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Locally produced organic legumes to restore the agri-food system

This Policy Brief sets out recommendations to guide public decision-makers and other stakeholders towards promoting the production and consumption of locally produced organic legumes, and towards harnessing their benefits across the entire food value chain.

The proposals have been developed by Alimentta, think tank for food transition, in collaboration with a diversity of voices from Spain's food system, and are structured around four key measures:

1. Ensure adequate economic and administrative support for producers to strengthen the profitability of legume production

2. Incentivise organic and locally based production to unlock the full potential of legume crops

3. Relocalise and structure the legume value chain from a territorial perspective

4. Use public procurement to connect supply and demand for legumes

Legumes: powerful allies in addressing food system inefficiencies

The transition towards more sustainable and healthier scenarios requires an integrated approach that identifies key leverage points for transforming food systems. In this context, legumes emerge as a pathway to address more complex structural challenges, including the population's growing distance from healthy diets, the depletion of soil fertility, biodiversity loss, and producers' dependence on synthetic inputs, among others. It is time to give back legumes the role they deserve within the Mediterranean diet.

BENEFITS OF LEGUMES

- **Health**. Legumes are a source of high-quality protein which, when combined with appropriate cereals, can provide the full profile of essential amino acids required by the human body[1–3]. They also supply slow-absorbing carbohydrates, dietary fibre, minerals, and vitamins, and contain lower levels of saturated fat than some types of meat[4]. Their consumption supports intestinal health, helps reduce cholesterol levels[5], regulates blood sugar, promotes satiety due to their high fibre content, and contributes to the prevention of iron-deficiency anaemia given their high iron content. In addition, legume consumption is associated with a lower risk of cardiovascular disease, cognitive decline[6], premature mortality, type 2 diabetes, and obesity[7–10].

- **Climate and environment**. Legume cultivation contributes to climate change mitigation, improves soil health through their nitrogen-fixing capacity[11], and reduces dependence on synthetic inputs[12–14]. Their commercialisation in dried form can also help lower emissions associated with production, storage, packaging, and transport. Moreover, their inclusion in rainfed crop rotations—widely practised in Spain—enhances environmental sustainability as well as the agronomic and economic performance of farms[12,15,16].

- **Food autonomy**. Legumes can be used for both human consumption and animal feed, thereby strengthening the resilience and self-sufficiency of the agri-food system. Local production using varieties adapted to domestic farming systems helps reduce dependence on imported feed and food, which represent one of the main sources of environmental impact within the food system.

- **Household economy**. Compared with diets high in animal protein, legumes can significantly reduce household food expenditure[17]. This benefit is particularly relevant in the current context of rising food prices.

Despite these benefits, legume consumption remains well below the recommendations of the Spanish Agency for Food Safety and Nutrition (AESAN). **While the desirable level is set at 11.5 kg per person per year, actual consumption stands at only 3.26 kg** (MAPA, 2023). This reflects a sustained downward trend: between 1981 and 2014, consumption declined by 60%, followed by a further reduction of approximately 19% between 2020 and 2023.

At the same time, national legume production has decreased by 25% since 1990 and currently accounts for only 3% of cultivated land, around 0.56 million hectares[12]. **Spain produces just 33% of the legumes it consumes**, meaning that two thirds of domestic supply depends on imports, with the associated carbon footprint[12]. Moreover, **only 8% of this cultivated area corresponds to organic production**, concentrated mainly in Andalusia and Castilla–La Mancha[12].

This decline in production has led to the loss of traditional species and varieties, as well as associated agronomic and culinary knowledge, in a context marked by insufficient incentives and unequal competition from imports. At the same time, consumers are confronted with food environments that do little to encourage legume consumption, as reflected in their limited availability on supermarket shelves, minimal promotional visibility, and insufficiently transparent labelling, particularly with regard to product origin[18].

A favourable social and political landscape to scale up ambition

The consumption macro-trends identified in **Spain's National Food Strategy (ENA)** point to a favourable context for revalorising legumes in Spain. The growing demand for plant-based and ready-to-eat foods represents a clear opportunity to highlight the versatility of legumes. Their diversity, ease of use, and high protein content give them strong culinary appeal, allowing them to be incorporated into everyday diets in multiple formats, such as stews, flours, pasta, snacks, spreads, or plant-based meat analogues. Combined with their deep cultural roots, these attributes give legumes a comparative advantage over other products such as soy, seitan, or plant-based beverages.

Spain is a net importer of grain legumes. According to the Ministry of Agriculture, Fisheries and Food (MAPA), the average volume of grain legumes imported into Spain amounts to approximately 400,000 tonnes per year. Lentil imports come mainly from Canada and the United States; chickpeas are primarily imported from the United States and Mexico; and dry beans are sourced largely from Argentina. Dry peas have traditionally been imported mainly from Russia, while dry fava beans originate predominantly from the United Kingdom, and sweet lupins from Australia.

At the same time, increasing interest in locally sourced foods and reusable packaging creates a window of opportunity to strengthen the production and marketing of local legumes. Moreover, a growing public awareness of the environmental impacts of food choices[19] further consolidates the conditions for scaling up the organic cultivation of legumes within proximity-based food systems.

Moreover, the **School Canteens Royal Decree (Royal Decree 315/2025)** mandates the regular inclusion of legumes across school menus, including first courses (1–2 times per week), plant-protein-based main dishes (1–5 times per week), and legume-based side dishes (1–2 times per week). This requirement is expected to drive the development of new recipes and formats that are suitable and appealing for collective catering across different age groups.

While these instruments represent a positive starting point, they remain insufficient to drive the paradigm shift required towards a production model that limits the use of synthetic inputs, ensures food self-sufficiency in times of crisis, and guarantees the economic viability of family farming. Such a shift will only be possible through a **clear commitment to organic production and the reterritorialisation of value chains**.

In this regard, the National Food Strategy (ENA) lacks concrete measures to stimulate domestic legume production and to reduce reliance on import-based supply chains, as well as to fully leverage the potential of legumes for soil improvement and climate change mitigation. Similarly, the School Canteens Royal Decree misses a critical opportunity to promote organic production, as it sets only a minimum threshold of 5% of total food procurement expenditure for organic products.

The launch of the **State Pact for the Climate Emergency** (September 2025) presents an opportunity to promote low-emission agri-food production, in which legumes can play a strategic role by improving soil health and enhancing the value of rainfed farming systems. Promoting these crops would support rural adaptation and the ecological transition, and should therefore be backed by a dedicated budget line.

However, the most decisive instrument for steering the development of such crops remains

the **Common Agricultural Policy (CAP)** and its national implementation through **Spain's CAP Strategic Plan (PEPAC) 2023–2027**, which already includes eco-schemes and interventions that encourage legume-based crop rotations, organic farming, and reductions in chemical fertiliser use. These environmental safeguards could be weakened beyond 2027 if a stable agricultural fund and dedicated financing for good agro-environmental practices are not secured.

At the European level, increasing attention and resources are being directed towards research and the promotion of plant-based proteins, in line with the European Protein Strategy (2023). Several funding calls have successfully mobilised the scientific community around legumes. These include initiatives supported by the European Agricultural Fund for Rural Development, with projects aimed at consolidating operational groups such as **LegSapiens**; projects focused on advancing cultivation techniques, such as **LEGUMINOSE**, dedicated to generating knowledge on intercropping; and **VALERECO**, which focuses on identifying and valuing the ecosystem services provided by legumes, funded through Horizon Europe. In addition, the European Agroecology Partnership supports projects such as **CropCat**, which seeks to introduce underutilised crops into public catering; in Spain, this initiative focuses on chickpeas and carob.

GOOD PRACTICE

In countries such as Denmark, France, and Portugal, protein transition strategies have already been consolidated. Notably, Denmark's Action Plan for Plant-Based Foods represents the first national plan to establish a clear roadmap for promoting diets based on plant proteins. The plan has helped to put in place a coherent framework of public support for research, production, and consumption of plant-based proteins, underpinned by stable funding and clearly defined national targets. In Spain, the Federación de Consumidores y Usuarios (CECU) and Mensa Cívica, together with a range of actors across the national food value chain, launched a participatory process in 2025 to explore how a similar plan could be developed, taking into account the specific characteristics of the Spanish context.

Measures to promote the organic production of local legumes

1 Ensure adequate economic and administrative support for producers in order to strengthen the profitability of legume production

To address the profitability challenges that discourage many farmers from investing in legume cultivation - including yield variability under Mediterranean climatic conditions[16] and the limited availability of plant genetic material adapted to organic production - it is essential to establish compensation mechanisms for poor harvests, to recognise and financially reward ecosystem services and on-farm innovation, and to promote programmes for the recovery, multiplication, and stewardship of traditional varieties adapted to Mediterranean contexts.

ACTIONS

- Establish income stabilisation mechanisms for producers to buffer the impacts of poor harvests, such as basic income support schemes targeted at farmers.
- Recognise and remunerate ecosystem services generated by the production of local and organic legumes, and secure dedicated funding for eco-schemes under the current CAP and the post-2027 CAP framework.
- Support the recovery, stewardship, and use of traditional varieties as collectively owned plant genetic heritage.
- Promote awareness-raising campaigns to inform consumers about the social, economic, and environmental benefits of locally produced organic legumes.

GOOD PRACTICE

In Belgium, targeted eco-schemes have been developed to support cereals and legumes. In Flanders, the ENVCLIM intervention supports multiannual protein crops combined with direct seeding, crop rotation, or organic farming, with payments ranging from €230 to €600 per hectare. These schemes are used predominantly by organic farmers. In Wallonia, a mixed-cropping eco-scheme has been introduced requiring a minimum of 20% legumes and 50% cereals, complemented by direct support for plant-based protein crops.

2 Incentivise organic and locally based production to unlock the full potential of legume crops

Integrating legumes into agroecosystems not only enhances biodiversity but also improves soil nutrient cycling, thereby increasing the viability of certain organic crops and reducing dependence on synthetic inputs in conventional agriculture. Indeed, their integration has already matched or even exceeded average yields in some rainfed extensive crops[16]. Moreover, recovering and valorising traditional varieties would support climate adaptation, given their better alignment with local conditions when combined with sustainable practices such as crop rotations, fallows, or intercropping[21].

Nevertheless, the incorporation of legumes into diversified farming systems presents mechanical and logistical challenges[22]. Addressing these constraints requires investment in social and technological innovation to develop low-cost management practices and appropriate machinery, which is currently designed primarily for monoculture systems.

ACTIONS

- Support research on crop diversification and agroecological practices for legume management (including techniques for weed control). Promote varietal trials under diverse field conditions, combined with both productive and ecological performance assessments. Strengthen research on the benefits of crop rotations and intercropping with other crops, such as cereals, in terms of soil fertility, organic matter, productivity, and nutrient cycling.

- Strengthen links with agricultural advisory networks, including universities, research institutes, think tanks, and operational groups.

- Incentivise sustainable practices by ensuring the availability of eco-schemes that support crop rotations with soil-improving species (increasing legume inclusion beyond the current 5%), as well as the use of legumes as cover crops or green manures as alternatives to fallow land.

- Support territorial and research-based projects that identify, systematise, scale up, and disseminate good practices, generating free and accessible information for all farmers.

- Provide training and capacity-building for producers in agroecological and organic farming models through workshops, field days, and ongoing advisory support. Priority should be given to training delivered by experienced producers with hands-on knowledge of production, post-harvest handling, and marketing.

GOOD PRACTICE

The **LegSapiens Operational Group** is an innovation project co-financed by the European Agricultural Fund for Rural Development (EAFRD). It promotes the cultivation of legumes across different climatic regions in Spain, including the Ebro, Duero, and Central regions. The project aims to reverse the decline in land dedicated to legume production and to reduce dependence on imports, while creating new opportunities for local value chains. To this end, it has developed agronomic factsheets and management guidelines adapted to crops such as beans, peas, lentils, chickpeas, and soybeans, under both rainfed and irrigated conditions.

3 Relocalise and structure the legume value chain from a territorial perspective

The decline of legume cultivation has led to the loss of valuable gastronomic heritage and the disappearance of associated agri-industrial fabric[12, 23]. Restoring the role of legumes in both diets and production models requires investment in territorial agri-industrial infrastructure that improves sector viability and harnesses economies of scale. In this regard, Spain could draw inspiration from experiences such as France's territorialised food systems, which demonstrate the potential of shared logistics hubs and processing facilities as nodes for aggregation, processing, and distribution.

It is equally necessary to strengthen short food supply chains and revitalise municipal fairs and markets, alongside sustained, evidence-based awareness-raising campaigns grounded in farmers' experiences. These efforts should address persistent negative perceptions related to preparation time, digestibility, or a perceived lack of culinary innovation, while actively promoting the consumption of locally produced organic legumes.

ACTIONS

- Consolidate post-harvest infrastructure (such as cleaning, freezing, packaging, and storage facilities) located close to production areas, in order to reduce costs and transport dependency, which currently significantly increases final consumer prices.
- Incentivise logistics and distribution through short supply chains, logistics hubs, and eco-markets, thereby strengthening local marketing channels.
- Support consumer awareness-raising campaigns that highlight the experiences of small and medium-scale organic legume producers, as well as the nutritional and environmental benefits of these crops.
- Introduce food education measures that go beyond awareness-raising to actively teach how to cook and consume legumes, with a particular focus on schoolchildren and families.

GOOD PRACTICE

Hazialdeko brings together a group of organic extensive-crop producers distributed across the region of Navarra. Following a participatory process, the initiative is establishing a shared processing facility that enables post-harvest handling and marketing of grain, with the aim of supplying local markets with organic legumes and cereals through short supply chains.

4 Use public procurement to connect supply and demand for legumes

Public procurement is a key instrument for ensuring stable demand that complements production support measures. It can drive food system transformation, improve dietary habits, and enhance access to healthy diets, particularly through school canteens[24]. Awareness-raising campaigns are more effective when combined with public procurement policies, as this integration facilitates the acceptance of legumes within everyday diets.

While some Spanish regions—such as Andalusia, Castile and León, and Catalonia—have already implemented programmes linking agriculture, gastronomy, and sustainability, their impact would be significantly greater if more ambitiously embedded within public food plans. In this regard, European experiences in countries such as Denmark, France, and Portugal provide useful reference points, as public procurement in these contexts systematically integrates sustainability and health criteria.

ACTIONS

- Include a minimum share of legumes above 5% in tender specifications for school, healthcare, and social catering menus, as a key measure to activate and stabilise demand.
- Incentivise culinary innovation in legume- and cereal-based products for collective catering, ensuring nutritional quality as well as economic and environmental efficiency, while balancing the objective of increasing production with the opening of fair-price market channels.
- Establish support mechanisms for public administrations (agriculture and food, health, social services, and their regional counterparts) to facilitate the inclusion of locally produced organic legumes in tender specifications, alongside other health and sustainability criteria, and promote dedicated working groups for public procurement processes.

GOOD PRACTICE

In 2024, Mensa Cívica and the Federación de Consumidores y Usuarios (CECU) implemented the project "*Legumes: Seeds for the Future*", funded by the European Climate Foundation, with the aim of identifying barriers and opportunities to scale up legume production and consumption in Spain. Through participatory workshops, technical reports, and multi-actor roundtables, the project demonstrated that public food procurement -particularly in school, healthcare, and social canteens- can play a decisive role in revalorising legumes as a cornerstone of agri-food sustainability. The initiative fostered networks among producers, consumers, and public administrations, and put forward sustainability criteria for public tenders to integrate legumes into nutritious and appealing meals. This integrated approach helps activate local demand, strengthen the economic viability of the production sector, improve public health outcomes, and reduce the environmental footprint of the food system.

About Alimentta

Alimentta brings together experts from a range of disciplines that may appear distant at first glance, yet are highly complementary - such as agroecology, marine ecology, anthropology, political economy, health, and nutrition - enabling a comprehensive approach to the entire food value chain. This diversity allows for the cross-fertilisation of knowledge and adds a transversal, interdisciplinary perspective to the proposals we develop.

Through our work, we have identified a number of structural dysfunctions within Spain's food system, including a growing disconnect between what people eat and healthy and sustainable dietary patterns, with the Mediterranean diet serving as a key reference model.

At Alimentta, we generate rigorous knowledge and apply it to the design and improvement of food-related policies. To this end, we support social change processes and engage in public policy advocacy to promote the transition towards healthy, sustainable, and just food systems.

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More information:
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Bibliography

1. Carlini, B., Lucini, C. & Velázquez, J. The role of legumes in the sustainable Mediterranean diet: analysis of the consumption of legumes in the Mediterranean population over the last ten years a PRISMA statement methodology. *Sustainability* 16, 3081 (2024).
2. EFSA Panel on Nutrition, Novel Foods and Food Allergens (NDA) *et al.* Scientific advice related to nutrient profiling for the development of harmonised mandatory front–of–pack nutrition labelling and the setting of nutrient profiles for restricting nutrition and health claims on foods. *EFS2* 20, (2022).
3. Craig, W. J. & Mangels, A. R. Position of the American Dietetic Association: vegetarian diets. *Journal of the American dietetic association* 109, 1266 (2009).
4. Baladia, E. & Martínez-Rodríguez, R. Legumbres y salud: sumario de evidencias rápidas. *RED-NuBE* 1–12 (2016).
5. Bazzano, L. A., Thompson, A. M., Tees, M. T., Nguyen, C. H. & Winham, D. M. Non-soy legume consumption lowers cholesterol levels: A meta-analysis of randomized controlled trials. *Nutrition, Metabolism and Cardiovascular Diseases* 21, 94–103 (2011).
6. Conti, M. V. *et al.* Bioactive compounds in legumes: Implications for sustainable nutrition and health in the elderly population. *Trends in Food Science & Technology* 117, 139–147 (2021).
7. Ha, V. *et al.* Effect of dietary pulse intake on established therapeutic lipid targets for cardiovascular risk reduction: a systematic review and meta-analysis of randomized controlled trials. *Cmaj* 186, E252–E262 (2014).
8. Bernstein, A. M. *et al.* Dietary Protein Sources and the Risk of Stroke in Men and Women. *Stroke* 43, 637–644 (2012).
9. Jenkins, D. J. *et al.* Effect of legumes as part of a low glycemic index diet on glycemic control and cardiovascular risk factors in type 2 diabetes mellitus: a randomized controlled trial. *Archives of internal medicine* 172, 1653–1660 (2012).
10. Hafiz, M. S. *et al.* Pulse consumption improves indices of glycemic control in adults with and without type 2 diabetes: a systematic review and meta-analysis of acute and long-term randomized controlled trials. *Eur J Nutr* 61, 809–824 (2022).
11. Lassaletta, L. *et al.* Nitrogen dynamics in cropping systems under Mediterranean climate: a systemic analysis. *Environ. Res. Lett.* 16, 073002 (2021).
12. Saralegui, P. *et al. Hacia La Transformación Del Sistema Alimentario En España: Situación Actual, Impactos y Escenarios de Futuro*. (2025).
13. Denora, M. *et al.* Durum wheat-vetch intercropping in Mediterranean agroecological systems: Effects on yield, nitrogen balance, and farm profitability. *Italian Journal of Agronomy* 20, 100045 (2025).
14. Poux, X. & Aubert, P.-M. An agroecological Europe in 2050: multifunctional agriculture for healthy eating. *Findings from the Ten Years For Agroecology (TYFA) modelling exercise, Iddri-AScA, Study* 9, 18 (2018).
15. Guzmán, G. I., Fernández, D. S., Aguilera, E., Infante-Amate, J. & de Molina, M. G. The close relationship between biophysical degradation, ecosystem services and family farms decline in Spanish agriculture (1992–2017). *Ecosystem Services* 56, 101456 (2022).

16. Guzmán, G. I., Aguilera, E., Carranza-Gallego, G., Alonso, A. M. & Pontijas, B. Joint analysis of land, carbon and nitrogen reveals diverging trends in the sustainability of organic crops in Spain. *Science of the Total Environment* 949, 174859 (2024).
17. Legumbres en tres claves: ahorro, salud y sostenibilidad - CECU. https://cecu.es/publicaciones/legumbres-en-tres-claves-ahorro-salud-y-sostenibilidad/ (2024).
18. ¿Quién decide lo que comemos? Barreras de acceso a las legumbres y otros alimentos vegetales en los supermercados españoles - CECU. https://cecu.es/publicaciones/quien-decide-lo-que-comemos-barreras-de-acceso-a-las-legumbres-y-otros-alimentos-vegetales-en-los-supermercados-espanoles/ (2025).
19. Informe 'La sociedad española y las dietas plant-based. Resumen de los principales resultados' - CECU. https://cecu.es/publicaciones/informe-la-sociedad-espanola-y-las-dietas-plant-based-resumen-de-los-principales-resultados/ (2025).
20. Bedoussac, L. *et al.* Ecological principles underlying the increase of productivity achieved by cereal-grain legume intercrops in organic farming. A review. *Agron. Sustain. Dev.* 35, 911–935 (2015).
21. Carranza-Gallego, G., Guzmán, G. I., Garcia-Ruíz, R., Gonzalez de Molina, M. & Aguilera, E. Addressing the role of landraces in the sustainability of Mediterranean agroecosystems. *Sustainability* 11, 6029 (2019).
22. Jensen, E. S. *et al.* Diversifying European agricultural systems by intercropping grain legumes and cereals. *Ciencia e investigación agraria: revista latinoamericana de ciencias de la agricultura* 47, 174–186 (2020).
23. Salmerón, J. I. C. Legumbres: el pan del pobre. *Arbor* 192, a312–a312 (2016).
24. Simon, X., Copena, D. & Pérez-Neira, D. Assessment of the diet-environment-health-cost quadrilemma in public school canteens. an LCA case study in Galicia (Spain). *Environ Dev Sustain* 25, 12543–12567 (2023).