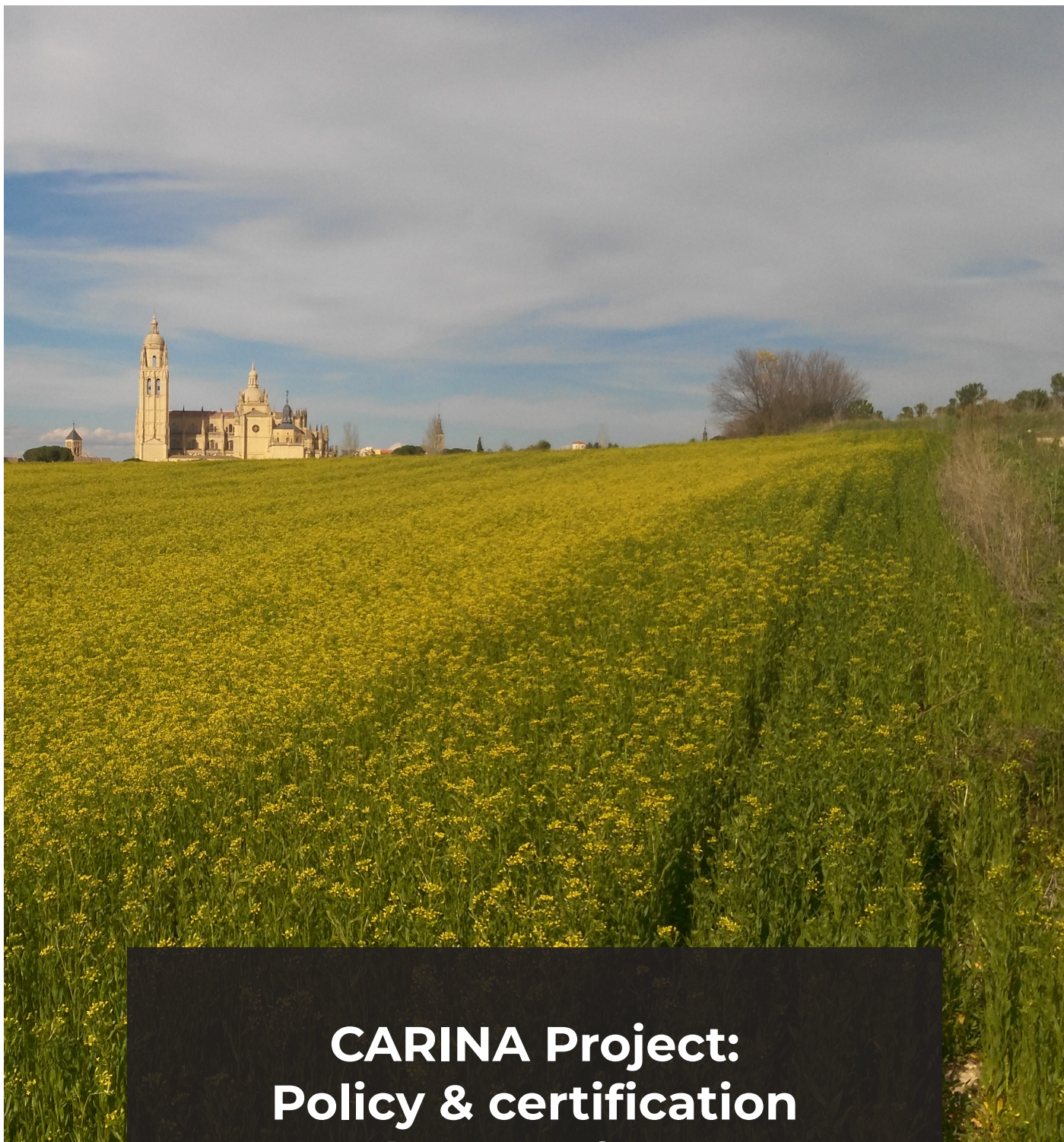




**CARINA Project:
Policy & certification
landscapes for low-
iLUC crops**

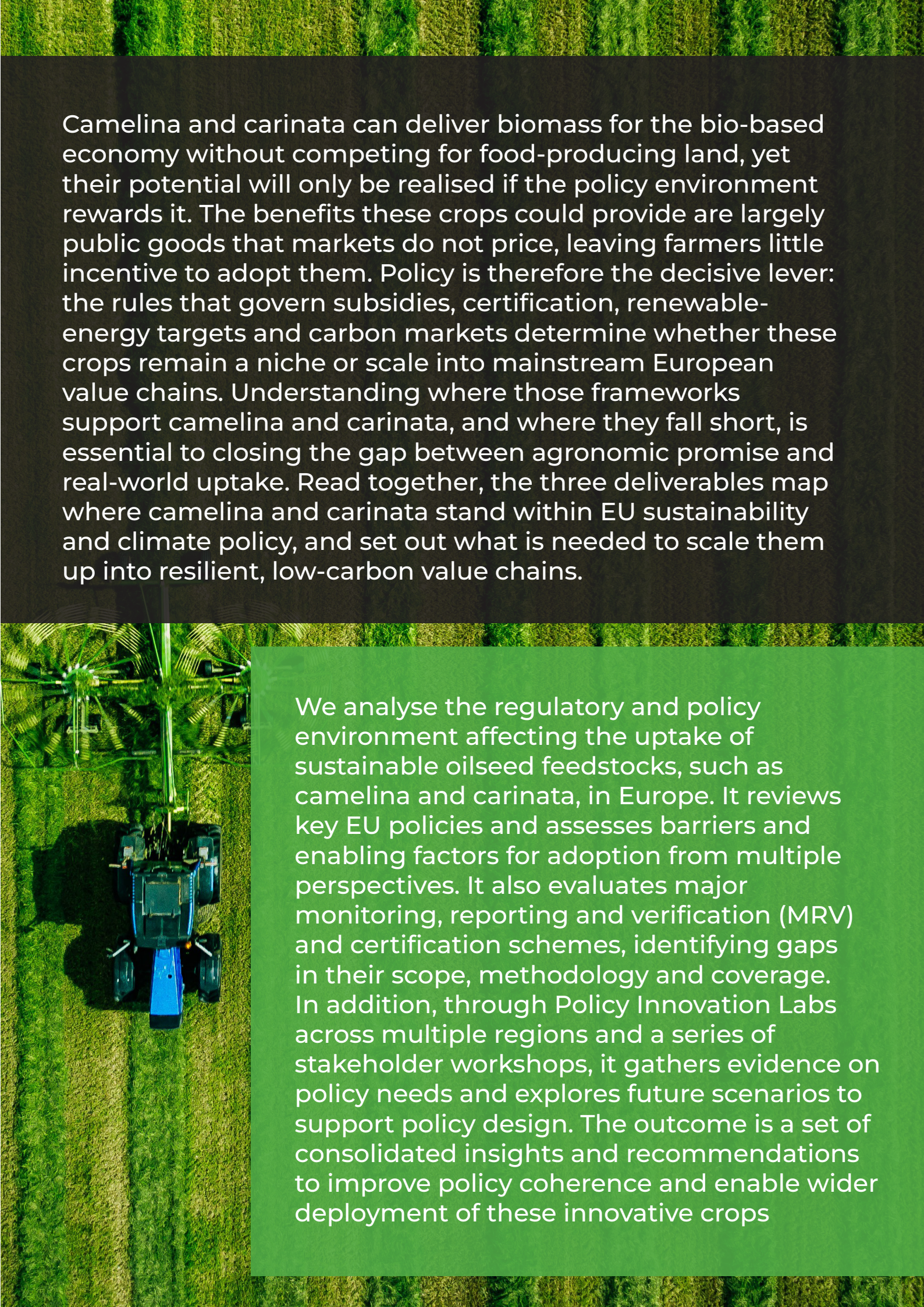




CARINA is a transformative initiative funded under Horizon Europe, dedicated to advancing agricultural sustainability across Europe for bioeconomy development. By integrating camelina and carinata into local farming systems, CARINA aims to enhance economic, environmental, and social outcomes for European farmers.

OUR MISSION

CARINA's mission is to study diversified and low ILUC cropping systems including camelina and carinata as bioresources and their impact on productivity and ecological benefits (e.g. by increasing soil cover and biodiversity).

An aerial photograph of a vibrant green agricultural field. A blue tractor is positioned in the lower-left quadrant, pulling a harrow. The harrow's tines are visible, creating a pattern in the grass. The overall scene is bright and clear, with the green of the grass contrasting sharply with the blue of the tractor.

Camelina and carinata can deliver biomass for the bio-based economy without competing for food-producing land, yet their potential will only be realised if the policy environment rewards it. The benefits these crops could provide are largely public goods that markets do not price, leaving farmers little incentive to adopt them. Policy is therefore the decisive lever: the rules that govern subsidies, certification, renewable-energy targets and carbon markets determine whether these crops remain a niche or scale into mainstream European value chains. Understanding where those frameworks support camelina and carinata, and where they fall short, is essential to closing the gap between agronomic promise and real-world uptake. Read together, the three deliverables map where camelina and carinata stand within EU sustainability and climate policy, and set out what is needed to scale them up into resilient, low-carbon value chains.

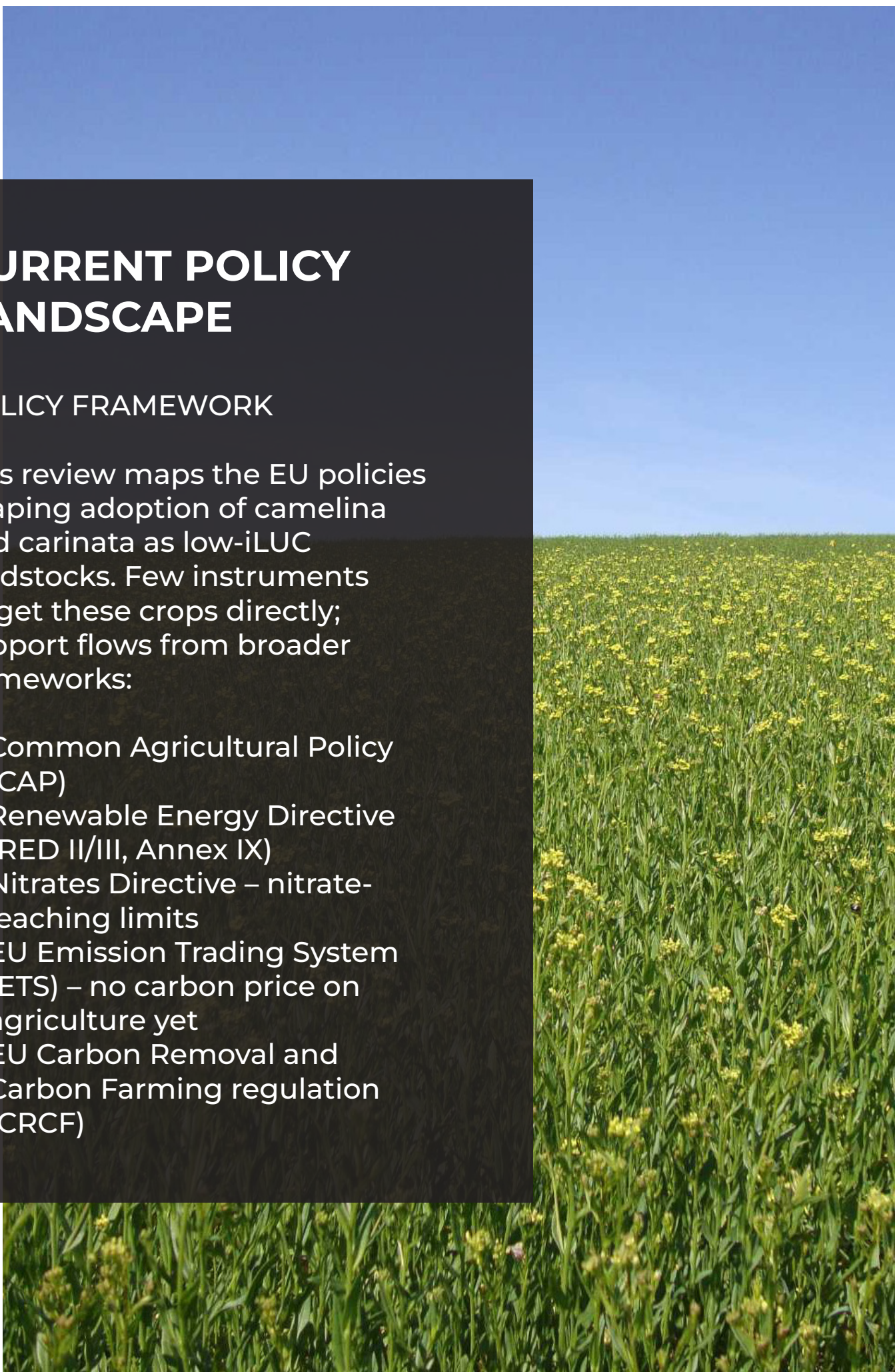
We analyse the regulatory and policy environment affecting the uptake of sustainable oilseed feedstocks, such as camelina and carinata, in Europe. It reviews key EU policies and assesses barriers and enabling factors for adoption from multiple perspectives. It also evaluates major monitoring, reporting and verification (MRV) and certification schemes, identifying gaps in their scope, methodology and coverage. In addition, through Policy Innovation Labs across multiple regions and a series of stakeholder workshops, it gathers evidence on policy needs and explores future scenarios to support policy design. The outcome is a set of consolidated insights and recommendations to improve policy coherence and enable wider deployment of these innovative crops

CURRENT POLICY LANDSCAPE

POLICY FRAMEWORK

This review maps the EU policies shaping adoption of camelina and carinata as low-iLUC feedstocks. Few instruments target these crops directly; support flows from broader frameworks:

- Common Agricultural Policy (CAP)
- Renewable Energy Directive (RED II/III, Annex IX)
- Nitrates Directive – nitrate-leaching limits
- EU Emission Trading System (ETS) – no carbon price on agriculture yet
- EU Carbon Removal and Carbon Farming regulation (CRCF)



KEY FINDINGS

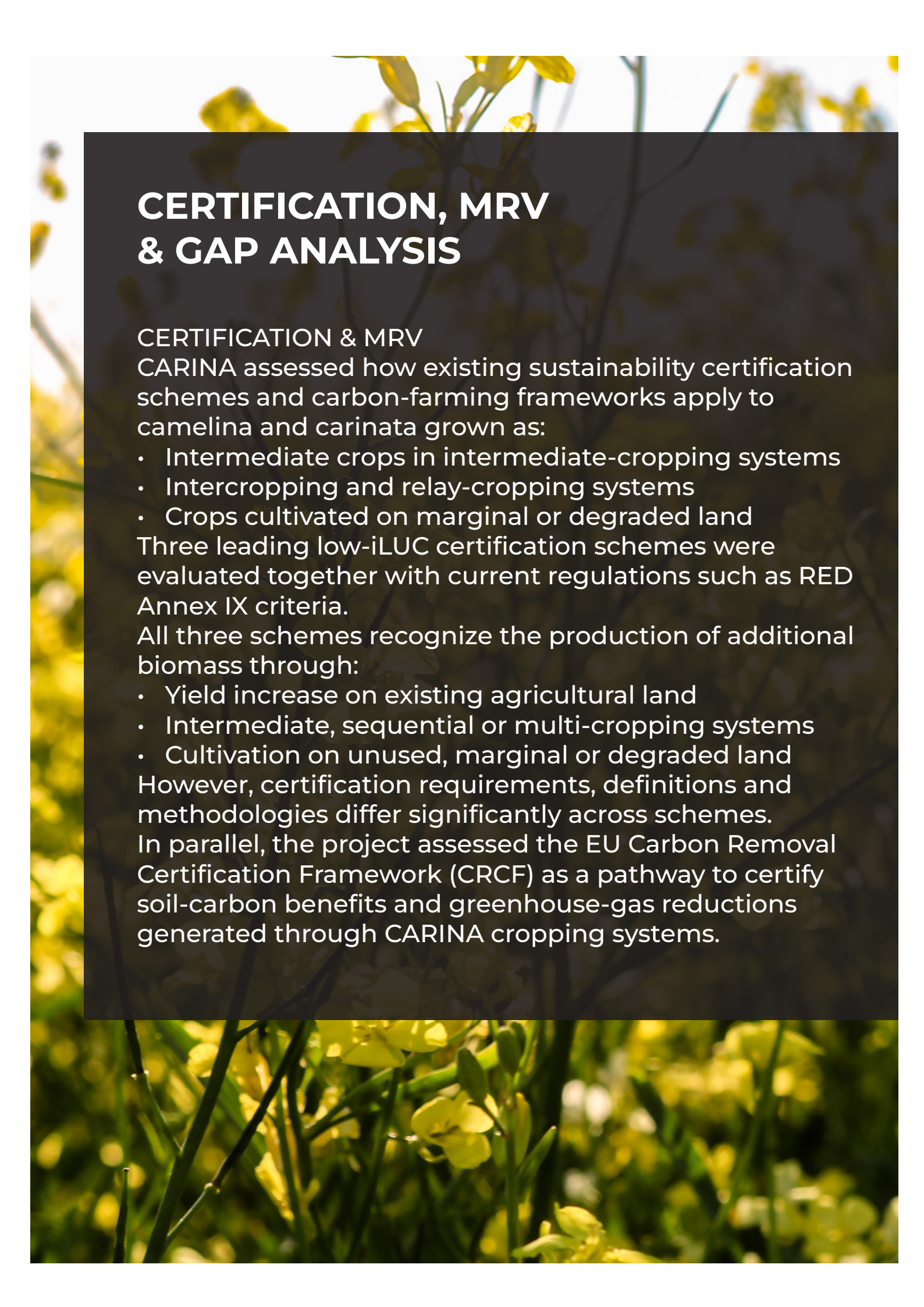
Across the literature low competitiveness is the most cited barrier, followed by poor information distribution – yet many farmers say economic gain is not their main motivation for adopting these crops.

The CAP already contains most measures the literature proposes; the problem is that within the scope of the CARINA Project, existing public policies appear ineffective rather than missing, with advisory services reaching only a small share of farmers.

Energy-sector support (RED) builds a lead market, but some studies in the literature suggest that classing intermediate crops as advanced biofuel feedstock risks an energy lock-in – cultivation-side innovation may be better funded via the CAP. Nonetheless, RED support is critical for intermediate crops.

POLICIES	CHALLENGES ▶	Sustainability & competitiveness	Lack of technology	Lack of information	Other barriers, e.g., social	
CAP			✓	✓	✓	addressed
RED			✓			partially addressed
Nitrates Directive						insufficient
ETS						not relevant

Policy challenges and their coverage by EU policies



CERTIFICATION, MRV & GAP ANALYSIS

CERTIFICATION & MRV

CARINA assessed how existing sustainability certification schemes and carbon-farming frameworks apply to camelina and carinata grown as:

- Intermediate crops in intermediate-cropping systems
- Intercropping and relay-cropping systems
- Crops cultivated on marginal or degraded land

Three leading low-iLUC certification schemes were evaluated together with current regulations such as RED Annex IX criteria.

All three schemes recognize the production of additional biomass through:

- Yield increase on existing agricultural land
- Intermediate, sequential or multi-cropping systems
- Cultivation on unused, marginal or degraded land

However, certification requirements, definitions and methodologies differ significantly across schemes.

In parallel, the project assessed the EU Carbon Removal Certification Framework (CRCF) as a pathway to certify soil-carbon benefits and greenhouse-gas reductions generated through CARINA cropping systems.



QU Quality

- ✓ Accurate measurement of the amount of CO₂ removed and the duration of its storage.
- ✓ Includes comprehensive accounting of all GHG emissions associated with the removal process.



A Additionality

- ✓ Activities must go beyond standard practices and legal requirements.
- ✓ This ensures that the carbon removal would not have occurred without the specific intervention.



L Long-term storage

- ✓ CO₂ must be stored securely and durably for several centuries.
- ✓ The storage method should be robust, with clear liability mechanisms in place to address any potential reversal of stored carbon.



ITY Sustainability

- ✓ Activities should avoid environmental harm and ideally contribute to broader sustainability objectives.
- ✓ This includes protecting biodiversity, preventing pollution, and supporting the transition to a circular economy.

QU.A.L.ITY criteria and their particularities of the CRCF regulation.

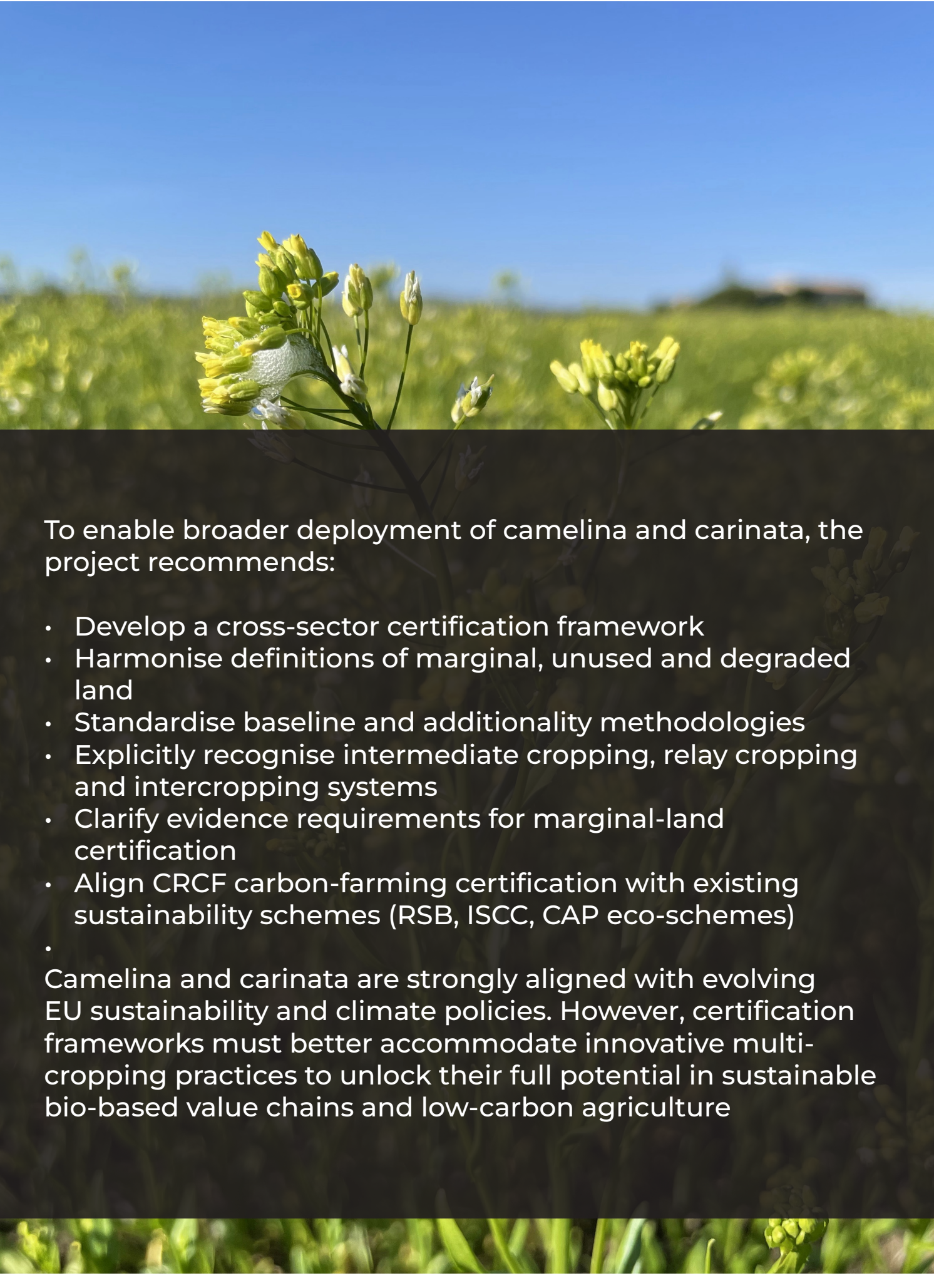
CERTIFICATION, MRV & GAP ANALYSIS KEY FINDINGS

The analysis identified nine gaps of four types: scope (which end uses a scheme covers), approach (how a practice such as double cropping is recognised), methodology (how baselines and additional biomass are calculated), and terminology (how terms such as “marginal” or “degraded” land are defined). Most are methodological, with three approach-related and one each of scope and terminology.

The single scope gap is highly impactful: no scheme covers all of CARINA’s end uses. CORSIA is aviation-only, while RSB and ISCC serve materials and conventional biofuels, forcing operators to switch schemes depending on how the crop is used.

The approach, methodology and terminology gaps then compound this. Multi-cropping systems fit yield-increase concepts but are recognised inconsistently, and the definitions of marginal, unused and degraded land differ from one scheme to the next.

The CRCF offers a credible route to certify soil-carbon and emission-reduction benefits. To make these frameworks workable for camelina and carinata, the recommendations call for a cross-sectoral certification framework, harmonised definitions, and alignment between the CRCF and existing schemes.

A photograph of a field of yellow flowers, likely camelina or carinata, under a clear blue sky. The flowers are in the foreground, slightly out of focus, with a dark semi-transparent box overlaid on the lower half of the image containing text. The background shows a vast field of similar flowers stretching to the horizon.

To enable broader deployment of camelina and carinata, the project recommends:

- Develop a cross-sector certification framework
- Harmonise definitions of marginal, unused and degraded land
- Standardise baseline and additionality methodologies
- Explicitly recognise intermediate cropping, relay cropping and intercropping systems
- Clarify evidence requirements for marginal-land certification
- Align CRCF carbon-farming certification with existing sustainability schemes (RSB, ISCC, CAP eco-schemes)
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Camelina and carinata are strongly aligned with evolving EU sustainability and climate policies. However, certification frameworks must better accommodate innovative multi-cropping practices to unlock their full potential in sustainable bio-based value chains and low-carbon agriculture

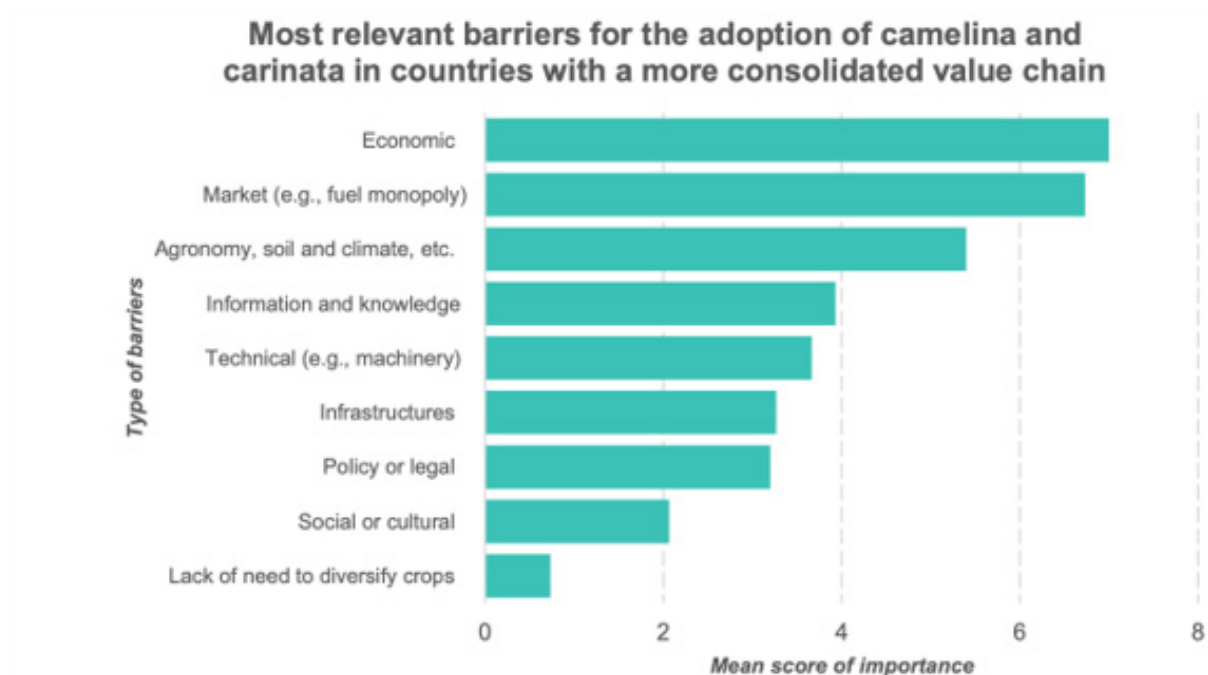
POLICY NEEDS FROM INNOVATION LABS

POLICY INNOVATION LABS

Ten Policy Innovation Labs (PILs) gathered farmers, industry, academia, NGOs and policymakers to identify policy gaps and opportunities for camelina and carinata. Countries span two groups:

- More consolidated value chains – France, Spain, Italy, Germany, Poland
- Less consolidated value chains – Bulgaria, Serbia, Greece, Tunisia, Morocco

Inputs were coded with a STEEP-based framework across cultural, technical, economic, environmental, governance and structural barriers and opportunities.

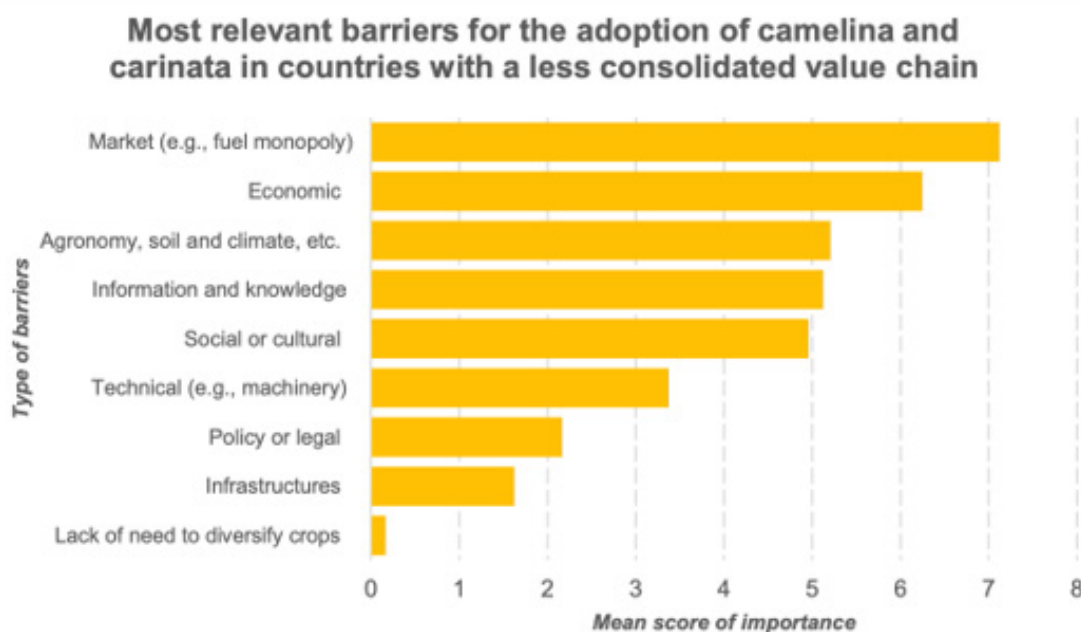


KEY FINDINGS

Economic and market barriers rank highest overall. In consolidated chains economic factors dominate; in incipient chains market access and – notably – social/cultural barriers rank higher.

Across all ten countries, lack of information and awareness are the most pressing needs, pointing to knowledge-sharing and awareness-raising as priorities alongside competitiveness support.

Recommendations include CAP first/second-pillar support, RED Annex IX inclusion, multi-annual payments, easier seed/pesticide licensing, public R&D and stronger information sharing.





GET INVOLVED

Join us in redefining the future of farming in Europe. Whether you're a farmer interested in sustainable practices or an advisor eager to support agricultural innovation, CARINA offers numerous opportunities for involvement and learning.

CONTACT US

For more information on how to participate or visit a demonstration field near you, please visit our website or contact us at

www.carina-project.eu

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