

Policy Brief:

Unlocking the Potential of Danish Faba Beans

From Feed to Food: Challenges and Pathways for Human Consumption

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1. Introduction

Denmark stands at a crossroads in its green transition. While 80% of Danish agricultural land is currently used for animal feed, the shift toward a "Food-Not-Feed" principle is essential to meet national climate goals. The faba bean (*Vicia faba*), also known as broad bean or horse bean, is a primary legume for this transition due to its strong profile across various criteria:

- Good nutritional profile with a high protein (26-32%) and fiber (11-16%) content. (Labba, Frøkiær, & Sandberg, 2021)
- Faba beans have the ability to fix nitrogen in the soil, which reduces the need for synthetic fertilizers; both for the crop itself and for the subsequent crops. (Siczek, Becher, Kalembasa, & Kalembasa, 2026)
- Faba beans are well adapted to Denmark's climate and soils, making it resilient and a good cover-crop. (Frandsen, Bosselmann, Hasler, & Hansen, 2023)
- Faba beans have a mild flavor and functional properties such as foaming, emulsification and fibrous texture, which makes them attractive to manufacturers. (BENEO, 2025)
- The faba bean is already an established crop in Denmark – approximately 60% of all legumes harvested to maturity in 2025 were faba beans. (DST, 2026)

However, despite clear environmental and health benefits, faba beans remain a niche ingredient in the Danish diet. Consumers currently eat only 8 grams of legumes daily, far below the recommended 100 grams (Fagt, et al., 2026). This low intake is linked to several challenges, which will need to be addressed, particularly as the production volume of faba beans in Europe is expected to more than double over the next 15 years (Figure 1).

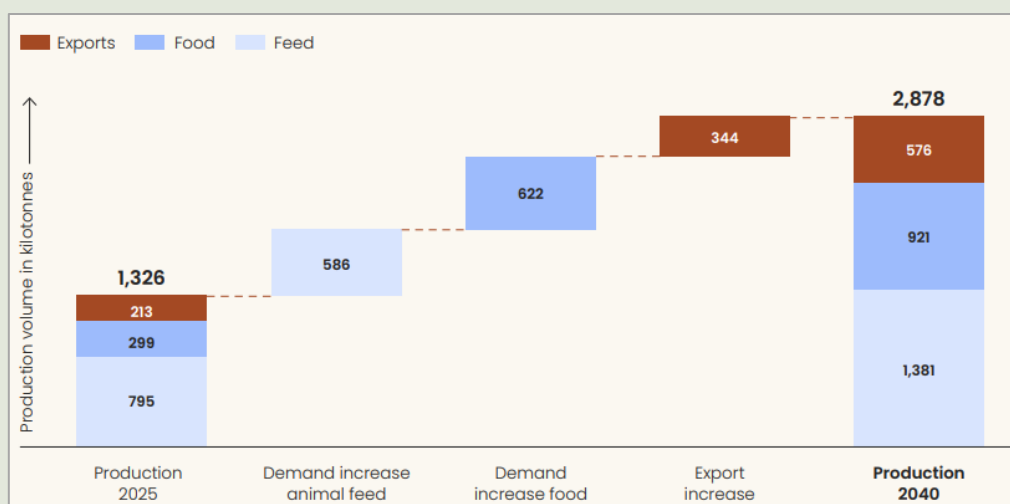


Figure 1: Modelled increase in EU faba bean production and consumption volumes. (The Protein Project, 2026)

This policy brief is part of the Novo Nordisk Foundation-funded MiCO Platform project, which aims to tackle obstacles across the faba bean value chain from open-source research to innovation. The overall aim is to identify primary barriers and outline policy recommendations to move faba beans from the livestock barn to the dinner table.

2. Challenges

We are in a transition from viewing faba beans as legumes for feed to being seen and used as food. This faces a deeply ingrained lock-in within the Danish food system on multiple fronts.

2.1 Farming and Structural Challenges

The value chain is currently fragmented. Farmers are ready to grow beans, but the infrastructure to process and handle them for food, is missing. Denmark suffers from a critical shortage of specialized cleaning and peeling facilities for human-grade legumes. So, the main structural barriers can be summarized as:

1. **Infrastructure:** Existing infrastructure is geared towards making faba beans to feed, not to food. (Rybner Analyse, 2024)
2. **Higher quality standards:** Legumes for human consumption require higher standards for e.g., removing small stones and ensuring uniform moisture levels. Insect-damaged or worm-eaten beans (e.g., dried faba beans with holes caused by larvae) can be an issue especially for organic beans. (Fog-Petersen, Ejlerskov, Kjærgaard, & Pedersen, 2022)
3. **Financial risk:** High entry cost for farmers who wish to transition to growing legumes. (Aare, Hansen, Kristensen, & Hauggaard-Nielsen, 2023)
4. **Breeding:** Lack of legume varieties and types for human consumption. The current varieties of faba beans have mainly been grown for feed, so the varieties and qualities of the faba beans do not match consumer preferences. The faba bean should therefore undergo further plant breeding to enhance the qualities wanted for human consumption. (Aare, Hansen, Kristensen, & Hauggaard-Nielsen, 2023)

2.2 Innovation and Upscaling

As for other plant-based raw materials, there is a lack of investment in innovation and scale-up of faba bean processing. This is linked to limited scientific knowledge, insufficient funding, and broader financial constraints. At present, faba bean processing primarily focuses on protein fractionation and isolation, while most food innovation is driven by small start-ups. Specific challenges are:

1. **Processing:** Implementation of gentle processing techniques including fermentation technologies is lacking behind. (Badjona, Bradshaw, Millman, Howarth, & Dubey, 2023)
2. **Flavor and palatability:** Techniques for removal of off-flavors and optimization of palatability are not in place. (Lippolis, Roland, Bocova, Pouvreau, & Trindade, 2023)
3. **Antinutritional components:** Crops without antinutrients are not available. Therefore, to scale up human consumption of faba beans, techniques are needed to lower the content of antinutrients such as phytic acid, trypsin inhibitors etc. (Labba, Frøkiær, & Sandberg, 2021)
4. **Food safety:** Spoilage microorganisms, particularly *Bacillus* spp. and other aerobic spore formers, are difficult to inhibit. (Kahala, et al., 2023) (EFSA Panel on Contaminants in the Food Chain (CONTAM), 2026)

5. **Upscaling:** Scale-up techniques for processing innovative faba bean-based foods are lacking, which limits product development. (Fernandez Castaneda, Langton, & Zamaratskaia, 2025)

2.3 Economics and Retail

Legumes (including faba beans) are often invisible in retail spaces. Poor product placement and uninspiring packaging leave consumers guessing how to use them. There are several challenges in this sector which include:

1. **Shelf space:** Faba beans and other legumes are often relegated to "health food" sections or on shelves in less accessible areas in the stores, rather than located on the primary protein aisles, making them invisible to the average shopper. (Løbner, Alexi, Pedersen, Wilken, & Kidmose, 2022)
2. **Price parity:** Danish legumes (including faba beans) often carry too high a price premium over imported, lower-quality legumes, which discourages budget-conscious consumers from buying the Danish options – especially in the organic segment. (Landbrug & Fødevarer, 2021) (Rybner Analyse, 2024)
3. **Convenience gap:** There are few ready-to-use products that include faba beans (e.g., pre-soaked, or vacuum-packed faba beans). When ready-to-use legume products are offered, they are often imported, not Danish. (Madsen, Donatzsky-Hansen, Ejlerskov, & Dragsdahl, 2022)

2.4 Consumers

There is a lack of demand from consumers to buy legumes. The power of habit and a deeply rooted meat culture pose a major challenge to increasing legume consumption in Denmark. 74% of Danes still eat meat for dinner on any given night, a figure that has remained stable despite increased climate awareness (Madkulturen, 2025). Faba beans are often perceived as "old-fashioned" or "poor man's food," making it difficult to reposition them as a luxury or modern ingredient (Aare, Hansen, Kristensen, & Hauggaard-Nielsen, 2023)

There are various culinary knowledge gaps that affect the consumption of legumes. Significant barriers are a lack of willingness to try new foods and cooking skills. The consumers report three major hurdles:

1. **Preparation time:** 38% of users who cook legumes at least once per month cite long preparation times (soaking and boiling) as an obstacle (Løbner, Alexi, Pedersen, Wilken, & Kidmose, 2022)
2. **The fear of antinutrients:** The presence of lectins (e.g., agglutinin) requires strict preparation procedures, such as soaking for 10-12 hours and boiling for at least 45 minutes. If these steps are not followed, the risk of stomach pain or vomiting poses a safety concern that deters novice cooks. (Knutsen, et al., 2026)
3. **Sensory mismatches:** Many consumers find the "mealy" or "mushy" texture of larger faba beans unappealing compared to the familiar texture of meat. (Hausner, Olsen, & Møller, 2012)

3. Policy Recommendations: A Roadmap for Change

To overcome these challenges, a multi-sector approach is required, focusing among others on innovation, upscaling, and the powerful engine of public kitchens and structural economic changes. However, focus must be put on various actors throughout the value chain to stimulate demand, supply and build sectoral bridges (Figure 2). Key policy recommendations include:

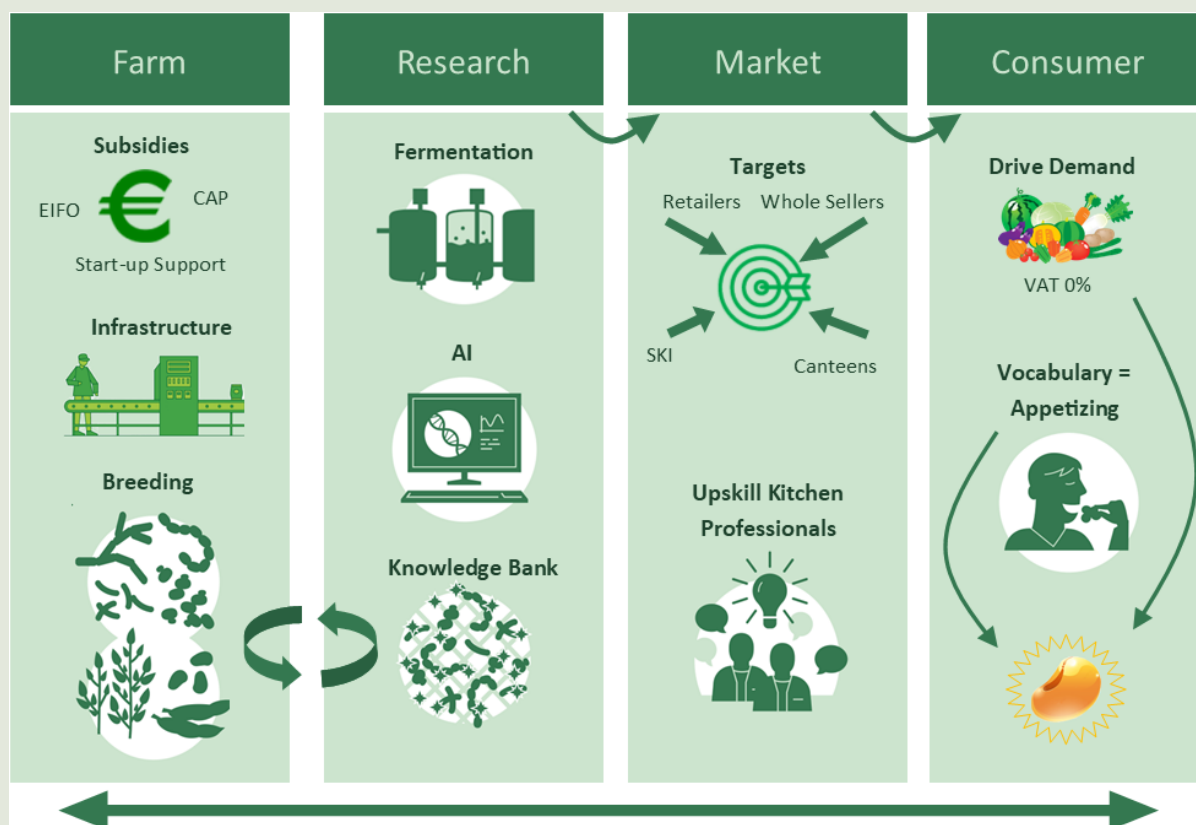


Figure 2: Policy Roadmap

3.1 Economic and Sectoral Bridge Building Incentives

1. **Investment in infrastructure:** Grants should support the establishment of decentralized drying, peeling, grinding, cleaning, sorting, and "ready-to-use" processing plants (e.g., vacuum-packed pre-soaked beans) to reduce the start-up costs and lower the barrier to entry for farmers to grow legumes. Processing the legumes closer to the source will also help reduce the time barrier for consumers and add value to the final products. Funding could also be given to pilot testing facilities, for e.g., extrusion and bio-fermentation, to develop convenient faba bean products.
2. **Subsidies:** Shift agricultural subsidies from animal-feed crops toward high-value human-consumption crops like faba beans. This could be done by shifting the direct hectare support to support documented climate- and environmentally friendly crops for human consumption, while allowing small farms to be eligible for a higher support rate.
3. **Reduced VAT:** Removing VAT on vegetables including legumes might enhance consumption.

4. **Danish Research Reserve:** Earmark part of the Danish Research Reserve to focus on research in Danish legumes such as improving quality, taste, nutrition, resilience, yield, breeding, and cultivation techniques.
5. **Support start-ups:** Leverage the Danish Export and Investment Fund (EIFO) to help first-time farmers establish themselves. Also use the Common Agricultural Policy (CAP) transition payments to de-risk the transition for established farmers to cultivate and process protein crops. Finally, utilizing Innovation Centre Denmark to help start-ups access international capital and partners.

3.2 From Research to Innovation and Scalable Technologies

1. **Fundamental knowledge:** Basic knowledge of faba bean composition and functionality is needed to understand and optimize their use in food processing and ingredient development for human consumption.
2. **Fermentation:** Fermentation offers gentle and sustainable processing, and improves taste and shelf life. Primarily outside Europe, solid state fermentation is important for production of plant-based food and condiments. Inspiration from abroad should be gathered and test facilities for solid-state fermentation should be established.
3. **Microbial resources:** As has been the case for dairy products, microorganisms in the form of optimized starter- and bioprotective cultures should be developed for diverse plant-based raw materials including faba beans.
4. **Green transition and gentle processing:** Innovation should focus on sustainable technologies for the production of new types of convenient food. To accelerate the green transition, financial resources must be directed toward transforming manufacturing processes and upscaling production facilities.
5. **Open sources and AI:** Additional focus on open sources and the use of AI from research to implementation in the food industry could further promote the green transition.

3.3 Stimulating Demand - Using Incentives for Public and Private Institutions

1. **Public and private canteens:** Should serve as the primary "testing grounds" for faba beans. These canteens have the possibility to showcase the potential of faba beans. It can inspire guests to try dishes with faba beans and start cooking legumes themselves, thereby normalizing the consumption of faba beans.
2. **Upskill professionals:** Investment in training for chefs and kitchen managers to build knowledge and improve their skills in the plant-based kitchen should be highly prioritized. Many professionals are currently as unfamiliar with cooking faba beans as the public.
3. **Make mandatory targets:** All public kitchens (canteens, hospitals, and schools) should serve food as per the Danish nutritional guidelines, where legumes play a vital part (e.g., creamy Anicia lentil dahl, spicy faba bean burrito, legume stew, tartlet with peas and beans).

4. **The public procurement agreement:** In SKI (“Staten og Kommunernes Indkøbsservice A/S”) there could be more specific options for selective types of legumes. The legumes in the tender could include specific targets for legumes with a good fit for the Danish climate (e.g, faba-, Fuego-, and Hangtown beans) instead of e.g., chickpeas which is nearly only produced abroad.
5. **Retailers and wholesalers:** Should be supported in monitoring and publishing data on their plant-based vs. animal ratio, e.g., via “the Protein Tracker”, which is a tool for tracking the protein split sold, leading to the possibility for them to set targets for plant-based vs. animal-based proteins sold.

3.4 Finding and Establishing a New Vocabulary for Legumes

We need to move away from labeling faba beans as “vegetarian food”. Instead, we need to market them as a high-quality Danish protein or as an ingredient that can enhance dishes in e.g., taste or fullness. We need to normalize legumes and make eating of legumes (including faba beans) part of a shared Danish identity. It should be trendy to eat legumes rather than seeing them as a dietary restriction.

1. **Sensory language:** Support the development of a professional sensory language for the taste of Danish legumes. As more types of faba beans and other legumes are bred, we need to move beyond terms like "nutty" to describe the unique taste profiles of each bean variety (e.g., "umami," “bitter”, "chocolate", “beer”) to appeal to more consumers and to help the emerging gastronomy movement.
2. **Product naming:** Ensure that the naming of legume-based products is clear and supportive of consumer adoption, thus permitting the use of terms like faba bean “burger” or “sausage”.

4. Conclusion

Faba bean and other legumes are more than just crops – they are tools for climate mitigation, healthier eating habits, and food security. Denmark has the potential to emerge as a frontrunner in the plant-based transition by tackling structural challenges and implementing coherent policy measures to support legume production and consumption.

The need to stimulate demand for faba beans and other legumes is of critical importance to ensure a sustainable transition into a more plant-based diet. This will require a multi-actor approach, along with increased investment in cross-disciplinary research, innovation and upscaling technologies. In addition to economic and sector-specific bridge-building incentives, greater emphasis is needed on training and education, as well as on developing a supportive and diverse vocabulary for legumes and their food products.

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