

GROWING THE FUTURE

WHAT UKRAINE'S GREENHOUSE SECTOR NEEDS AND HOW DUTCH EXPERTISE CAN CONTRIBUTE

Insights from the RVO-commissioned study: "Market Report on Needs Assessment Protected Crop in Ukraine: International Opportunities for Dutch SMEs"

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AMSTERDAM 2026

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- Overview of Ukraine's Greenhouse Sector
- Factors Affecting the Sector
- What Is Produced in Ukraine?
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- Sector Needs and Areas for Dutch Contribution
- Why Ukraine Needs a Sector Organization and/or Association
- Why Ukrainian greenhouse sector Matters for Dutch Companies



Ukraine Agriculture & Food Security Platform

Public Private Partnerships

Participants of the Greenhouse cluster



Joining on a personal title:

- Valentina Demkina
- Kateryna Volianska
- Martis van Splunter



Supported by:



Rijksdienst voor Ondernemend Nederland

Agriculture & Food Security Platform
Ukraine

Covered Cultivation Cluster (horticulture)
Public Private Partnerships

Research Background and the Authors

This study responds to growing interest from Dutch stakeholders in how their expertise can support the recovery and modernization of Ukraine's greenhouse sector amid war-related damage, the energy crisis, and Ukraine's path toward EU integration.



Challenge

- War-related destruction
- Energy crisis



Context

- Decarbonization
- Need for sector modernisation
- Alignment with EU standards



Need

- Need for sector assessment
- Lack of reliable market intelligence
- Understanding real needs of growers



Solution

- RVO Market Study
- Recommendations for cooperation
- Practical opportunities for Dutch companies

- ☑ There is a strong willingness within the Netherlands and the European Union to support the recovery, modernisation and long-term development of Ukraine's greenhouse sector.

Resilience is not the absence of challenges. It is the ability to grow despite them.

The Authors



Valentyna Domkina

- Accounting & Audit background.
- 10+ years in international sales, 7 in horticulture.
Former AB Ludvig Svensson.
- Cooperating with RVO since 2025.



Kateryna Volianska

- Agriculture Engineering & International Affairs.
- Erasmus+ on EU integration.
- 15 years in horticulture sales with Dutch companies across Eastern Europe and Asia.
- Former Royal Brinkman, now KG Greenhouse.
- Cooperating with RVO since 2020.

Study Objectives

- Understand the current situation of Ukraine's greenhouse sector
- Identify key constraints and development needs
- Assess opportunities for Dutch technologies and expertise
- Identify stakeholders and potential partners in Ukraine
- Clarify market entry barriers for Dutch companies
- Identify future Dutch–Ukrainian cooperation initiatives
- Contribute to long-term sector modernisation and EU integration

About the Study



RVO Study (2025–2026)

Research Tools

- Desk research (regulations, permits, customs procedures, grants and subsidy programmes)
- Price analysis of cultivated crops
- Stakeholder mapping
- Interviews with greenhouse growers, suppliers and sector organisations
- Consultations with universities and training centres
- Expert interviews and sector consultations



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Regions
Small & medium growers

Research conducted in 2025–2026 for RVO Netherlands Enterprise Agency.



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About the study

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Appendix 3: Regional structure of greenhouse cucumber production by area and volume, 2020–2024

Appendix 4: Regional structure of greenhouse cucumber production by area and volume, 2020–2024

Appendix 5: Cucumber and tomato import export analytics

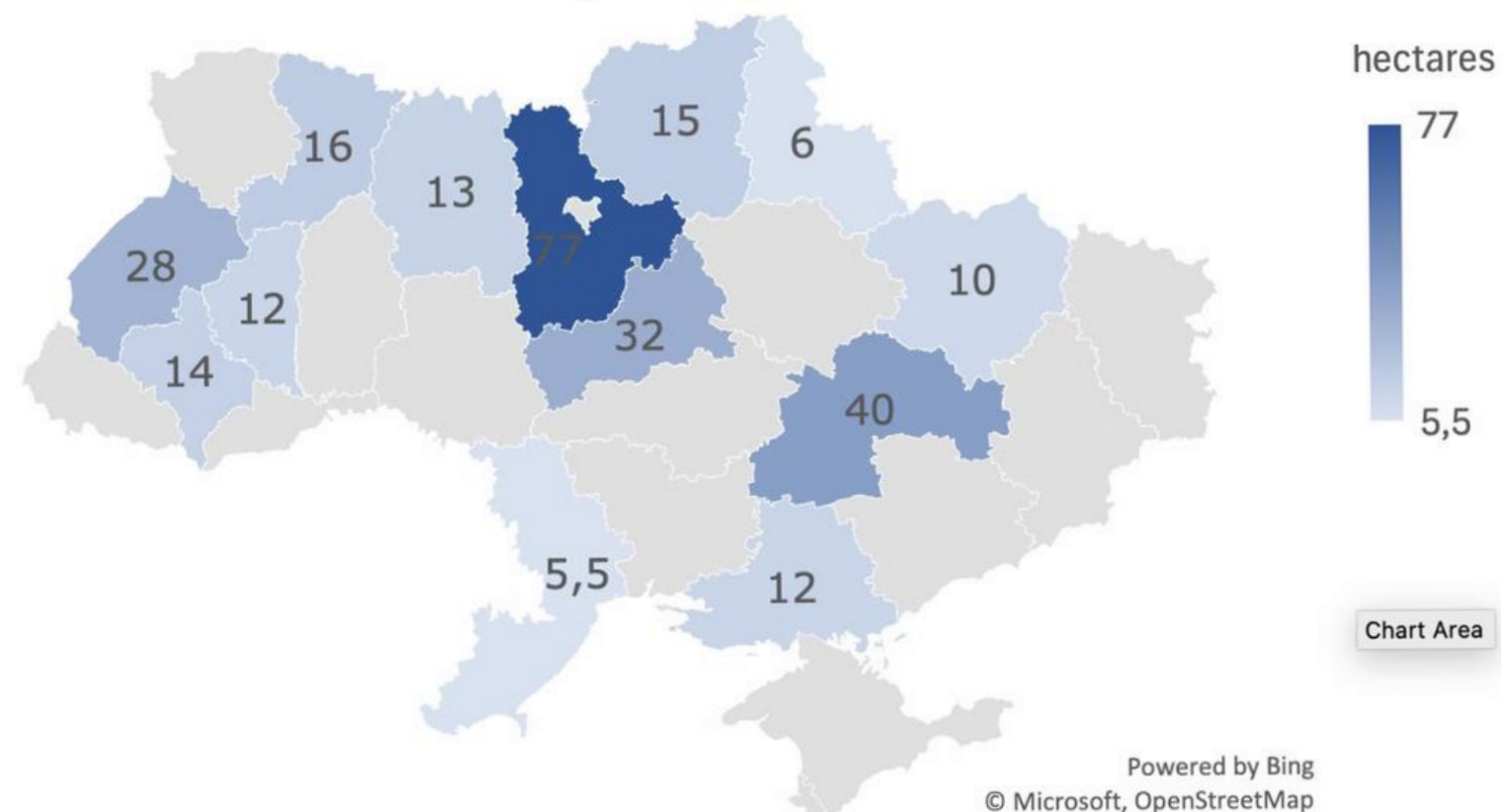
Result:

130 pages,
11 chapters,
5 appendixes

Ukraine's Greenhouse Sector: A Two-Speed Market

Commercial Greenhouse Enterprises

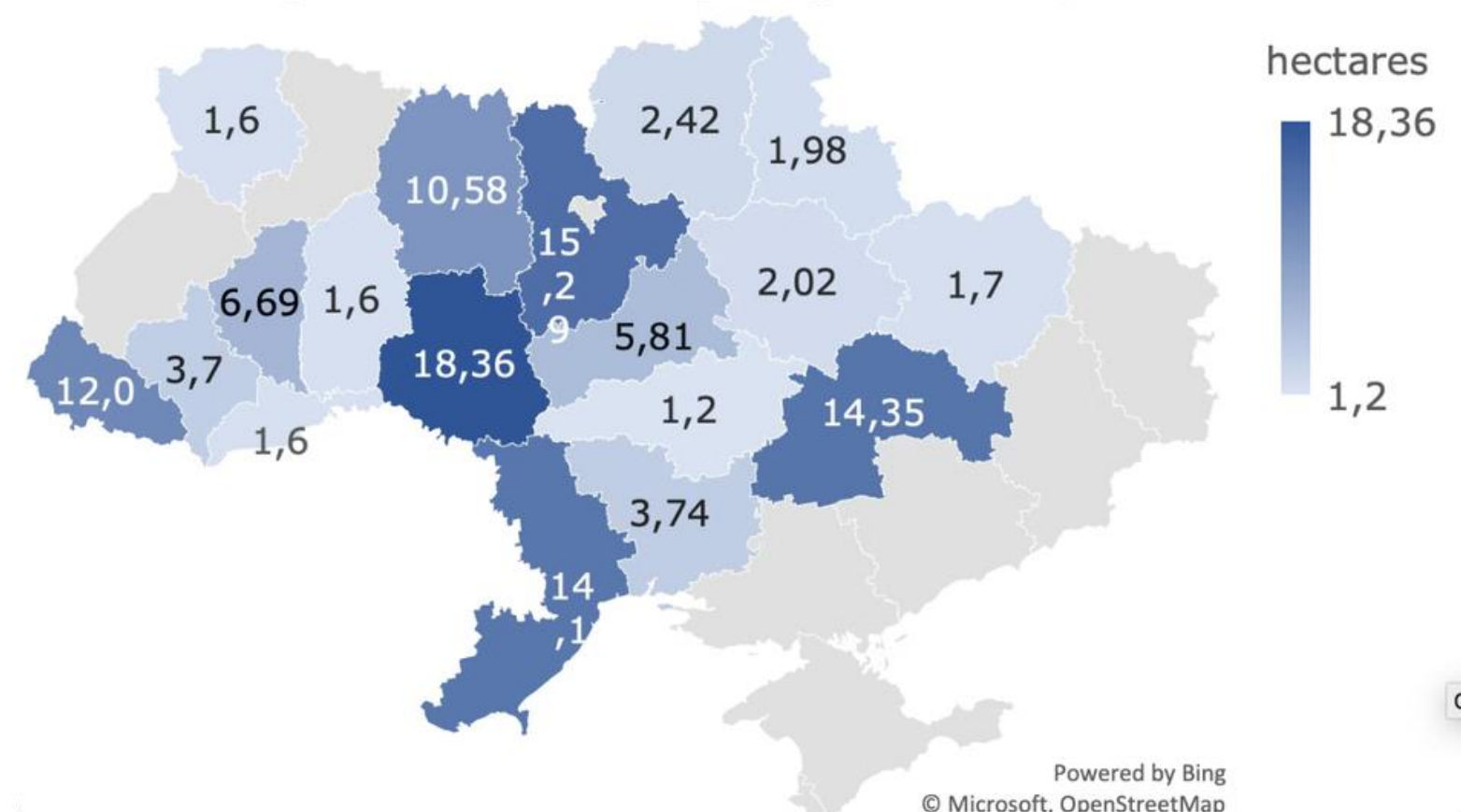
Distribution of high tech greenhouses, hectares



- **Approximately 270–290 ha**
- Year-round production
- Heating systems
- Climate control
- Cold storage facilities
- Higher technology level
- Investment-oriented businesses

Small & Medium-Sized Growers

Regional distribution of grant greenhouses, hectares

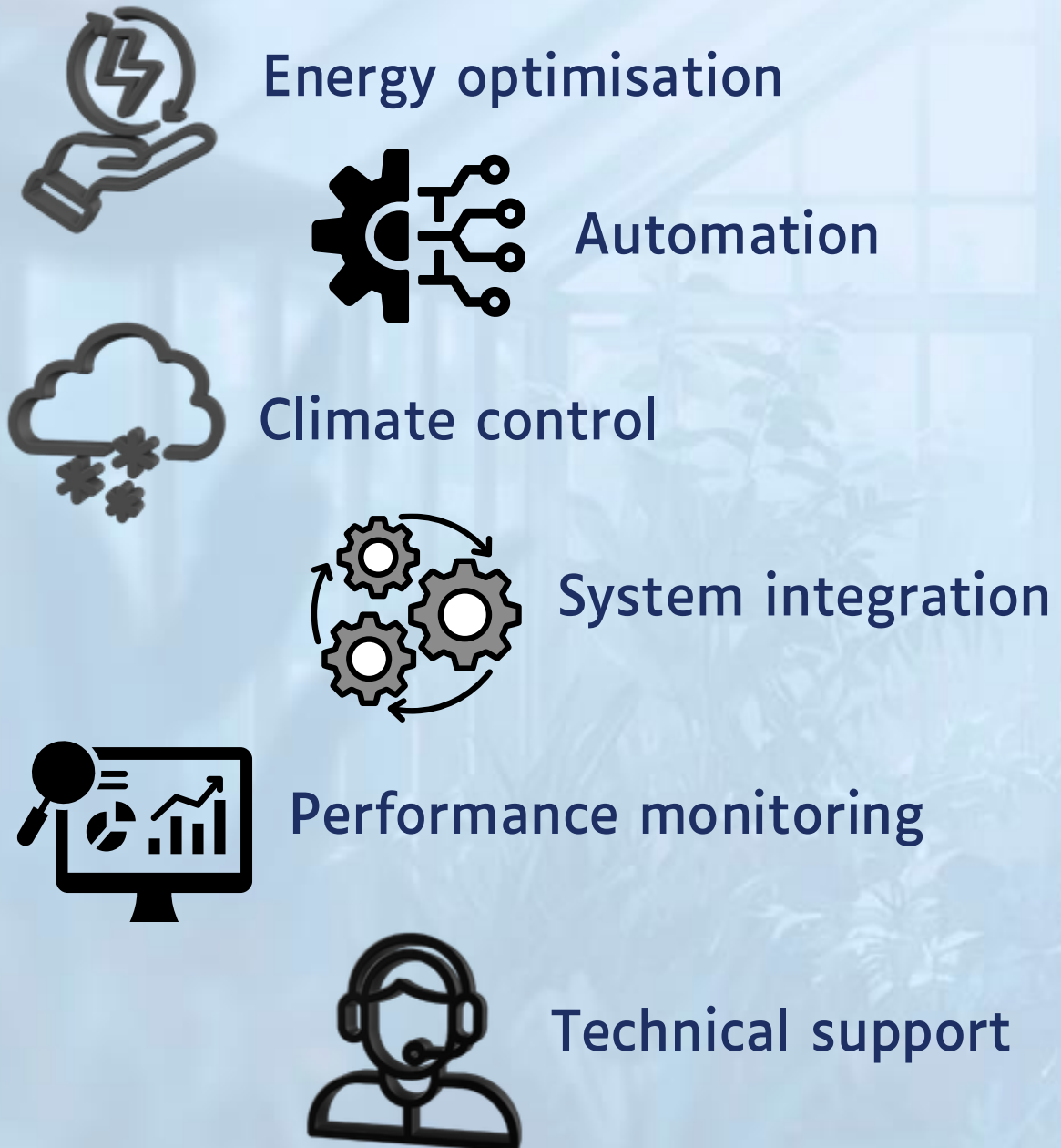


- **Approximately 4,000–7,000 ha**
- Predominantly low- and mid-tech production
- Seasonal cultivation
- Limited automation
- Limited access to finance
- Strong dependence on local markets
- Grant-supported expansion

Ukraine is not one greenhouse market. It consists of two distinct segments with different technology levels, investment capacities and development needs.

Different Segments – Different Needs

Industrial Greenhouse Complexes



Industrial segment

High-value integrated solutions

Small & Medium-Sized Growers



SME segment

Affordable bundled packages + training

Key Message



Drivers of Sector Transformation



Energy Crisis

- Rolling blackouts
- Gas prices $\times 3-4$ since 2021
- Diesel generators required
- Heating = 40–70% of costs



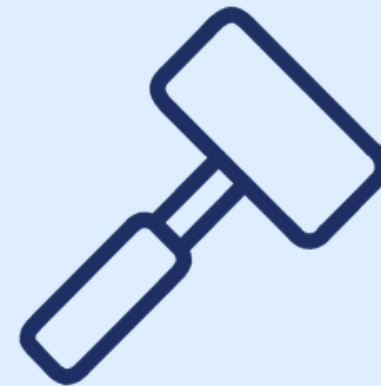
War Impact

- Infrastructure damage
- Lost occupied/flooded areas
- Supply chain disruption
- Labour displacement



Finance Gap

- Limited access to credit
- High interest rates
- Investment uncertainty
- Fragmented donor support



Regulatory Environment

- No national association
- Weak sector coordination
- Slow EU harmonisation
- Limited policy support



Market Access

- Turkish import pressure
- Logistics challenges
- Limited cold-chain
- Export barriers



Human Capital

- Workforce shortage
- Skills gap (greenhouse tech)
- Limited advisory services
- Lack of specialised training



Strategic implication: The Ukrainian greenhouse sector is undergoing rapid structural transformation. Energy pressure, war-related disruptions, and labour shortages are accelerating demand for more efficient, technology-driven, and professionally managed production systems.



The Real Cost of Sector Contraction

Estimated contraction of Ukraine's industrial greenhouse sector between 2013 and 2026.

Energy-driven insolvency & bankruptcy
156 ha lost
26% of industrial sector



66%



War-related occupation & destruction
240 ha lost
40% of industrial sector



Private Greenhouse Sector Losses

2,600–3,900 ha

Regional Shift:

Pre-2022: South & East dominant

Post-2022: Kyiv, Cherkasy, Ternopil, Zakarpattia

Western Ukraine emerging as a new greenhouse hub

Challenges → Modernisation → New Opportunities

What Ukraine Produces

Ukraine's protected crop sector spans traditional vegetables, emerging high-value segments and innovative cultivation formats – each presenting distinct technology needs.



Vegetables

Tomatoes, cucumbers and peppers dominate – 70%+ of protected crop output, primarily for the domestic market



Leafy Greens & Herbs

Rapidly growing segment driven by urban retail demand; short cycles suit modular technology



Ornamentals & Flowers

Roses and cut flowers remain significant; recovery underway post-COVID and war disruptions



Medical Cannabis

Legalised in 2024 – a high-value emerging segment requiring precision climate and security systems



Vertical Farming

Early-stage but growing in Kyiv and major cities; driven by food security and import substitution



Organic & Sustainable Production

Emerging niche driven by consumer demand, certification requirements and EU market opportunities. Increasing interest in biological crop protection and low-input systems.

What Is Produced in Ukraine?

Key Production Facts



Tomatoes dominate — 44% of output. High demand but quality gap vs EU.



Cucumbers second — 38% mostly sold fresh, local/regional markets.



Peppers growing — year-round greenhouse production expanding.



Berries emerging — strawberries & blueberries for export.



Ornamentals: significant pre-war, now recovering slowly.



Herbs & greens — high-value, fast-growing niche for HoReCa.

Key Highlights

- Total vegetable area: **~250 ha**
- Tomatoes & cucumbers — **82%** of total area
- Berries in greenhouses: 14.0 ha, 1,100 tones
- Flowers and Ornamentals: **~50-60 ha**

*Vegetable production in protected cultivation, 2024
(enterprises only, excluding occupied territories)*

Technology Levels in Ukraine's Sector

High-Tech Operations

Hydroponic systems, climate control, year-round production

Mid-Tech Producers

Partial automation, seasonal production, modernisation potential

Low-Tech & Tunnels

Smallholder production, minimal automation, grant-supported expansion

Vertical Farming

Emerging segment with urban production potential

"Despite war, energy challenges and market disruptions, Ukraine's greenhouse sector continues to adapt, modernise and grow."



Ukrainian Market Potential

The future of Ukraine's greenhouse sector is not being postponed until after the war – it is being built today

Replacing Lost Production Capacity



Domestic Market Development



Export Opportunities



Why Ukrainian greenhouse sector Matters for Dutch Companies

- Strong Demand for Modern Technologies
- Growing Need for Knowledge Transfer and Training:
 - advisory services
 - applied knowledge (University)
- Opportunities for Long-Term Partnerships
- Increasing Demand in Sustainable and Energy-Efficient Solution
- Potential for Demonstration Projects and Pilot Initiatives

Sector Needs & Areas for Dutch Contribution

Key priorities identified by Ukrainian growers and greenhouse companies

1. Greenhouse Technologies

Modern structures, essential equipment upgrades, and scalable high-yield production systems.

2. Climate Control & Energy

Energy-efficient climate management systems, alternative heating, and operational cost savings.

3. Post-Harvest & Logistics

Advanced cold chain storage facilities, high-efficiency packing centres, and robust logistics.

4. Water Management

Automated drip irrigation, smart fertigation units, and modern water-saving technologies.



PARTICULAR RELEVANCE FOR LOW/MID-TECH GROWERS

Growers do not require individual technologies in isolation. Success depends on integrated support packages combining hardware, training, and strategic advisory services.

5. Cultivation Knowledge

Modern growing techniques, targeted crop management, and broad dissemination of global best practices.

6. Training & Advisory Services

Continuous technical training programs, localized grower education, and expert advisory networks.

7. Demonstration Projects

Physical demo greenhouses, active pilot projects, and technology validation adapted to local climates.

8. Sector Organisation

Greenhouse association capacity building, unified knowledge sharing, and broad stakeholder coordination.

 Opportunity for Dutch Contribution: The highest systemic impact lies in combining Dutch technology, targeted knowledge transfer, demonstration projects, and sector development initiatives into **one coordinated ecosystem approach**.

Why Ukraine Needs a Greenhouse Sector Organization

Current Challenges

- Fragmented sector representation
- Limited knowledge & technology exchange
- Weak links between industry & education
- Limited structural dialogue with government
- Lack of coordinated training & advisor services

Organization's Role

- Advocacy & unified policy representation
- National knowledge & sharing platform
- Professional training & development
- University, science & research links
- Active innovation & global partnerships

Expected Impact

- ✓ Stronger, highly respected industry voice
- ✓ Accelerated modern technology adoption
- ✓ Better qualified, future-ready workforce
- ✓ Seamless access to global best practices
- ✓ A highly competitive greenhouse market



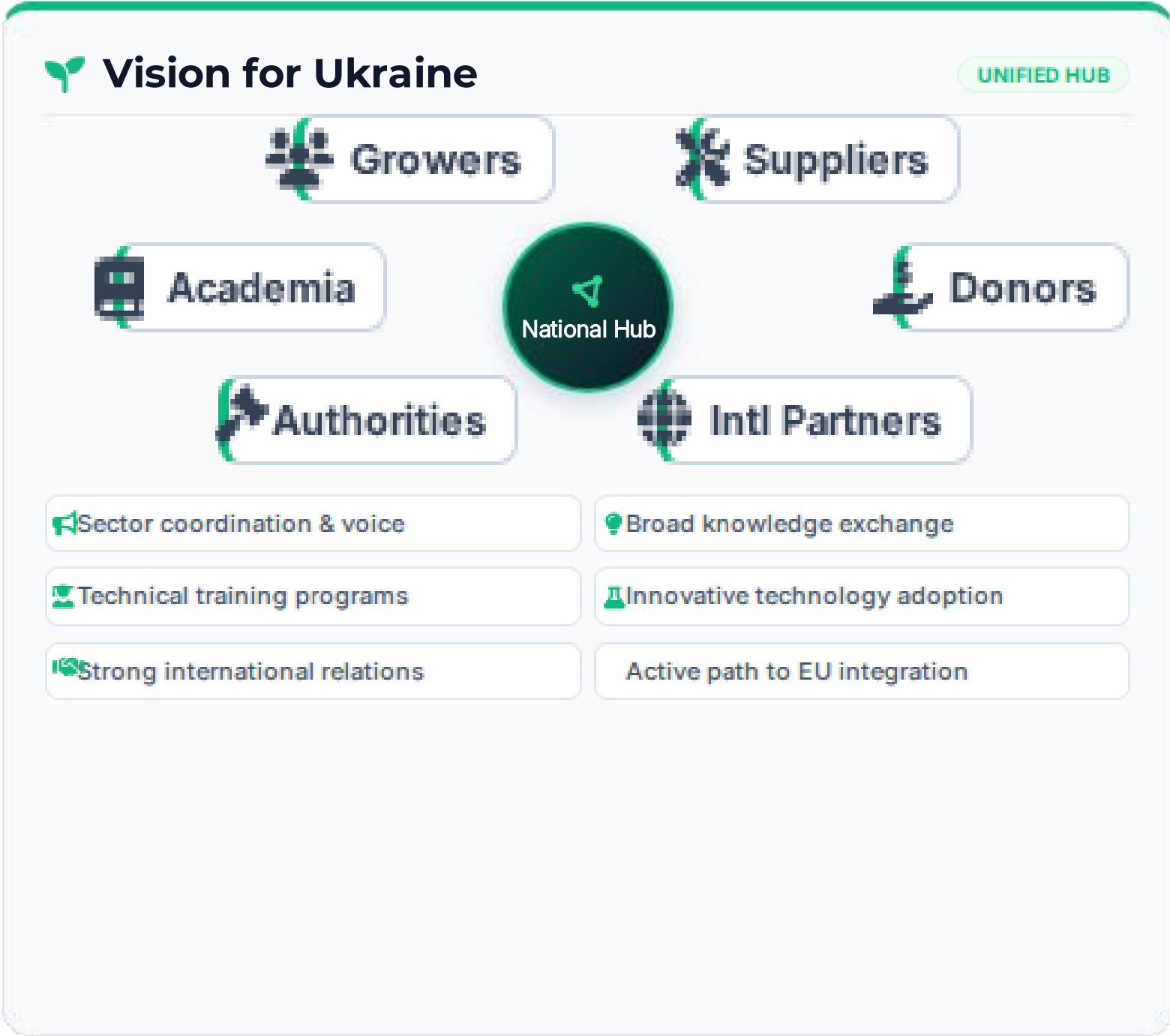
"A strong sector organization acts as the **essential bridge** connecting growers, technology providers, universities, government, and **international partners**."

Lessons from NL Greenhouse Ecosystem

Coordination, cooperation and innovation as drivers of sector development



DUTCH
EXPERIENCE →
UA
OPPORTUNITY



STRATEGIC QUESTION

What is the most effective organizational model for Ukraine?

National Association?

Regional Cluster?

Hybrid Model?



A greenhouse sector organisation can become the **platform connecting** growers, suppliers, academia, donors and public institutions to support the long-term development of Ukraine's protected cultivation sector.

SWOT: Dutch Role in UA Greenhouses

Strategic assessment of opportunities for Dutch companies in Ukraine's protected cultivation sector

Strengths

- ✓ Globally recognised Dutch greenhouse expertise
- ✓ Modular solutions for both low-/mid-tech and high-tech growers
- ✓ Established training, advisory, and technology transfer capabilities
- ✓ Global leadership in energy efficiency, climate control, and fertigation
- ✓ Dynamic ecosystem of partner companies, universities, and associations

S

Weaknesses

- ⚠ Higher initial investment costs compared to low-cost alternatives
- ⚠ Limited local service, repair, and technical maintenance capacity
- ⚠ Highly fragmented and dispersed smallholder grower market
- ⚠ Heavy dependence on localized partners and dealer networks
- ⚠ Increased long-distance support costs for geographically dispersed growers

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Opportunities

- ⬆ Two-speed market creates multiple entry points for diverse solutions
- ⬆ Urgent local demand for modern resource-saving technologies
- ⬆ High willingness of Ukrainian growers to cooperate with Dutch partners
- ⬆ Accessible donor-funded recovery and international co-financing
- ⬆ Launch of localized demonstration projects and modern greenhouse hubs

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Threats

- ⚡ Ongoing war-related logistical, security, and systemic risks
- ⚡ High energy price volatility and critical infrastructure instability
- ⚡ Intense cost-based competition from regional lower-cost suppliers
- ⚡ Extreme administrative complexity of international donor programmes
- ⚡ Severe shortage of qualified technical specialists and engineers locally

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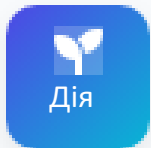


Key Strategic Insight: The highest long-term return for Dutch providers lies in supplying integrated ecosystems (combining technical hardware, knowledge transfer, and operational training) rather than focusing solely on isolated equipment supply.

Support Programmes: Greenhouse Sector

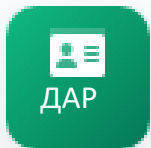
Key funding and support mechanisms available for Ukrainian greenhouse growers

Government Support Programmes



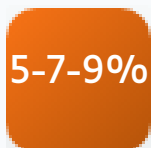
eRobota Grants

Non-refundable modular greenhouse construction grants providing up to UAH 7M per design-approved project.



DAR Platform (State Agricultural Register)

Ensures streamlined, transparent digital distribution of target subsidies and targeted operational aids.



5-7-9% Soft Credit Programme

Preferential state-backed financing supporting capital investment, heating modernisations, and cashflow needs.

International Donors & Partners



FAO

Targeted seed provision & emergency asset packages



EBRD

Direct business loans & green modernization energy audits



European Union

SME recovery grants & technical standards integration



Swisscontact

Agronomic skill enhancement & technical training transfers



Mercy Corps

Direct financial recovery grants for frontline farms



Key Takeaway: Public and donor-funded programmes play an important role in reducing investment barriers, supporting modernisation and accelerating the recovery of Ukraine’s greenhouse sector.

Strategic Actions for a Protected Cultivation Cluster at RVO

De-risk Market Entry Through Controlled Pilots



Support energy-integrated demonstration projects within bundled delivery models (equipment + commissioning + advisory + follow-up), that:

- validate performance under Ukrainian cost conditions
- generate operational data
- reduce financing uncertainty
- build local technical capacity

→ **Pilot before scale.**

Build a Knowledge & Advisory Infrastructure



Facilitate structured cooperation between:

- Dutch and Ukrainian universities
- Advisory services
- Demonstration sites
- Technical training programmes

→ **Train the ecosystem, not only individual growers.**

Enable Cluster-Based Scaling



Support a coordinated cluster model that:

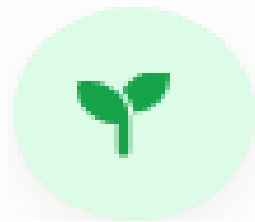
- integrates Dutch SMEs
- links technology + service + training
- aligns with regional recovery strategies
- prepares selective high-tech expansion

→ **Move from isolated transactions to structured presence.**

The opportunity lies not in rebuilding what was lost, but in structuring what comes next.

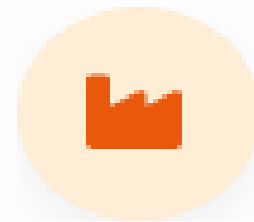
Key Takeaways

Strategic summary and future path of Ukraine's protected cultivation sector



Transformation

Ukraine's greenhouse sector is undergoing rapid modernization and transformation, not disappearing.



Two-Speed Market

Large industrial complexes and low-to-mid tech growers require distinct solutions and custom business models.



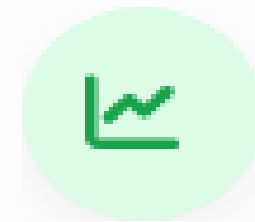
Beyond Tech

Hardware alone is insufficient. Operational training, expert advisory services, and knowledge transfer are crucial.



Dutch Contribution

World-class Dutch horticulture expertise and modular technology align perfectly with local recovery needs.



Long-Term Impact

Sustainable development depends on durable partnerships, capacity building, education and strong sector organizations.



“The future of Ukraine's greenhouse sector is **not being postponed until after the war — it is being built today.”**

Welcome to join us at Covered Cultivation Cluster

Contact

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Rijksdienst voor Ondernemend
Nederland

**Agriculture & Food
Security Platform**
Ukraine

**Covered Cultivation
Cluster (horticulture)**
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Thank You For attention

Link to: "Market Report on Needs
Assessment Protected Crop in Ukraine:
International Opportunities for Dutch
SMEs"



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