (Guthman and Bilteckoff, 2021; Duluins and Baret, 2024a, b).

Across its five policy tracks, the NPS projects promises that the EU’s protein deficit can be addressed through a range of technological fixes and circularity optimizations, from boosting growing leguminous crops to large-scale insect farming and promoting food innovations in cellular agriculture, such as cultivated meat. These promissory narratives share three features commonly identified in scholarship on alternative protein imaginaries. First, they foreground techno-optimistic pathways as the most viable and even inevitable solution while downplaying uncertainties related to regulation, economic viability, and consumer acceptance (Sexton et al., 2019; House, 2019; Jönsson, 2016). Second, they frame innovation as a means of producing better, aligning with the logic of sustainable intensification that promises resource efficiencies and environmental improvements without addressing underlying metabolic pressures (Cusworth et al., 2021). Third, they implicitly reproduce the expectation that high volumes of animal-based protein production will continue, an assumption that is at odds with most ecological analyses of Europe’s livestock system (Weis, 2013; Poore and Nemecek, 2018).

The analysis of the NPS demonstrates how these promissory narratives are strategically assembled to respond to several interlocking political–ecological crises. The Dutch Nitrogen Crisis (Van der Ploeg, 2023), the ecological footprint of soy imports (Haalboom, 2024; Van der Vleuten and de Hoop, 2022), and vulnerabilities exposed by global supply chain shocks are all present as justificatory backdrops. Yet these crises do not lead to questioning the scale or orientation of Dutch livestock production per se. Instead, the NPS mobilizes narratives that promise continuity through innovation: more domestic protein crops, more circular waste valorization, more high-tech alternatives, and more efficient feed conversion enable business to continue as usual. The political–ecological roots of the protein problem, linking Dutch livestock density to global feed circuits, deforestation, and export-oriented agro-capitalism, remain largely untouched (Westhoek et al., 2011; Van Der Ploeg, 2020).

This continuity is further illustrated by the analysis of the political reception of the NPS between 2020 and 2025. As shown in the empirical sections, the NPS was developed in the context of the political salience of livestock farming during the Dutch Nitrogen Crisis, triggering contestation between parties advocating for dietary and systemic change and those defending export-oriented production. The rise of agropopulism, notably the Farmer Citizen Movement (BBB), changed the policy landscape by reframing the protein strategy, again, primarily through the lens of food security and national self-sufficiency. Once BBB became responsible for the agriculture portfolio, ministerial discourse shifted markedly: animal-based proteins were framed as *indispensable*, and the protein transition became decoupled from reductions in livestock numbers.

A central finding of this paper is therefore that the NPS predominantly frames the protein problem as a supply-side deficit rather than a socio-ecological imbalance inherent in conventional industrial livestock farming, in which the Netherlands is a key hub. While the strategy includes some consumption-side measures, these remain limited, partial, and ambivalently framed. The NPS's modest ambition to shift Dutch diets from 60 % to 50 % animal-sourced protein reflects neither the urgency of scientific recommendations (Godfray et al., 2018) nor the multi-scalar crises that are inherent to the livestock density of the country. Furthermore, the complete absence of a critical interrogation of the role of export is striking. As the literature on protein transitions argues, meaningful transformation requires reductions in animal production and consumption, not solely the addition of novel protein sources (Aiking and de Boer, 2020; Lonkila and Kaljonen, 2021). The NPS sidesteps these structural dimensions almost entirely.

The paper also shows how the NPS draws on promissory narratives to integrate disparate policy domains: food security, circular agriculture, climate mitigation, environmental restoration, agricultural competitiveness, and technological innovation. This aligns with scholarship on how food system narratives assemble coalitions and stabilize contested transitions (Wittmayer et al., 2019; Anderson, 2024). In the Dutch case, promissory narratives help reconcile (seemingly) incompatible policy ambitions of supporting export-oriented livestock industries while addressing ecological crises at home and abroad. The narrative coherence of the NPS thus masks underlying tensions and inconsistencies: between remedying the protein deficit while sustaining feed-intensive meat and dairy production, between circularity and the biological limits of waste-based systems, and between techno-optimism and the political and cultural barriers to dietary change.

Taken together, the findings reveal that the NPS functions less as a roadmap towards a post-livestock protein future than as a strategic effort to secure the Dutch agro-industrial complex against geopolitical uncertainty and environmental regulation. Promissory narratives regarding novel proteins and

circularity sustain an imaginary in which intensification and sustainability are mutually compatible. Rather than envisioning a protein transition anchored in decreased animal production, the NPS offers a menu of technological fixes that promise to reconcile ongoing intensification with sustainability goals. This reflects a broader European pattern in which alternative proteins and circular agriculture become vehicles for reconsolidating existing agri-food regimes (Guthman and Biltekoff, 2021, 2023; Duluins and Baret, 2024a, b).

Data availability. The data used for this study are all publicly available via <https://www.officielebekendmakingen.nl/> (last access: 16 April 2026).

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