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German-Ukrainian Agricultural Policy Dialogue

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IMPACT ASSESSMENT OF AGRIFOOD TRADE BETWEEN UKRAINE AND THE EU

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Implemented by

IAK AGRAR CONSULTING

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About the Project "German-Ukrainian Agricultural Policy Dialogue" (APD)

The project "German-Ukrainian Agricultural Policy Dialogue (APD)" has been implemented with the support of the Federal Ministry of Food and Agriculture (BMEL) since 2006 and is currently being implemented until 2024 at its request through the executor of GFA Consulting Group LLC, as well as a consortium consisting of IAK Agrar Consulting, Leibniz Institute for Agricultural Development in Transition Economies and GOPA AFC GmbH.

The recipient of the project is the National Association of Agricultural Advisory Services of Ukraine "Dorada". In implementing important measures for the development of the land market, the use of state land areas, and privatization, APD cooperates with BVVG Bodenverwertungs- und -verwaltungs GmbH. The beneficiary of the project is the Ministry of Agrarian Policy and Food of Ukraine.

The project should support Ukraine in the areas of sus-tainable agriculture, efficient processing industry and international competitiveness in accordance with the principles of market and regulatory policies taking into account the development potential that arises under the Association Agreement between the EU and Ukraine. To meet this goal, the Project should provide information on German experience, as well as international European experience in development of agrarian and forestry policy framework, as well as on the organization of relevant agrarian and political institutions.

APD
German-Ukrainian
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www.apd-ukraine.de

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EXECUTIVE SUMMARY

Ukraine's aspiration to join the European Union has driven significant political and economic developments, including the 2013 Revolution of Dignity, followed by Russia's annexation of Crimea and partial occupation of Donbas in 2014, and the full-scale invasion by Russia in 2022. Despite these existential challenges, Ukraine has steadfastly pursued EU integration, achieving candidate status in June 2022 and commencing accession negotiations in December 2023.

Since the implementation of the EU-Ukraine Association Agreement in 2014 and the Deep and Comprehensive Free Trade Area (DCFTA) in 2016, Ukraine and the EU have achieved nearly complete trade liberalization, with the EU becoming Ukraine's largest trading partner by 2023. The bilateral trade volume reached €61.9 billion, largely driven by agricultural exports. However, Ukraine's journey toward EU membership faces significant challenges in agriculture, including compliance with the EU agricultural acquis and Common Agricultural Policy (CAP), budgetary concerns regarding CAP transfers, and competition-related concerns among EU farmers. This study examines various trade scenarios and theoretical considerations to analyze their impact on Ukraine's agricultural production, trade outlook, and competitiveness.

Key Findings from the Trade Scenario Analysis

Using the AGMEMOD model, the study examined three scenarios against the baseline one:

1. Two scenarios include various combinations of expected trade restrictions after 2025 (with ATMs or completely free trade regime). No differences were observed between trade regimes, as Ukraine's agricultural trade with the EU is already largely liberalized. This allows room for strategic trade negotiations.
2. The third scenario modeled the EU Membership by simulating increased compliance costs for Ukrainian farmers. It projected a short-term decline in Ukraine's agricultural output for major grains is expected, followed by recovery by 2033, albeit on a lower trajectory compared to the baseline. For other agricultural products there is no difference to the baseline.

Additional sectoral analysis suggested strong prospects for Ukraine's sugar and dairy sectors, which have already significantly increased exports to the EU. The sugar sector is expected to benefit from evolving EU market dynamics, while structural changes in dairy farming could enhance competitiveness and expand dairy exports to the EU, although constraints in raw milk supplies might limit the scope for exports' expansion.

Challenges to Agricultural Competitiveness

As Ukraine emerged into a global agricultural player, it is important not only from Ukraine's standpoint but also from a global food security perspective that despite becoming the EU member, Ukraine continues to maintain its competitiveness and increasingly contributes to feeding a growing global population. In particular, we looked

at how the following elements of the EU accession/membership might affect Ukraine's agricultural competitiveness:

1. Trade Liberalization. Advocacy for a fully liberalized trade regime with the EU is essential to maintain agricultural competitiveness.
2. Institutional Capacity and Readiness. Significant investments in public institutions and competent authorities are required to adopt, implement and enforce more complex and demanding EU agricultural acquis and CAP to maintain agricultural competitiveness
3. Compliance Costs for agricultural producers. Continuing the reasoning from above, Ukrainian farmers will face increased compliance cost that should not ruin agricultural competitiveness, but still can have a negative impact. However, efficient agricultural practices may offset this burden.
4. EU CAP Budgetary Transfers. Ukraine could expect €10–14 billion in CAP transfers, potentially straining EU budgets and reducing CAP transfers to the existing EU members. This does not look as politically feasible within the EU, so it will require political compromises on subsidies from Ukraine. This is not necessarily a downside for Ukraine, taking into account the empirical evidence of negative impact of specific direct subsidies (including CAP subsidies) and tax benefits on agricultural productivity growth.

Policy Implications

To ensure successful and timely EU accession while sustaining agricultural competitiveness, Ukraine should:

1. Advocate for a fully liberalized trade regime with the EU.
2. Invest in public institutions and competent authorities to adopt, implement and enforce more complex and demanding EU agricultural acquis and CAP.
3. Support farmers in mitigating compliance costs through efficient practices.
4. Engage in pragmatic and politically feasible negotiations on CAP transfers to align subsidies with productivity growth goals, and at the same time to facilitate EU accession negotiations..

Background and rationale of the study

Russia invaded Ukraine at full-scale almost three years ago, largely due to Ukraine's persistent and increasing aspiration to join the European Union. This ambition erupted at a large scale in the 2013 Revolution of Dignity, which ultimately led to Russia's annexation of Crimea and the partial occupation of the Donbas region in 2014. Despite the ongoing full-scale war, Ukraine has intensified its pursuit of European integration, leading the European Council to grant Ukraine candidate status in June 2022 and commence accession negotiations in December 2023.

In its recent report, the European Commission assesses Ukraine as being in the early stages of preparation for accession in agriculture and rural development, while moderately prepared in the areas of food safety, veterinary, and phytosanitary policy (EU Commission, 2024b). Addressing these challenges will require substantial public sector efforts to bridge the institutional capacity gap necessary to adopt and implement the EU agricultural acquis (Nivievskyi, 2024b). Meanwhile, the private sector must be prepared to invest in compliance with EU agricultural acquis. These obstacles, combined with rising concerns among EU farmers about competition from Ukraine's robust agricultural sector, suggest that Ukraine's path to full EU membership will be long and challenging.

However, Ukraine's accession process has not started from scratch. Since November 2014, the EU and Ukraine have been implementing an Association Agreement negotiated after Ukraine joined the WTO in 2008. As part of this agreement, a Deep and Comprehensive Free Trade Area (DCFTA) has been in effect since January 2016, removing 98.1% of tariffs on both sides. Agricultural trade between Ukraine and the EU has been almost entirely liberalized, with the remaining EU import restrictions limited to tariff rate quotas (TRQs) on 40 product lines, including cereals, meat, sugar, eggs, and selected dairy products. These products accounted for 35% of Ukraine's total agricultural exports to the EU in 2021, while making up less than 1% of the EU's total agricultural imports (Nivievskyi, 2024a).

In response to Russia's invasion, the EU introduced Autonomous Trade Measures (ATMs) in June 2022, removing the remaining trade barriers. This resulted in a significant increase in Ukrainian agricultural exports (mainly grains and oilseeds) to the EU, sparking protests from farmers in frontline EU member states and even leading to import bans on Ukrainian agricultural products. Politically, farmers and representatives from certain agricultural processing industries successfully lobbied in Brussels for more restrictive trade measures against Ukraine (Nivievskyi, 2024a). In June 2024, the EU announced a revision of the ATMs, introducing an "emergency brake" mechanism to automatically reintroduce TRQs for seven agricultural products if their import volumes exceeded the average annual levels recorded between July 2021 and December 2023. The next critical milestone is June 2025, when the current ATMs will be reviewed for potential extension or adjustment.

Despite these challenges, nearly a decade of the DCFTA and the ongoing war with Russia have significantly strengthened Ukraine's trade relationship with the EU. By 2023, the EU had become Ukraine's largest trading partner, with bilateral trade more than doubling since 2016. The EU accounted for 56% of Ukraine's total trade in goods, while

Ukraine represented 1.2% of the EU's total trade. In absolute terms, the total trade in goods between the EU and Ukraine reached €61.9 billion in 2023.

This study models various trade scenarios, including the extension of ATMs and Ukraine's potential EU membership, to inform future trade and accession negotiations between Ukraine and the EU amidst the ongoing war.

1. Ukraine and the EU: Some Membership and Development Perspectives

1.1. Agricultural structures in the EU and Ukraine

Agriculture plays a substantially larger economic role in Ukraine than in the EU, in terms of the agricultural land cover, share of national income, and trade. Agriculture alone accounts for about 10% of GDP, but together with upstream (e.g. agricultural machinery) and downstream (e.g. food processing) industries, the entire agri-food sector's share of Ukrainian GDP amounts to roughly 20%. Both EU and Ukrainian sectors are predominantly crop-based, but crops dominate substantially more in Ukraine (Figure 1). Grains and oilseeds in Ukraine have increasingly becoming a backbone of agricultural growth, accounting for almost 90% of the total arable land (Figure 2; Figure 3; Nivievskyi et al, 2022).

Farms in the EU are considerably smaller on average than in Ukraine. But these averages of farm structures mask a huge heterogeneity of farms primarily in Ukraine. Small-sized farms (about 3 ha on average), which include individual commercial and household farms constitute the largest group by total land area, with 20.1 million ha compared to 17.1 million ha operated by medium and large-sized agribusinesses, producing about a half of the gross agricultural output (Nivievskyi et al, 2021).

Table 1 - Agricultural structures in the EU and Ukraine

	EU	**Ukraine**		**EU**	**Ukraine**
Economic context			Agriculture in the economy		
GDP (billion USD in PPPs)	21,901	588	Agriculture in GDP (%)	1.6	10.6
Population (million)	447	44	Agriculture share in employment (%)	3.8	14.7
Land area (thousand km2)	3,996	603	Agro-food exports (% of total exports)	8.9	40.6
Agricultural area (AA) (thousand ha)	163,962	41 311	Agro-food imports (% of total imports)	5.9	9.5
Agricultural area (AA), % of total land	41	71	Characteristics of the agricultural sector		
Population density (inhabitants/km2)	106	75	Crop in total agricultural production (%)	61	82
GDP per capita (USD in PPPs)	48,900	14 220	Livestock in total agricultural production (%)	39	18
Trade as % of GDP	15.5	33.9	Share of arable land in AA (%)	58	80
			Average (commercial) farm-size (ha)	37	514
			# of commercial farms		40,333
			# of household/individual farms		ca. 4 mln

Despite its impressive growth, Ukraine's agricultural sector still operates below its full potential and could have contributed even more to global food security. Figure 4 demonstrates, for example, that yields have drastically improved in Ukraine over the last two decades, but still the gap to the corresponding benchmarks in the EU are substantial and exceeding 30-50% for some key export commodities. The war has severely impacted Ukraine's agricultural sector and its growth trajectory. More than one-third of the country's total stock of agricultural capital ($10 billion USD) has been destroyed, while overall economic losses have reached $70 billion USD (Nivievskyi and Neyter, 2024). These losses, coupled with other war-related challenges such as the temporary loss of agricultural land due to occupation, will shape Ukraine's ability to return to prewar output levels. This is certainly expected given Ukraine's high competitiveness not only in its major commodities like grains and oilseeds but also in products such as sugar and dairy products.

Figure 1 - Gross Agricultural Output Structure

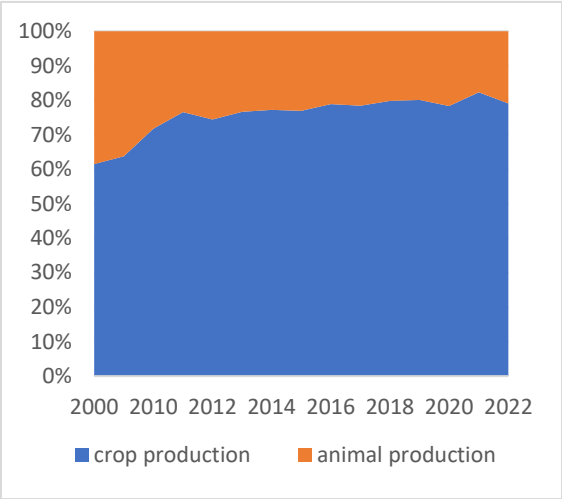


Figure 2 - Agricultural Growth driven by Grains and Oilseeds Output

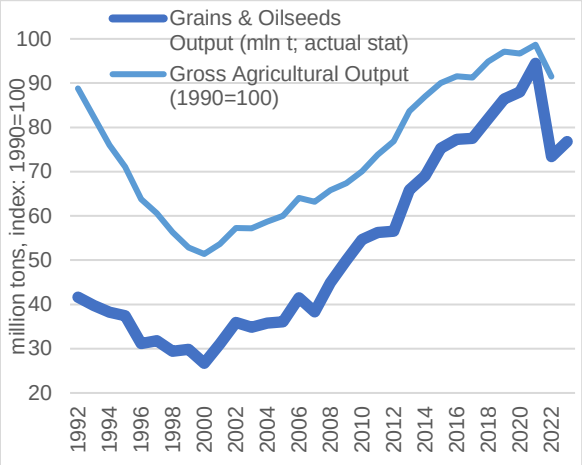


Figure 3 - Structure of the Crops Area

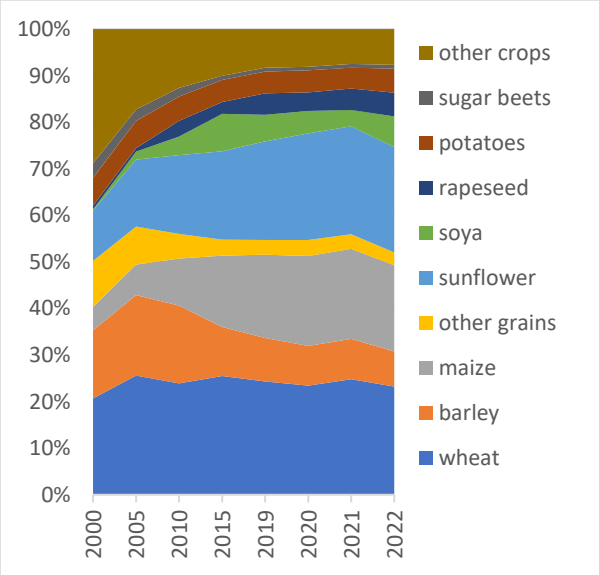
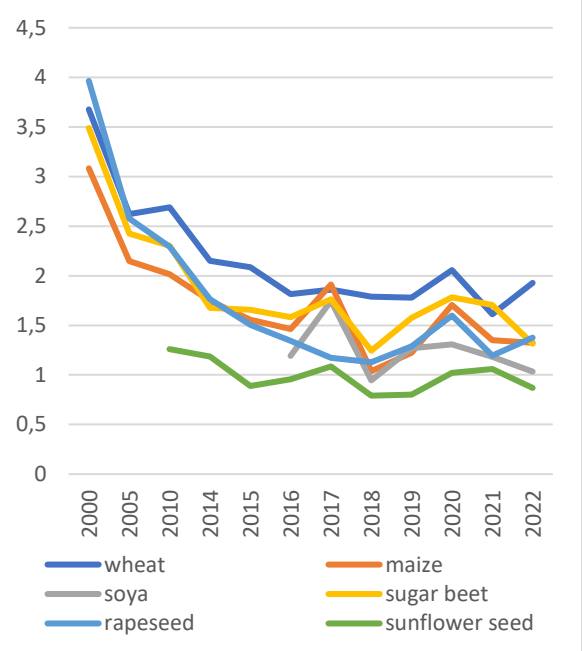


Figure 4 - Yields gap: Germany to Ukraine



1.2. Ukraine's agricultural competitiveness and EU membership considerations

Ukraine has been traditionally highly competitive in the major staple food (grains and oilseeds; von Cramon-Taubadel and Nivievskyi, 2008) and it turned into one of the key global agricultural exporters over the last two decades. Other products that gained in international competitiveness are poultry meat (Nechyporenko, 2024) and sugar (von Cramon-Taubadel and Nivievskyi, 2024). So it is important not only from Ukraine's standpoint but also from a global food security perspective that Ukraine continues to maintain its competitiveness and increasingly contributes to feeding a growing global population.

In general, international competitiveness is a product of many factors and the interactions among them. The change in a firm's international competitiveness from one period to the next can be decomposed into the following components (Nivievskyi et al, 2010):

$$\%\Delta\text{Competitiveness} = \%\Delta\text{Productivity (TFP)} + \Delta\alpha\text{Poutput} - \%\Delta\beta\text{Pinput} \quad (1)$$

where %Δ refers to 'percentage change'. Poutput and Pinput are undistorted output and input prices, and α and β are revenue and cost shares so that the last two terms on the right-hand side of equation (1) refer to weighted average output and input price changes, respectively.

The intuition behind (1) is quite straightforward: i) a firm's competitiveness over time is determined by changes in its productivity, i.e. more productive firms are more competitive, all other things being equal; ii) changes in average (undistorted) output and input prices, respectively; if output (input) prices increase, competitiveness will improve (be reduced) as a result.

Prices for inputs and outputs are often distorted by government policies (mainly by trade or domestic policies, like price supports, minimum/maximum prices, subsidized inputs or other forms of support). As a result, a firm that is lacking competitiveness at undistorted world market prices for inputs and outputs might appear to be competitive at the policy-distorted domestic prices that it faces, or vice versa. Also if a trading partner erects trade tariff and non-tariff barriers, it decreases exporting country competitiveness on a destination markets.

As was mentioned above, firm's competitiveness over time is determined by changes in its productivity (total factor productivity – TFP) – one of the major policy goals in agricultural policies across the globe. Governments achieve the goal of increasing productivity by various measures, including by governmental support in the form of direct subsidies and tax breaks. The effect of this support on agricultural productivity growth across the globe and in Ukraine in particular is either negative or at least questionable (Nivievskyi, 2018) This particular issue if quite relevant for Ukraine, for the EU Common agricultural policy quite generously supports its farmers with direct payments, while Ukraine's agricultural support overall has been even negative (OECD, 2023).

1.2.1. Ukraine agricultural competitiveness and trade regime with the EU

Since 2016, Ukraine has almost fully liberalized its trade with the EU under the DCFTA. The only remaining trade barriers from the EU were tariff rate quotas (TRQs) for 40 product lines, including grains, beef, pork, sheep and poultry meat, sugar, eggs, selected dairy products, certain vegetables, fruit juices, ethanol, and cigarettes. These TRQs accounted for only 35% of Ukraine's total agricultural exports to the EU in 2021.

In June 2022 (in response to Russia's attack on Ukraine) the EU introduced temporary ATMs that removed the remaining trade barriers. Ukrainian exports of agricultural products (mainly grains and oilseeds, also sugars) to the EU grew rapidly. Farmers in some regions as well as the representatives of some agricultural processing industries expressed their concerns that imports from Ukraine represented unfair competition that was depressing prices in the EU.

In June 2024, the EU announced a revision of the ATMs, introducing an "emergency brake" mechanism. This measure would automatically reintroduce TRQs for seven agricultural products if their import volumes exceeded the average annual levels recorded between July 2021 and December 2023 (Nivievskyi, 2024a; von Cramon-Taubadel and Nivievskyi, 2024). The next key milestone is June 2025, when the current ATMs will be reviewed for potential extension or modification (EU Commission, 2024).

It is highly unlikely for Ukraine to expect a surge in trade barriers with the EU, and a negative impact on the competitiveness of Ukraine's agricultural products on the EU market as a result. In fact, existing evidence suggests that fully liberalized trade has been beneficial for the EU. Countryman et al. (2024) analyzed the global effects of "weak" and "strong" economic sanctions and liberalization (ESLs) using a CGE model. Their results, which account for combined impacts on producers and consumers, show that for Europe, weak ESLs result in a welfare loss of $520 million USD, while strong ESLs yield a welfare gain of nearly $2 billion USD.

1.2.2. Ukraine agricultural competitiveness and public support

Agriculture is one of the most integrated and regulated sectors in the EU. On the day of accession, an acceding country must be able to implement the administratively complex and financially demanding Common Agricultural Policy (CAP), which itself could be a moving target. Furthermore, an acceding country should be able to implement the extensive EU 'agricultural acquis' which, together with the CAP, includes regulation of markets and standards in the areas of farming practices, animal and plant health, food safety, and environmental and animal welfare. These factors mean that Ukraine's preparations for EU accession will require substantial additional public investments in the competent authorities and their capacities to implement and enforce the EU agricultural acquis (Nivievskyi, 2024b). This is a crucial element in supporting Ukraine's agricultural productivity and competitiveness growth, as opposed to the direct support in the form of direct subsidies and tax privileges. Investments in public services also play a significant

role in attracting private investment. Global experience shows that each additional dollar invested in public services typically attracts about two dollars of private investment in OECD countries, particularly in economic infrastructure and human capital. In Ukraine, the leverage could be even higher, potentially up to 3.4, based on evidence from comparable countries such as the Baltic states or Poland. This is badly needed for the country like Ukraine in mobilizing private investments under the tremendous fiscal pressures due to the ongoing war with Russia and resulting recovery and reconstruction needs due to enormous damages and losses, including in agriculture (World Bank, 2024).

1.2.3. Ukraine agricultural competitiveness and EU agricultural acquis additional compliance costs

EU farmers might claim that the current competition or comparative advantages of Ukrainian agriculture might stem from the unfair cost advantages because Ukrainian farmer face fewer environmental, traceability and other standards than their counterparts in the EU. We are aware of no recent comparative studies on the expected compliance costs in the EU that Ukraine's farmers might face. Indeed, the extensive EU 'agricultural acquis' which, together with the Common Agricultural Policy (CAP) measures, includes regulation of markets and standards in the areas of farming practices, animal and plant health, food safety, and environmental and animal welfare that would require additional investments from agricultural producers to comply with. Past studies, however, that have assessed the costs of compliance with EU agricultural acquis (e.g. EU Commission, 2014) show that these costs are not the main determinant of competitiveness, and that other cost components (labour, land rent) play much more important roles. Based on the EU Commission (2014) study we expect that Ukraine farmers might face additionally up to 10% (differentiated across the sectors) costs increase due to more stringent EU regulations. This is certainly not a critical factor that should ruin Ukraine's comparative advantage in agriculture. Moreover, emerging evidence suggests that, on average, producers of grains and oilseeds in Ukraine have a capacity improve their efficiency to increase their output by almost 20% and simultaneously contract harmful environmental impact by 16% (Halytsia et all, 2024).

1.2.4. Ukraine agricultural competitiveness, productivity and potential direct public support

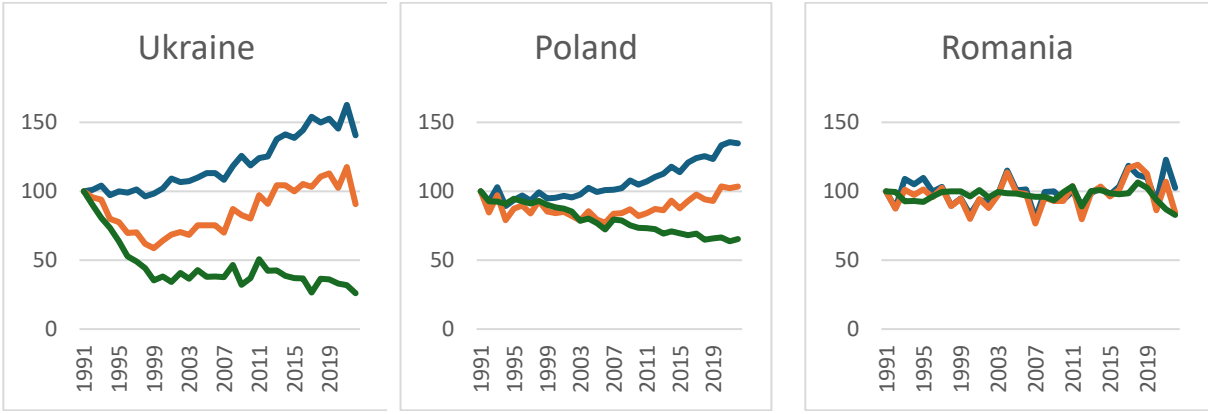
Over the last two decades, Ukraine's agriculture productivity increased drastically but it is still performing below its potential and is capable to contribute further to Ukraine's economic development and global food security. Figure 5 demonstrates that Ukraine's productivity growth over the last two decades was enormous compared to the EU key agricultural countries and other key agricultural players in the region. Old EU member states operated already 'on a production frontier' so one should probably not expect a drastic TFP growth from these countries. Central European countries or new EU members, however, do not demonstrate a comparable to Ukraine agricultural productivity growth.

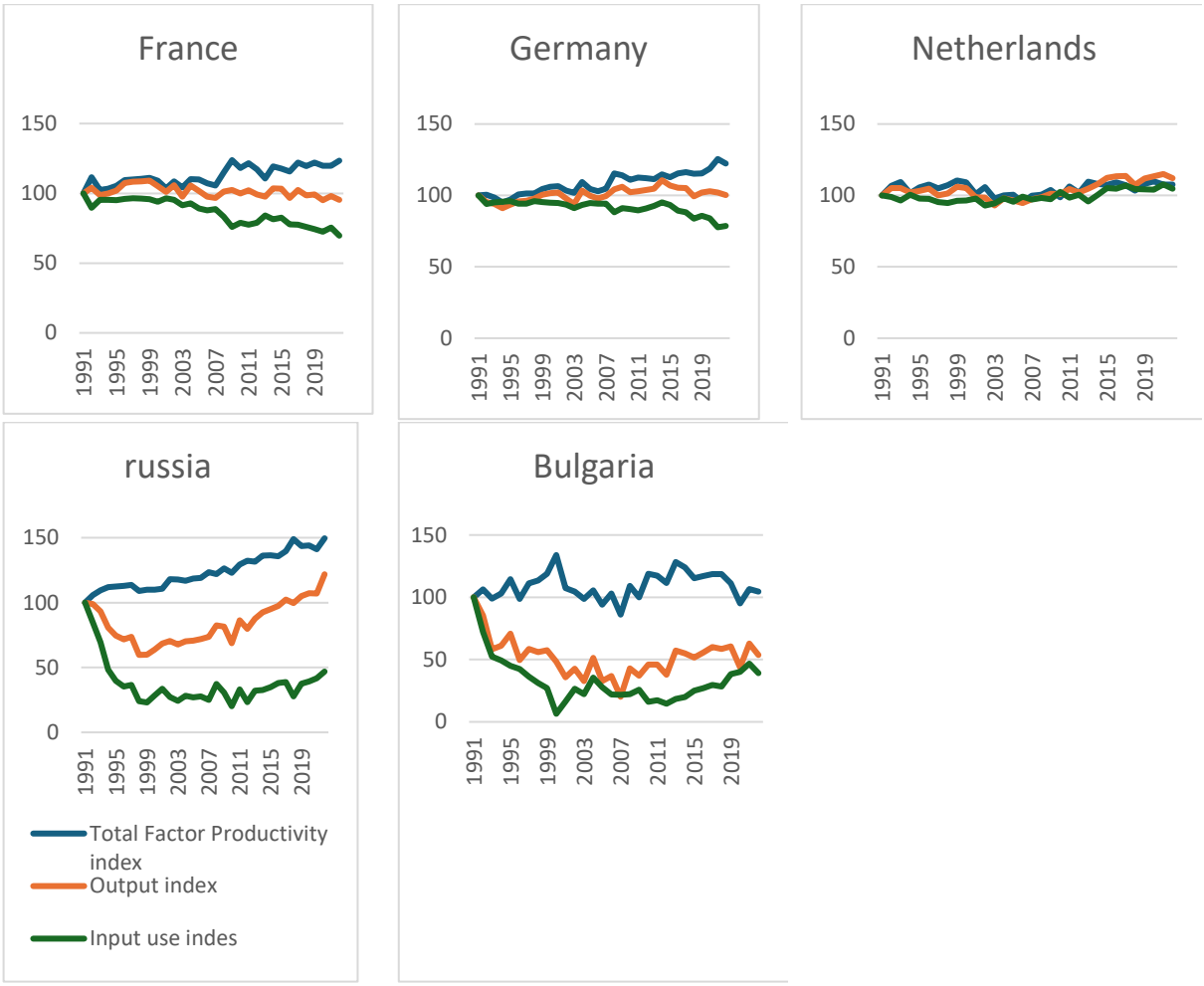
Romania's and Bulgaria's productivity growth has been essentially flat over the last two decades.

Unlike in many other countries, especially in the EU region, Ukraine's agricultural growth was achieved with the relatively low state support (World Bank, 2024). During the last twenty years Ukraine's annual public agricultural expenditures averaged US$600 million. In 2019-21, this translated into 0.33 percent of GDP, less than 2 percent of gross agricultural output (GAO), and US$14 per hectare (ha) of agricultural land. For comparison, budgetary support in high-income countries, members of the Organization for Economic Cooperation and Development (OECD), averaged 0.47 percent of GDP, 17 percent of GAO, and US$216 per ha of agricultural land. This is an important finding, given Ukraine's low fiscal space. The quality of agricultural public spending is more important than quantity as not all public spending is equal. There is empirical evidence, for example, that commodity specific direct subsidies and tax benefits had only counteracted to Ukraine's agricultural productivity growth in the past (Neyter and Nivievskyi, 2023; Nivievskyi and Deininger, 2019; Nivievskyi, 2018) and this this finding is aligned with the global experience (World Bank, 2024).

Now, Ukraine as a candidate country can expect budgetary transfers under the CAP and under the existing rules and policies. The existing estimates vary in the range of 10-13.8 billion Euros (Matthews, 2024) which implies a substantial additional fiscal pressure on the CAP budget that has been politically downscaled over the past (Nivievskyi, 2024b). So additional spending on the EU CAP literally implies that the existing EU members should be ready to get less generous agricultural transfers from the EU and most likely this will not be politically acceptable, unless the existing CAP allocation rules and policies are changed. Most likely, from a political economy perspective, Ukraine will have to come up with a politically acceptable compromise on subsidies to proceed with accession talks, possibly even making some concessions. This is not necessarily a downside of the EU accession, taking into account the empirical evidence of negative impact of specific direct subsidies (including CAP subsidies) and tax benefits on agricultural productivity growth.

Figure 5 - Trends in agricultural output, inputs and total factor productivity (TFP) in Ukraine and other selected European countries





source: own presentation using the USDA ERS data on International Agricultural Productivitity data product

1.3. EU agricultural Outlook and implications for Ukraine

EU agricultural markets have been very much regulated since the birth of the Common Agricultural Policy in 1962. Initially, agricultural producers were pushed to produce and supply more via high levels of price support generated by means of a production quota system, prohibitive tariffs to restrict imports, and export subsidies to dispose of (dump) surplus production on world markets. By the 80s the this policy support system generated permanent surpluses of the major farm commodities and the need to reform it increased from within (due to budgetary constraints) and from outside - from the trading partners, USA and Cairns Group due to substantial distortions and complains of unfair competition (Zorya and Nivievskyi, 2005). The MacSharry's 1993 reform initiated a paradigm shift towards a more market oriented CAP. For most agricultural products, price support and market interventions were gradually phased out and replaced by direct payments to farmers. For some of the products (milk or sugar) it took more than two decades, before production quotas and export subsidies have been fully eliminated (von Cramon-Taubadel and Nivievskyi, 2024).

Overall, however, gradual but still more market orientation of the CAP implies a shift of a net trade position of the EU and opportunities for Ukraine to supply the EU market

with more agricultural products. Full agricultural trade liberalization with the EU from the beginning of Russian invasion and increase of agricultural imports from Ukraine reveals that the demand for Ukrainian agricultural products is substantial in the EU. Moreover, even before the beginning of the full-scale war the degree of TRQs utilization was gradually increasing and considerable over-quota supplies were recorded for some good amount of product lines (honey, processed tomatoes, barley groats and meal, cereal grains, apple and grape juice, maize, flour and pellets, poultry meat, wheat, flour and pellets, sugars, butter and dairy spreads, starch processed). As a result, the EU somewhat increased TRQs for 8 product lines in 2017. So additionally to these revealed agricultural export supplies capacity of Ukraine, EU is expected to remain in a net import position in a future for a number of key agricultural products of Ukraine (grains, oilseeds, sugar and poultry meat) which also demonstrates an trade opportunity for Ukraine's agriculture.

Figure 6 - EU net exports of cereals, mln t

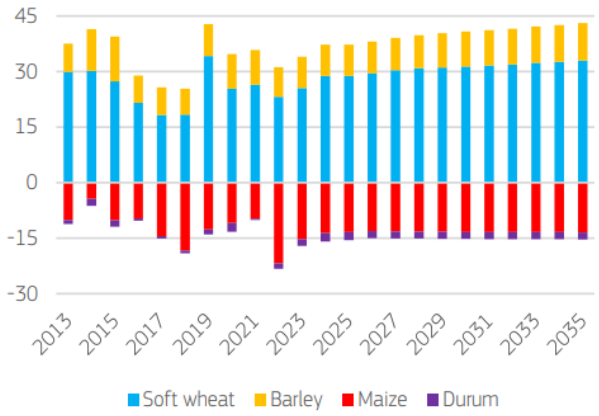


Figure 7 - EU net exports of oilcrops, mln t

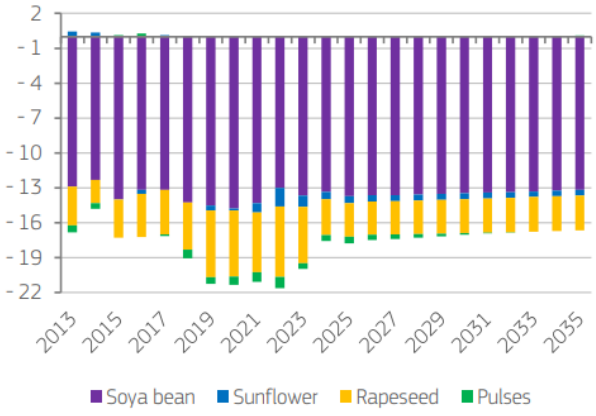


Figure 8 - EU sugar trade, mln t

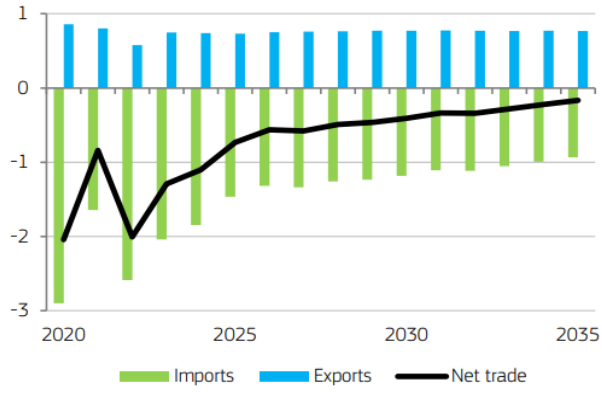


Figure 9 - EU beef market balance, mln t

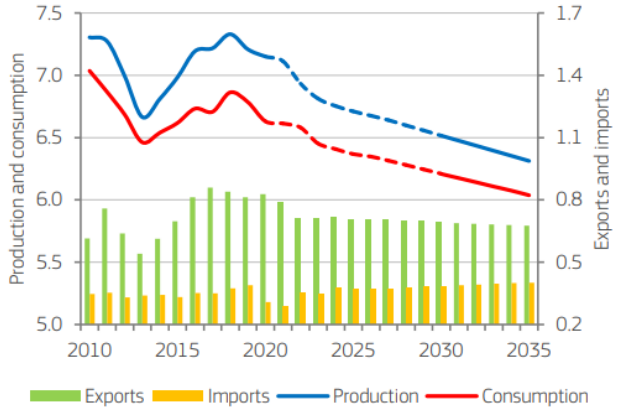


Figure 10 - EU pork market balance, mln t

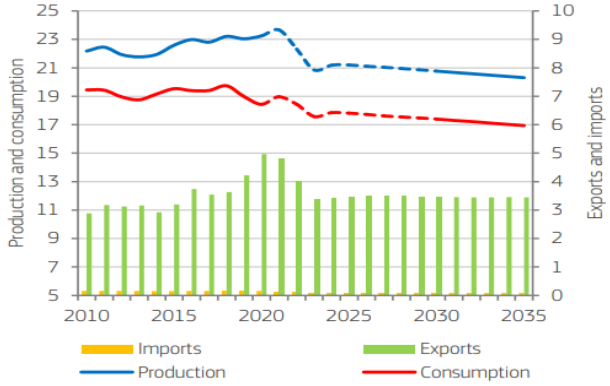
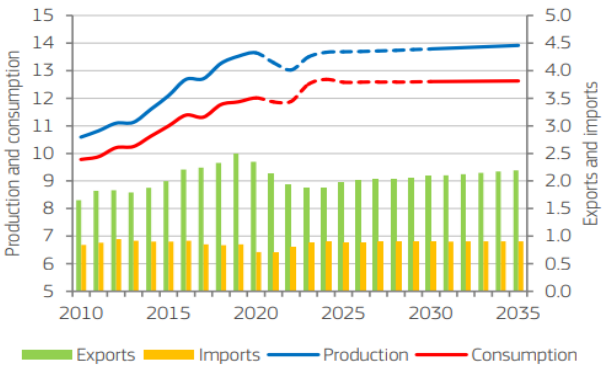


Figure 11 EU poultry market balance, mln t



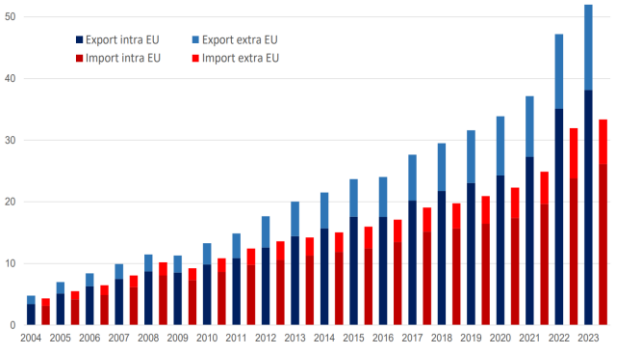
source: own presentation using EU Commission (2023)

1.4. EU Membership: Experience of Poland

The example of Poland for Ukraine's accession to the EU is very interesting from many perspectives. First, it is the largest EU neighboring country and economy to Ukraine. Second, Poland has been depicted as a success case. The World Bank (2017) report shows that Poland's economic ascent is remarkable. It moved from middle to high income in less than 15 years after transitioning from communism. Prosperity was shared, and jobs and income growth were broad-based, with lagging regions catching up. The income inequality coefficient — the Gini — did not increase. Poland also has one of the lowest internal regional variations in GDP per capita. This was achieved by properly sequenced and anchored reforms. Through the "big bang" liberalization reforms of the transition from communism, it quickly "got the prices right" and then "got the institutions right," namely the rule of law, property rights, democratic accountability, and basic market institutions. EU accession and membership were used to anchor, reinforce, and further deepen the reforms. Infrastructure improvements, supported by generous EU structural funds, were seen across the country: the length of motorways almost quadrupled since the transition.

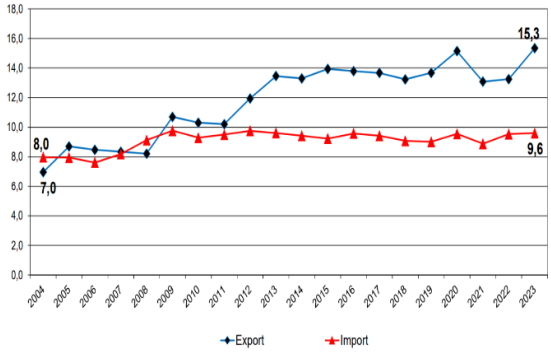
The agri-food sector also expanded, especially in terms of trade. It is now 10 times larger than in 2004, and more importantly, it has increased persistently since 2004. The benefits of the EU single market for Poland are clearly manifested in the development of the share of trade with EU members relative to total agri-food trade. Poland supplied disproportionately more to the single EU market than to the rest of the world; the share of supplies to EU countries increased from 7% in 2004 to more than 15% in 2023.

Figure 12 Poland's agri-food trade development since the EU accession, billion euros



source: Pawlak and Hamulczuk (2024)

Figure 13 Share of intra-EU trade in total agri-food trade of Poland



2. EU-Ukraine Bilateral Agri-Food Trade

Over the last decade the EU became Ukraine's largest trading partner, accounting for nearly 65% of its total exports (Figure 10) and above 50% of its total imports in 2023 (Figure 11). Ukraine, however, accounted only for 1.2% of the EU's total trade in goods in 2023. In the pre-war period the share of exports to the EU was about 40% of total Ukraine's exports. Such a drastic jump in the EU share reflects the effect of the ATMs and European Solidarity Lanes project to counteract Russia's blockade of Ukraine's seaports after invasion. More than 50% of Ukraine's agri-food exports (HS:1-24) ended up in the EU in 2023, and approximately the same share of Ukraine's agri-food imports came from the EU in 2023 (Figure 10 and Figure 11). On a more granular look the structure of agricultural exports to and imports from individual EU countries varies to some gut degree, reflecting specific local agricultural demand and supply conditions (see Annex Figure 18 and Figure 19 for details).

In absolute terms (see Figure 6 through Figure 9), the total trade in goods between the EU and Ukraine reached €56 billion in 2023, meaning that trade in goods has more than doubled since the entry into force of the DCFTA in 2016. Agri-food goods account for a substantially higher share in its total as well as in the EU destined exports, while Ukraine imports mainly non-agri-food products (Figure 10 and Figure 11)

Top 10 Ukraine's products (including agricultural ones) reflect its comparative advantage, primarily in staple foods like grains and oilseeds (Table 2 and Table 3). Other agricultural competitive products of Ukraine are sugar, poultry meat, dairy products, and fruits. Imports, as it was mentioned above, are mainly non-agri-food products that are not in the top 10 imported goods from the EU. When it comes to agricultural goods, alcohol and tobacco products lead in the ranking (Table 3).

Figure 14 - Total Exports from Ukraine, bn USD

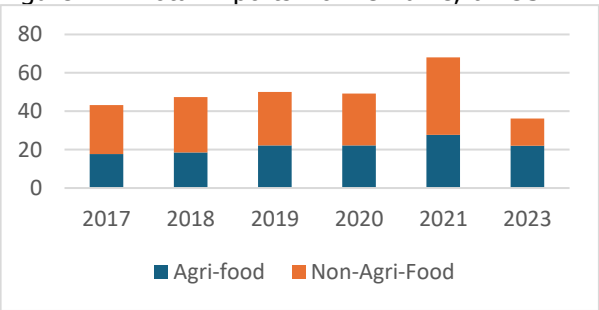


Figure 15 - Total Exports from Ukraine to the EU, bn USD

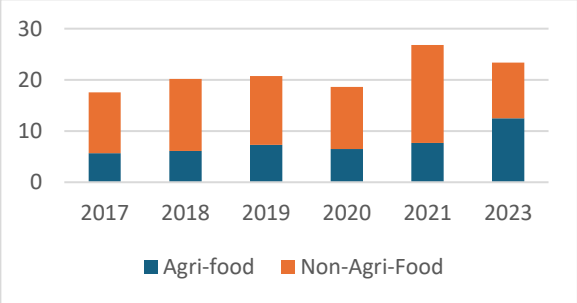


Figure 16 - Total Imports to Ukraine, bn USD

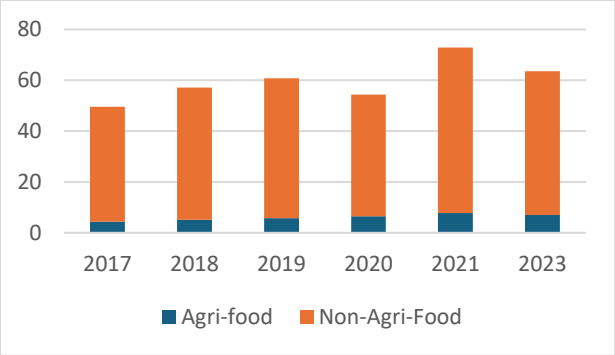


Figure 17 - Total Imports from the EU to Ukraine, bn USD

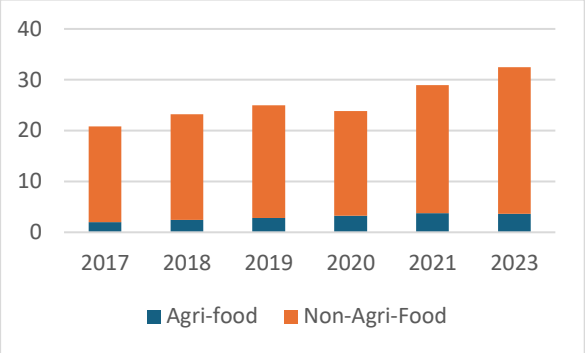


Figure 18 - Exports from Ukraine to the EU, % of total

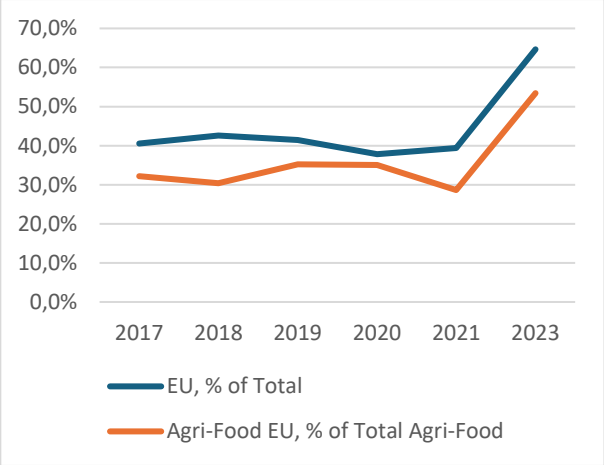


Figure 19 - Imports from the EU to Ukraine, % of total

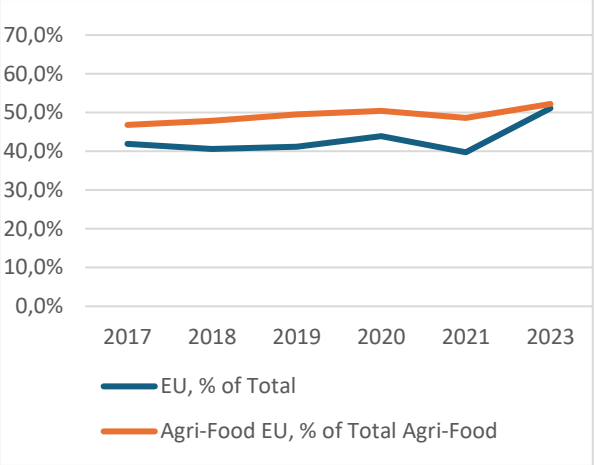


Table 2 - Top 10 Exported Goods from Ukraine to the EU in 2023, bn USD

	In Total Exports to the EU		In Total Agri-Food Exports to the EU	
1	10 Cereal crops	4.58	10 Cereal crops	4.58
2	15 Fats and oils of animal or vegetable origin	2.98	15 Fats and oils of animal or vegetable origin	2.98
3	72 ferrous metals	2.16	12 seeds and fruits of oilseeds	1.94
4	12 seeds and fruits of oil plants	1.94	23 residues and waste from the food industry	0.80
5	26 ores, slag and ash	1.66	17 sugar and sugar confectionery	0.49
6	85 electric machines	1.51	02 meat and edible offal	0.41
7	44 wood and wood products	1.25	04 milk and dairy products, poultry eggs; natural honey	0.23
8	23 residues and waste from the food industry	0.80	08 edible fruits and nuts	0.20
9	94 furniture	0.70	22 alcoholic and non-alcoholic beverages and vinegar	0.18
10	73 ferrous metal products	0.59	19 ready-made products of grain	0.17

Table 3 - Top 10 Imported Goods from the EU to Ukraine in 2023, bn USD

	In Total Imports from the EU		In Total Agri-Food Imports from the EU	
1	27 mineral fuels; petroleum and its distillation products	6.62	22 alcoholic and non-alcoholic beverages and vinegar	0.44

2	87 means of land transport, except railway	3.67	24 tobacco and industrial tobacco substitutes	0.36
3	84 nuclear reactors, boilers, machinery	2.66	23 residues and waste from the food industry	0.35
4	85 electrical machines	1.64	21 miscellaneous food products	0.34
5	39 plastics, polymeric materials	1.56	04 milk and dairy products, poultry eggs; natural honey	0.29
6	30 pharmaceutical products	1.52	19 ready-made products from grain	0.23
7	31 fertilizers	0.70	18 cocoa and cocoa products	0.21
8	38 various chemical products	0.66	20 processed vegetable products	0.17
9	72 ferrous metals	0.58	07 vegetables	0.15
10	33 essential oils	0.56	12 seeds and fruits of oil plants	0.15

3. EU-Ukraine Expected Trade Development: Simulation Scenarios

The scenario-based impact assessment is performed with partial equilibrium dynamic econometric model for the EU, Ukraine and global agricultural commodities markets, AGMEMOD[1]. The envisaged scenarios, developed in collaboration with APD and the Chamber of Commerce, will explore potential market dynamics under varying trade and production conditions. They include Baseline scenario (further, Baseline), Liberalized (free) agrifood trade scenario (further, FT scenario), Autonomous Trade Measures as adopted in June 2024 scenario (further, ATM scenario) and EU membership scenario (further, EU scenario).

3.1. Scenarios set up and some trade preliminaries

The *Baseline scenario* reflects the future 9-year dynamic (2025-2033) development of the agricultural commodities markets of Ukraine under the status quo assumption. The status quo includes general economic and policy conditions as observed in September 2024, implying the intensity of the war, the UAA occupied by Russian forces, domestic agricultural and fiscal policies etc. This as well implies the bilateral trade policies, such as ATM safeguards. The simulation of the baseline assumes the end of the war in December 2025, the ATMS safeguards in force until the end of 2025, and then return to EU-Ukraine DCFTA measures following the respective agreement in 2026-2033.

Liberalized (free) agrifood trade scenario (FT scenario) assumes completely free trade since 2025 and until 2033. Autonomous Trade Measures as adopted in April 2024 scenario (ATM scenario) assumes that ATMs as of September 2024 apply in 2025-2033. The EU scenario assumes free trade and introduction of the EU agricultural acquis and increased compliance costs for farmers in 2026-2033, and ATM in 2025.

Table 4 - Scenario assumptions

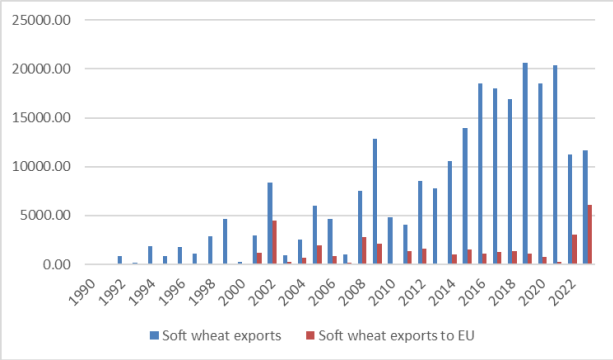
Assumptions	**Baseline**	**FT**	**ATM**	**EU**
Export capacity from Ukraine	as of September 2024, unlimited since 2026			
Duration of the war	ends in December 2025			

Reduction of UAA	as of May 2024, 100% return since 2027			
Change in production costs	Following the crop-specific production costs survey conducted by KSE Agrocenter in 2023 in 2025-2033	Following the crop-specific production costs survey conducted by KSE Agrocenter in 2023 in 2024-2033	Following the crop-specific production costs survey conducted by KSE Agrocenter in 2023 in 2024-2033	increase in production costs (due to the EU agricultural acquis compliance costs): wheat and grains 5%, dairy 5%, beef, pork and poultry 10%
World market prices	OECD-FAO Outlook 2023, with internal projections for sunflower oil	OECD-FAO Outlook 2023, with internal projections for sunflower oil	OECD-FAO Outlook 2023, with internal projections for sunflower oil	OECD-FAO Outlook 2023, with internal projections for sunflower oil
Macroeconomic assumptions on GDP, GDP deflator, Population, Inflation and UAH/USD exchange rate follow the projections of the Ministry for economy of Ukraine with own USDA-based extrapolations to 2033				
EU-UA trade policy	For 2025, ATM as in September 2024; return to EU-UA DCFTA in 2026-2033	For 2025, ATM as in September 2024; Free trade in 2026-2033	ATM as in September 2024 for 2025-2033	For 2025, ATM as in September 2024, free trade and EU agricultural production guidelines compliance in 2026-2033

The ATM safeguards include the emergency brake in the form of TRQs for eggs, poultry, sugar, oats, maize, groats, and honey. In September 2024 the safeguard mechanisms have not been activated for oats (order number 09.6703), sugar (order number 09.6704), eggs (order number 09.6741), sugar (order number 09.6742) and honey (order number 09.6743). The TRQs have been activated for poultry - 20 thsd tonnes (order number 09.6740) and for maize - 2.9 million tonnes. For the first half of 2025, the quota for oats will be 4 thsd tonnes (order number 09.6703), for eggs 9.7 thsd tonnes (order number 09.6727), for sugar 109 thsd tonnes (order number 09.6728), for groats, pellets, grains, etc. 8.6 thsd tonnes (order number 09.6729), for honey 18 thsd tonnes (order number 09.6730).

In the past two decades, Ukrainian exports to the EU have shown slow but steady growth. The introduction of DCFTA in 2014-2016 after the Revolution of Dignity and of Solidarity Lanes following the full-scale invasion of Russia accelerated this development. **Ошибка! Источник ссылки не найден.** below demonstrates the quantities of the main crops and products of their processing to the world and to the EU.

Figure 20 Exports from Ukraine to the world and to the EU in 1990-2023 of the main crops and the products of their processing (thsd tonnes)


25000.00
20000.00
15000.00
10000.00
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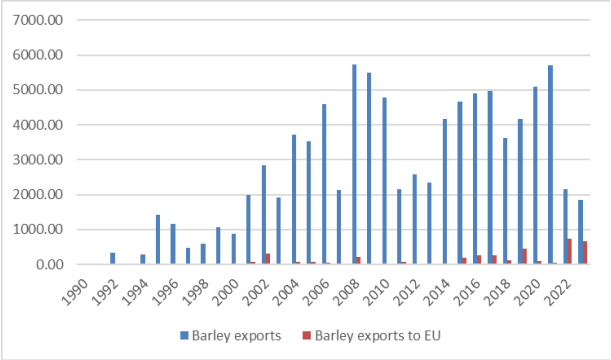
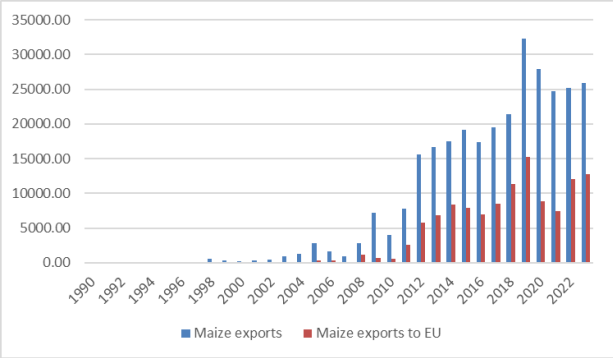
0.00
1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018 2020 2022
Soft wheat exports
Soft wheat exports to EU


7000.00
6000.00
5000.00
4000.00
3000.00
2000.00
1000.00
0.00
1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018 2020 2022
Barley exports
Barley exports to EU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30000.00
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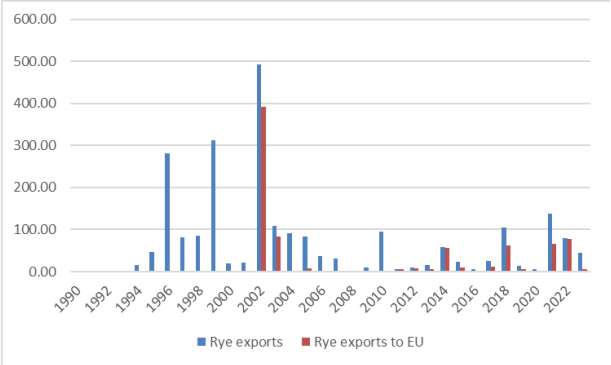
1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018 2020 2022
Maize exports
Maize exports to EU


600.00
500.00
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300.00
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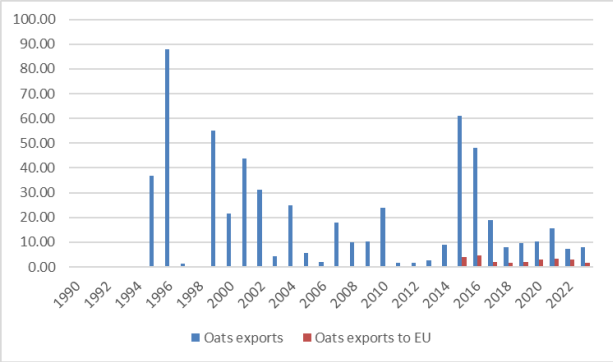
0.00
1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018 2020 2022
Rye exports
Rye exports to EU


100.00
90.00
80.00
70.00
60.00
50.00
40.00
30.00
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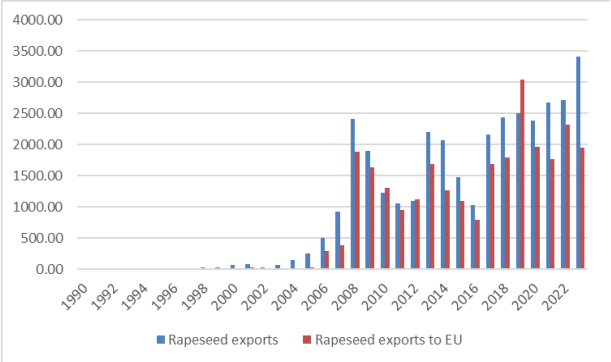
1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018 2020 2022
Oats exports
Oats exports to EU


4000.00
3500.00
3000.00
2500.00
2000.00
1500.00
1000.00
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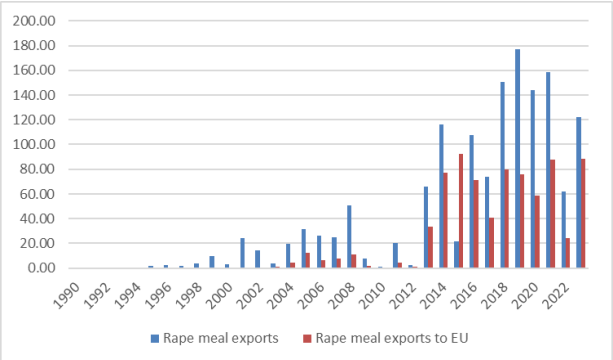
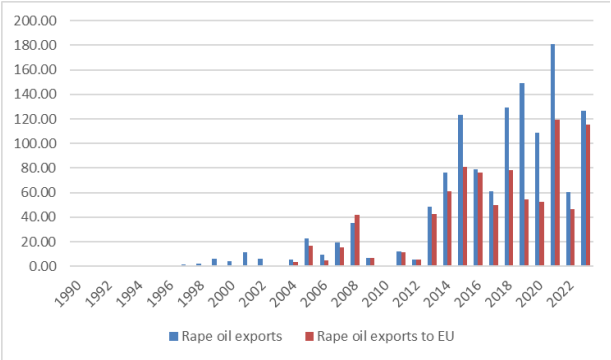
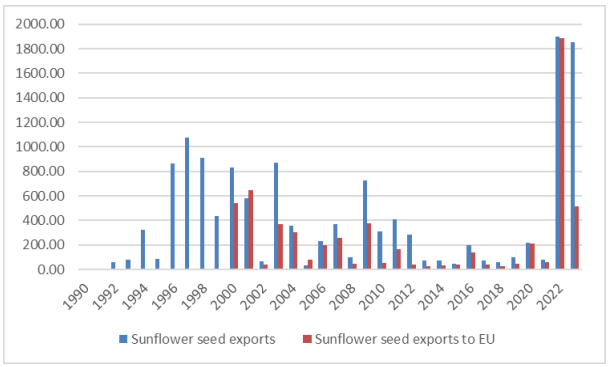
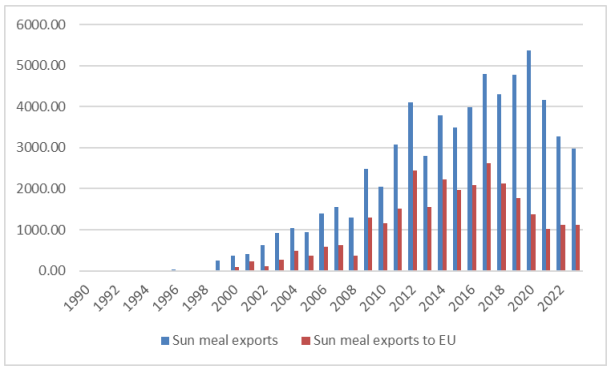
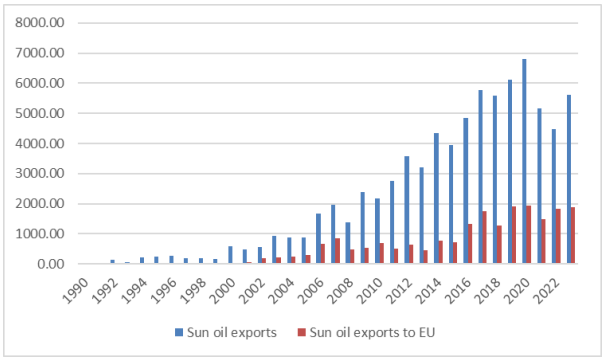
1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018 2020 2022
Rapeseed exports
Rapeseed exports to EU

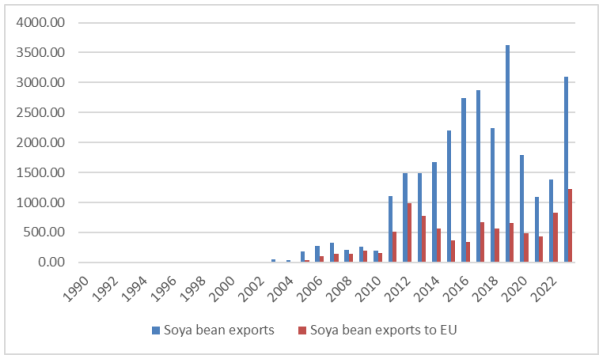

200.00
180.00
160.00
140.00
120.00
100.00
80.00
60.00
40.00
20.00
0.00
1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018 2020 2022
Rape meal exports
Rape meal exports to EU

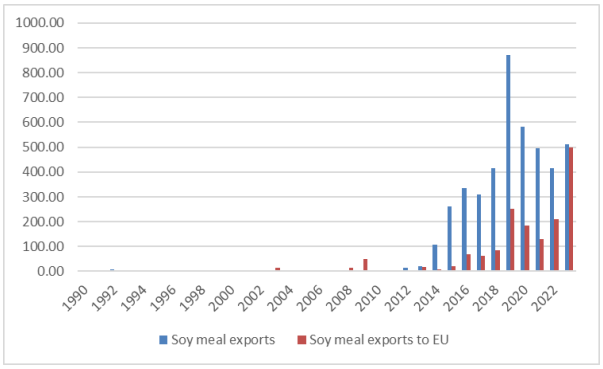

200.00
180.00
160.00
140.00
120.00
100.00
80.00
60.00
40.00
20.00
0.00
1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018 2020 2022
Rape oil exports
Rape oil exports to EU

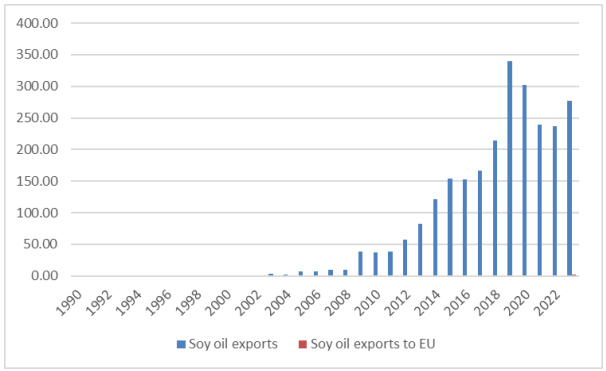










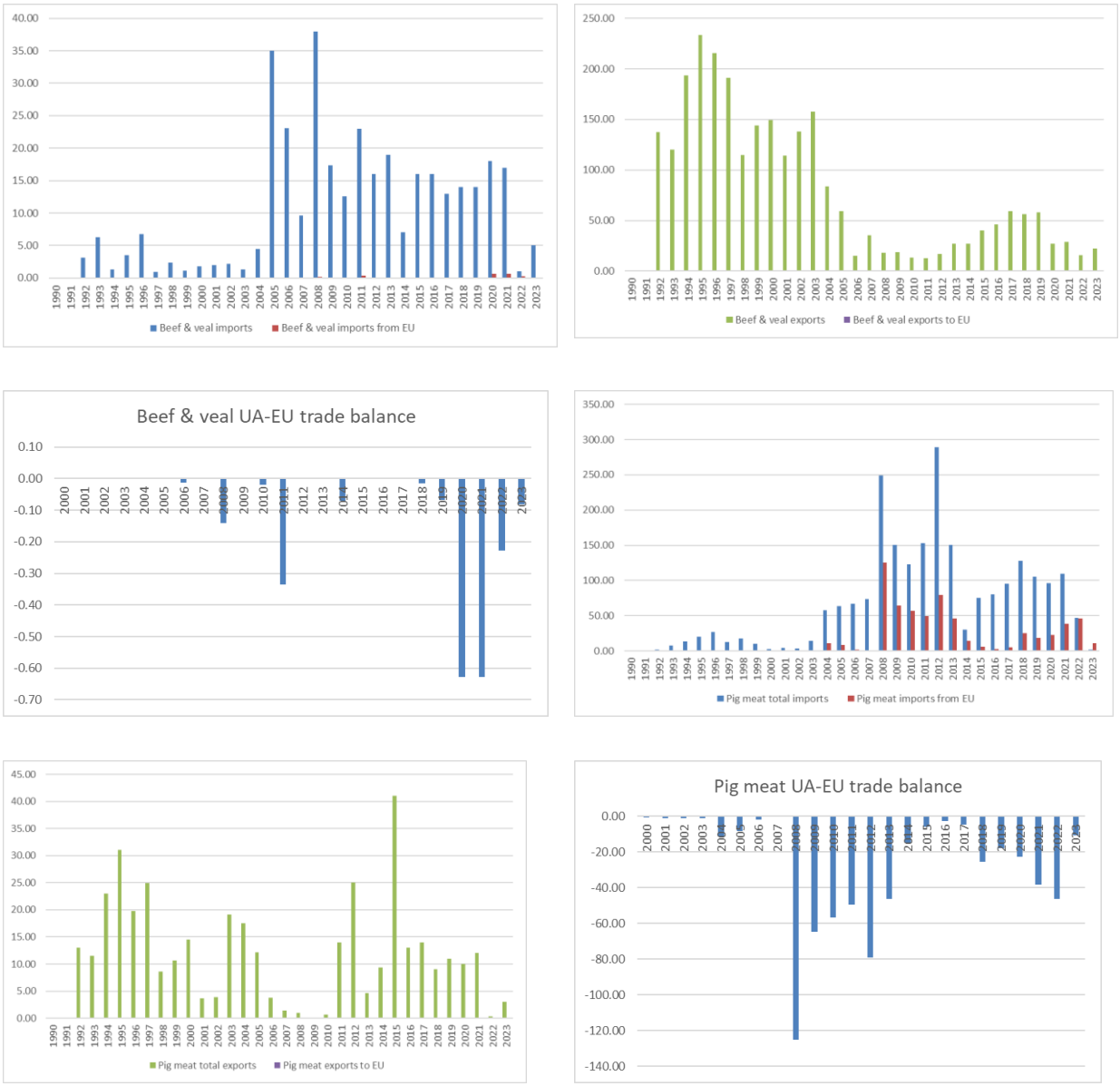


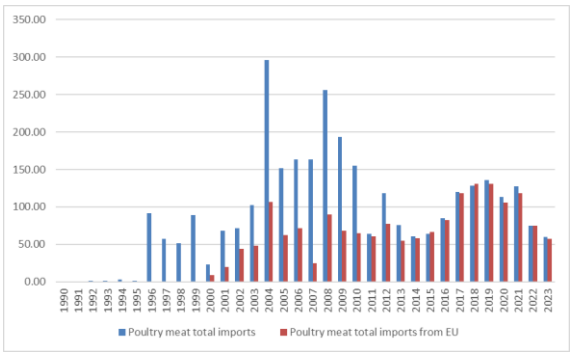
source: State Statistic Service of Ukraine, EUROSTAT

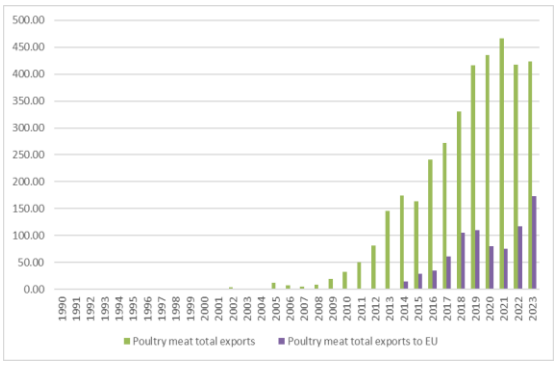
Until 2022 quantities of soft wheat exported to the EU did not exceed 1.5 million tonnes contributing 11% to the total exports (in 2015). With the invasion of Russia, the main export hubs, i.e., sea ports, have been entirely blocked or access to them complicated, which left Ukraine with considerable lower export quantities and new trade routes. In 2022 soft wheat export to the EU increased 300% and in 2023 650% compared to the 2017-2021 average, and contributed 27% and 52% to the total wheat exports from Ukraine. Quite similar situation has been observed for barley. No changes in export shares destined to the EU can be observed for maize, oats, rye, sunflower oil and meal, rape seed, rapeseed oil and meal, and soy oil, despite the obvious drop of quantities exported for most of the crops. The only other commodities with the observed changes are sunflower seeds, soya beans and soy meal. For the former, the world and domestic market prices motivated Ukrainian producers to exporting of seeds instead of oil which resulted in severe increase in the total quantity exported and the share to the EU. In 2022-2023 Ukraine exported nearly 2 million tonnes of sunflower seeds. In 2022 nearly

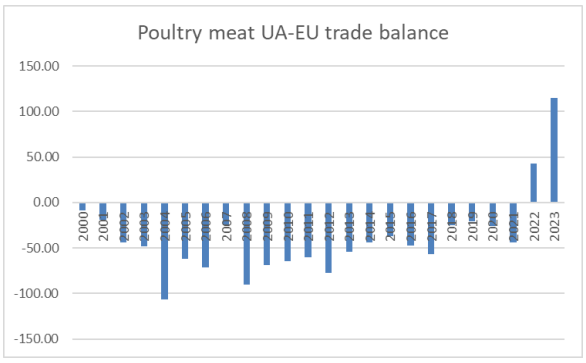
all of it was exported to the EU, and in 2023 nearly 30%. Soya beans total exports reached the pre-war exports in 2023 after nearly 50% decrease in 2022. The significant share of these exports, however, have been shipped to the EU. In the past five years before the war, total soya beans exports to the EU were around 560 thousand tonnes on average. In 2022, they reached 822 thousand tonnes and in 2023, more than 1.2 million tonnes, contributing nearly 60% and 40% to the total exports. In 2023, total soya meal exports reached the pre-war period - 510 thousand tonnes. However, for the first time nearly all of it was shipped to the EU.

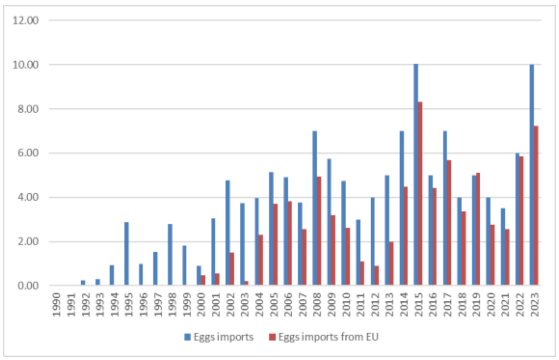
Figure 21 - Trade of Ukraine with the world and with the EU in 1990-2023 of poultry meat, eggs, beef and veal and pig meat (thsd tonnes)

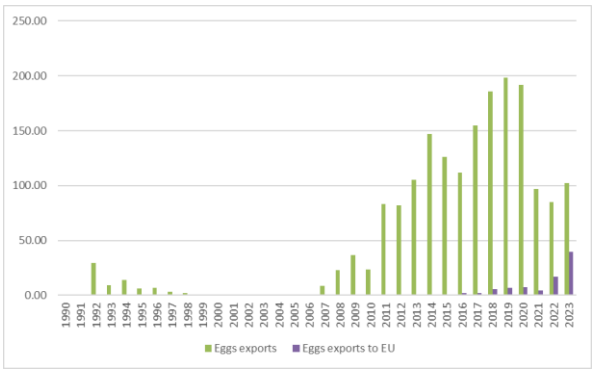


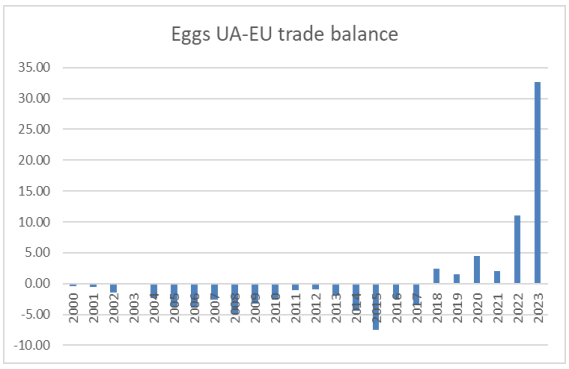












source: State Statistic Service of Ukraine, EUROSTAT

The situation in livestock sector is entirely different. Figure 19 demonstrates the trade for poultry meat, eggs, beef and veal and for pig meat. In 2020-2021 Ukraine exported around 30 thousand tonnes of beef and veal and imported around 20 thousand tonnes. Trade with the EU of this commodity is nearly non-existent. Nevertheless, the trade balance with the EU is negative indicating more imports than exports. Pig meat imports from the EU showed positive dynamic starting from 2016 peaking nearly 50 thousand tonnes in 2022. Whereas before the war, they contributed around 20% to the total pig meat imports of Ukraine, with the start of the war, EU has been the only supplier of imported pork to Ukraine considering the drop-out of the rest of the importers, hence drop from above 100 thousand tonnes of total import to 50 thousand tonnes. Export of pig meat from Ukraine varied between 10-15 thousand tonnes since 2016, dropping to less than 5 thousand tonnes with the start of the war. Nearly none of this quantity was shipped to the EU. Hence, trade balance of pig meat with the EU has been negative for Ukraine. In 2013-2023 EU has been nearly the only supplier of poultry meat to Ukraine.

The quantities reached 130 thousand tonnes the last three years before the war, and then dropped to 50 thousand tonnes in 2022-2023. In 2019-2021 total exports of poultry from Ukraine reached 460 thousand tonnes, with only 75 thousand tonnes going to the EU. Hence, before the war the trade balance with the EU of poultry meat was negative. The dynamic has changed significantly after the invasion and introduction of Solidarity Lanes Initiative. In 2023 Ukraine shipped to the EU nearly 145 thousand tonnes of poultry meat facing relatively slight decline in the total poultry exports. Thus, the trade balance reversed to positive for Ukraine. The situation with poultry eggs is similar in a way that exports to the EU increased with the beginning of the war without the total exports been significantly impacted. However, positive trade balance with the EU has began in 2018, reaching 30 thousand tonnes in 2023.

Note on commodity definitions: soft wheat is defined as "Wheat and meslin"; barley is defined as "Barley"; maize is defines as "Maize or corn"; rye is defined as "Rye"; oats are defined as "Oats"; sunflower seeds are defined as "Sunflower seeds, whether or not broken"; rapeseed is defined as "Rape or colza seeds, whether or not broken(2002-2500); Rape or colza seeds, whether or not broken(1988-2001)"; soya beans are denied as "Soya beans, whether or not broken"; sunflower meal is defined as "Oilcake and other solid residues, whether or not ground or in the form of pellets, resulting from the extraction of sunflower seeds"; soya meal is defined as "Oilcake and other solid residues, whether or not ground or in the form of pellets, resulting from the extraction of soya-bean oil"; rapeseed meal is defined as "Oilcake and other solid residues, whether or not ground or in the form of pellets, resulting from the extraction of low erucic acid rape or colza seeds "yielding a fixed oil which has an erucic acid content of < 2% and yielding a solid component of glucosinolates of < 30 micromoles/g"; soya oil is defined as "Soya-bean oil and its fractions, whether or not refined, for technical or industrial uses (excl. chemically modified, crude, and for production of foodstuffs)"; sunflower seed is defined as "Sunflower-seed, safflower or cotton-seed oil and fractions thereof, whether or not refined, but not chemically modified"; rapeseed oil is defined as "Rape, colza or mustard oil and fractions thereof, whether or not refined, but not chemically modified"; beef and veal are defined as "Meat of bovine animals, fresh or chilled"; pig meat is defined as "Meat of swine, fresh, chilled or frozen"; poultry meat is defined as "Meat and edible offal of fowls of the species Gallus domesticus, ducks, geese, turkeys and guinea fowls, fresh, chilled or frozen"; poultry eggs are defined as a sum of "Birds' eggs, in shell, fresh, preserved or cooked" and "Birds' eggs, not in shell, and egg yolks, fresh, dried, cooked by steaming or by boiling in water, moulded, frozen or otherwise preserved, whether or not containing added sugar or other sweetening matter". HS6 codes have been used.

3.2. Simulations' outcomes

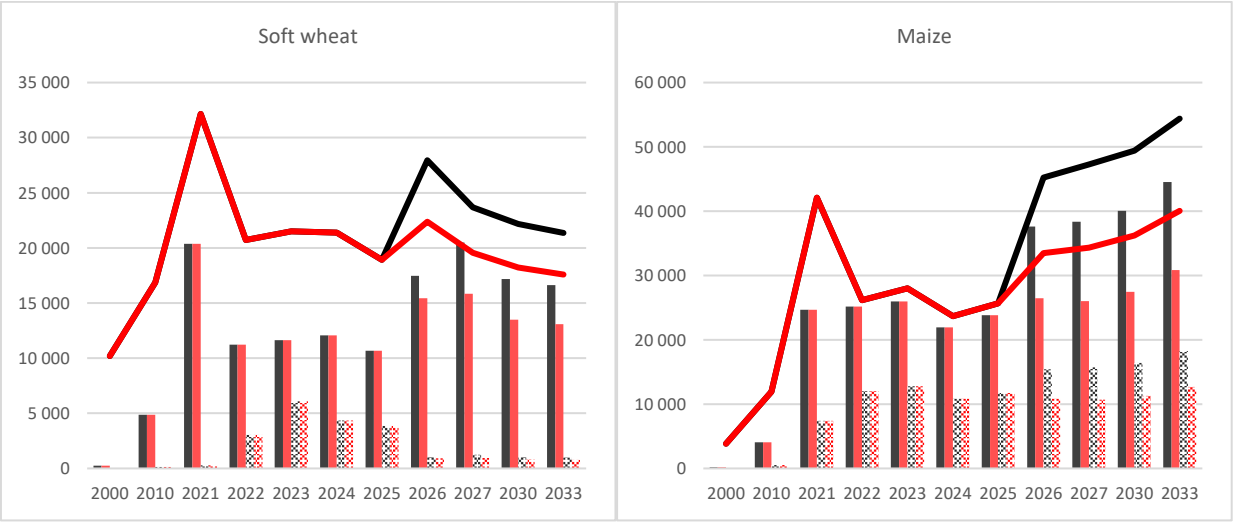
The scenario simulations provide insights into developments under assumptions related to ATM, free trade, and EU accession. The Baseline, ATM, and Free trade scenarios yield similar outcomes, as trade assumptions prove non-restrictive for the model. Coefficients for trade barriers, such as ATMs and DCFTA tariff-rate quotas, are derived from time-series data. These data are available, because DCFTA has been in force since

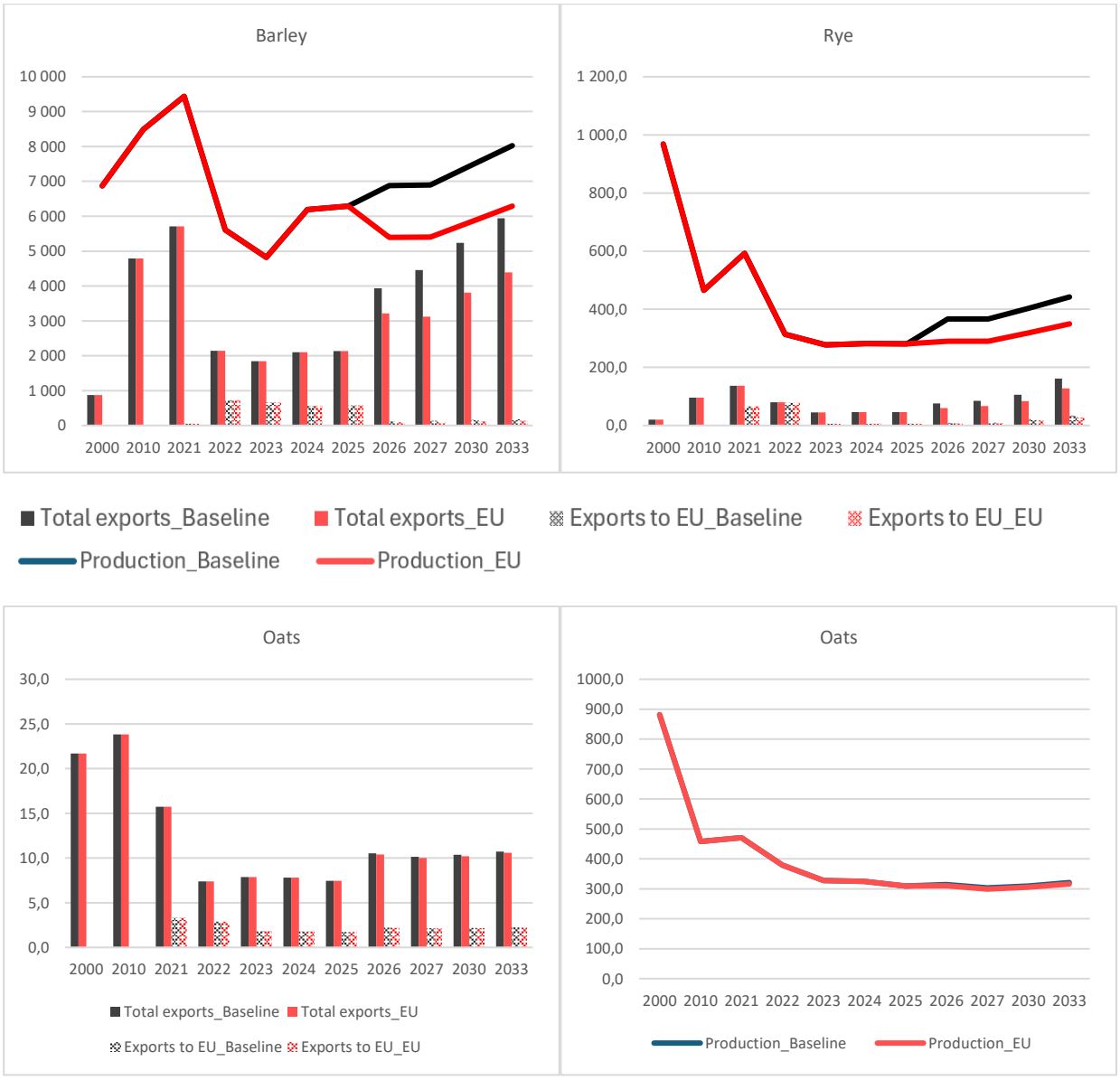
2016, free trade prevailed in 2022 – 2023, and ATMs' tariff-rate quotas are essentially a DCFTA instrument. Using the estimates within the current modeling tool, no significant differences were observed among the outcomes across the three scenarios. In particular, none of these trade measures significantly restricted agricultural exports or production. The EU scenario diverges from the others, as it incorporates increased production costs. While EU accession entails entering the Common Market Organization (CMO), there is no evidence to suggest that Ukraine's domestic market price transmission will shift from the current world market mechanism to the EU market analogues. As a result, global market prices will likely remain the primary driver for crop production. Therefore, the EU scenario have produced different from the Baseline outcome. Hence, Annex Table 5 and Figures 22-26 illustrate the simulation results for the Baseline and the EU scenario.

The sector's performance strongly hinges on the war ending, assumed by late 2025. Post-war recovery is characterized by a resurgence in crop and processed product production and the re-establishment of pre-war trade routes. Major trade routes for Ukrainian crops primarily bypass the EU, relying instead on reopened sea ports, which remain the optimal logistical choice. Increased EU exports in the Baseline and the EU scenario are attributable more to wartime disruptions to sea-port routes than to market dynamics.

In the Baseline, by 2033, maize production is expected to recover to pre-war growth trends, reaching 54 million tonnes – a 31% increase compared to 2021. Maize will replace soft wheat in harvested area, driven by climate change effects (arid southern regions favoring maize over soft wheat) and higher relative profitability due to rising global market prices. Soft wheat production, however, is projected to decline, falling 33.5% from 2021 levels to 21 million tonnes by 2033. Barley, rye, and oats production will grow modestly to 8 million tonnes, 442,000 tonnes, and 316,500 tonnes, respectively, compared to 2022, though they will remain below pre-war highs by 15%, 25%, and 33%, primarily due to competition for cultivated areas from maize and wheat.

Figure 22 - Modeling outcome for cereals, in 000 tonnes





Source: own simulations, 2000-2023 data from State Statistic Service of Ukraine, EUROSTAT

It is assumed that agricultural land will return to production within one year after the war ends. The model does not project an expansion of arable land; therefore, the growth in oilseed cultivation will occur at the expense of cereal cultivation. Sunflower will remain the dominant crop, with production expected to recover to pre-war record highs, reaching 17 million tonnes by 2033 – a 6% increase compared to 2021. Rapeseed production is projected to grow significantly, reaching nearly 7 million tonnes, up from 3 million tonnes in 2021. Soybean production will plateau at approximately 5 million tonnes, representing a 57% increase compared to 2021. This stabilization is attributed to the relative profitability of soybeans compared to other oilseeds.

The production of oils and meals will align with oilseed production trends. By 2033:

- Sunflower oil and meal will reach 7.3 million tonnes and 6.1 million tonnes, respectively (+35% compared to 2021).

- Rapeseed oil production will increase from 171,000 tonnes in 2021 to 248,000 tonnes (+45%), with meal production rising from 209,000 tonnes to 310,000 tonnes (+48%).
- Soybean oil and meal production will stabilize at approximately 258,000 tonnes and 1.2 million tonnes, comparable to 2021 levels of 267,000 tonnes and 1.2 million tonnes, respectively.

Total oilseed oil production is projected to rise to 7.8 million tonnes in 2033, compared to 5.8 million tonnes in 2021. Similarly, meal production will increase to 7.6 million tonnes, up from 5.9 million tonnes in 2021. Overall, the total production of modeled oilseeds will reach 29 million tonnes and of cereals 85 million tonnes, which are by +30% and -0.3% different from 2021. The total oilseeds and cereals production will sum up to 113 million tonnes, 6% greater than in 2021. As arable land is not expected to expand, production growth will be driven by technological improvements, resulting in higher yields even for crops with reduced harvested areas. Figure 24 illustrates the production levels of oilseeds and cereals in 2021 and 2033.

The EU scenario results in significantly lower production levels and slower post-war recovery for soft wheat, maize, barley, and rye, while having minimal impact on oilseed production. This disparity arises from changes in the relative profitability of cereals and oilseeds due to increased production costs assumed in the scenario. The model's interconnections between sectors are governed by elasticity-based behavioral functions for market prices, profitability, cultivation areas, trade, usage etc. As a result, the simultaneous increase in production costs for both oilseeds and cereals affects each sector differently. Therefore, in this scenario, the relative profitability of oilseeds increases substantially compared to cereals. By 2033:

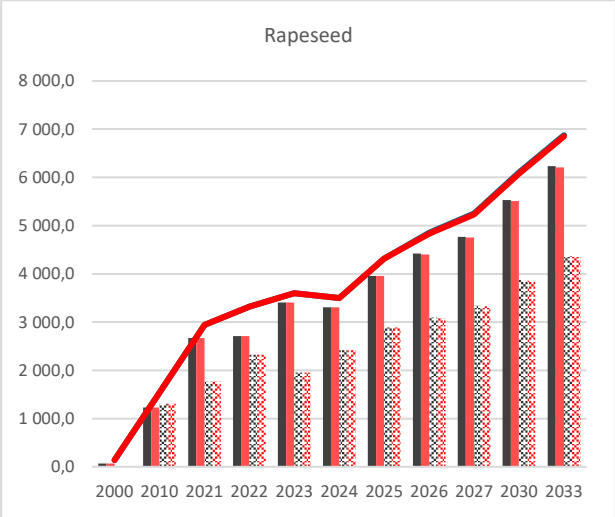
- soft wheat production is expected to be 18% lower,
- maize production declines by 26%,
- barley production drops by 22%, and
- rye production decreases by 21% compared to the Baseline.

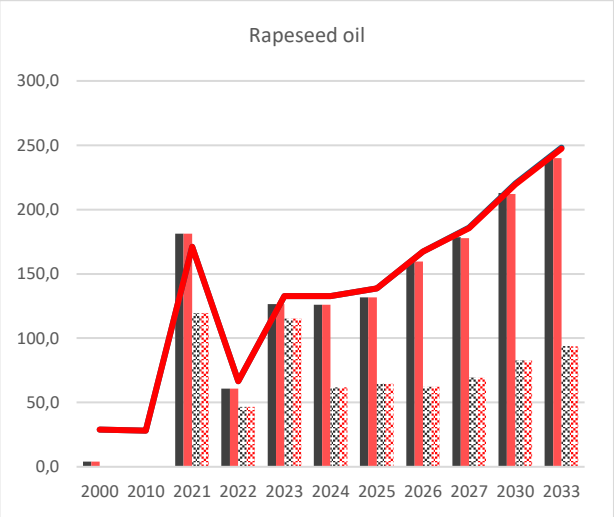
Conversely, changes in sunflower, rapeseed, and soybean production are negligible. Oat production experiences only a 1% decline because its inelastic domestic demand allows increased production costs to be reflected in higher domestic market prices. Overall, in this scenario in 2033 the total oilseeds production will set at 29 million tonnes and of cereals at 65 million tonnes, which are:

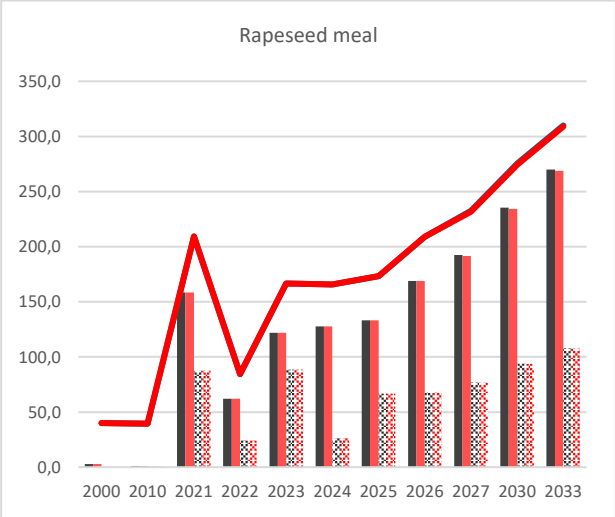
- for oilseeds by +30% different from 2021 and 0% different from the Baseline, and
- for cereals by -24% different from 2021 and from the Baseline.

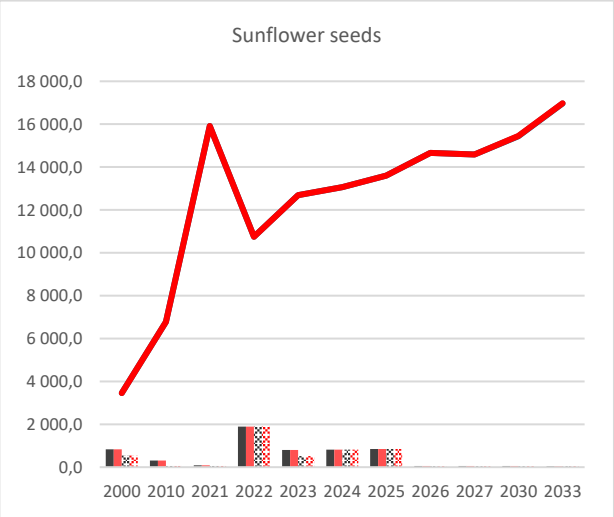
Total cereals and oilseeds production is projected to 93.5 million tonnes which is 13% smaller than in 2021 and 18% smaller than in the baseline. Figure 24 demonstrates these changes.

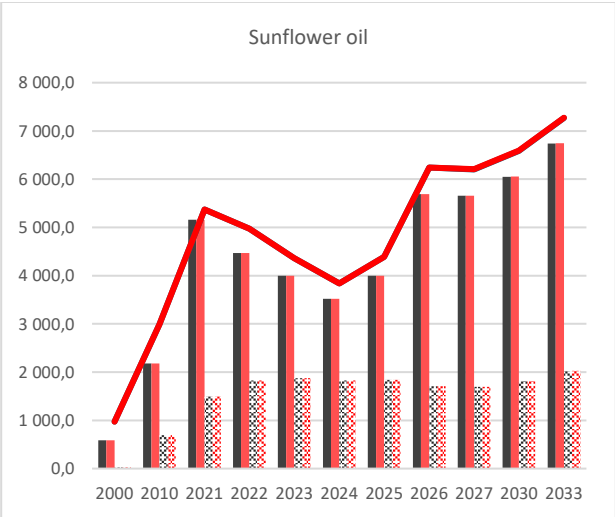
Figure 23 - Modeling outcome for oilseeds, in 000 tonnes

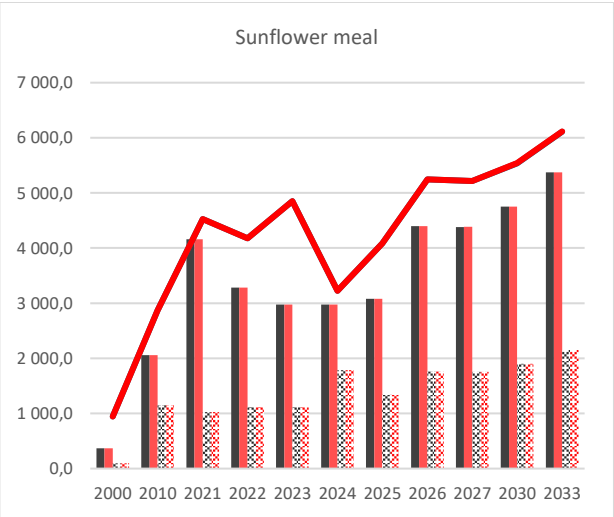

Rapeseed
8 000,0
7 000,0
6 000,0
5 000,0
4 000,0
3 000,0
2 000,0
1 000,0
0,0
2000 2010 2021 2022 2023 2024 2025 2026 2027 2030 2033

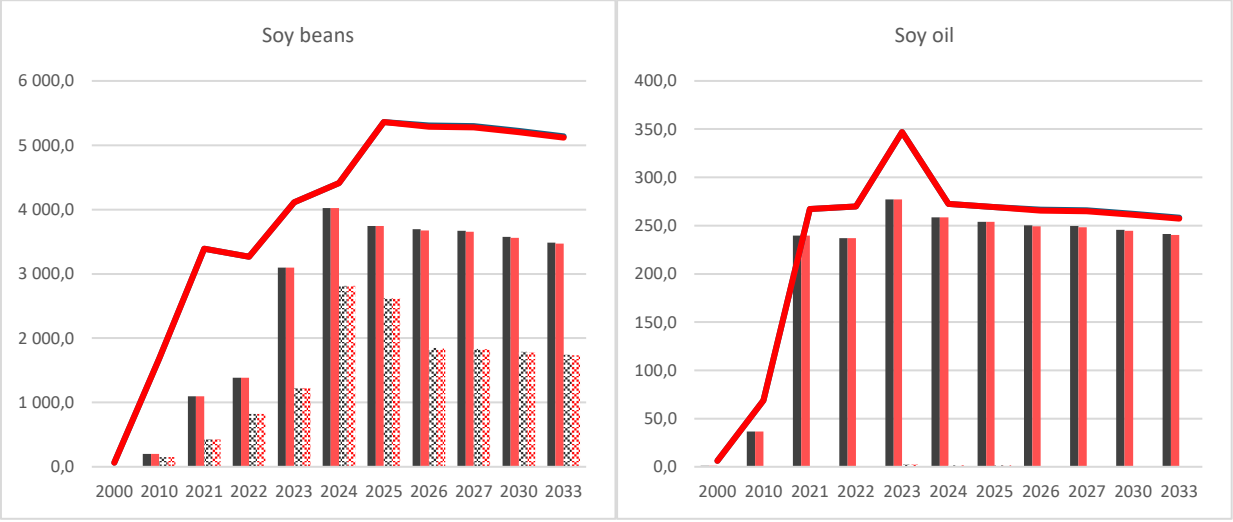

Rapeseed oil
300,0
250,0
200,0
150,0
100,0
50,0
0,0
2000 2010 2021 2022 2023 2024 2025 2026 2027 2030 2033

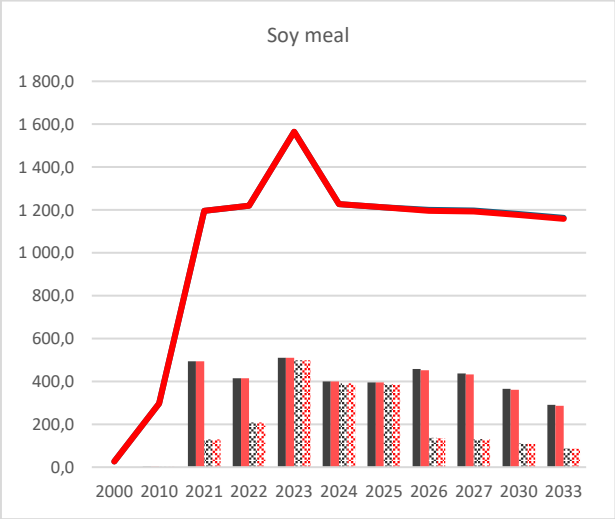

Rapeseed meal
350,0
300,0
250,0
200,0
150,0
100,0
50,0
0,0
2000 2010 2021 2022 2023 2024 2025 2026 2027 2030 2033


Sunflower seeds
18 000,0
16 000,0
14 000,0
12 000,0
10 000,0
8 000,0
6 000,0
4 000,0
2 000,0
0,0
2000 2010 2021 2022 2023 2024 2025 2026 2027 2030 2033


Sunflower oil
8 000,0
7 000,0
6 000,0
5 000,0
4 000,0
3 000,0
2 000,0
1 000,0
0,0
2000 2010 2021 2022 2023 2024 2025 2026 2027 2030 2033

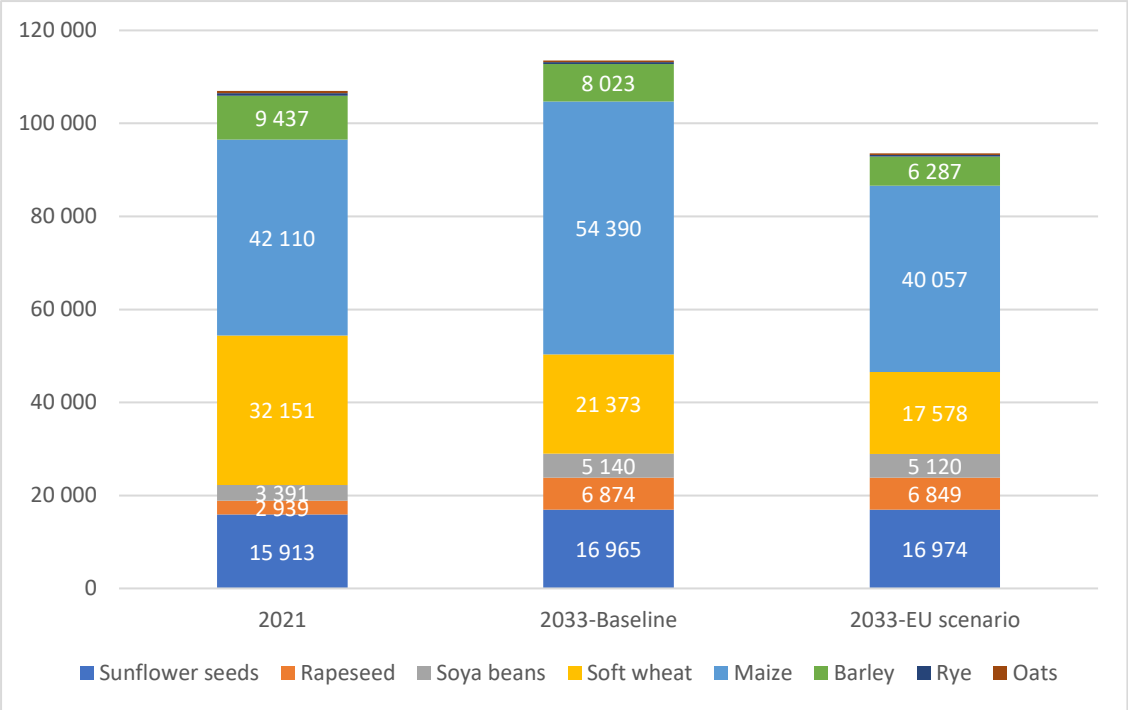

Sunflower meal
7 000,0
6 000,0
5 000,0
4 000,0
3 000,0
2 000,0
1 000,0
0,0
2000 2010 2021 2022 2023 2024 2025 2026 2027 2030 2033





Source: own simulations, 2000-2023 data from State Statistic Service of Ukraine, EUROSTAT

Figure 24 - Production of cereals, oilseeds, oils and meals in 2021 and 2033 – Baseline and EU scenario, 000 tonnes



Source: own simulations, 2000-2023 data from State Statistic Service of Ukraine, EUROSTAT

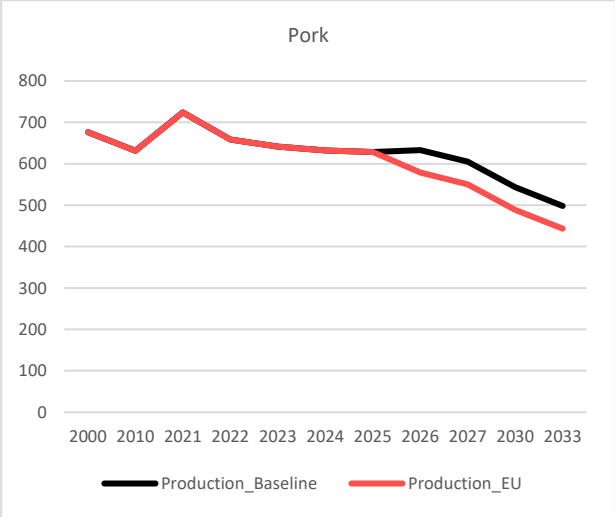
No significant changes in livestock trends are anticipated. Beef, veal, and pork production will continue to decline, while poultry meat and egg production will grow. By 2033, beef production is expected to continue its long-term downward trend, reaching just 106,000 tonnes – down from 311,000 tonnes in 2021. Pork production is projected to decrease to 498,000 tonnes, compared to 724,000 tonnes in 2021. Before the war, rural households accounted for 72.3% of beef and veal production, 71.8% of milk production, and 45.7% of pork production. Since the early 2000s, livestock herd sizes at rural households have been shrinking due to rising input costs and the growth of retail chains, which primarily source products from agricultural enterprises. While livestock rearing at agricultural enterprises has been increasing, it has not fully offset the production decline in rural households. In contrast, poultry (primarily chicken) and egg production trends show steady growth at the national level. Since 2010, enterprises' share of poultry and egg production has been increasing, compensating for declining household production. By 2033, poultry meat production will increase by 20%, reaching 1.6 million tonnes compared to 2021 levels; and egg production will rise by 5%, totaling 855,000 tonnes.

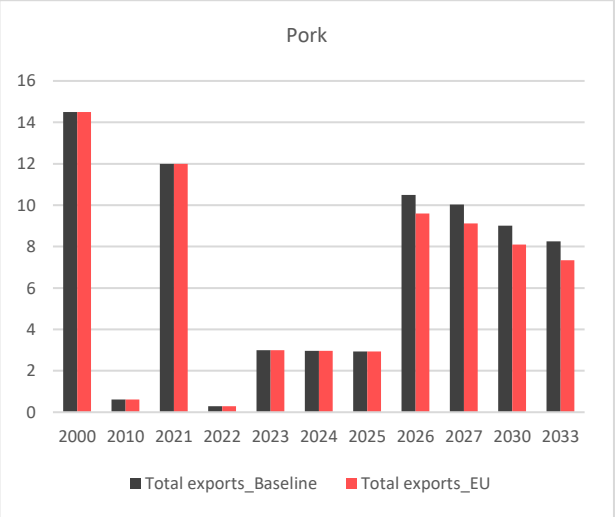
In the EU scenario, by 2033, beef and veal production decreases by 13% (to 93,000 tonnes), and pork production declines by 11% (to 443,000 tonnes) compared to the Baseline. The reduction in domestically supplied commodities is offset by increased imports. Total beef imports are projected to rise significantly in 2033, with a proportional increase in the share of imports from the EU. Imports are expected to reach 41,000 tonnes from the rest of the world and 3,000 tonnes from the EU (+44% compared to the

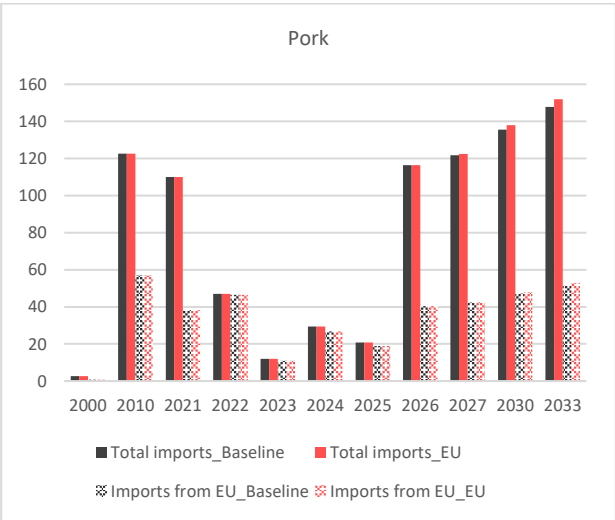
Baseline). As a result, the total net trade balance becomes negative by 2033, including the trade balance with the EU, both of which had remained positive until 2027.

For pork, the dominance of EU imports observed during the war will diminish as former trade partners return to the market. With the decreased production, imports from both the EU and the rest of the world are expected to rise (+3%), further exacerbating the negative net trade balance. Because the model does not account for the application of EU import regulations on the Ukrainian market, it does not consider the potential exclusion of non-EU import partners due to incompatibility with the EU standards. If such consideration has been done, the share of EU imports could potentially be larger. Poultry and eggs sectors are marginally impacted in the EU scenario demonstrating better profitability and adaptability of the sector.

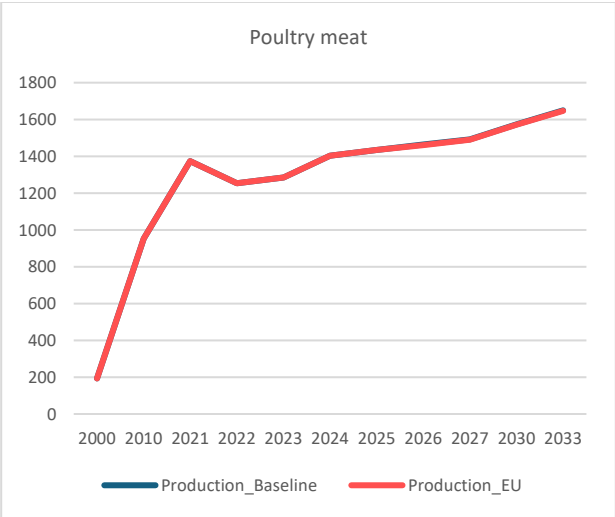
Figure 25 - Modeling outcome for livestock commodities, in 000 tonnes

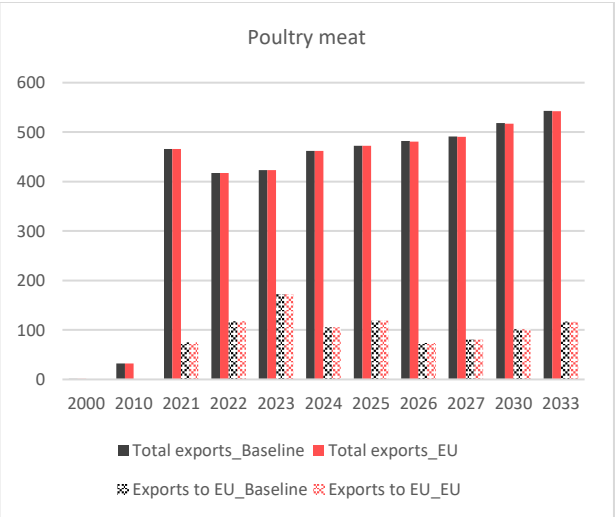

Pork
800
700
600
500
400
300
200
100
0
2000 2010 2021 2022 2023 2024 2025 2026 2027 2030 2033
Production_Baseline
Production_EU

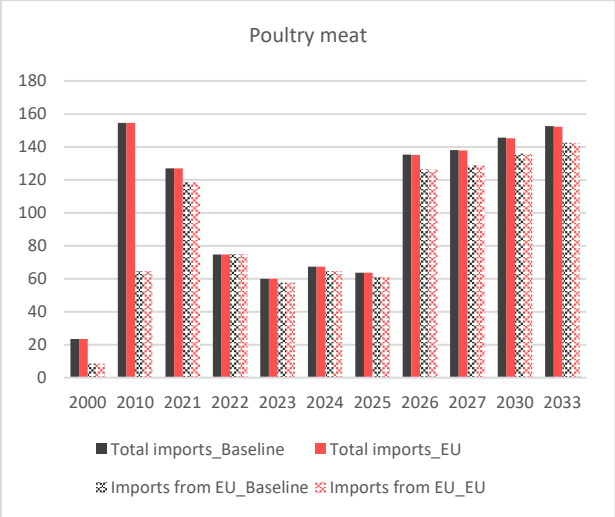

Pork
16
14
12
10
8
6
4
2
0
2000 2010 2021 2022 2023 2024 2025 2026 2027 2030 2033
Total exports_Baseline
Total exports_EU

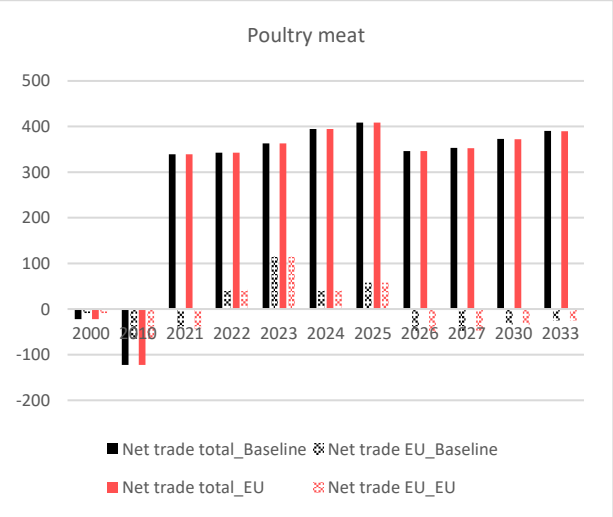

Pork
160
140
120
100
80
60
40
20
0
2000 2010 2021 2022 2023 2024 2025 2026 2027 2030 2033
Total imports_Baseline
Total imports_EU
Imports from EU_Baseline
Imports from EU_EU

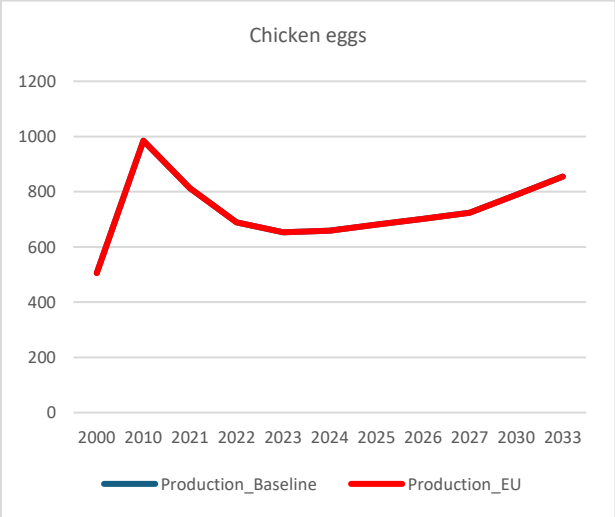
Pork
20
0
-20
-40
-60
-80
-100
-120
-140
-160
2000 2010 2021 2022 2023 2024 2025 2026 2027 2030 2033
Net trade total_Baseline
Net trade EU_Baseline
Net trade total_EU
Net trade EU_EU

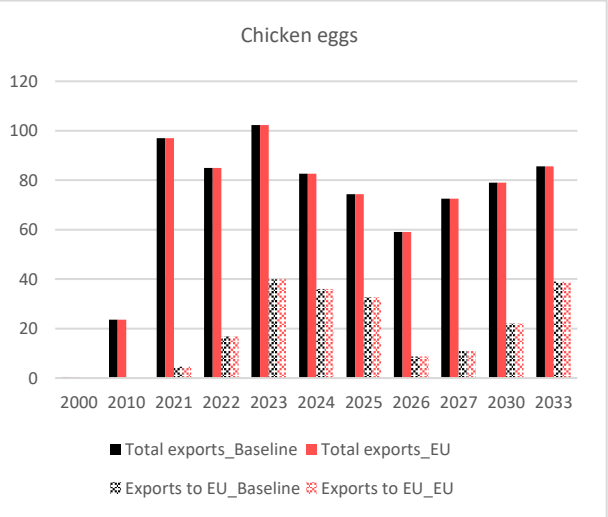

Poultry meat
1800
1600
1400
1200
1000
800
600
400
200
0
2000 2010 2021 2022 2023 2024 2025 2026 2027 2030 2033
Production_Baseline
Production_EU

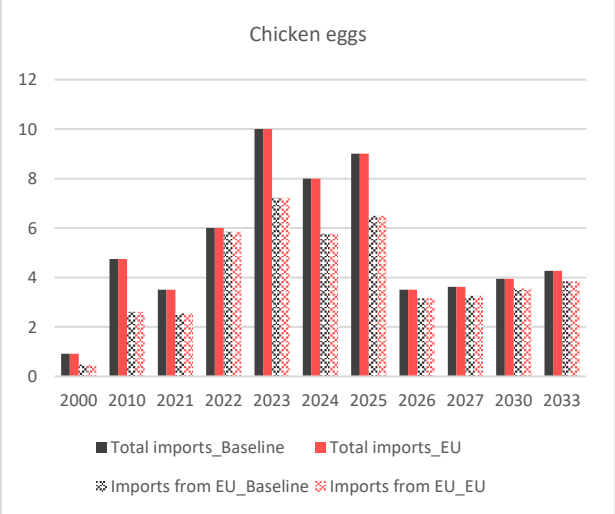

Poultry meat
600
500
400
300
200
100
0
2000 2010 2021 2022 2023 2024 2025 2026 2027 2030 2033
Total exports_Baseline
Total exports_EU
Exports to EU_Baseline
Exports to EU_EU

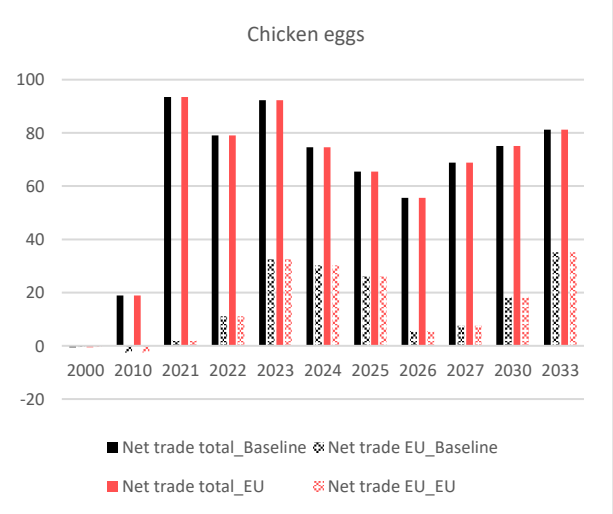












Source: own simulations, 2000-2023 data from State Statistic Service of Ukraine, EUROSTAT

With livestock production and per-capita consumption trends projected to follow pre-war patterns, and the population assumed to return to 40 million in 2027, domestic use levels are also expected to align with pre-war trends. Consequently, commodity exports are projected to mirror production levels without significant structural changes in trade flows. This is underpinned by the assumption of no physical or structural obstacles to

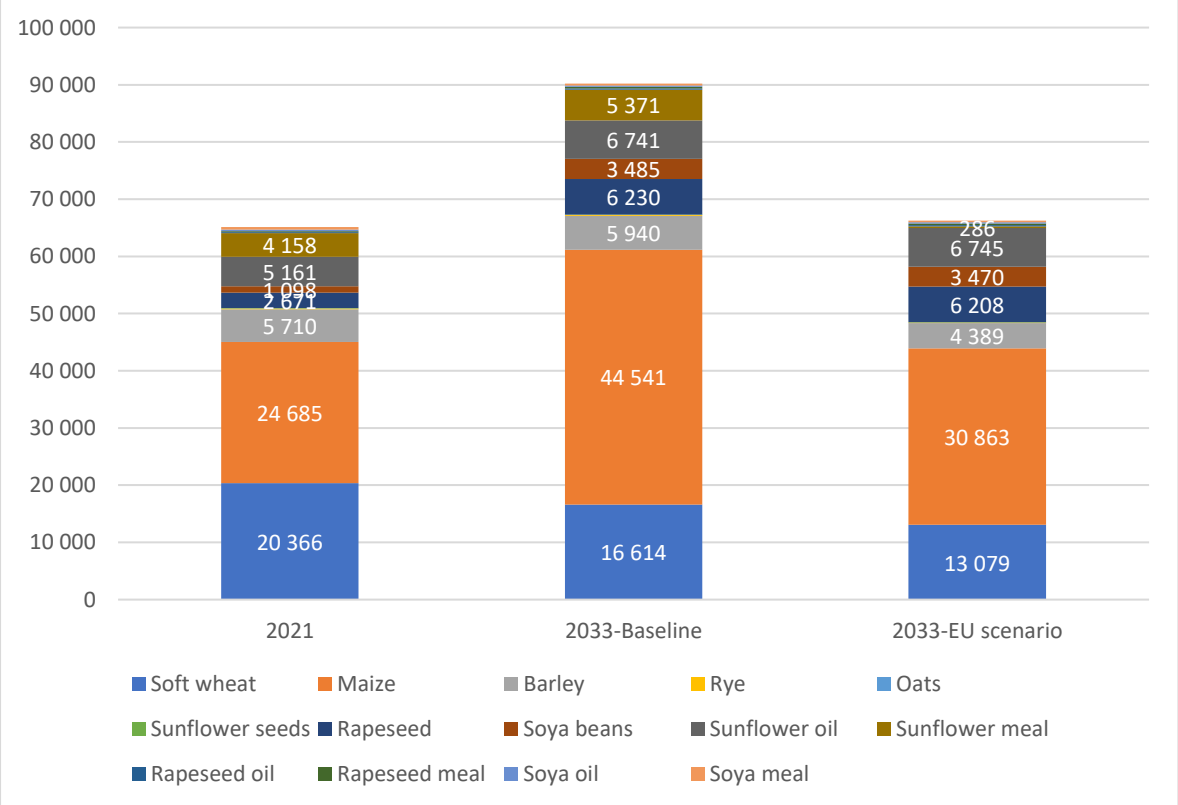
trade through sea ports after the war ends. By 2033, the following export levels are projected for cereals:

- Soft wheat: 17 million tonnes (18% less than in 2021)
- Maize: 44.5 million tonnes (80% more than in 2021)
- Barley: 6 million tonnes (4% more than in 2021)
- Rye: 161,000 tonnes (18% more than in 2021)
- Oats: 11,000 tonnes (32% less than in 2021)

The high exports of sunflower seeds induced by low domestic prices during the war are expected to shift to sunflower oil exports. By 2033, sunflower oil exports are projected to reach 6.7 million tonnes, a 30% increase compared to 2021. Rapeseed exports are expected to grow to 6.2 million tonnes, up from 2.7 million tonnes in 2021, continuing the historical trend of high rapeseed exports. Soybean exports will remain above 60% of total production, increasing to 3.5 million tonnes from 1.4 million tonnes in 2021. Exports of soybean and rapeseed oils, as well as oilseed meals, are also projected to grow in line with production trends.

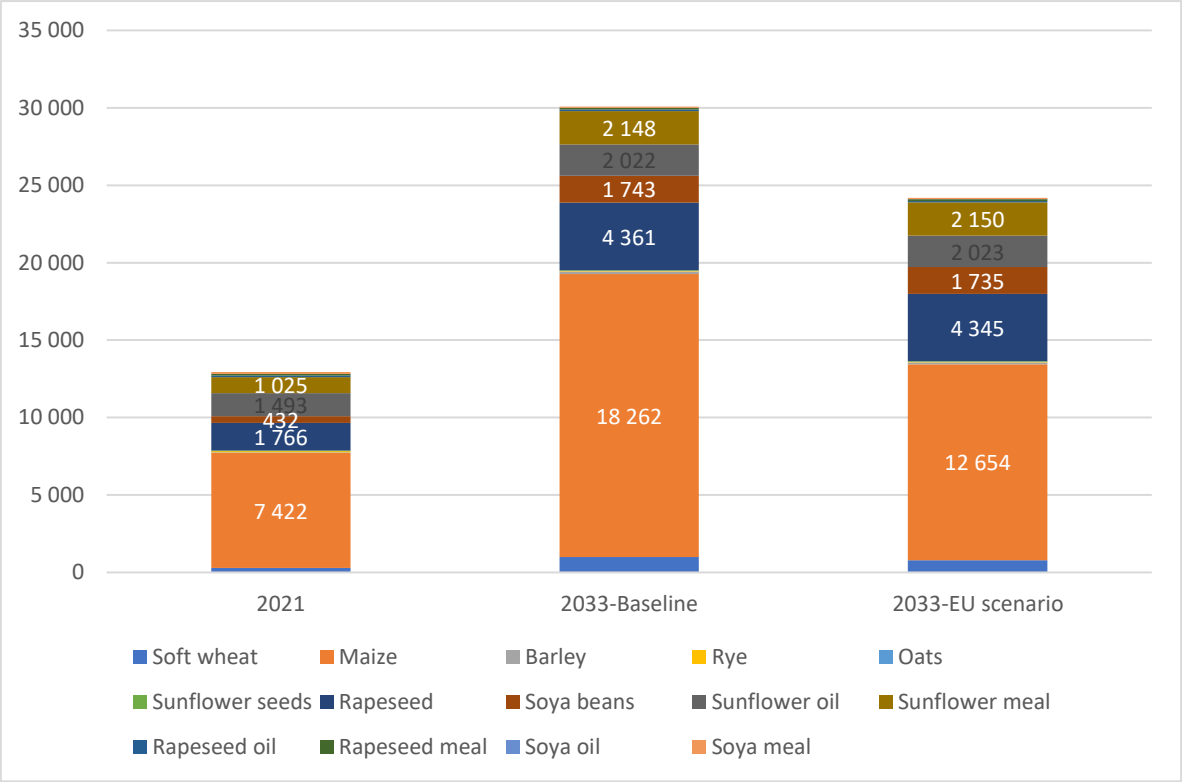
In the EU scenario, quantities exported follow the production changes. Figures 26-27 summarize the export projections for the Baseline and the EU scenario. Overall, in the EU scenario total exports of the plant commodities modelled (inlcuing oils and meals) fall by 26.5% compared to the Baseline but remain slightly higher than in 2021. Exports to the EU increase in the Baseline by 132% and in the EU scenario by 87% compared to 2021.

Figure 26 - Total exports of cereals, oilseeds, oils and meals in 2021 and 2033-Baseline and 2033-EU scenario, 000 tonnes



Source: own simulations, 2000-2023 data from State Statistics Service of Ukraine, EUROSTAT

Figure 27 - Exports to the EU of cereals, oilseeds, oils and meals in 2021 and 2033-Baseline and 2033-EU scenario, 000 tonnes



Source: own simulations, 2000-2023 data from State Statistics Service of Ukraine, EUROSTAT

3.3. Special cases of sugar and dairy products

3.3.1. Sugar

Sugar is a special case in this study, mainly because it is not in the AGMEMOD model, and we are not able to run through the scenarios similar to other agricultural products. Instead, we shortly comment mainly qualitatively on the EU membership trade perspective for Ukrainian sugar industry based on the existing studies available, primarily on von Cramon-Taubadel and Nivievskyi (2024).

Sugar is included in the "emergency brake" list of seven agricultural products subject to the reintroduction of tariff-rate quotas (TRQs) if import volumes exceed the average annual levels recorded between July 2021 and December 2023.

Historically, Ukraine was a significant producer of refined sugar, with output reaching 5 million tonnes across more than 190 sugar plants at the time of the Soviet Union's collapse. However, during the post-Soviet transition, outdated and inefficient infrastructure led to a sharp decline in the industry. Today, Ukraine's sugar sector comprises about 30 plants producing less than 1.5 million tonnes annually. This contraction has fostered a consolidated, vertically integrated, and increasingly efficient industry, making Ukrainian sugar small by international standards but highly competitive, particularly in the neighboring EU market. So similar to international scale, sugar sector also remains small in Ukraine, accounting for just 1% of the country's total agricultural output.

Before 2022, Ukraine's sugar exports primarily targeted former Soviet countries in Central Asia and the Caucasus. EU imports of Ukrainian sugar were sporadic, never exceeding 11% of the EU's total monthly imports. However, the full liberalization of trade in May 2022 significantly boosted EU imports of Ukrainian sugar. By late 2023 and early 2024, Ukraine supplied over 50% of the EU's monthly sugar imports, contributing to 39% of the EU's total sugar imports for the 2023/24 season. These exports mainly went to peripheral EU member states, increasing competition with core sugar-producing countries like Germany, France, the Netherlands, and Belgium. While Ukrainian imports created competitive pressure for domestic producers, they also alleviated a domestic sugar shortage in the EU, where production had fallen by over 2 million tonnes, leading to doubled sugar prices.

The OECD (2024) projects stable EU sugar exports and a gradual decline in imports until 2035. However, other studies, such as Bruemmer et al. (2023), predict further reductions in EU sugar production, signaling opportunities for Ukraine. With its increasing export surpluses and the EU's growing demand, Ukraine is well-positioned to expand its market share.

Ukraine's sugar consumption has also been affected by demographic shifts caused by the war. From 2021/22 to 2022/23, domestic consumption dropped by over 300,000 tonnes as millions of Ukrainians fled the country, with many seeking refuge in the EU, increasing sugar demand there. Although Ukraine's population is expected to rebound somewhat post-war, United Nations projections (2024) suggest a long-term annual decline of 300,000 people. With average annual per capita sugar consumption of 30 kilograms, this decline would reduce domestic consumption by approximately 9,000 tonnes annually, further increasing Ukraine's exportable surplus.

So the outlook for Ukraine's sugar sector looks quite positive, as the relatively small but highly competitive sector poised to benefit from evolving EU market dynamics, including declining domestic production and increased demand driven by demographic changes.

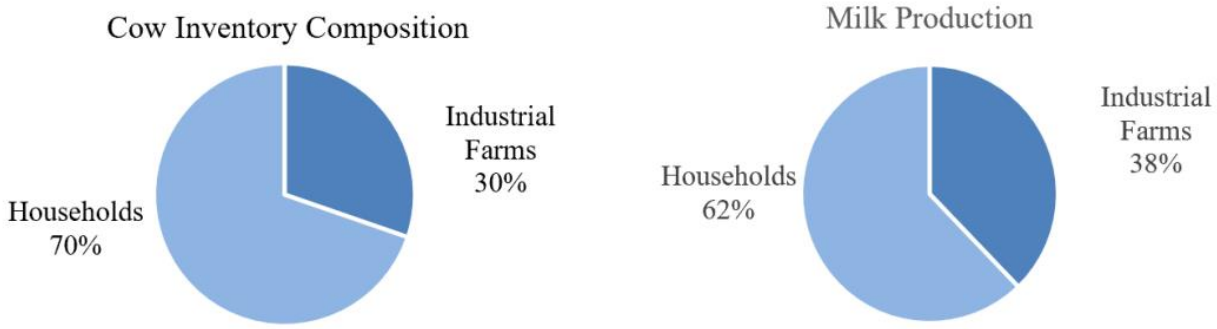
3.3.2. Dairy Products

Dairy is a special case in this study because it is not represented in the AGMEMOD model, yet it holds substantial importance for food and primary agriculture, especially for the rural population and economy. About 70% of dairy cows are kept by households, producing approximately 62% of the total raw milk output, while the rest is produced by relatively large industrial farms. This disproportion between the number of dairy cows and their output reflects a productivity gap between households and industrial farms, in addition to other intrinsic advantages of large farms, such as quality, food safety, and seasonality.

The share of households in dairy farming has been persistently decreasing since around 2007, following the overall decline in cow herd size and milk output (Nivievskyi, 2012). This trend affects the dairy products export potential of Ukraine. Historically, dairy farming in Ukraine has been internationally competitive, with at least 20% of dairy farms producing at an internationally competitive level, supporting dairy exports (von Cramon-

Taubadel et al., 2008). Moreover, larger dairy farms with higher productivity are associated with greater international competitiveness. For example, Nivievskyi and von Cramon-Taubadel (2008) estimated that the largest positive impact on competitiveness is achieved with a herd size of roughly 900 cows..

Figure 27 - Dairy cattle inventory and milk output, as of January 2024



source: FAS USDA (2024)

Figure 1 Ukraine's fluid milk production

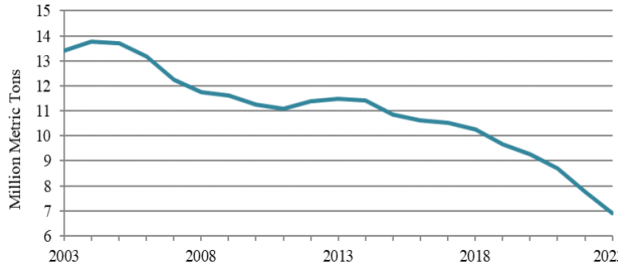
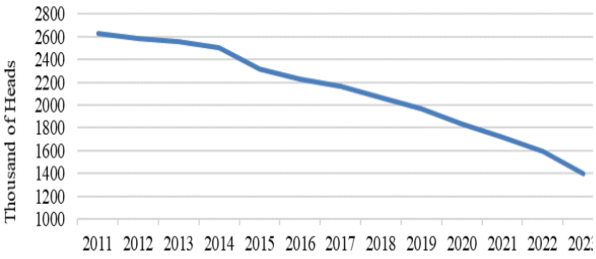


Figure 2 dairy cows inventory



source: FAS USDA (2024)

In terms of dairy products trade with the EU, dairy exports to the EU surged due to the ATMs regime introduced to mitigate the war's impact. Pre-war export volumes were not sustainable and were significantly restricted by the TRQs from the EU side, thus decreasing Ukraine's dairy products competitiveness in the EU market (Figures 30-31). As the trade barrier was lifted and the number of Ukrainian EU-approved processing facilities increased, export volumes to the EU at least doubled. By the fall of 2023, the number of Ukrainian EU-approved processing facilities had skyrocketed to 51 (FAS USDA, 2023). This demonstrates the revealed competitiveness of the dairy processing sector, which apparently builds upon the competitiveness of dairy farming. A gradual fundamental shift in raw milk output from households to industrial dairy farmers is expected to support further international competitiveness of the dairy sector and its export expansion in the EU market, if free trade between Ukraine and the EU prevails. However, a smaller raw milk supply will be a constraining factor for export expansion.

EU exports to Ukraine increased tenfold from 2016 to 2021, but their structure (primarily cheese) lies more in higher-value products (Figure 32-33), reflecting the historical and technological advantages of the EU in dairy processing. The drop in exports since 2022 primarily reflects a decrease in population (more than 4 million refugees) and overall incomes due to the war.

Figure 30 Ukraine's dairy exports to the EU, in 000 USD

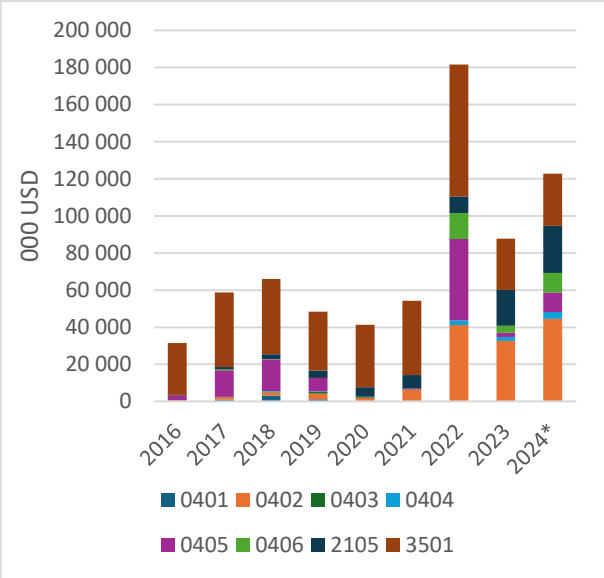


Figure 3 Ukraine's dairy exports to the EU, in t

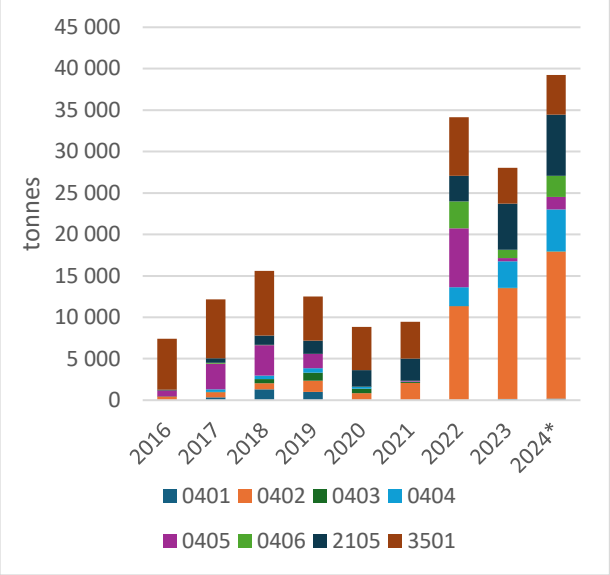


Figure 32 Ukraine's dairy import from the EU, in 000 USD

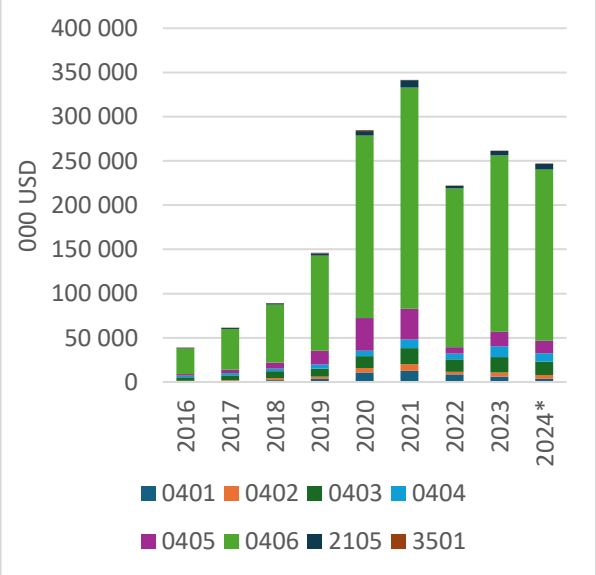
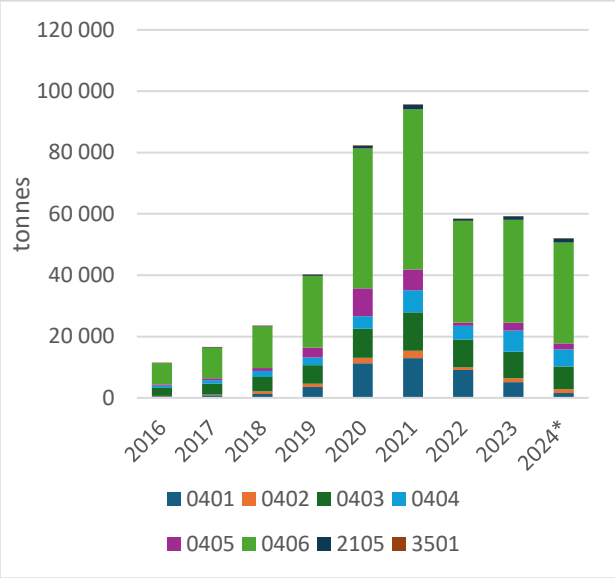


Figure 33 Ukraine's dairy import from the EU, in t



source: own demonstration using the Ukrstat data; Note: HS 0401 - milk and cream, not concentrated; HS 0402 - milk and cream, concentrated; HS 0403 - buttermilk, curdled milk and cream, yogurt, kephir etc; HS 0404 – whey; HS 0405 – butter and other animal fats; HS 0406 – cheese; HS 2105 – ice cream; HS 3501 - casein

4. Conclusions and Further Discussion

Despite the full-scale invasion by Russia in 2022, Ukraine's commitment to EU integration only strengthened, culminating in candidate status and the start of accession talks Economic ties between the EU and Ukraine have also strengthened, with the EU now being Ukraine's largest trading partner. Total trade reached €61.9 billion in 2023.

Recent agricultural trade tensions with the EU neighboring countries and ongoing discussions suggest that Ukraine's accession journey will be challenging. Moreover, Ukraine itself faces substantial institutional and economic hurdles, including in the agricultural sector. On the one hand the adoption and implementation of the EU

agricultural acquis and CAP will require substantial efforts by the government. Private sector will also face additional compliance costs to comply with the EU agricultural acquis. On the other hand, concerns over competition from highly competitive Ukraine's agriculture sector develop within the EU and farmers and their associations push in Brussels for additional trade restrictions with Ukraine.

By means of the AGMEMOD model, in this paper we first do a trade scenario analysis that incorporates these two possible developments: 1) possible trade restrictions (by means of ATMs) and 2) EU membership of Ukraine proxied by increased compliance costs for Ukrainian agricultural producers. In a nutshell, the outcome of these trade scenarios analysis is the following:

- Assuming the war ends in 2025, there is no a substantial difference between the baseline scenario (status quo or the current trade regime), fully liberalized or ATMs trade regime. This outcome looks consistent and plausible, as currently agricultural trade (even with the ATMs) is to a large extend already liberalized with the EU. Moreover, with no striking expected differences between the scenario outcome, this gives Ukraine a scope for further trade negotiations and strategies with the EU
- EU membership (modelled as increased compliance costs at about 10% plus free trade). It projected a short-term decline in Ukraine's agricultural output for major grains is expected, followed by recovery by 2033, albeit on a lower trajectory compared to the baseline. For other agricultural products there is no difference to the baseline.

Additionally, we qualitatively analyzed the implications of trade liberalization and expected EU membership for two other key agricultural sectors – sugar/sugar beet and dairy processing/farming sectors – as they are not explicitly modeled in the AGMEMOD framework. Both sectors have dramatically increased exports to the EU. The outlook for Ukraine's sugar sector is quite positive, as this relatively small but highly competitive sector is expected to benefit from evolving EU market dynamics and apparent demand from the EU food processing industry. Similarly, the outlook for the dairy farming/processing industry appears positive, with potential for further export expansion to the EU. Structural changes in dairy farming toward more large-scale industrial operations could enhance competitiveness in EU markets. However, the overall decline in raw milk supplies might limit the scope of Ukraine's dairy export expansion.

Furthermore, we expand the trade scenario analysis with additional considerations regarding Ukraine's agricultural competitiveness and EU membership. Ukraine has traditionally been highly competitive in major staple foods (grains and oilseeds), establishing itself as one of the key global agricultural exporters. Other products that have gained international competitiveness include poultry meat and sugar. From both Ukraine's and a global food security perspective, it is essential that Ukraine, even as an EU member, continues to maintain its competitiveness and increasingly contributes to feeding a growing global population. In particular, we examined how the following elements of EU accession/membership might affect Ukraine's agricultural competitiveness:

1) Trade regime with the EU. As it is unlikely for Ukraine to expect a surge in trade barriers with the EU, and a negative impact on Ukraine's agricultural competitiveness as a result. But still it is important for maintaining Ukraine's agricultural competitiveness to advocate for a fully liberalized trade regime with the EU.
2) Implication of a more complex and demanding EU agricultural acquis and CAP for public institutions and possible bottleneck for Ukraine's agricultural competitiveness. Ukraine's preparations for EU accession will require substantial additional public investments in the competent authorities and their capacities to implement and enforce the EU agricultural acquis. Failure to do so is expected to negatively impact agricultural competitiveness of Ukraine and delay the whole accession for Ukraine.
3) Implications of a complex and demanding EU agricultural acquis and CAP for private sector: additional compliance costs and agricultural competitiveness. We expect that Ukraine farmers might face additionally up to 10% (differentiated across the sectors) costs increase due to more stringent EU regulations. This is certainly not a critical and should not ruin Ukraine's comparative advantage in agriculture. Moreover, there is an evidence that Ukrainian farmers can their output and simultaneously contract harmful environmental impact, thus potentially compensating for the additional compliance costs
4) Expected EU CAP transfers and agricultural competitiveness. Ukraine as a candidate country can expect 10 to 14 billion Euros of budgetary transfers under the CAP and under the existing rules and policies. This implies a substantial additional fiscal pressure on the CAP budget that has been politically downscaled over the past. So additional spending on the EU CAP literally implies that the existing EU members should be ready to get less generous agricultural transfers from the EU and most likely this will not be politically acceptable, unless the existing CAP allocation rules and policies are changed. Most likely, from a political economy perspective, Ukraine will have to come up with a politically acceptable compromise on subsidies to proceed with accession talks, possibly even making some concessions. This is not necessarily a downside, taking into account the empirical evidence of negative impact of specific direct subsidies (including CAP subsidies) and tax benefits on agricultural productivity growth.

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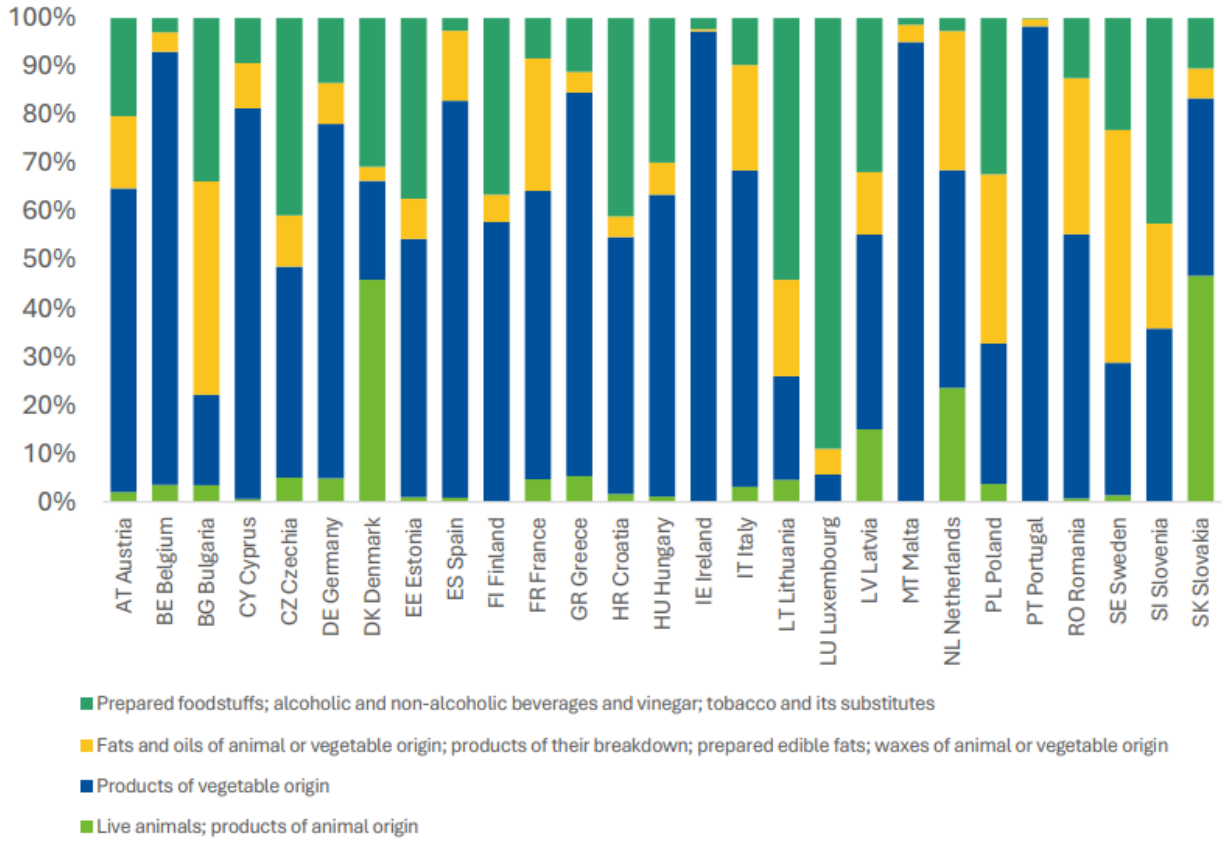
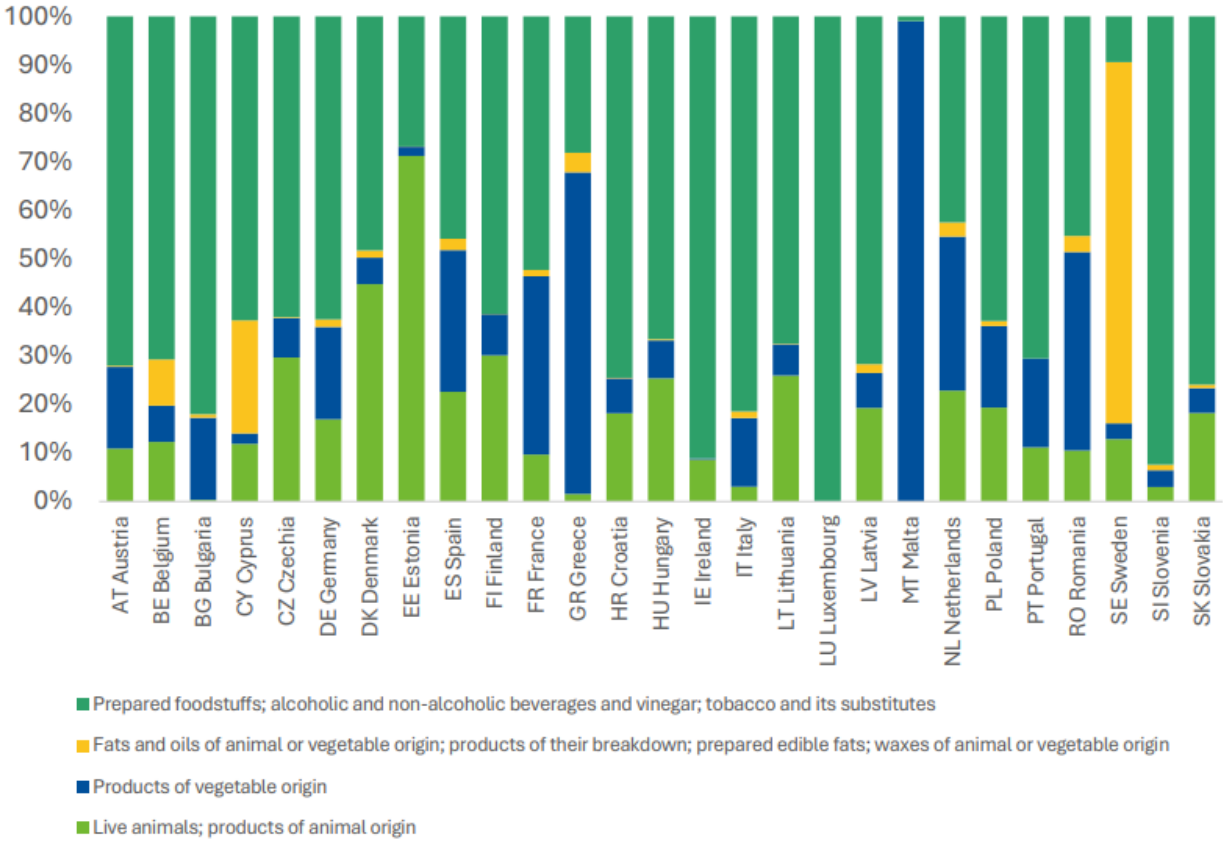
Annex

Figure 34 - The structure of the EU country specific agricultural exports from Ukraine, in %



source: CES (2024)

Figure 35 - The structure of the EU country specific agricultural imports toUkraine, in %



source: CES (2024)

Table 5 - Modeling outcome for crops under FT, ATM and the Baseline scenarios, thousand tonnes

	2000	2010	2015	2020	2021	2022	2023	2024	2025	2026	2029	2030	2033
Soft wheat imports	826.6	1.2	50.0	125.0	130.0	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Soft wheat production	10,197.0	16,851.3	26,532.0	24,877.0	32,151.0	20,729.2	21,500.0	21,387.2	18,924.9	21,978.5	18,057.3	17,804.3	17,108.8
Soft wheat total exports	260.5	4,859.6	13,974.0	18,489.0	20,366.0	11,223.2	11,640.5	11,160.9	22,073.6	15,301.7	13,598.6	13,136.6	12,669.2
Soft wheat exports to the EU	20.8	125.5	838.4	1,109.3	1,222.0	673.4	698.4	4,017.9	7,946.5	918.1	815.9	788.2	760.2
Barley imports	92.9	10.5	14.0	31.0	55.0	1.9	1.9	1.9	43.0	46.8	37.8	41.2	47.7
Barley production	6,871.9	8,484.9	8,288.4	7,636.0	9,437.0	5,608.2	4,821.4	6,189.9	6,292.8	5,443.2	5,761.8	5,905.5	6,352.0
Barley total exports	870.6	4,785.2	4,673.0	5,083.0	5,710.0	2,144.4	1,843.5	2,103.0	5,542.1	3,230.7	3,632.3	3,867.5	4,446.8
Barley exports to the EU	3.0	0.0	197.5	97.1	50.1	724.8	660.3	567.8	1,496.4	96.9	109.0	116.0	133.4
Maize imports	92.0	30.5	30.0	25.0	29.0	23.2	20.0	20.0	40.0	38.6	41.9	42.9	46.0
Maize production	3,848.1	11,953.0	23,327.6	30,290.0	42,110.0	26,186.9	27,000.0	22,087.7	28,686.5	35,785.2	37,803.8	38,525.4	42,520.3
Maize total exports	163.2	4,052.4	19,128.0	27,916.0	24,685.0	25,176.7	25,958.4	32,201.0	11,404.2	28,630.3	29,108.5	29,684.9	33,214.4

Maize exports to the EU	1.7	538.4	7,951.2	8,906.2	7,421.8	12,046.4	12,801.3	15,778.5	5,588.1	11,738.4	11,934.5	12,170.8	13,617.9
Rye imports	15.3	4.3	9.0	0.0	0.0	29.3	52.0	15.4	22.9	25.6	0.0	0.0	0.0
Rye production	968.3	464.9	391.0	457.0	593.0	314.0	277.4	282.2	280.7	290.3	309.6	319.3	350.3
Rye total exports	19.9	95.6	0.0	110.0	173.0	0.0	0.0	0.0	0.0	0.0	13.1	29.0	76.8
Rye exports to the EU		0.5	10.4	0.0	65.9	77.6	6.1	0.0	0.0	0.0	2.7	6.1	16.1
Oats imports	2.8	2.6	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Oats production	881.4	458.5	488.5	534.8	470.2	378.5	327.4	324.5	309.4	314.6	306.8	309.3	320.8
Oats total exports	21.7	23.8	64.5	10.4	16.4	8.4	8.9	59.9	50.8	41.3	42.6	44.1	49.5
Oats exports to the EU		0.0	4.1	3.1	3.3	2.9	1.8	9.6	8.1	6.2	6.4	6.6	7.4
Sunflower seeds imports	0.6	6.2	14.0	21.0	24.0	21.0	31.0	26.0	6.9	11.3	19.7	21.9	27.3
Sunflower seeds production	3,457.4	6,771.5	10,836.8	12,731.1	15,912.5	10,740.8	12,683.1	13,060.4	13,597.2	14,660.9	15,052.0	15,441.7	16,964.7
Sunflower seeds total exports	833.7	308.0	47.6	220.0	79.0	1,900.0	1,855.0	1,409.5	54.4	54.5	51.2	50.1	47.2
Sunflower seeds exports to the EU	543.8	49.9	42.5	209.0	57.8	1,886.4	517.1	2,114.2	81.6	49.0	46.0	45.1	42.5
Sunflower oil imports	21.1	40.3	1.7	0.1	0.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Sunflower oil production	972.8	2,990.4	5,241.5	6,770.7	5,373.3	4,971.2	5,776.9	3,838.6	5,763.0	6,238.8	6,412.1	6,586.4	7,268.8
Sunflower oil total exports	586.0	2,177.9	3,938.6	6,560.6	4,882.2	4,562.2	5,348.6	3,362.5	5,251.7	5,689.6	5,869.8	6,047.7	6,740.8
Sunflower oil exports to the EU	23.2	689.6	1,181.6	1,968.2	1,464.7	1,368.7	1,604.6	1,109.6	1,733.1	1,706.9	1,761.0	1,814.3	2,022.2
Sunflower meal imports			6.2	2.9	2.9	1.0	1.0	1.0	5.4	5.4	5.4	5.4	5.4
Sunflower meal production	945.0	2,869.2	3,624.8	5,667.0	4,523.5	4,178.1	4,851.1	3,227.0	4,844.8	5,244.8	5,390.5	5,537.0	6,110.8
Sunflower meal total exports	370.4	2,054.8	3,496.3	4,942.7	3,659.3	3,033.7	2,577.0	2,703.6	3,982.0	4,397.3	4,589.0	4,750.9	5,370.7
Sunflower meal exports to the EU	93.4	1,149.7	1,398.5	1,977.1	1,463.7	1,213.5	1,030.8	1,622.2	2,389.2	1,758.9	1,835.6	1,900.4	2,148.3
Rapeseed seeds imports	0.1	2.2	3.0	8.0	77.0	12.0	40.0	26.0	26.0	26.0	26.0	26.0	26.0
Rapeseed seeds production	139.8	1,534.1	1,781.0	2,557.2	2,938.9	3,318.0	3,602.0	3,500.0	4,317.1	4,850.8	5,830.8	6,099.0	6,873.9
Rapeseed seeds total exports	68.9	1,228.8	1,481.0	2,382.5	2,671.0	2,710.0	3,405.0	3,202.1	3,954.1	4,419.5	5,290.2	5,528.2	6,230.2
Rapeseed seeds exports to the EU	15.2	1,310.1	1,098.9	1,963.1	1,766.1	2,324.8	1,955.7	2,337.5	2,886.5	3,093.6	3,703.1	3,869.7	4,361.1
Rapeseed oil imports	0.0	0.1	0.1	4.7	3.1	1.8	0.3	1.3	1.3	1.3	1.3	1.3	1.3
Rapeseed oil production	28.9	28.1	150.0	125.4	171.2	66.5	132.6	132.7	138.7	167.4	208.8	220.4	248.2
Rapeseed oil total exports	4.2	0.3	123.1	119.2	167.5	60.7	126.6	125.0	131.7	159.7	201.2	212.9	240.8
Rapeseed oil exports to the EU	0.0	0.3	81.2	52.7	119.6	46.7	115.2	61.3	64.5	62.3	78.5	83.0	93.9
Rapeseed meal imports		0.8	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Rapeseed meal production	40.0	39.4	189.0	160.2	209.2	84.5	166.6	165.8	173.3	209.1	260.8	275.3	310.0
Rapeseed meal total exports	2.8	1.0	21.8	144.1	158.4	62.1	121.9	52.6	133.2	169.0	220.7	235.3	269.9
Rapeseed meal exports to the EU		0.4	92.1	58.6	87.5	24.5	88.6	26.3	66.6	67.6	88.3	94.1	108.0

Soya beans imports	0.0	1.3	4.0	23.5	1.0	2.0	2.0	2.0	3.9	3.1	1.8	1.6	1.0
Soya beans production	64.4	1,680.2	3,809.6	2,716.8	3,390.9	3,265.1	4,112.6	4,409.7	5,360.4	5,307.2	5,247.0	5,222.2	5,140.1
Soya beans total exports	7.8	199.6	2,694.6	1,708.1	994.8	1,204.5	2,545.8	2,830.0	3,744.6	3,692.5	3,606.9	3,577.0	3,485.4
Soya beans exports to the EU	4.5	150.3	1,347.3	854.1	497.4	602.2	1,272.9	1,981.0	2,621.2	1,846.2	1,803.5	1,788.5	1,742.7
Soya oil imports	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Soya oil production	6.2	68.8	169.0	246.5	267.2	269.7	346.9	272.5	269.2	266.6	263.6	262.4	258.3
Soya oil total exports	1.1	36.7	154.3	301.9	239.7	237.0	277.0	258.5	253.8	250.3	246.9	245.6	241.3
Soya oil exports to the EU			0.2	0.1	0.0	0.5	2.4	1.3	1.3	0.3	0.2	0.2	0.2
Soya meal imports	0.5	38.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Soya meal production	26.6	297.2	782.8	1,117.1	1,195.5	1,220.3	1,564.5	1,226.6	1,212.1	1,200.2	1,186.8	1,181.2	1,162.9
Soya meal total exports		3.2	261.3	583.2	551.8	361.6	508.8	331.9	492.7	457.6	390.6	366.1	290.7
Soya meal exports to the EU		0.9	78.4	175.0	165.5	108.5	152.6	232.4	344.9	137.3	117.2	109.8	87.2

Table 6 - Modeling outcome for crops under the EU and Baseline scenarios, 000 tonnes

	2000	**2010**	**2015**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2029**	**2030**	**2033**
Виробництво пшениці_Базова лінія	10,197	16,851	26,532	24,877	32,151	20,729	21,500	21,387	18,925	21,979	18,057	17,804	17,109
Виробництво м'якої пшениці_ЄС	10,197	16,851	26,532	24,877	32,151	20,729	21,500	21,387	18,925	22,369	18,455	18,218	17,578
Загальний експорт м'якої пшениці_Базова лінія	261	4,860	13,974	18,489	20,366	11,223	11,641	11,161	22,074	15,302	13,599	13,137	12,669
Загальний експорт м'якої пшениці_ЄС	261	4,860	13,974	18,489	20,366	11,223	11,641	11,161	22,074	15,423	13,942	13,495	13,079
Експорт м'якої пшениці до ЄС_Базова лінія	21	126	838	1,109	1,222	673	698	4,018	7,946	918	816	788	760
Експорт м'якої пшениці до ЄС_ЄС	21	126	838	1,109	1,222	673	698	4,018	7,946	925	836	810	785
Виробництво кукурудзи_Базова лінія	3,848	11,953	23,328	30,290	42,110	26,187	27,000	22,088	28,686	35,785	37,804	38,525	42,520
Виробництво кукурудзи_ЄС	3,848	11,953	23,328	30,290	42,110	26,187	27,000	22,088	28,686	33,491	35,525	36,217	40,057
Загальний експорт кукурудзи_Базова лінія	163	4,052	19,128	27,916	24,685	25,177	25,958	32,201	11,404	28,630	29,109	29,685	33,214
Загальний експорт кукурудзи_ЄС	163	4,052	19,128	27,916	24,685	25,177	25,958	32,201	11,404	26,440	26,933	27,481	30,863
Експорт кукурудзи до ЄС_Базова лінія	2	538	7,951	8,906	7,422	12,046	12,801	15,779	5,588	11,738	11,934	12,171	13,618
Експорт кукурудзи до ЄС_ЄС	2	538	7,951	8,906	7,422	12,046	12,801	15,779	5,588	10,840	11,043	11,267	12,654
Виробництво ячменю_Базова лінія	6,872	8,485	8,288	7,636	9,437	5,608	4,821	6,190	6,293	5,443	5,762	5,906	6,352
Виробництво ячменю_ЄС	6,872	8,485	8,288	7,636	9,437	5,608	4,821	6,190	6,293	5,394	5,699	5,842	6,287
Загальний експорт ячменю_Базова лінія	871	4,785	4,673	5,083	5,710	2,144	1,844	2,103	5,542	3,231	3,632	3,868	4,447
Загальний експорт ячменю_ЄС	871	4,785	4,673	5,083	5,710	2,144	1,844	2,103	5,542	3,210	3,574	3,808	4,389
Експорт ячменю до ЄС_Базова лінія	3	0	197	97	50	725	660	568	1,496	97	109	116	133
Експорт ячменю до ЄС_ЄС	3	0	197	97	50	725	660	568	1,496	96	107	114	132
Виробництво жита_Базова лінія	968	465	391	457	593	314	277	282	281	290	310	319	350
Виробництво жита_ЄС	968	465	391	457	593	314	277	282	281	290	309	319	350

Загальний експорт жита_Базова лінія	20	96	0	110	173	0	0	0	0	0	13	29	77
Загальний експорт жита_ЄС	20	96	0	110	173	0	0	0	0	0	13	29	77
Експорт жита до ЄС_Базова лінія		0	10	0	66	78	6	0	0	0	3	6	16
Експорт жита до ЄС_ЄС		0	10	0	66	78	6	0	0	0	3	6	16
Виробництво вівса_Базова лінія	881	459	489	535	470	379	327	324	309	315	307	309	321
Виробництво вівса_ЄС	881	459	489	535	470	379	327	324	309	310	302	305	316
Загальний експорт вівса_Базова лінія	22	24	65	10	16	8	9	60	51	41	43	44	50
Загальний експорт вівса_ЄС	22	24	65	10	16	8	9	60	51	41	42	43	49
Експорт вівса до ЄС_Базова лінія		0	4	3	3	3	2	10	8	6	6	7	7
Експорт вівса до ЄС_ЄС		0	4	3	3	3	2	10	8	6	6	7	7
Виробництво насіння соняшнику_Базова лінія	3,457	6,772	10,837	12,731	15,913	10,741	12,683	13,060	13,597	14,661	15,052	15,442	16,965
Виробництво насіння соняшнику_ЄС	3,457	6,772	10,837	12,731	15,913	10,741	12,683	13,060	13,597	14,667	15,060	15,450	16,974
Загальний експорт насіння соняшнику_Базова лінія	834	308	48	220	79	1,900	1,855	1,409	54	54	51	50	47
Загальний експорт насіння соняшнику_ЄС	834	308	48	220	79	1,900	1,855	1,409	54	54	51	50	47
Експорт насіння соняшнику до ЄС_Базова лінія	544	50	42	209	58	1,886	517	2,114	82	49	46	45	43
Експорт насіння соняшнику до ЄС_ЄС	544	50	42	209	58	1,886	517	2,114	82	49	46	45	43
Виробництво ріпаку_Базова лінія	140	1,534	1,781	2,557	2,939	3,318	3,602	3,500	4,317	4,851	5,831	6,099	6,874
Виробництво ріпаку_ЄС	140	1,534	1,781	2,557	2,939	3,318	3,602	3,500	4,317	4,833	5,809	6,077	6,849
Загальний експорт ріпаку_Базова лінія	69	1,229	1,481	2,382	2,671	2,710	3,405	3,202	3,954	4,419	5,290	5,528	6,230
Загальний експорт ріпаку_ЄС	69	1,229	1,481	2,382	2,671	2,710	3,405	3,202	3,954	4,402	5,271	5,508	6,208
Експорт ріпаку до ЄС_Базова лінія	15	1,310	1,099	1,963	1,766	2,325	1,956	2,338	2,887	3,094	3,703	3,870	4,361
Експорт ріпаку до ЄС_ЄС	15	1,310	1,099	1,963	1,766	2,325	1,956	2,338	2,887	3,081	3,689	3,855	4,345
Виробництво соєвих бобів_Базова лінія	64	1,680	3,810	2,717	3,391	3,265	4,113	4,410	5,360	5,307	5,247	5,222	5,140
Виробництво соєвих бобів_ЄС	64	1,680	3,810	2,717	3,391	3,265	4,113	4,410	5,360	5,286	5,226	5,201	5,120
Загальний експорт соєвих бобів_Базова лінія	8	200	2,695	1,708	995	1,204	2,546	2,830	3,745	3,692	3,607	3,577	3,485
Загальний експорт соєвих бобів_ЄС	8	200	2,695	1,708	995	1,204	2,546	2,830	3,745	3,676	3,591	3,561	3,470
Експорт соєвих бобів до ЄС_Базовий	4	150	1,347	854	497	602	1,273	1,981	2,621	1,846	1,803	1,789	1,743
Експорт соєвих бобів до ЄС_ЄС	4	150	1,347	854	497	602	1,273	1,981	2,621	1,838	1,796	1,781	1,735
Виробництво соняшникової олії_Базова лінія	973	2,990	5,242	6,771	5,373	4,971	5,777	3,839	5,763	6,239	6,412	6,586	7,269
Виробництво соняшникової олії_ЄС	973	2,990	5,242	6,771	5,373	4,971	5,777	3,839	5,763	6,242	6,416	6,590	7,273
Загальний експорт соняшникової олії_Базова лінія	586	2,178	3,939	6,561	4,882	4,562	5,349	3,362	5,252	5,690	5,870	6,048	6,741
Загальний експорт соняшникової олії_ЄС	586	2,178	3,939	6,561	4,882	4,562	5,349	3,362	5,252	5,692	5,873	6,051	6,745
Експорт соняшникової олії до ЄС_Базова лінія	23	690	1,182	1,968	1,465	1,369	1,605	1,110	1,733	1,707	1,761	1,814	2,022
Експорт соняшникової олії до ЄС_ЄС	23	690	1,182	1,968	1,465	1,369	1,605	1,110	1,733	1,708	1,762	1,815	2,023

Виробництво соняшникового шроту_Базова лінія	945	2,869	3,625	5,667	4,524	4,178	4,851	3,227	4,845	5,245	5,390	5,537	6,111
Виробництво соняшникового шроту_ЄС	945	2,869	3,625	5,667	4,524	4,178	4,851	3,227	4,845	5,247	5,393	5,540	6,114
Загальний експорт соняшникового шроту_Базова лінія	370	2,055	3,496	4,943	3,659	3,034	2,577	2,704	3,982	4,397	4,589	4,751	5,371
Загальний експорт соняшникового шроту_ЄС	370	2,055	3,496	4,943	3,659	3,034	2,577	2,704	3,982	4,400	4,592	4,754	5,374
Експорт соняшникового шроту до ЄС_Базова лінія	93	1,150	1,399	1,977	1,464	1,213	1,031	1,622	2,389	1,759	1,836	1,900	2,148
Експорт соняшникового шроту до ЄС_ЄС	93	1,150	1,399	1,977	1,464	1,213	1,031	1,622	2,389	1,760	1,837	1,902	2,150
Виробництво ріпакової олії_Базова лінія	29	28	150	125	171	67	133	133	139	167	209	220	248
Виробництво ріпакової олії_ЄС	29	28	150	125	171	67	133	133	139	167	208	220	247
Загальний експорт ріпакової олії_Базова лінія	4	0	123	119	167	61	127	125	132	160	201	213	241
Загальний експорт ріпакової олії_ЄС	4	0	123	119	167	61	127	125	132	160	201	212	240
Експорт ріпакової олії до ЄС_Базова лінія	0	0	81	53	120	47	115	61	65	62	78	83	94
Експорт ріпакової олії до ЄС_ЄС	0	0	81	53	120	47	115	61	65	62	78	83	94
Виробництво ріпакового шроту_Базова лінія	40	39	189	160	209	84	167	166	173	209	261	275	310
Виробництво ріпакового шроту_ЄС	40	39	189	160	209	84	167	166	173	209	260	274	309
Загальний експорт ріпакового шроту_Базова лінія	3	1	22	144	158	62	122	53	133	169	221	235	270
Загальний експорт ріпакового шроту_ЄС	3	1	22	144	158	62	122	53	133	169	220	234	269
Експорт ріпакового шроту до ЄС_Базова лінія		0	92	59	88	24	89	26	67	68	88	94	108
Експорт ріпакового шроту до ЄС_ЄС		0	92	59	88	24	89	26	67	68	88	94	108
Виробництво соєвої олії_Базова лінія	6	69	169	246	267	270	347	272	269	267	264	262	258
Виробництво соєвої олії_ЄС	6	69	169	246	267	270	347	272	269	266	263	261	257
Загальний експорт соєвої олії_Базова лінія	1	37	154	302	240	237	277	258	254	250	247	246	241
Загальний експорт соєвої олії_ЄС	1	37	154	302	240	237	277	258	254	249	246	245	240
Експорт соєвої олії до ЄС_Базова лінія			0	0	0	0	2	1	1	0	0	0	0
Експорт соєвої олії до ЄС_ЄС			0	0	0	0	2	1	1	0	0	0	0
Виробництво соєвого шроту_Базова лінія	27	297	783	1,117	1,196	1,220	1,565	1,227	1,212	1,200	1,187	1,181	1,163
Виробництво соєвого шроту_ЄС	27	297	783	1,117	1,196	1,220	1,565	1,227	1,212	1,195	1,182	1,176	1,158
Загальний експорт соєвого шроту_Базова лінія		3	261	583	552	362	509	332	493	458	391	366	291
Загальний експорт соєвого шроту_ЄС		3	261	583	552	362	509	332	493	453	386	361	286
Експорт соєвого шроту до ЄС_Базова лінія		1	78	175	166	108	153	232	345	137	117	110	87
Експорт соєвого шроту до ЄС_ЄС		1	78	175	166	108	153	232	345	136	116	108	86