



## **BEANS Action Plan 2026**

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## 1. Introduction

Despite their proven agronomic, nutritional, and environmental benefits, **legumes remain underutilized** across the Mediterranean due to weak market visibility, fragmented research, limited policy support, and low consumer awareness.

Building on shared analyses and multiple specialized seminars, the **BEANS Meta Network (Boosting Euro-Mediterranean Agri-food through Networked Systems)** was established in 2025 through seed funding from **CIHEAM Bari**, with support from the Italian Ministry of Foreign Affairs and International Cooperation **MAECI** and **CIHEAM**. Officially launched on **June 5, 2025**, BEANS aims to bridge **knowledge, policy, and practice** across the Mediterranean, focusing on cultivar improvement, nutritional promotion, and climate-smart agriculture.

The launch underscored legumes' pivotal role in **transforming Mediterranean agri-food systems** through their ecological, economic, and cultural benefits. Supported by a broad coalition of international organizations, national authorities, research institutions, private sector actors, and civil society, BEANS seeks to **integrate pulses into national and regional agricultural and food policies**.

Its core ambition is to position Mediterranean legumes, such as faba beans, lentils, chickpeas, and dry beans, as **a regional public good** driving rural prosperity, sustainability, and resilience; strengthening nutrition and health security; stimulating economic growth; and preserving Mediterranean agricultural heritage.

## 2. Comparative Overview and Strategic Gaps

### 2.1 Recent Initiatives

Over the past few years, several international organizations and research alliances have launched initiatives focusing on legumes and beans in the Mediterranean and adjacent regions. While diverse in scope and objectives,

these efforts share the overarching goal of enhancing sustainability, food security, and the resilience of legume-based systems. A comparative review of key initiatives led by ICARDA, the Alliance of Bioversity International and CIAT, FAO, PRIMA, CIHEAM and the EU Horizon Framework highlights both significant progress and persistent strategic gaps. These gaps underline the relevance of BEANS as a coordinating platform for a Mediterranean Legume Network.

- **ICARDA** has led and contributed to multiple projects on dryland legumes, supported by EU-IFAD, OFID, and Crop Trust funding, including the TEMPLETON and BOLD initiatives, as well as India-Morocco food legume projects and broader CGIAR programmes. IFAD-funded projects (implemented in Algeria, Egypt, Jordan, Lebanon, Morocco, Sudan, Tunisia, and Turkey) and OFID-funded initiatives (in Tunisia, Jordan, and Yemen) have focused on improving legume technologies for sustainable agriculture. In parallel, ICARDA's pre-breeding efforts have generated valuable pre-breeding lines of grass pea and lentil. In India, ICARDA's bilateral projects have further strengthened legume innovation, scaling, and diversification strategies.
- The **Alliance of Bioversity International and CIAT** leads the *Pan-Africa Bean Research Alliance (PABRA)*, operating across 31 African countries. PABRA aims to improve the livelihoods of smallholder farmers by developing and disseminating nutritious bean varieties, increasing productivity, enhancing quality, and strengthening bean value chains from production to market. The Alliance is also actively involved in Mediterranean-focused initiatives such as **LEGU-MED** and **DiVicia**, which address legume biodiversity, participatory breeding, and ecosystem services. As a global custodian of bean genetic resources, the Alliance manages approximately 38,000 accessions conserved in the Future Seeds gene bank, of which around 15,000 have been genotyped and characterized for key traits, including agro-ecological adaptation, climate resilience, and resistance to pests and disease.

- **Tunisia** has made substantial investments in legume research and value-chain development through its national research and innovation system. Supported by IRESA, high-impact programmes such as PRI, ARAR, and TARA have enabled national research institutes to advance varietal improvement, strengthen farmer support, and accelerate the uptake of innovation. A flagship example is the PRI-PROPOS project, coordinated by INRAT, which focuses on revitalizing chickpea production through improved stress-tolerant varieties, optimized production systems adapted to agro-ecological conditions, strengthened seed delivery, evidence-based policy support, and enhanced linkages between farmers, processors, and markets. These efforts highlight the strategic role of legumes in Tunisia's sustainable agriculture agenda and illustrate how NARS such as INRAT can contribute to BEANS by sharing validated innovations, varieties, and extension models.
- **FAO**, through the *SFS-MED Platform* (Jordan, Morocco, Albania,...), promoted food system transformation and legume value enhancement.
- **EU Horizon projects** - *LegumES* (2024–2027), *BELIS* (2023–2027) and *INCREASE* (2020-2025) - strengthen scientific understanding of legume ecosystem services and breeding systems (too Eurocentric).
- **CIHEAM-Bari** - Through the *MEDIET Project* (2022–2025), funded by MAECI, CIHEAM strengthened awareness of the role of legumes in Mediterranean diets and climate resilience, while building a solid cross-country knowledge base. CIHEAM-Bari led key actions, including: i) Mapping and multi-dimensional characterization (environmental, socio-economic, nutritional) of underutilized local varieties in 17 Mediterranean countries; ii) Development of a platform to promote best practices; iii) Design of a framework for an international legume network (BEANS).

## 2.2 Persistent Strategic Gaps

A cross-cutting analysis of existing initiatives highlights several persistent strategic gaps where **BEANS and the Mediterranean Legume Network** can provide clear added value:

### 2.2.1. Regional Coordination Gap

There is currently no unified platform linking Mediterranean and Near Eastern legume initiatives under a shared strategic framework.

**Tunisia**, through INRAT, has built a strong tradition in cereal-legume research, hosting one of the MENA region's most recognized legume breeding programmes, with over 20 improved faba bean, chickpea, and lentil varieties released across diverse zones, contributing to food and nutritional security. Drawing on decades of coordinated research, seed-system development, and supportive policies as reflected in Tunisia's leadership in durum wheat the country demonstrates the value of long-term integrated action. Yet gaps remain for legumes, particularly in cropping system integration, investment, and regional coordination. Within BEANS, Tunisia seeks to strengthen regional coordination, align innovation with policy, and leverage BEANS as a catalyst for resilient Mediterranean food systems, supporting collaborative approaches to shared challenges such as soil fertility, climate resilience, and market integration.

**ICARDA**, sharing a common mission with CIHEAM to diversify agri-food systems and improve rural livelihoods in dryland regions, is well positioned to support BEANS through its research-for-development programmes under CGIAR and bilateral initiatives. Its extensive partnerships across the Mediterranean, CWANA, Sub-Saharan Africa, and South Asia enable ICARDA to contribute to consolidating regional partnerships, advancing collaborative research, and strengthening institutional capacities.

Drawing on the **Pan-Africa Bean Research Alliance (PABRA)** experience, BEANS could co-develop a Mediterranean–Near Eastern legume network using proven coordination mechanisms, such as multi-country



corridors and national innovation platforms. These approaches foster joint planning, data sharing, accountability, and impact at scale.

### **2.2.2. South–North Integration Gap**

Cooperation between EU, North African, and Levant countries remains fragmented and largely project-based.

**INRAT** has a long-standing record of collaboration with European and Mediterranean partners through EU-IFAD, PRIMA, Horizon, and bilateral initiatives. These partnerships have enabled germplasm exchange, multi-location trials, and sustained two-way knowledge flows between North and South. Within BEANS, INRAT can help strengthen South–North and South–South cooperation by sharing experience in collaborative research platforms and by hosting joint trials through its experimental station network.

**ICARDA** can further facilitate cross-Mediterranean integration through joint research networks, scientific exchanges, and shared learning across BEANS member states. Its strengths in genetic innovation, systems research, innovation platforms, and data harmonization for major food legumes can support multi-country research and regional alignment.

**CIHEAM** promotes strategic partnerships among national stakeholders across the Mediterranean to address key structural weaknesses. A major challenge in the agricultural sector is the limited involvement of producers and cooperatives along the full value chain, from production to post-harvest and marketing, exacerbated by severe financial constraints. Research by regional stakeholders consistently shows that closing these gaps is essential to unlocking growth opportunities in Mediterranean agri-food systems.

**Alliance Bioversity:** Building on **PABRA’s co-investment and resource mobilization model**, BEANS could promote shared financing mechanisms, peer-to-peer exchanges, and collaborative learning among NARES,



researchers, and private-sector actors to accelerate integration and mutual trust.

### **2.2.3. Innovation and Technology Gap**

Few initiatives systematically integrate digital agriculture, precision technologies, or artificial intelligence in legume systems.

**ICARDA** has played a leading role in developing and disseminating legume germplasm, contributing to the release of more than 450 improved varieties in 42 countries. These varieties combine high yield, nutritional quality, and climate resilience. ICARDA is actively closing the technology gap by integrating digital agriculture, precision farming, and data-driven decision-support systems. Its precision agriculture platform, including AI, machine learning, IoT, drones, and satellite imagery, supports real-time monitoring of soil and crop performance. The GeoAgroIKrishi application further enables farmers to make informed management decisions.

Through partnerships with ICARDA, BEANS could leverage these digital platforms, scientific content, and policy tools to expand access to data-driven solutions across the Mediterranean.

Adapting the **PABRA Academy model** could strengthen structured capacity development through exchanges, internships, short-term attachments, and sabbaticals, enhancing South–North skills transfer. PABRA’s experience with digital multi-stakeholder platforms, germplasm sharing, and breeding management systems offers practical templates that BEANS partners can adapt to streamline breeding pipelines and accelerate variety release.

**CIHEAM Bari’s** Geomatics and Plant Pathology Laboratories, in collaboration with the IT Office, work on smart agriculture and remote sensing applications. They develop Decision Support Systems (DSS) and advanced mapping tools based on satellite imagery and drone data to support land and crop monitoring, including applications for legume crops.

#### 2.2.4. Value Chain and Market Gap

Weak linkages between research, processing, and markets limit legume valorization and competitiveness.

In **Tunisia**, INRAT has translated research into market-ready legume-based cereal innovations, including a patented gluten-free pastry flour commercialized in supermarkets (PAQ-Collabora, 2018–2024) and a legume-enriched bread flour with date by-products under the PR2I project (2024–2027), benefiting both producers and consumers.

**ICARDA** complements these efforts by promoting improved post-harvest technologies, value addition, and market linkages, enabling farmers to reduce losses and access reliable markets.

**CIHEAM** promotes a participatory approach involving public and private stakeholders. By aligning policy agendas with a market-oriented perspective, CIHEAM strengthens strategic supply chains, such as legumes, and supports the development of short food supply chains, including farmers' markets.

**PABRA's "beyond bean corridor" approach** provides further inspiration for strengthening inclusive value chains by connecting research, policy, and private-sector actors and scaling successful pilots toward commercial and policy adoption.

#### 2.2.5. Policy and Data Gap

The region lacks harmonized monitoring systems, aligned policies, and shared indicators for legumes' contribution to sustainability goals.

**PABRA** offers practical lessons in aligning demand-led research with national policies, implementing harmonized cross-country frameworks, and supporting regional seed trade through alignment with economic blocs. These experiences can inform BEANS in developing comparable indicators, shared monitoring tools, and policy coherence across the Mediterranean.





**CIHEAM-Bari** carries out sustainability assessments covering environmental, socio-economic, and nutritional aspects. Using integrated frameworks (LCA, CBA, SAFA) and specialized laboratories, including Food4Health, it supports data generation and strengthening of the legume value chain.

### 2.2.6. Youth and Gender Engagement Gap

Women and young innovators remain underrepresented in legume programmes and entrepreneurship.

**ICARDA** has actively promoted youth and gender inclusion through capacity-building programmes, postgraduate training, and participatory approaches, empowering women in value addition, processing, and marketing. In collaboration with BEANS members, ICARDA can support joint training, research exchanges, internships, and co-supervised postgraduate programmes.

Similarly, **PABRA embeds youth and women's participation across its value chains**, from production to enterprise development and service provision, offering transferable models for inclusive growth.

Bridging these gaps represents a major opportunity for **BEANS** to position itself as a catalyst for regional collaboration, a knowledge hub for legume innovation, and a platform for mobilizing partnerships and resources to strengthen Mediterranean food-system resilience.

## 2.3 Emerging Insights and Needs

- **Legumes as a Pillar of the Mediterranean Diet:** Legumes are a cornerstone of the Mediterranean Diet, providing plant protein, essential nutrients, and benefits for ecosystem and planetary health. They also support inclusive economic growth. Despite this, their nutritional and economic potential remains underutilized and insufficiently promoted.

- **Solid but Fragmented Scientific Progress:** Advances in biodiversity, breeding, and crop improvement are significant but dispersed, underscoring the need for a coordinated regional framework. Evidence on legumes' health benefits also remains fragmented.
- **Knowledge Gained, Integration Lacking:** Research findings are insufficiently translated into policy, markets, and consumer behaviour. EC partners strong communication and outreach systems support BEANS in strengthening science policy dialogue and visibility.
- **Collaboration Without Permanence:** Partnerships are expanding, but the absence of a formal, permanent network limits long-term cooperation.
- **Innovation with Limited Scaling:** Promising value-chain and market initiatives exist but require cross-country coordination and scaling mechanisms for regional impact.

### 3. Progress Achieved During 2025

The **2025 Action Plan** has focused on establishing the **institutional and operational foundation** of the BEANS Meta Network. During the **First General Assembly** held in CIHEAM-Bari on 05-06 June 2025, over **50 partners** confirmed their commitment to contribute to the Network's development, including international organizations, NARS, and leading experts, while digital platforms, communication tools, and the first strategic roadmap were launched.

### 4. Strategic Orientation 2026–2027

Guided by its vision to make legumes a **cornerstone of sustainable Mediterranean food systems**, BEANS connects science, innovation, and policy to promote healthier diets, soil fertility, and inclusive rural livelihoods.

From 2026 onward, BEANS will move from **foundation-building to consolidation and scaling-up**, through national and thematic chapters,

evidence-based policy engagement, and market-oriented initiatives such as a **Mediterranean Sustainability Label for Legume Products**.

#### **4.1 Strategic Objectives (2026–2027)**

##### **a) Consolidate Governance and Coordination**

- Strengthen the CIHEAM-based coordination mechanism, Executive Committee, and thematic working groups.
- Formalize operational guidelines and partner roles.

##### **b) Collaborative Research and Innovation, and Knowledge transfer**

- Launch multi-country studies and living labs in diverse agro-ecological zones.
- Develop harmonized datasets and shared methodologies for productivity, soil, and value-chain assessment.
- Facilitate participation in EU and regional programs.
- Research to Business actions (private companies, start-ups..)

##### **c) Enhance Capacity Building**

- Organize regional training on legumes, biodiversity, sustainability and resilience.
- Engage CIHEAM institutes in curricula development, research mobility, and dissemination.

##### **d) Foster Policy Dialogue and Stakeholder Engagement**

- Produce policy briefs and recommendations.
- Engage decision-makers in regional fora (e.g., CIHEAM Ministerial Meeting, etc.).

##### **e) Increase Communication and Impact Visibility**

- Launch BEANS digital platform, newsletters, and branding.
- Disseminate best practices and monitor impact via a shared dashboard.

#### **4.2 Governance and Coordination**

The **Executive Committee** will oversee implementation in collaboration with international and national partners. Responsibilities will be assigned among committee institutions and regional actors, with some activities

executed via **competitive calls for proposals** to encourage innovation and inclusivity.

### 4.3 Funding and Sustainability

- **Core Funding:** Provided by CIHEAM Secretariat, CIHEAM-Bari, and partner institutes.
- **External Funding:** Targeted proposals to international calls and bilateral programs (EU, UN, CGIAR, Italy, Spain, France).

### 4.4 Key Activities for 2026

Sequence	Quarter	Main Activity
<b>A</b>	<b>Q1</b>	Strengthen and formalize BEANS membership.
<b>B</b>	<b>Q1 - Q4</b>	Establish active expert working groups focused on the strategic priority themes of BEANS. Activate collaborations in research, capacity building, and policy development.
<b>C</b>	<b>Q3</b>	Prepare and submit targeted funding proposals to support network activities ( <i>ICARDA can lead the preparation of a proposal</i> ).
<b>D</b>	<b>Q2 - Q3</b>	Conduct an online workshop, summer school, regional training, and youth forum focused on legume productivity, soil health, and nutritional impacts ( <i>ICARDA can contribute in online workshop, regional training through content and experts</i> ).
<b>E</b>	<b>Q2 - Q4</b>	Support for International Project Participation and monitor global calls on food systems and sustainability, assisting Mediterranean teams in proposal preparation and submission. It will pursue strategic partnerships to enhance visibility and

		ensure fair scientific and financial benefits from funded projects.
<b>F</b>	<b>Q3</b>	Organize a high-level Policy Round Table with BEANS members, NGOs, and private stakeholders to enhance policy impact and institutional engagement.
<b>G</b>	<b>Q3 - Q4</b>	Build a shared knowledge base on the role of legumes in sustainable food systems, supported by key scientific and technical publications ( <i>ICARDA will contribute to knowledge based on legumes</i> ).
<b>H</b>	<b>Q3 - Q4</b>	Subject to available funding, BEANS will launch a call for short-term (up to 12 months) innovative initiatives addressing key legume-related challenges and priorities in the Mediterranean. Partial financial and technical support will be provided to selected proposals from members, NARS, and experts.
<b>I</b>	<b>Q4</b>	Publish BEANS Policy Brief and define 2027 Strategic Agenda
<b>J</b>	<b>Q4 - Q5</b>	Organize an Bi-Annual Mediterranean Legume Summit to reinforce visibility, dialogue, and cooperation.

**[Approved by the Executive Committee held at CIHEAM-Bari, 22 Dec 2025]**