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Today and tomorrow of Ukrainian agricultural sector

Dr. Pavlo Martyshev, Senior Researcher, Center for Food and Land Use Research,
Kyiv School of Economics, Ukraine

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Ukraine's agricultural sector and the war are now intrinsically linked. The sector can no longer be assessed through the prism of peacetime performance, but through its ability to withstand destruction, maintain production, adapt to disruption, and create the foundations for long-term recovery.

Recovery is not a post-war process — it is already underway during wartime. Ukrainian agriculture is simultaneously:

- sustaining food production under unprecedented security risks
- adapting supply chains, logistics, and business models to constant disruption
- investing in modernization and alignment with EU standards while rebuilding damaged assets

As highlighted during the Chatham House–EBRD Ukraine Conference, Ukraine is pursuing three parallel objectives:

- defending the country
- transforming the economy
- and advancing EU integration

"

Businesses' ability to continue operating, producing and transporting is amazing.
— Odile Renaud-Basso, President, EBRD

UA AGRI

- I Challenges and Bottlenecks
- II Resilience
- III Policy
- IV Strategy and outlook

I Challenges: 1 Mine contamination and post-clearance damage

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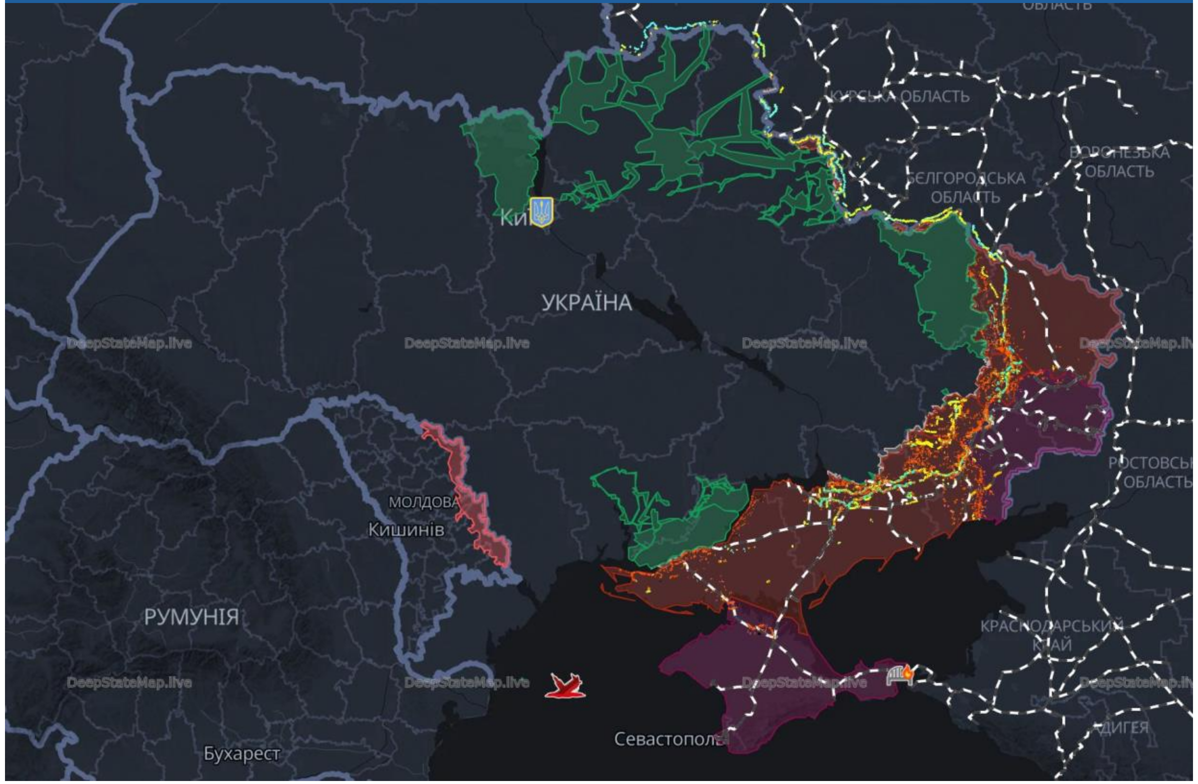
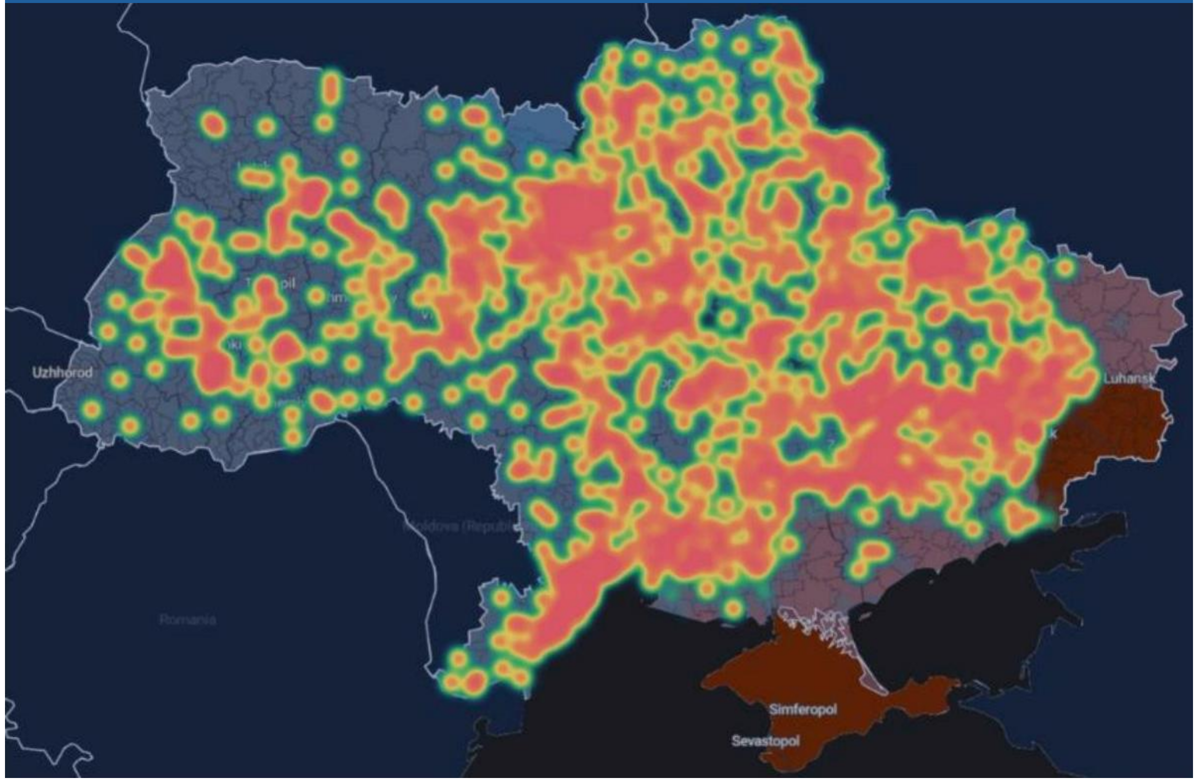
Front Lines & Russian-Occupied Territories (April 2026)



Source: DeepStateMap.live

The map illustrates Russian-occupied zones (dark maroon) and active front lines as of early 2026. The geographic extent of occupation and active hostilities directly determines where post-clearance agricultural recovery is most urgently needed and most delayed.

Spatial Distribution of Aerial Attacks (RDNA5, Feb 2026)



Source: Assessment team. Note: Map represents spatial distribution of aerial attacks as recorded by the WRUDP

The heatmap reveals that aerial attacks are not confined to front-line oblasts but extend across all over Ukraine. Red zones signal high attack density, exposing agricultural communities far beyond the active conflict to explosive remnants of war.

I Challenges: 1 Mine contamination and post-clearance damage

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132,076 km²

Ukrainian internationally recognized territory under contamination risk, as of January 2026

1-1.2 mln ha

area of potentially contaminated agricultural lands (as of 2025)

By 2033

National mine action strategy: coordinated, data-driven system for safe and productive use of demined territories. Also to minimize human, economic, and environmental risks.

~USD 11.2B

annual GDP reduction from mines & ERW (~5.6% of 2021 GDP)

Russia's full-scale invasion has generated extensive contamination of farmland by mines, UXO, shelling residues, and other war hazards.

While humanitarian demining is a central pillar of Ukraine's reconstruction agenda, **clearing land of explosive hazards alone does not restore agricultural production.**

Key Question: How does the transition from formal land clearance to actual agricultural reuse unfold in mine-affected areas of Ukraine, and what constitutes the post-clearance gap?

I Challenges: 1 Mine contamination and post-clearance damage

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Certified ≠ cultivation-ready

01 Craters & Physical Disruption

- Depressions from munition impact/detonation
- Disrupts field topography and drainage
- Topsoil compaction or damage

Requires: backfilling, leveling, soil structure restoration, removal and disposal of affected soils, especially where fuel and lubricants were spilled and equipment burned

02 Fragments & Debris

- Metal shrapnel and residues remain after clearance
- Damage machinery during initial cultivation
- Increase operational costs significantly

Requires: additional field clearing, inspection cycles

03 Chemical Contamination

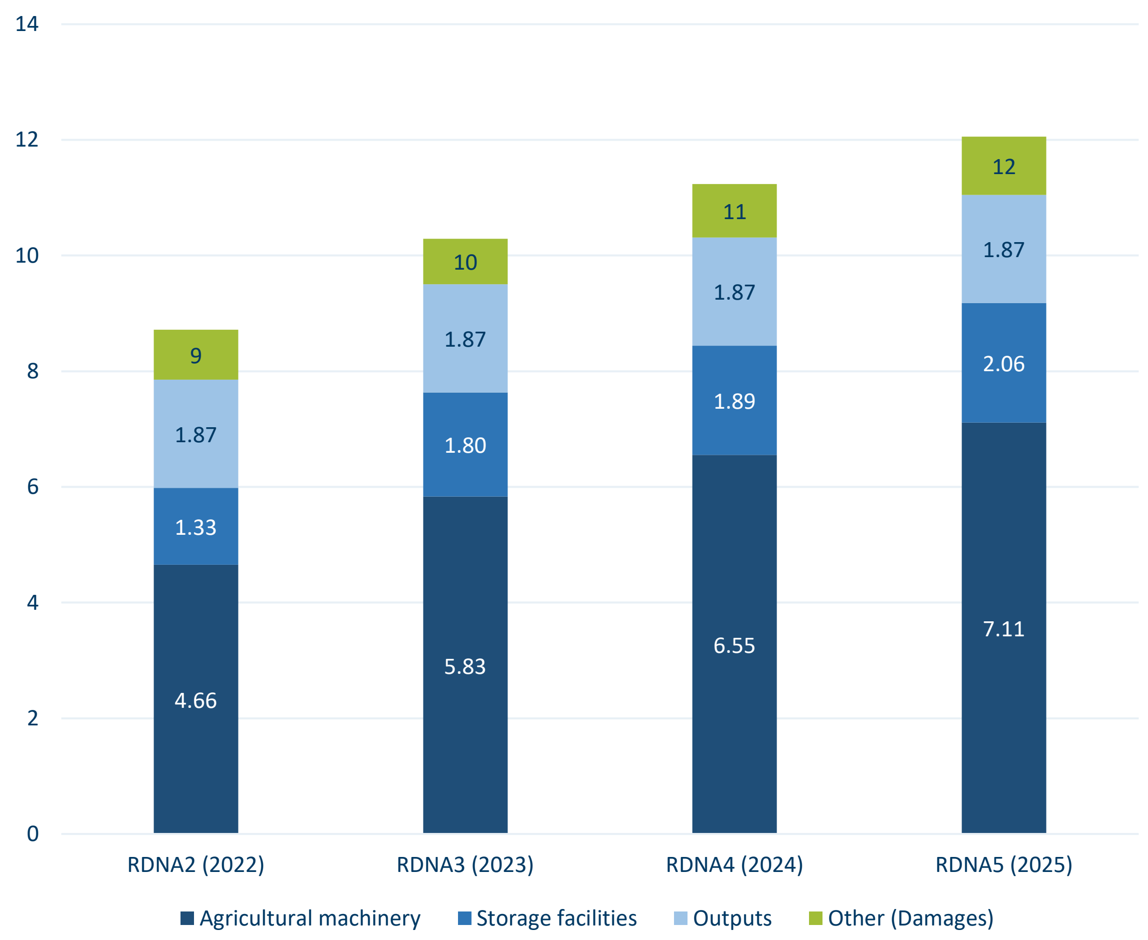
- Heavy metals: llead, cadmium, arsenic, mercury, nickel, cobalt, zinc, chromium, antimony, copper, and barium.
- Invisible — no external signs
- Can be taken up by crops → enters food chain

Requires: soil laboratory tests (agrochemical certification), grown (harvested) crops tests

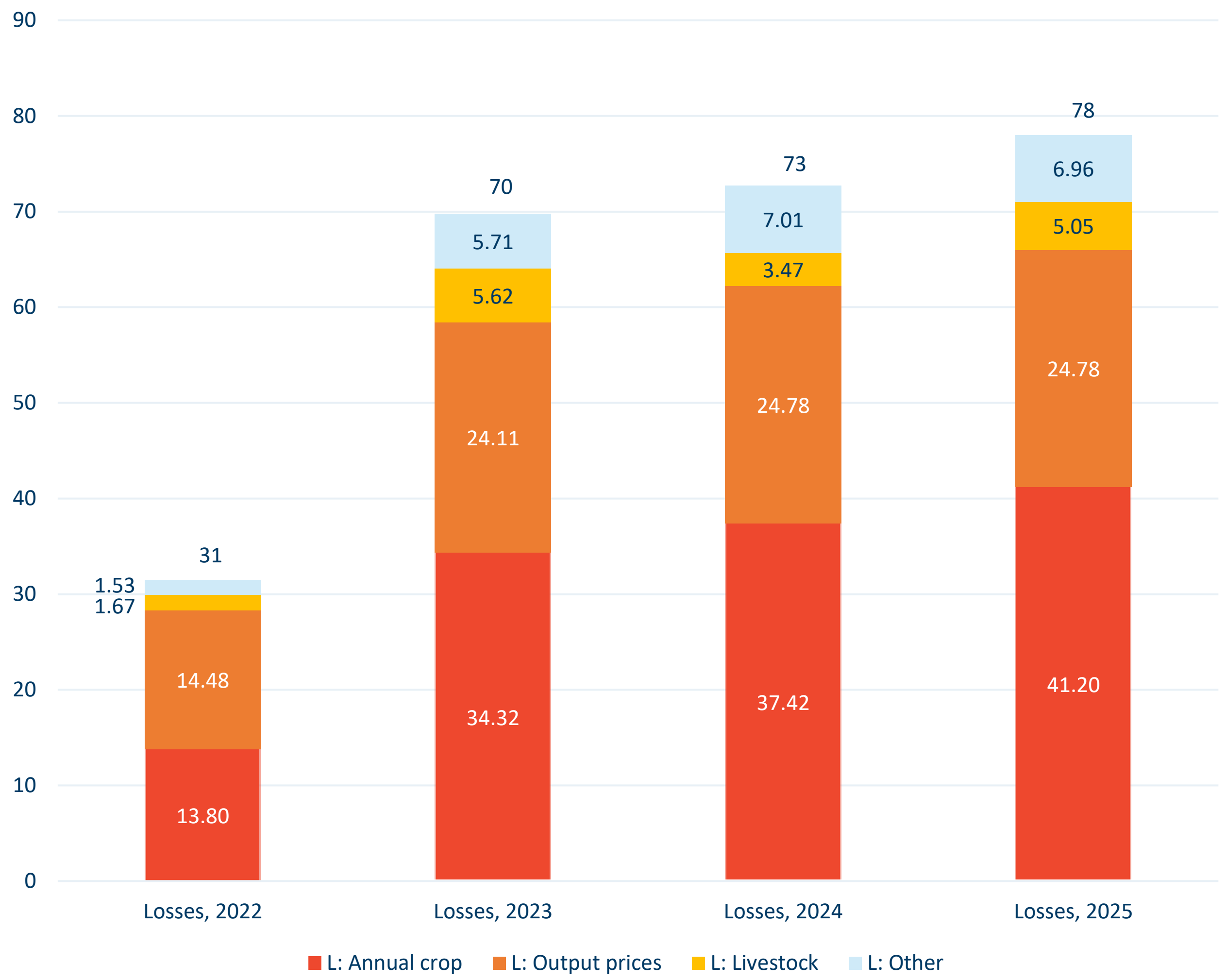
The primary legal obligation after demining focuses on explosive hazard removal - not soil health. Soil quality is governed under a separate legal framework.

I Challenges: 2 Damages and losses

Cumulative damages breakdown — USD bln



Damages & Losses breakdown by category — USD bln



I Challenges: 2 Damages and losses

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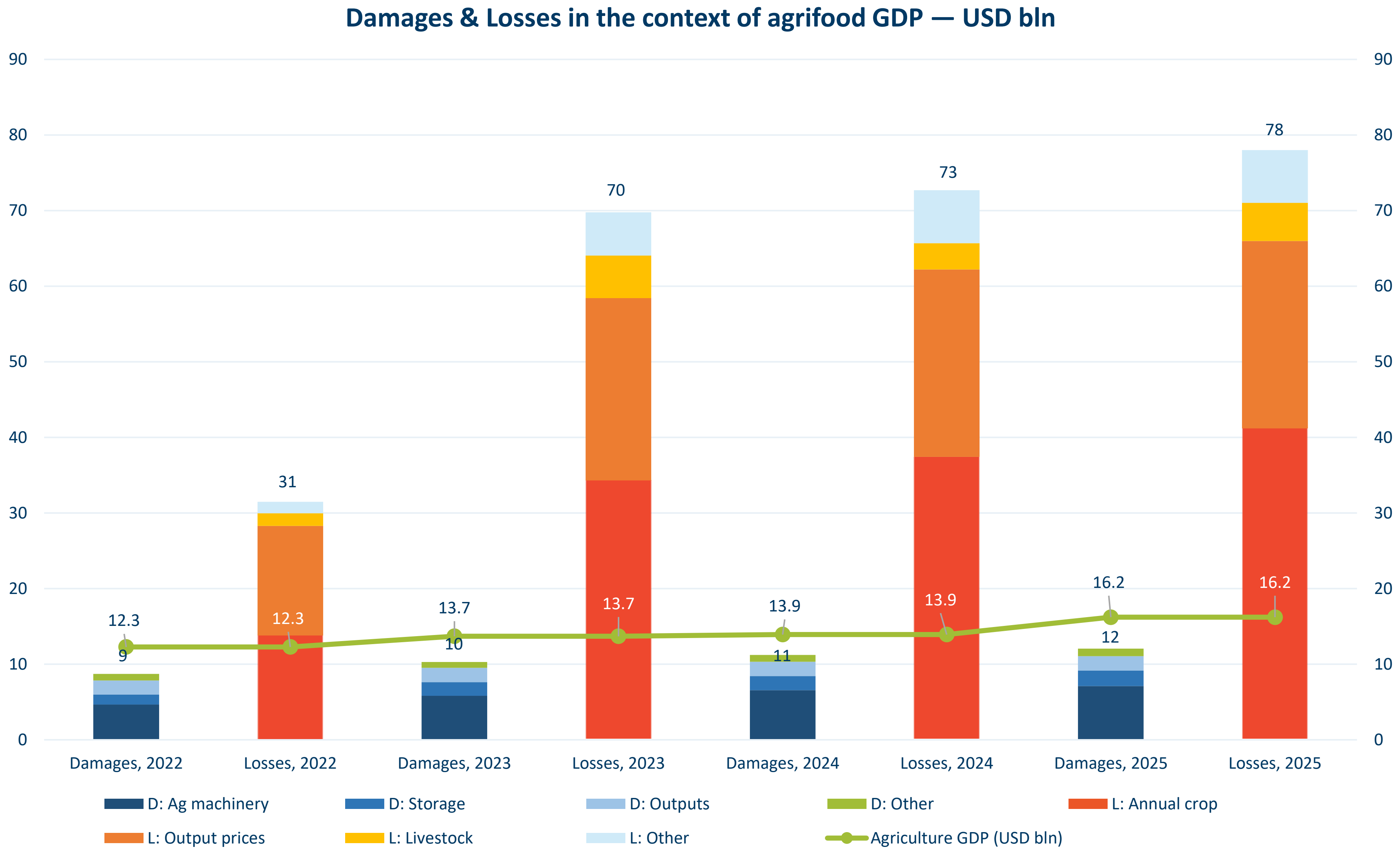
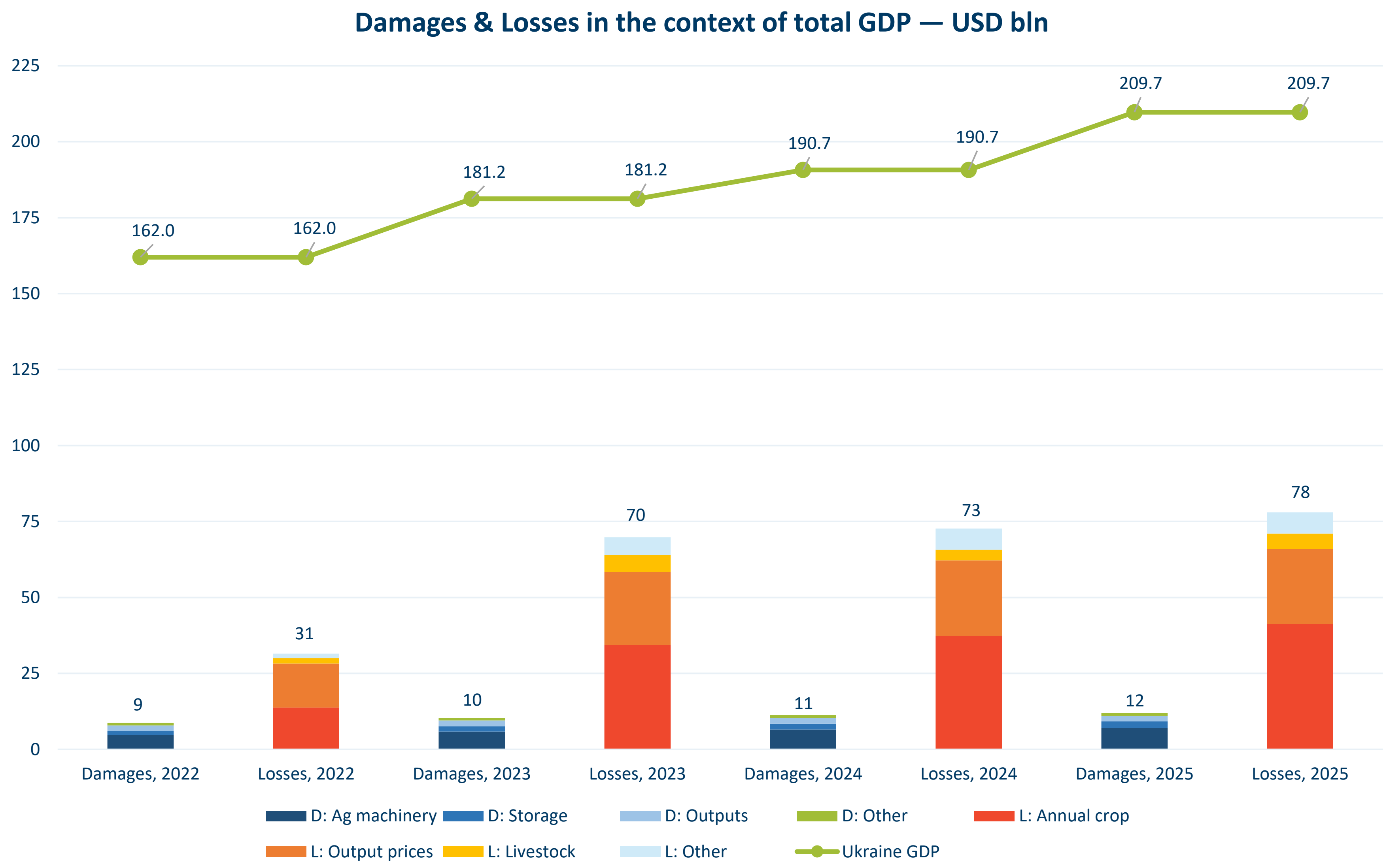


I Challenges: 2 Damages and losses



I Challenges: 3 Labor shortage

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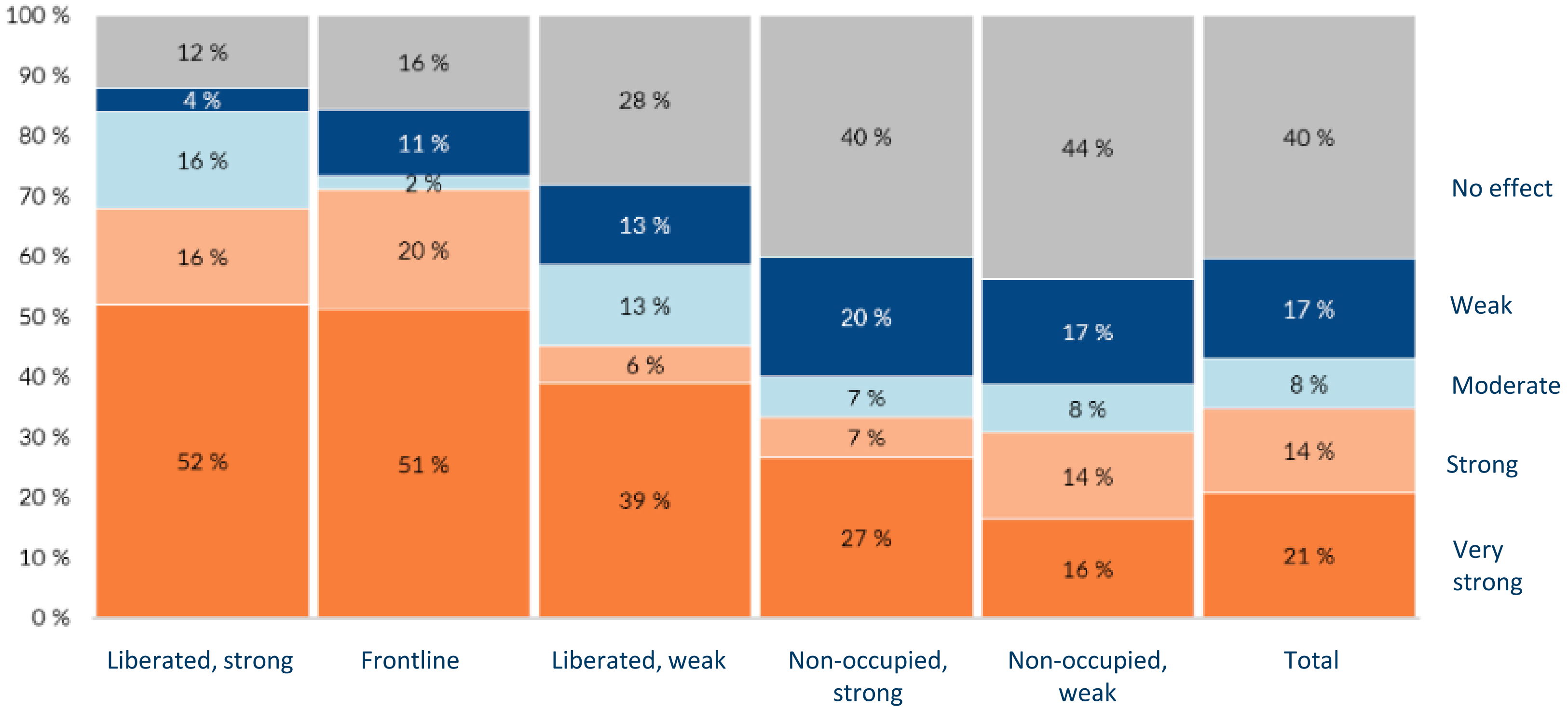
- High informality of ag employment (more than 80%);
- The decline of formal employment in agriculture by 20% in 2023 versus 2021;
- Enterprises with 1000-5000 ha suffered the most from the labor shortage (Laender Analysen, 2024).

Regional farmers' sentiments of labor shocks



Source: Laender Analysen, 2024

I Challenges: 4 Climate change

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- So far, just 1% of farmlands are irrigated;
- The average temperature is projected to increase by 4°C until 2100, the precipitation growth is projected to be very uneven across the country (World Bank, 2021);
- All crops, except wheat and soybean, face significant productivity decline in 2050 (World Bank, 2021).

Changes in yields across oblasts for major crops due to climate change

	2030		2050	
	RCP 4.5	RCP 8.5	RCP 4.5	RCP 8.5
Barley	-2.3% to +7.5%	-15.1 to -11.5%	-11.0% to -0.3%	-15.8% to -5.2%
Maize	-17.2% to +14.1%	-22.0% to -2.3%	-18.8% to +4.3%	-22.9% to +3.0%
Soybean	+8.6% to +27.9%	+8.8% to +31.7%	+18.3% to +30.4%	+21.1% to +46.7%
Sunflower	-25.1% to +8.1%	-9.4% to +6.1%	-10.6% to +16.0%	-20.9% to +7.6%
Wheat	+8.6% to +44.1%	+13.9% to +40.7%	+11.9% to +49.1%	+20.8% to +63.5%

Source: World Bank, 2021

I Bottlenecks

When combining Poultry, Dairy, Wallnuts, Fruit & Vegetables, Hemp, Grains and Oilseeds, Rootcrops, studies the same structural themes emerge.

New Melitz Trade Theory in Ukraine: globally competitive large exporters and millions of smaller/medium producers unable to effectively export and are oriented on supplying the domestic market

SECTOR BOTTLENECKS

1. **Access to institutions**: Limited access to veterinary medicines, lack of slaughter facilities, limited services for small batches
2. **High risk exposure**: exposure to price volatility (at output and input markets), lack of compensation for disease-related culling
3. **Low bankability and inadequate financial support instruments**: entry into formal supply chains and long-term sales contracts are costly/risky ↔ banks see such clients as unreliable
4. **Weak cattle identification and traceability systems**
5. **Forms of cooperation to strengthen the bargaining power of smaller/medium producers**

Effective producers aim to close the supply chain in-house → Growth → Naturally emerged monopolistic competition (with competitive fringe) can potentially be observed in some sectors

Why and how Ukrainian agri producers continue exporting the pre-war volumes?

Litvinov, V., Ihle, R., & Dries, L. (2025). *Farming in Times of War: Perceived Impact Patterns of Russia's Invasion of Ukraine*. Wageningen University & Research and Kyiv School of Economics Institute Agrocenter. Paper submitted to *Food Policy*.

DRIVERS OF TRANSFORMATION

Proximity to war → strongest geographical driver. The cost of maintaining the status quo exceeds the cost of change: the disruptions are severe and long-term (severe disruptions to labor, logistics, markets and input supply)

Large farm size → strongest structural driver. Transformation requires resources. Larger farms possess more capital, management capacity, collateral and access to finance.

Livestock specialization → strongest production-system driver. Unlike crop producers that can postpone planting or investment decisions, livestock farms must continuously manage feeding, animal health and production, creating stronger incentives to improve efficiency and transform.

Economic shocks (costs, labor shortages) → strongest operational driver.

BARRIERS TO TRANSFORMATION

Asset and land destruction. Transformation requires assets. Farms that lose productive capital shift from innovation to survival and reconstruction. Destruction reduces both the ability and the financial capacity to invest in change.

Why and how Ukrainian agri producers continue exporting the pre-war volumes?

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GENERAL CONCLUSIONS

Large farms provided transformation capacity

- Large farms possessed the capital, management capacity and financing needed to implement change.
- They acted as stabilizers of production and investment during the crisis.

Economic and war pressure stimulated innovation

- Rising costs and labor shortages forced farms to seek new technologies, organizational models and production strategies.
- Economic stress, accompanied by the capacity to transform, became a catalyst for transformation rather than solely a source of losses.

III Policy: Current state of the domestic policy

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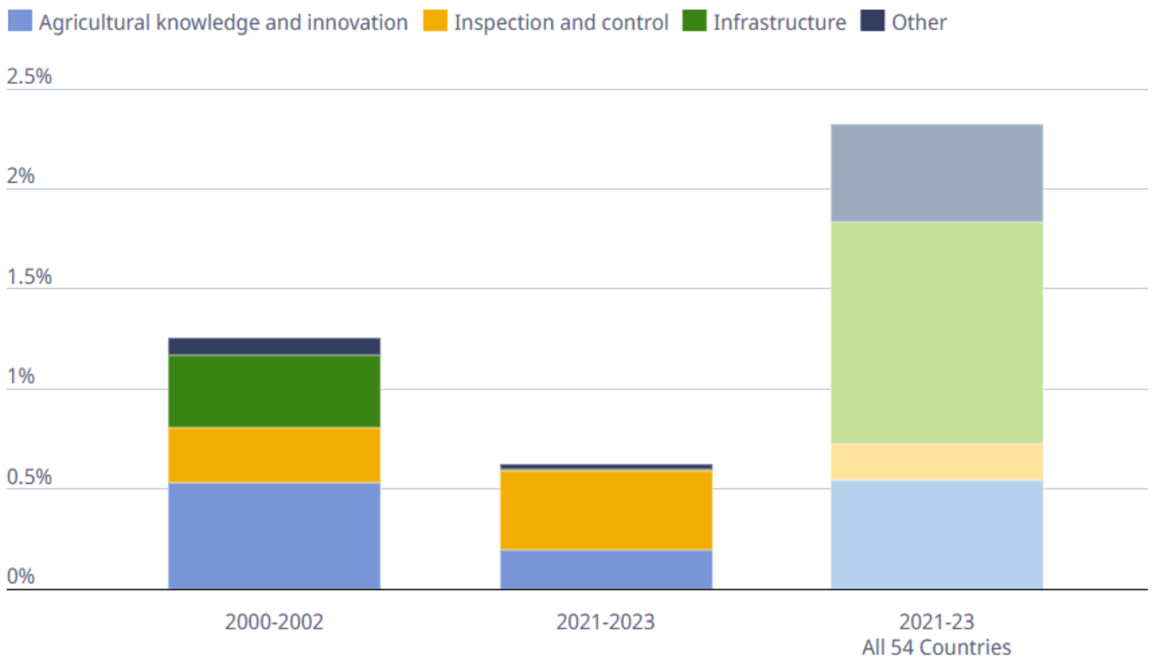
- Developing institutional environment: land tenure, taxation etc;
- Distortions of market mechanism: commodity-specific support, unpredictable export restrictions, localization of machinery production etc;
- Moderate adaptation of the EU agricultural acquis: “early stage” of preparation for the “Agriculture and Rural Development” chapter;
- Low presence of smallholders to value chains due to market failures (land tenure) and policy failures (pro-large tax privileges and subsidies);
- Underfinancing of research and science: in 2021-2023, the share of General Services Support Estimate in total ag output was 0.7% versus 3.8% in the EU (OECD 2024).

Ukraine: General Services Support Estimate and its composition (relative to agricultural value of production)



Source: OECD (2024), “Producer and Consumer Support Estimates”, OECD Agricultural policy monitoring (database)

III Policy: Land tenure

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Stage 1. 1991-1994

From collective Soviet farms to cooperatives.

Stage 2. 1991-2001

The distribution of land shares («pai») between members of the cooperatives. 7 million people (average plot size is 4.2 ha).

Stage 3. 2001-2021

Moratorium on the purchase and sale of land.

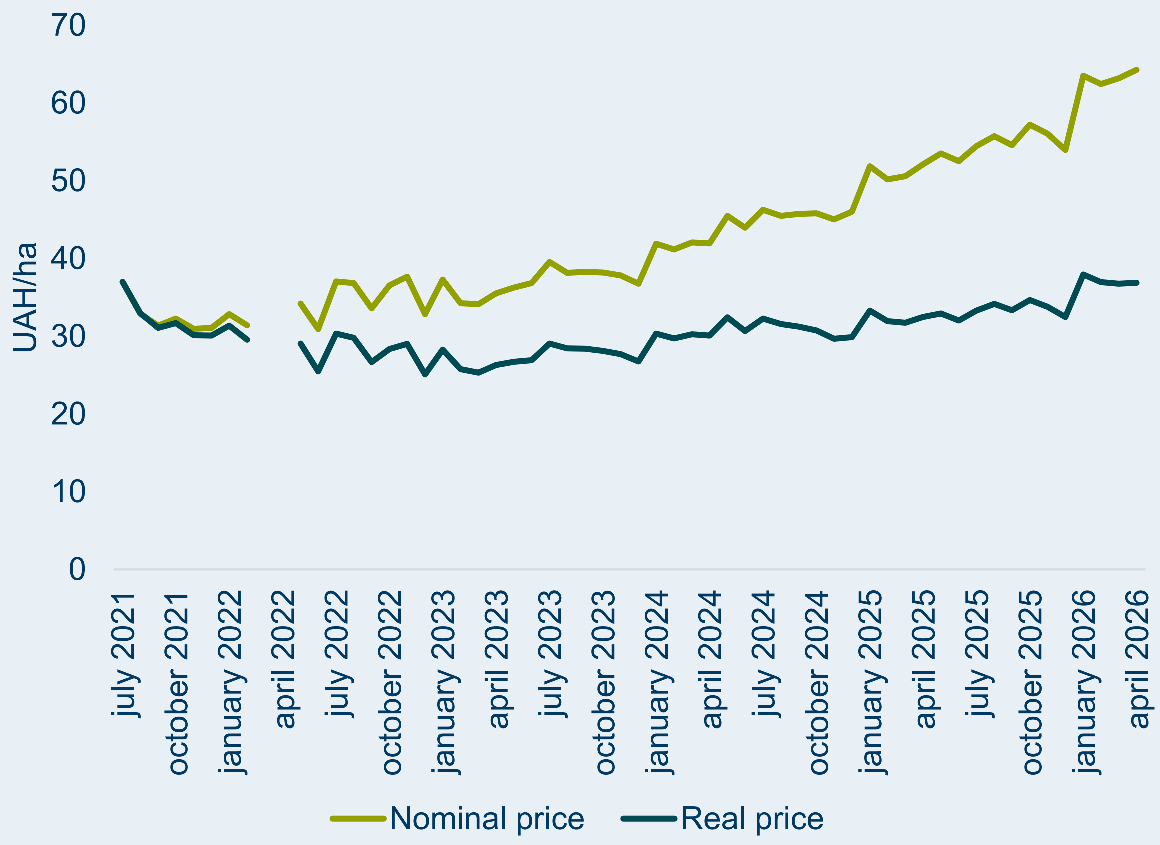
Stage 4. 2021-2024

Opening farmland sales market to individuals (up to 100 ha).

Stage 5. 2024-now

Opening farmland sales market to both individuals (up to 100 ha) and legal entities (up to 10000 ha).

Farmland selling price in Ukraine

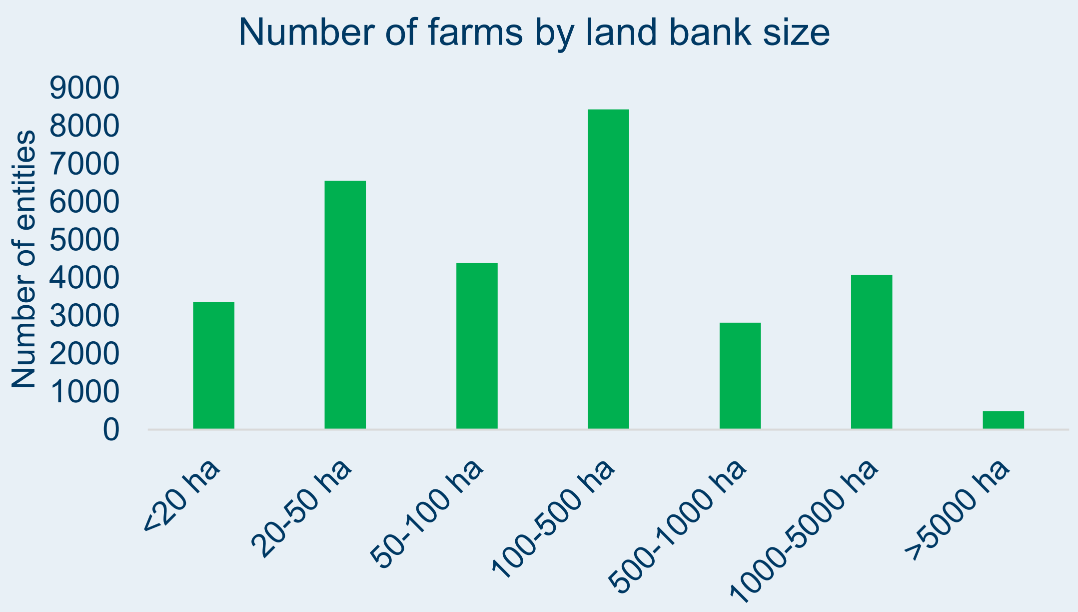


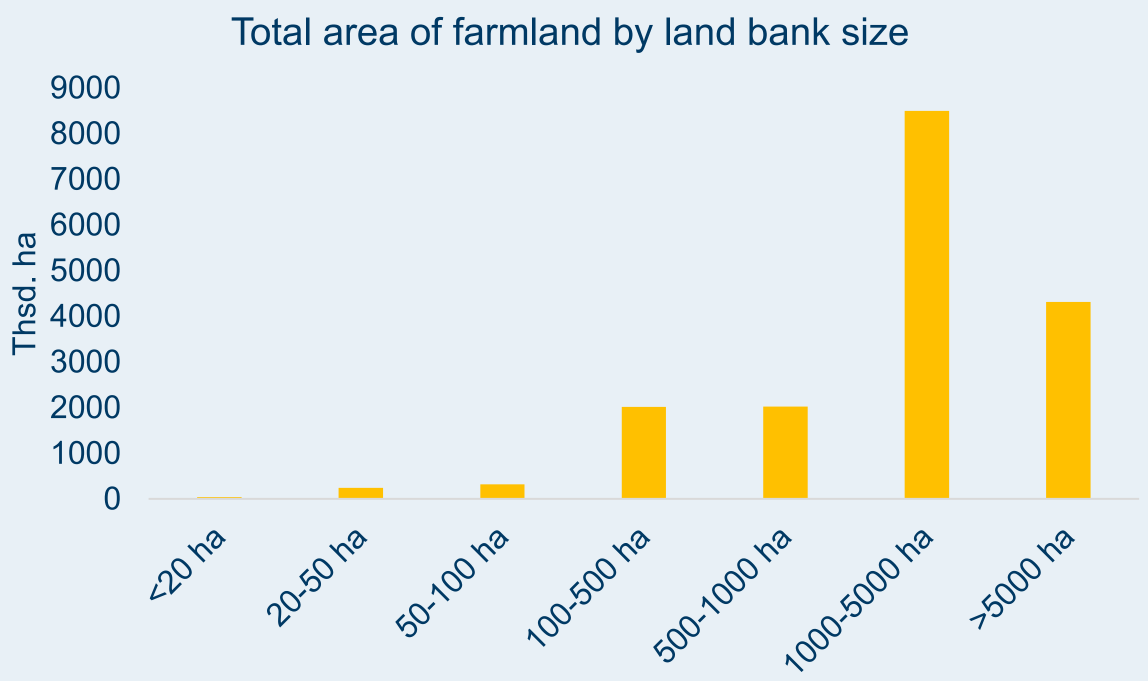
Current farmland price is ~ 1500 $/ha, far below the international benchmarks.

III Policy: Land tenure

Moderate consolidation of land:

- ~30,000 farms;
- turnover on farmland sales market during 2021-2026 is less that 2% of total area;
- large companies (incl., agri holdings) operate on 4 mln. ha;
- scale effect for crop production increases until 1000-2000 ha of land bank;
- no local monopolies.





III Policy: EU integration progress

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Key Achievements of Q1 2026

Agricultural Governance

- Agriculture & Rural Development Strategy 2030 adopted
- State Agrarian Register made mandatory for access to state support
- Continued alignment of agricultural market legislation with EU rules

Rural Development

- National coordination launched for the EU LEADER approach
- Rural development framework being aligned with CAP principles
- Funding mechanisms for local development under preparation

Food Safety & SPS

- TRACES operational nationwide
- Plant Health Law adopted
- Food and feed safety implementing legislation introduced
- Draft SPS law prepared to align food safety, animal health and GMO regulation with EU standards

Regional Development & Recovery

- 2025–2027 Regional Development Action Plan adopted
- State Regional Development Fund reactivated
- Pilot programmes launched for frontline and recovery regions using EU cohesion approaches

Investment Mobilisation

- €600 million EIB project pipeline agreed under the Ukraine Facility
- Investments targeted at transport, border infrastructure, energy and recovery

Remaining Priorities

Fisheries & Aquaculture:
- Upgrade e-Fish data systems
- Strengthen inspection, control and traceability mechanisms

Financial & Budgetary Alignment:
- Further VAT harmonisation
- Develop EU own-resources systems
- Introduce plastic-based own-resource mechanisms

Complete alignment with EU acquis on:
- Quality policy & Geographical Indications (GI)
- Organic farming

Regional Policy:
- Strengthen administrative capacity
- Improve financial management systems
- Finalise public administration reform

Complete SPS reforms:
- Animal health legislation
- Official controls
- Plant health implementation
- Full traceability systems

Developmental outcomes: UA Dairy sector

Bifurcation + Consolidation towards larger commercial farms

INDUSTRIAL SEGMENT

Commercial Farms

Larger (median farm is 400 – 800 cows), efficient, and increasingly EU-compliant. 55% of raw milk for formal supply chains is EU compliant

Top 8 Processors: Control 33% of the formal market output.

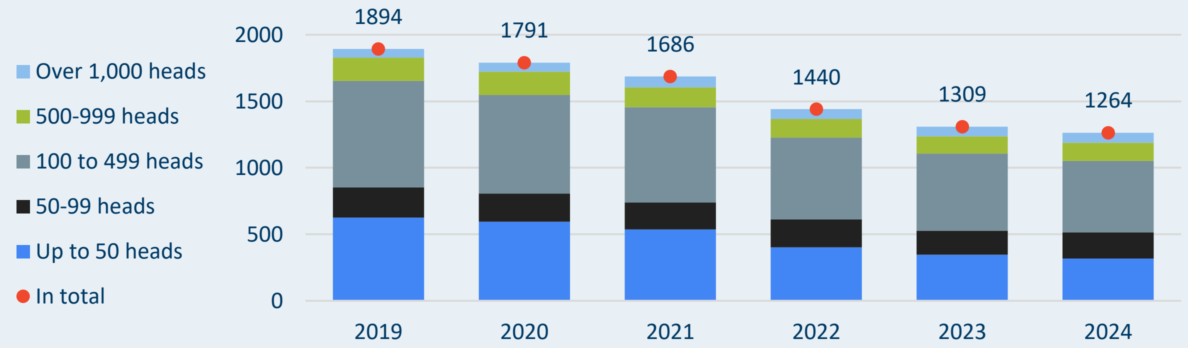
TRADITIONAL SEGMENT

Rural Households

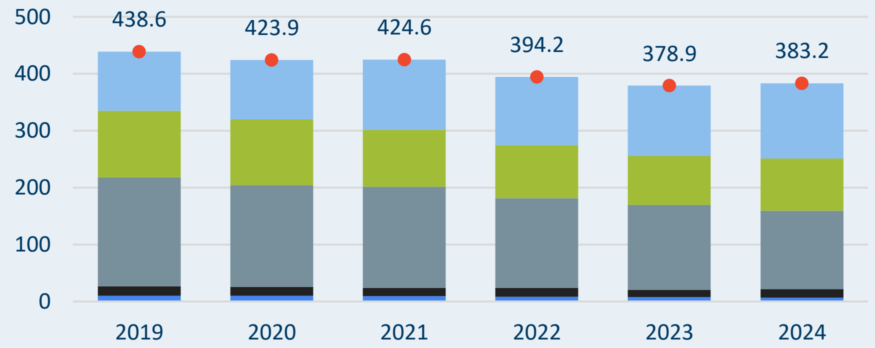
Produce ca. 50% of raw material but face high risk of exclusion due to fragmented collection and hygiene issues.

Food Security: Key for food security in war zones but structurally unviable in EU framework.

(a) number of farms



(b) number of cows



III Policy: EU integration outcome - case study

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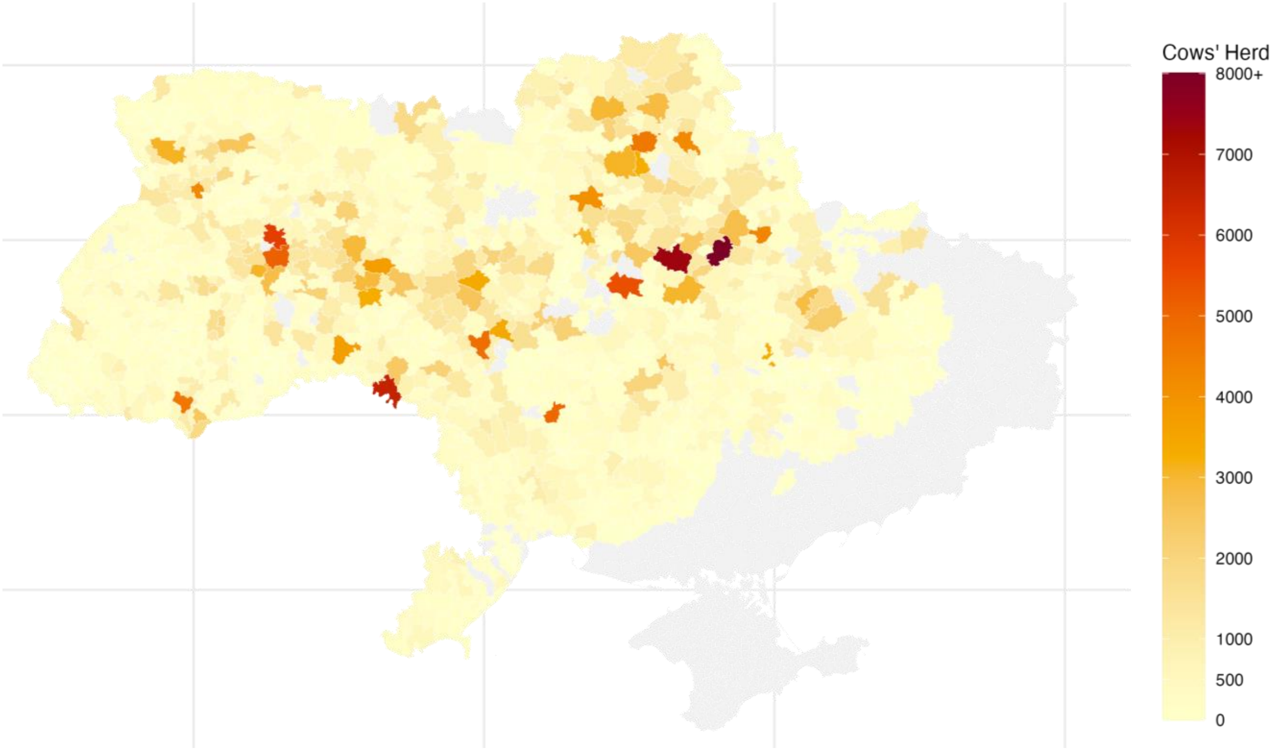
Rural Survival vs. Formal Markets

55y Average age of Household cow owners

63% Gross milk production consumed or bartered locally

<8% Share of processing supply from households

Cow herd across hromadas (SAR-registered users, N_{cows}=200k)



During the full-scale war, rural households have been vital for **local food security** and regional stability, yet they are increasingly excluded from formal EU-oriented supply chains due to hygiene standards.

III Policy: EU integration outcome - case study

EU

EU Integration Requires

- SPS and traceability compliance
- Animal welfare investments
- Modern processing infrastructure
- Reliable collection and quality control systems

UA

But Ukraine Has

- Weak cooperatives
- Fragmented rural producers
- Long milk collection distances (~300 km)
- Limited upgrading of medium-sized processors

➡️ **The most likely outcome is not broad-based convergence with the EU dairy model, but SECTOR BIFURCATION:**
large farms and processors integrate into EU value chains, while rural households face market exclusion and medium-sized processors become dependently integrated into larger commercial chains.

III Policy: Needs

Ukraine's agricultural resilience stems from its ability to transform under pressure.

Protect Productive Assets = Protect Transformation Capacity (US$ bn, 2025–2035)

- Farm equipment & machinery: **$7.8 bn**
- Storage facilities: **$2.5 bn**
- Damaged farmland reclamation: **$1.1 bn**

The goal is ensuring farms have the resources to respond to shocks.
The resilience study shows that: 1) Economic stress stimulates transformation. 2) Large farms transform because they retain access to capital and management capacity.

- Credit support (5-7-9): **$2.8 bn**
- Partial credit guarantees: **$0.6 bn**

The farms are showing the willingness to transform ➞ Recovery should focus on enabling transformation rather than merely restoring pre-war production structures.

- Climate-smart technologies: **$15.0 bn**
- Value-chain development: **$10.0 bn**
- Investment grants: **$10.0 bn**
- Agricultural institutions: **$2.9 bn**

Total agricultural recovery and reconstruction needs (2025 –2035): $55.5 bn
Currently financed: ~$1.3 bn (~2.3% of total needs)

III Policy: Needs

There is a risk that recovery restores production but fails to integrate rural households, medium-sized farms and processors into the next generation of EU-compliant value chains.

Priority: The Missing Middle

- Medium-sized farms
- Medium-sized processors
- Rural households integrated into value chains

Financial instruments

- Portfolio guarantees and risk-sharing
- Bankable collateral instruments

Strengthen Rural Value Chains

- Strengthening the bargaining power by “bargaining together” (forms of cooperation and collaboration)
- Access to infrastructure
- Access to services services

Wartime EU Transition

- Conditional upgrading assistance
- Transition periods linked to investment support

III Policy: Access to value-added food markets

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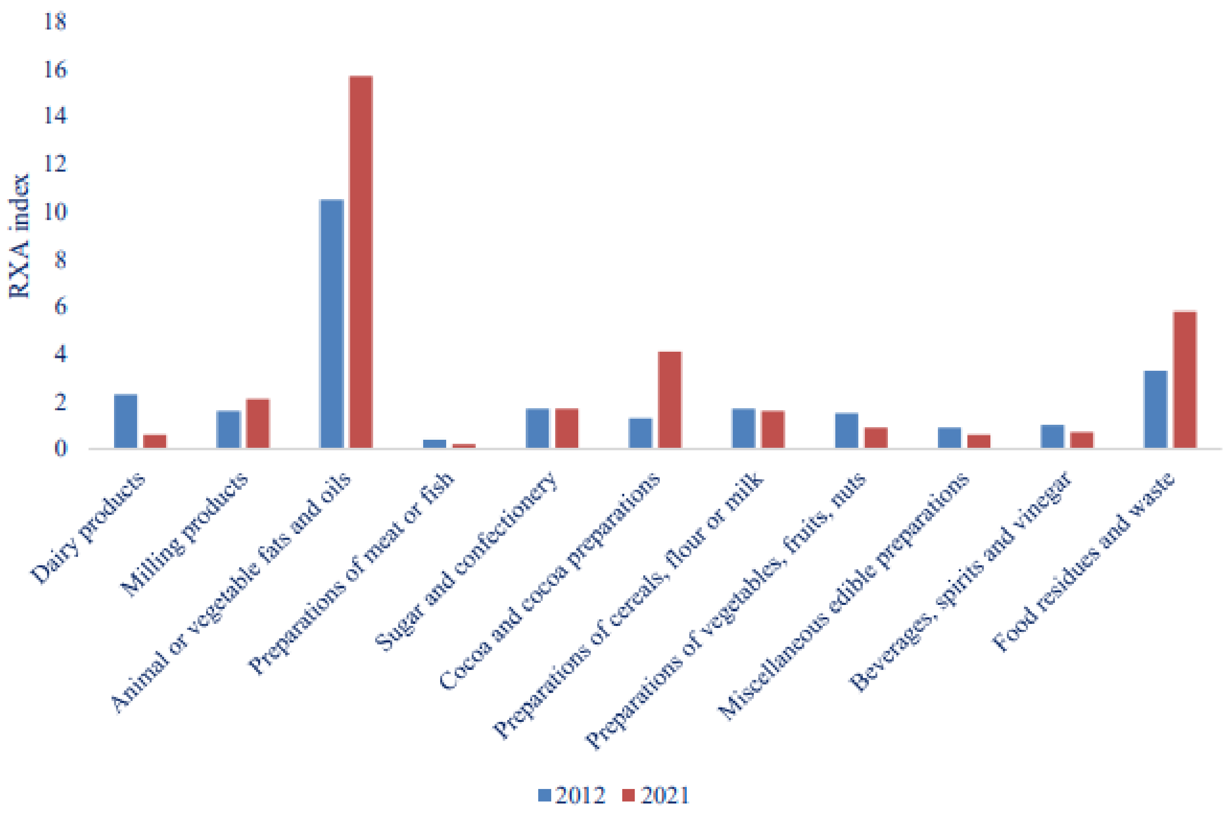
- Tariff barriers and NTMs: weighted average effective tariff rate for processed food products is around 32%, 4 times higher than for raw commodities (Martyshev et. al, 2023);
- Increasing international competition along the GVC: exporters (RF, Brazil), importers (Turkey, Egypt).

The relative export advantage (RXA) index for the main subsectors of Ukraine's food industry



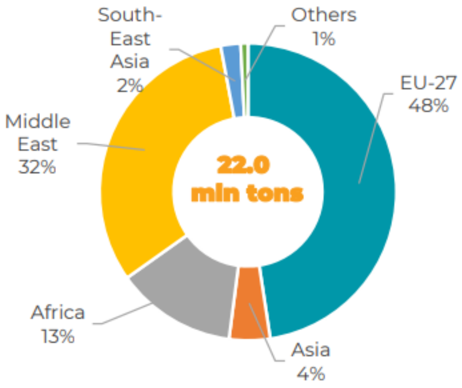
Source: Martyshev et. al, 2023

1. FOOD SECURITY OF THE VULNERABLE:

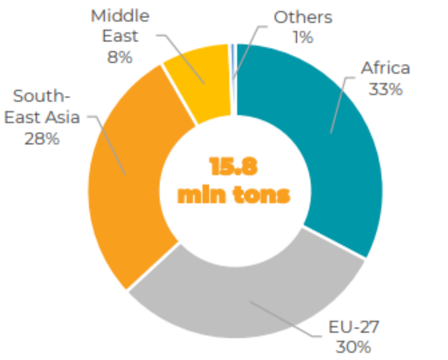
- African countries' dependence on Russian grain led to increased hunger after the start of a full-scale war in Ukraine in 2022. This contributed to the strengthening of these countries' political dependence on the Kremlin. In addition, Russia's humanitarian supplies to a number of countries influenced their votes in the UN General Assembly on resolutions condemning the Russian invasion of Ukraine.

- Humanitarian supplies of Ukrainian grain have become a relatively new phenomenon of "grain diplomacy" that can reduce the Russian geopolitical influence in the region.

Export geography in 2024/25 MY



Export geography in 2024/25 MY



Ukraine exported **15.8 mln tons of wheat** in 2024/25 MY despite wartime disruptions.
Ukraine exported **22.0 mln tons of corn** in 2024/25 MY despite lower production and reduced carry-over stocks.
Export declines were driven primarily by war-related logistical and production shocks rather than loss of export capacity.
Ukraine remains one of the world's key grain suppliers and a critical contributor to food security in import-dependent regions.

2. REDUCE THE RISK OF UNSTABLE PRODUCTION

- Reduce dependence on imported fertilizer supply chains
- Strengthen resilience to trade, logistics, and energy disruptions
- Protect crop yields during wartime shocks
- Improve input security through diversified nutrient sources
- Reduce production risks and input price volatility
- Support stable farm incomes and rural livelihoods
- Safeguard Ukraine's contribution to global food security
- Enhance long-term sustainability and climate resilience

IV Strategy and outlook: Green fertiliser application scenarios and the outlook

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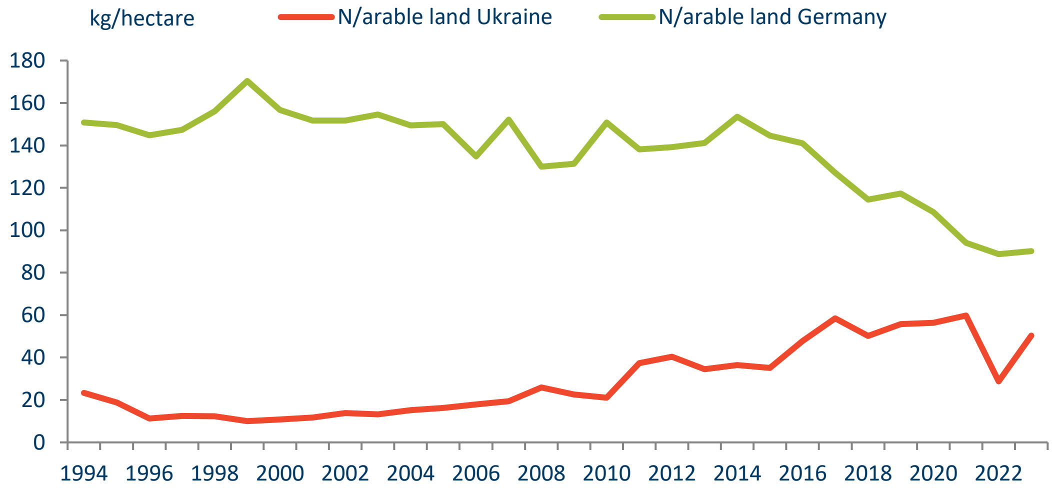
Main fertilisers used in Ukraine

	Share fertiliser use	Most common products
N fertilisers	70%	- Ammonium nitrate - Urea - Urea ammonium nitrate
P fertilisers	17%	- Superphosphate - Monoammonium phosphate (MAP) - Diammonium phosphate
K fertilisers	13%	- Potassium chloride (KCl) - Potassium sulphate (K_2SO_4)

Source: Author's elaboration based on FAOSTAT (2021)

Nitrogen application in Ukraine and Germany



Source: Author's elaboration based on IFASTAT (2025), Ukrstat and GENESIS online data (2025)

Fertilisers are central to sustaining Ukraine's export-oriented crop production

- Land expansion exhausted → productivity depends on fertilisers
- N fertilisers dominate inputs for key grains (wheat, barley, maize - leaf growth, tillering, and grain protein formation)
- Ukraine's forest-steppe soil lacks phosphorus (P) and gradually depletes potassium (K) reserves
  - This makes P and K fertilizers further important inputs

Ukraine's N use remains far below the EU

- Even at its peak, Ukraine's N use remains far below the EU (Germany ~120 kg/ha)
- Average nitrogen application in Ukraine doubled from ~30 kg/ha (2011) to ~60 kg/ha by 2021
- Fertiliser use plunged after invasion due to supply and price shocks
- Use partially recovered in 2023 via alternative imports

IV Strategy and outlook: Green fertiliser application scenarios and the outlook

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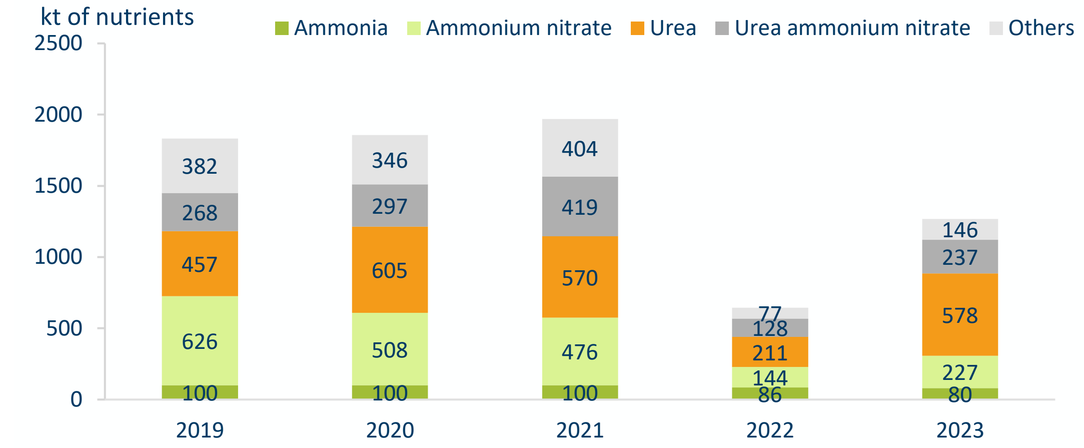
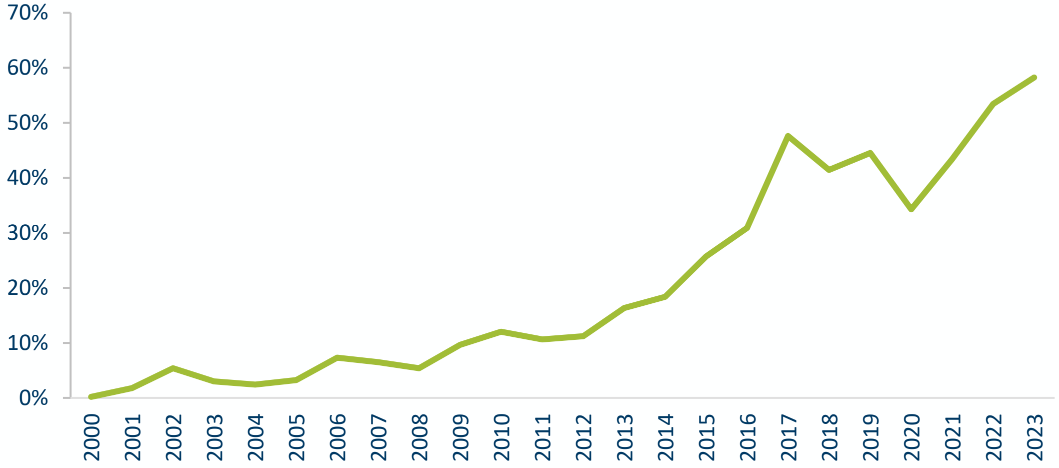
Total nitrogen fertiliser consumption in Ukraine



Source: Author's elaboration based on IFASTAT (2025)

Share of import in domestic fertiliser consumption



Source: Author's elaboration based on FAOSTAT data

Invasion drove sharp contraction and product mix shifts

- In 2019-2021 AN and urea accounted for stable 55-65% of N use, while UAN represented another 15-20%
- Post-2022 N mix shifted toward urea as more affordable alternative

Rising import dependence

- Import share increased **from <5% in early 2000s** to 40-45% by 2018-2019 and to **60% by 2023**
- **Pre-2022: 44% from Belarus**, remainder from EU, Central Asia, Middle East (notably Poland – 27%, Uzbekistan – 20%).
- **Post-2022:** Poland – 28%, Azerbaijan – 22% and China – 21%
- **Ukraine's fertiliser market is now structurally import-dependent** and exposed to supply and price shocks
- **This situation directly impacts domestic and regional food security**

Potential for e-fertilizer use in Ukraine

- Ukraine's large agricultural sector is highly fertiliser-dependent to maintain stable output
- **Heavy reliance on imported, fossil-based fertilisers links crop production to global energy prices and supply volatility.**
- Domestic green ammonia production for e-fertilisers could shield farmers from external shocks, enhance food security, and lower emissions.

Green ammonia remains more expensive than its conventional counterpart

- E-fertilisers carry a cost premium over conventional fertilisers due to higher green ammonia feedstock costs.
- Higher fertiliser costs would be passed through to farm production costs and crop prices.
- Certified low-carbon products can earn an export price premium, depending on market recognition and certification credibility.

To assess the potential effects of a partial uptake of e-fertilisers by Ukrainian agricultural producers, a modelling exercise was carried out

- Agricultural market impacts assessed using the **AGMEMOD partial-equilibrium model**
- Annual projections generated to **2035** to evaluate market shocks on production, trade, and prices.
- Results compare a **Baseline (no e-fertilisers)** with **Moderate (25% of grains-oilseeds land)** and **High (60% of grains-oilseeds land) adoption scenarios**, capturing changes driven solely by e-fertiliser uptake.

Scenario description

Baseline	▪ **No e-fertiliser** adoption or related policy change ▪ Reflects current technologies, cost structures and price relations ▪ Serves as reference pathway against which adoption scenarios are compared.
Scenario "Moderate"	▪ **25%** of cereal and oilseed arable land adopts e-fertilisers by 2035 ▪ Variable production costs **+10%** ▪ Market price premium **+5%** reflecting higher buyer recognition
Scenario 'High"	▪ **60%** of cereal and oilseed land adopts e-fertilisers by 2035 ▪ Variable production costs **+15%** ▪ Market price premium **+10%** reflecting higher buyer recognition

Source: Author's elaboration based on FAOSTAT (2021)

Study conducted together with Berlin Economics Institute: The Green Ammonia and E-Fertiliser Value Chain in Ukraine: An Initial Assessment

Assumptions

Database update	Up to 2024/2023 depending on data availability
Duration of war	2022-2026
E-fertiliser adoption start	since 2027 gradually to reach the assumed values on e-fertiliser adoption rates by 2035
Export possibility	2025-2026 as of today. 2027-2035 – all ports are available except of the Azov sea ports
Arable land availability	until 2026 – 24,542 thousand ha (based on GIS estimates 2025 considering the occupied territory and the territory under intense military action). 2027-2035 – 31,627 thousand ha, i.e, return to 2021 area
Changes during the war	The changes of expenses for fuel, mineral fertilizer, services, seeds, labor, depreciation and plant protection measures are based on 2023 KSE Agrocenter survey of agricultural producers
World market prices in 2025–2035	OECD-FAO Outlook 2023 (OECD 2023) with trajectory
Crops storage assumption	Storage available
GDP projections 2025-2035	Growth rate projected by ERS 2023 (ERS)
GDP deflator	According to the ERS projections 2023 (ERS)
UAH/USD currency exchange rate	According to the ERS 2021 projections (ERS)
Population	2022-2026: 34.12 million people. 2027-2035: 40.67 million people

Source: IRENA (2022), IEA (2021), S&P (2025), Pahle et. al. (2025). Own calculations.

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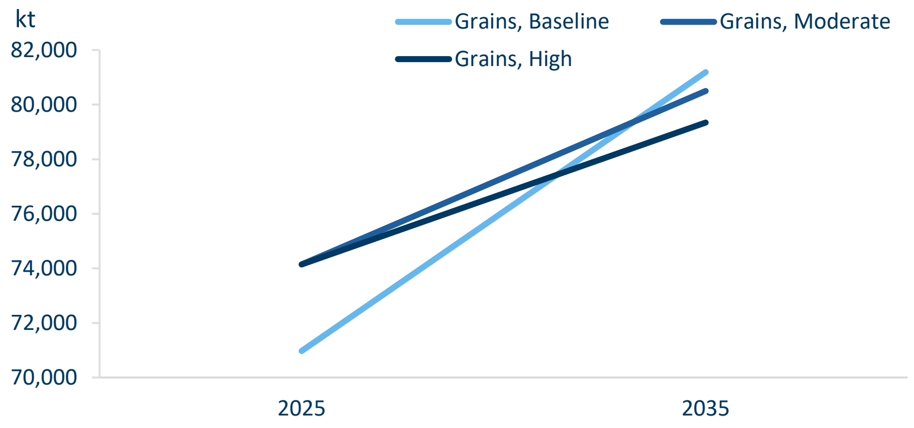
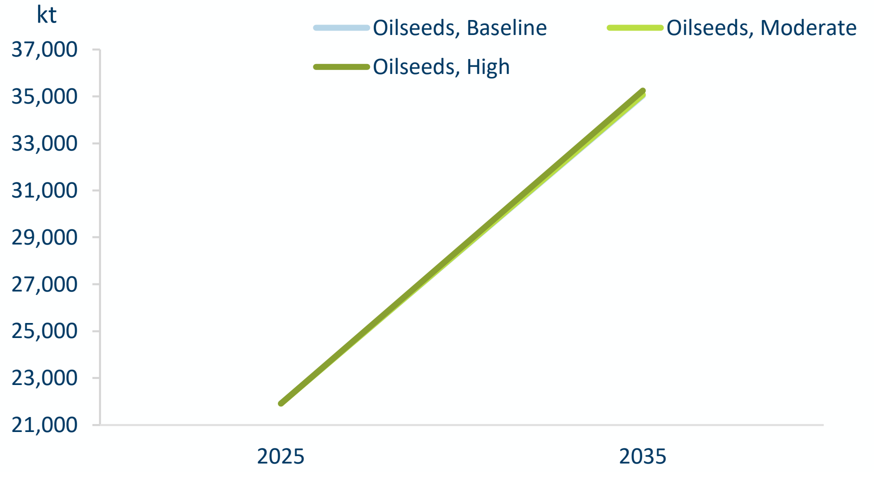
Results

Effects on grains



Effects on oilseeds



Source: Author's estimation

Sector effects

- Total grain output declines by **1-2% vs baseline** under both adoption scenarios due to higher input costs.
- Grain-sector adjustment: **land reallocates toward wheat** where green premiums outweigh cost inflation.
- Total oilseed output **rises by 1% in adoption scenarios** as price premiums offset higher costs.
- Oilseed-sector adjustment: **sunflower strengthens its dominance**, while rapeseed retreats slightly and soybeans remain stable.
- **Overall impact remains small, confirming production resilience**.

Study conducted together with Berlin Economics Institute: The Green Ammonia and E-Fertiliser Value Chain in Ukraine: An Initial Assessment

Compared to UCAB 2026 review and analysis

✅ **Consistent with observed market trends**
Ukrainian producers are already adjusting crop portfolios in response to profitability and wartime constraints rather than maximizing grain output. The Agridees 2026 Outlook reports expanding wheat area and stable sunflower area despite overall pressure on arable land.

✅ **Small grain reductions do not threaten food security**
Even under wartime conditions, Ukraine remains capable of delivering significant grain export volumes while continuously adapting production and trade patterns.

Results for 2035

	Baseline	Moderate	High	2021 (pre-war)
Scenario-specific results: Production in million tonnes				
Aggregated production	**116.2**	**115.6**	**114.6**	**107.6**
Grains	**81.2**	**80.5**	**79.3**	**84.8**
Soft wheat	19.8	20.4	22.1	32.2
Corn	52.8	51.6	48.7	42.1
Barley, rye and oats	8.52	8.5	8.49	10.5
Oilseeds	**35.0**	**35.1**	**35.2**	**22.8**
Sunflower seed	20.7	20.8	21.1	16.4
Rapeseed	8.2	8.2	8	2.9
Soybean	6.1	6.1	6.1	3.5
Oilseed oils	9.5	9.6	9.8	6.1
Oilseed meals	9.3	9.3	9.5	6.4

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Beneficiaries

- **Wheat**: main beneficiary of e-fertiliser adoption. Harvested area expands by 3% (Moderate) and 11% (High). Yield close to baseline → higher production despite added costs.
- **Sunflower:** marginal beneficiary. yields rise <0.5%, harvested area increases +2.2% (High adoption) → production +2% vs baseline.

Marginal changes

- **Barley, rye & oats:** marginal changes only – production remains nearly unchanged vs baseline.
- **Soybean:** largely unaffected; yields and output remain within ±0.5% of baseline.

Negative impacts

- **Corn:** production falls 2% (Moderate) and 8% (High) as tighter margins reduce sown area
- **Rapeseed:** production declines by 1% (Moderate) and 3% (High) due to weaker margins.

Results for 2035

	Baseline	Moderate	High	2021 (pre-war)
Scenario-specific results: Production in million tonnes				
Aggregated production	**116.2**	**115.6**	**114.6**	**107.6**
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Compared to UCAB 2026 review and analysis

✅ **Wheat**
The Agridees Outlook identifies wheat as one of the few crops expanding its planted area, reaching approximately 5.1 million ha, reflecting favorable economics and strategic importance for exports. Green fertilizer adoption reinforces an already observed shift toward wheat, suggesting the scenario is consistent with current market signals.

✅ **Oilseeds**
The outlook highlights the increasing importance of oilseeds in Ukraine's agricultural structure, with sunflower remaining stable and rapeseed maintaining strong market positions despite wartime disruptions. The projected increase in oilseed production aligns with broader market trends favoring higher-value crops and domestic processing.

✅ **Sunflower**
Independent market outlooks project continued expansion of sunflower production and processing, supported by strong profitability and Ukraine's dominant position in global sunflower oil exports. The strengthening position of sunflower under green fertilizer adoption is consistent with current competitiveness trends in the Ukrainian oilseed sector.

⚠️ **Soybean**
The Agridees Outlook reports a decline in soybean area after an exceptionally strong season, suggesting that soybeans may face greater competitive pressure than assumed in the baseline scenario. Scenario results may underestimate future pressure on soybean acreage, which is already declining due to changing profitability signals.

❌ **Rapeseed**
Current market outlooks suggest stable or increasing rapeseed production driven by EU demand, biodiesel markets and expanding planted area. The projected decline in rapeseed production under high adoption scenarios may be conservative, given strong external demand and positive market signals.

Main conclusions

Study conducted together with Berlin Economics Institute: The Green Ammonia and E-Fertiliser Value Chain in Ukraine: An Initial Assessment

The baseline outlook already projects a resilient and growing agricultural sector. E-fertiliser adoption does not fundamentally alter this trajectory, with total output remaining close to baseline levels (within 1–2%).

Scenario results are consistent with broader market trends identified by the UCAB 2026 review and analysis. Both studies suggest that future growth will come from changes in crop composition rather than expansion of total production.

The primary adjustment mechanism is land reallocation toward more competitive crops. Under adoption scenarios, wheat and sunflower expand their position, reinforcing trends already observed in Ukraine's agricultural outlook.

Ukraine's export capacity and international competitiveness remain largely intact. Changes in output, prices and trade flows remain modest, suggesting that green fertiliser adoption is compatible with Ukraine's continued role as a major global grain and oilseed supplier.

Crop-level impacts differ significantly. Wheat and sunflower benefit most from adoption, while corn and rapeseed face some pressure from higher production costs and changing relative profitability.

UCAB 2026 review and analysis **broadly validates the resilience narrative of the scenario analysis.** Ukrainian agriculture appears capable of absorbing higher input costs through production adjustments rather than experiencing major output losses.

Economic viability ultimately depends on market premiums. Adoption becomes attractive where green premiums compensate for higher production costs and compliance requirements.

A targeted adoption strategy is therefore preferable to a blanket approach. Priority should be given to crops and value chains where market premiums, export opportunities and competitiveness gains are sufficient to offset higher costs.

Thank you

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