

Impact of the war in Ukraine on the Moldovan agriculture sector – focus on cereals and oilseeds

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Executive Summary

- Global food prices have been increasing since mid-2021; war in UKR has increased food prices further, especially for some key agri-food commodities, where UKR is a large exporter
- Impact on consumers mainly through inflation; very high inflation in MDA affects consumers negatively, mainly driven by food and energy price increase
- Agriculture is an important economic sector in MDA with around 10% of GDP and 21% of employment; productivity in sector lower than rest of economy; also, sector highly vulnerable to external shocks, thus production volumes and exports fluctuate strongly yoy
- Price increase due to war in UKR at first glance: good for MDA as a net exporter; but, cost of key inputs also increased and logistics a key bottleneck for MDA farmers competing with UKR
- Our analysis shows that the cost for producing key agricultural commodities has increased between 50% to 100%; in addition: transport costs for exports from MDA increased by 180%
- On top, poor weather conditions led to below-average harvest expectations for the current year
- In addition: base rate hikes due to high inflation drove up financing costs
- Net effect is mixed for the analysed commodities: using average yields, impact is positive (prices increased stronger than costs) for sunflower seeds and negative for wheat, maize and rapeseed
- Policy response to ease pressure on agricultural producers:
 - Temporary financial support for input costs to most affected producers
 - Improvements in logistics infrastructure
 - Improved access to finance for farmers (e.g. temporary increase of interest rate subsidies, guarantees)
 - Long-term: improvements in irrigation and post-harvest infrastructure, product development and climate-resilient cultivation systems

Outline

1. Rationale / Background
2. Role of agriculture in Moldova
3. Impact of the war in UKR on global food prices
4. Impact on consumers in Moldova
5. Impact on Moldovan agriculture sector
6. Key challenges for MDA agriculture sector due to war in UKR
7. Policy response and recommendations

1. Rationale / Background

- Global food prices have been on the rise since mid-2021
- The war in Ukraine has further increased the upward pressure on food prices, especially for crops, where UKR is a main exporter (wheat, oilseeds, maize)
- While bad for consumers of food products, this has positive effects for producers of food products. In net exporting countries, the positive effects can outweigh the negative
- MDA is a net exporter of important staple agri-food products (cereals, oilseeds)

Goal of this Policy Study: Overview of how the war in UKR affects the Moldovan agriculture sector? Specifically:

1. What is the impact of increased prices on food consumers in MDA?
2. What is the impact of increased prices on food producers in MDA?
3. In what other ways does the war in UKR affect the sector in Moldova?

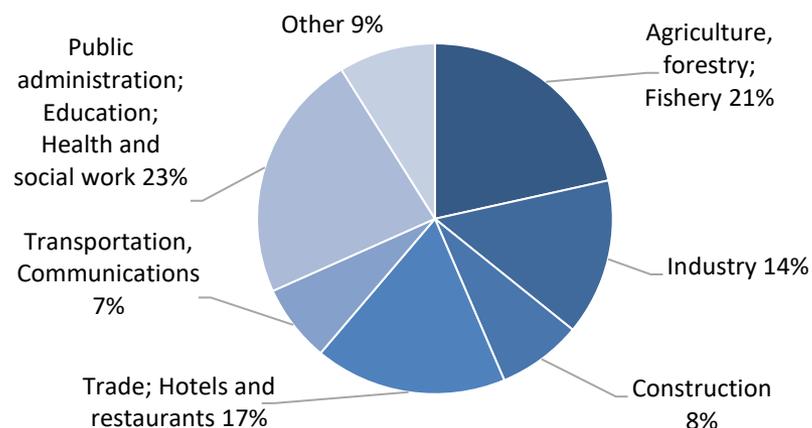
2. Role of agriculture in MDA

Agriculture share in GDP



Source: National Bureau of Statistics

Share in employment by economic activity

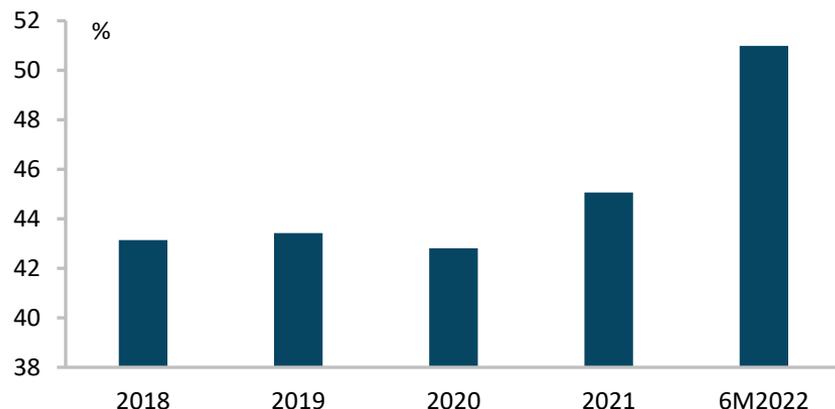


Source: National Bureau of Statistics

- Share of agriculture in GDP has been declining for a few years, but is still significant at around 10%
 - A significant share of the population is employed in agriculture, in 2021 around 21% of employed population
 - In rural areas, this share is significantly higher with 37% of employment
 - Actual employment in the sector may be higher due to prevalence of informal employment, especially on smaller subsistence-level farms
 - Higher share of sector in employment vs GDP illustrates that productivity in the sector is lower than rest of economy
- **Role of the agriculture sector in the economy is decreasing slowly**
- **Overall, role of the sector in MDA is still big, especially in rural areas**

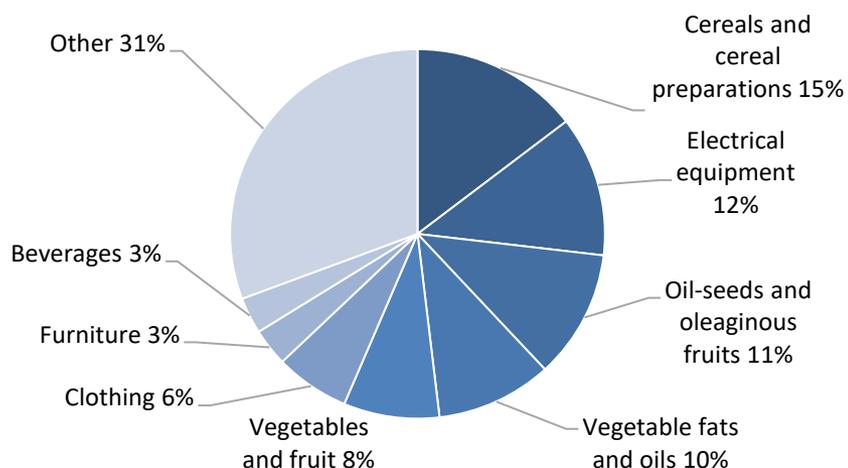
Role of agri-food exports

Agri-food products share in exports



Source: National Bureau of Statistics; note: includes processed food products

Structure of Moldovan exports



Source: National Bureau of Statistics, data for 6M2022; Note: trade in goods

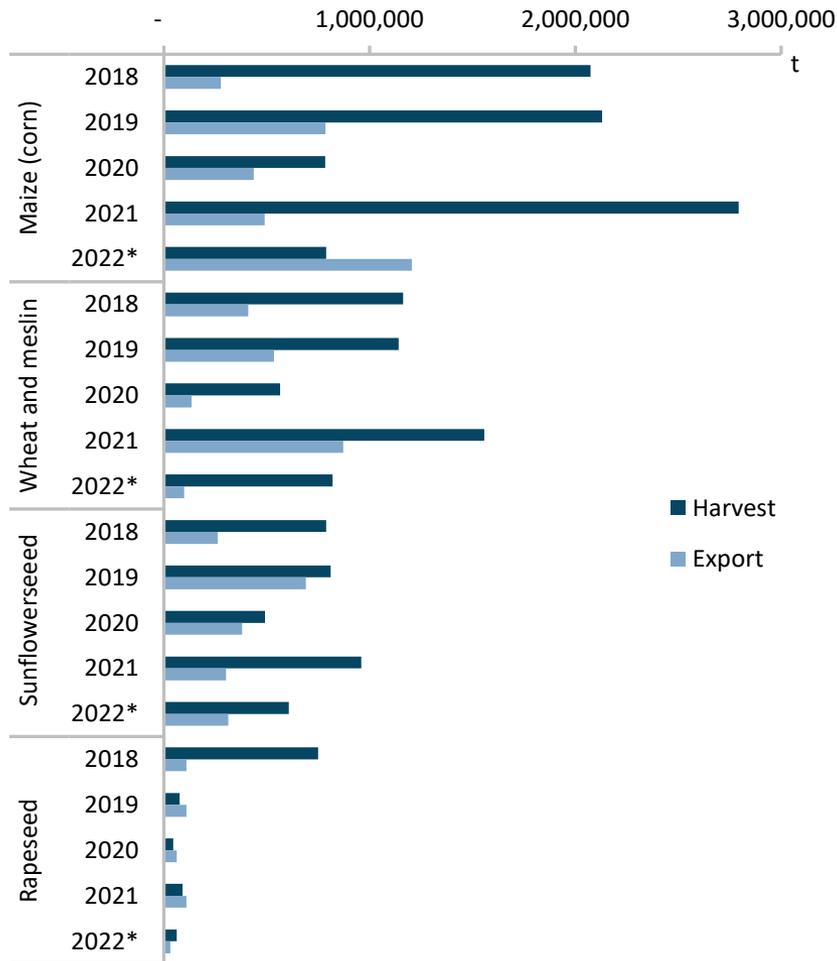
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- Agri-food sector plays a key role for Moldovan exports
- Including processed food products (e.g. wine, vegetable oil), share is as high as 45% in 2021
- In 6M2022, this share increased even further to 51%; agri-food key driver of export growth in 6M2022
 - Reason: record harvest in 2021 and price effects
- The most important agri-food exports are cereals, vegetables & fruits, oilseeds as well as beverages and vegetable oils
- 6M2022: cereals most important export category with a share of 14.6%
- Similarly, oilseeds, third most important export with a share of 11.2% of exports

➤ **Agri-food products play a key role for MDA exports**

Harvest and export volumes

Harvest and export volumes of key commodities

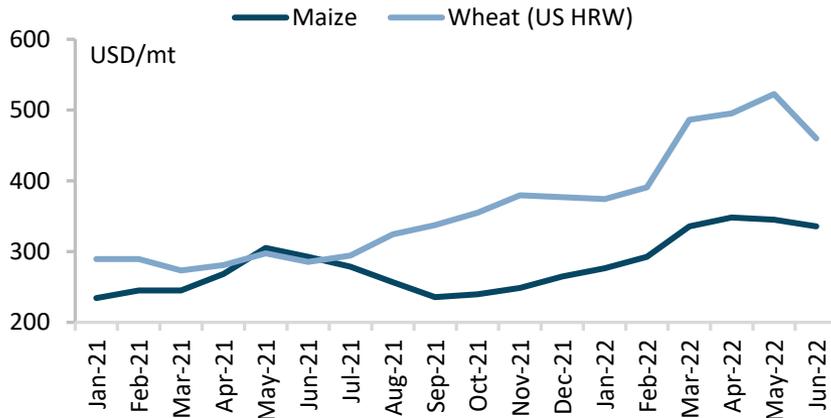


Source: UN Comtrade, Moldova Customs Office, Ministry of Agriculture and Food Industry; *estimates

- In general: correlation between harvest and export volumes; for some crops, correlation between previous year's harvest and export volumes
 - In some years, restrictions on exports due to food security concerns limit this relationship, e.g. 3 months export ban for wheat in 2022
 - MDA is a price-taker; thus, prices realized by farmers are a function of international prices (spot and futures) and logistical costs
 - Production costs in MDA do not influence the price on international markets
 - MDA farmers only have limited ability to adjust export volumes to prices
 - Limited storage and processing facilities
- **MDA export volumes determined mainly by harvest, not by market prices**

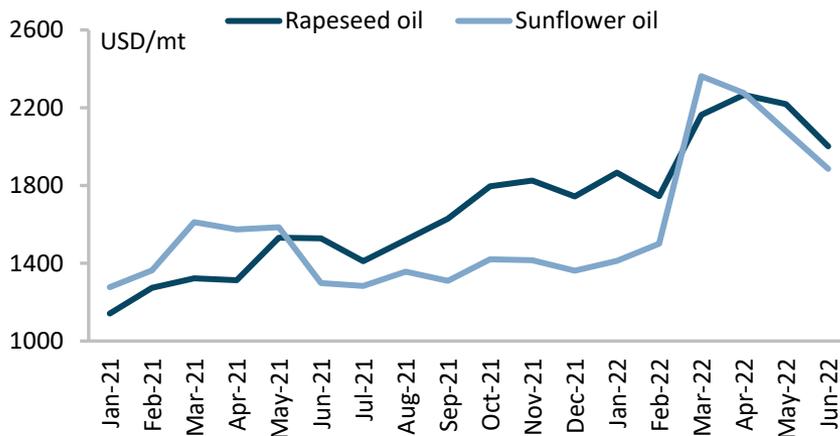
3. Development of global agri-food prices

International prices for selected cereals



Source: World Bank

International prices for selected vegetable oils



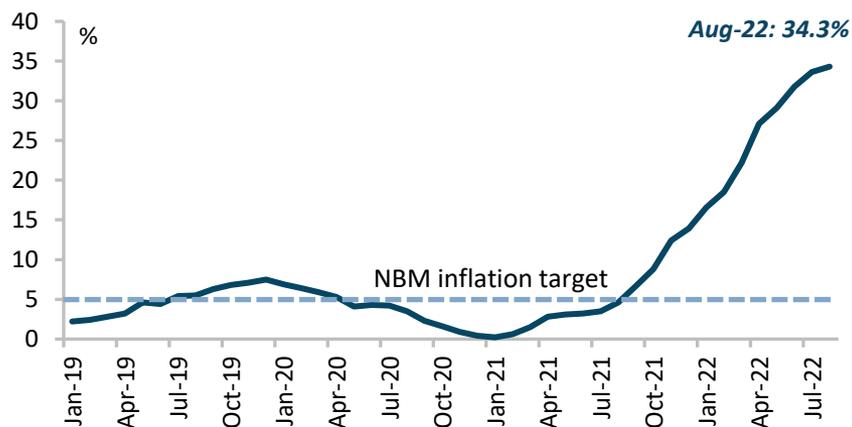
Source: World Bank

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- International prices for cereals and vegetable oils have been rising since mid-2021
 - After the start of the war in UKR, prices spiked further upwards
 - Both UKR and RUS important exporters of cereals (around 18% of world exports) & oilseeds/vegetable oils (e.g. sunflower oil, >50% of world exports)
 - War in UKR made exports of agri-food products from UKR very difficult, expectation: highly reduced export volumes
 - In recent weeks, prices for cereals and oilseeds/vegetable oils have fallen from their peaks due to new harvest season
 - However, still higher than before war, esp. for oilseeds/vegetable oils
- **Agri-food prices for key commodities increased sharply due to war in UKR**

4. Impact on consumers in Moldova

Inflation



Source: National Bank of Moldova; CPI, end of period

Share of food and energy in consumer price index

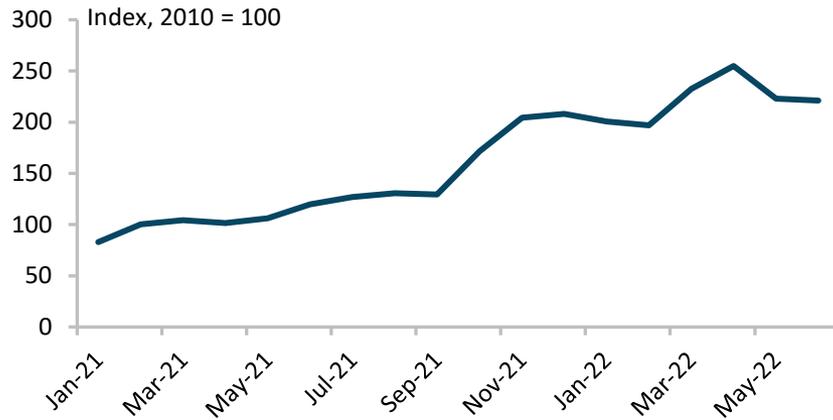
Product group (in %)	Moldova	Germany	Eurozone
Food and drinks	36.6	9.4	17.3
Energy	6.1	5.6	5.9
Electricity	3.3	2.6	2.9
Gas	1.9	2.5	1.9
District heating	1.0	0.5	3.3

Sources: National Bureau of Statistics Moldova, Federal Statistical Office of Germany, Eurostat

- Increase of food prices affects consumers negatively; main channel: inflation
- Inflation in MDA increased a lot, Aug-22: 34.3%, one of the highest in the region
 - Largely driven by food prices
 - Energy prices a second important factor
- Share of food in MDA CPI much higher than e.g. in Eurozone; larger effect on inflation
- Recent WB-study: MDA with 10th highest food-price inflation worldwide
- On the other hand, the impact on food producers is not immediately clear
 - Could be positive, if revenues also increase
 - But, food prices also include other costs, e.g. energy costs for processing
- **High inflation in MDA strongly driven by food prices; clearly a problem for consumers**
- **But, could be good for producers; more detailed analysis needed**

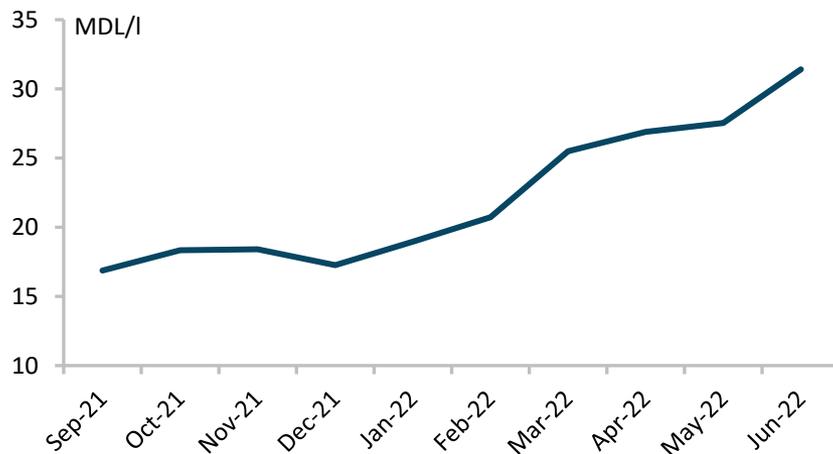
5. Impact on Moldovan agri-food sector

International prices for fertilizer (N, P, K)



Source: World Bank

Local price for diesel fuel



Source: ANRE

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- As a net exporter of cereals and oilseeds, MDA could potentially benefit from higher prices for these commodities
 - But, prices for inputs have also been on the rise, especially for fertilizers and diesel fuel
 - These inputs have a major impact on the cost structure of producing key agri-food products
 - The share of fertilizer in overall costs can be up to 50% for some crops
 - Increased input costs especially problematic for cereals, where profit margins are slim
 - In addition, strong increase in transport costs for exports from MDA due to congestion of logistics infrastructure
 - UKR cannot export through Black Sea ports, so they are using MDA road, rail and Danube ports infrastructure
- **Unclear if net effect (higher output prices vs. higher input & transport cost) for MDA farmers is positive or negative**

Methodology of analysis

- To determine the net effect of increased output prices and increased input costs, we conducted an analysis based on two pillars:
 1. a) Analysis of the average cost structure for 4 years prior to the war in Ukraine for key agricultural export commodities (wheat, maize, sunflower seed and rapeseed). b) Analysis of the cost structure for the 2022/2023 marketing year (after the start of the war in UKR) for the same key commodities (wheat, maize, sunflower seed and rapeseed)
 2. Key stakeholder interviews to gather information about the nature of the challenges farmers in MDA are facing due to the war in UKR. Interview partners included producers, traders' association, importers and wholesalers of agricultural inputs, Ministry of Agriculture and Food Industry, and FAO Moldova Office
- Since initial interviews showed that international market prices for agricultural commodities are not the relevant output prices for producers in MDA, we conducted additional research to determine the development of prices for the key commodities
 - We look at output prices Moldovan farmers receive from traders (i.e. regional output prices). In the past months, these prices have been lower than world market prices due to an oversupply of UKR products, which could not be exported to world markets through UKR sea ports, at below-market prices
 - We also consider the cost of transport as a factor reducing the output price realised by the producer and its development. This cost increased sharply due to the war in UKR, due to the much larger demand on the MDA transport infrastructure (esp. the Danube ports and railway infrastructure), as UKR products were also transported through these routes, and much higher demand for MDA transportation units from UKR exporters. As a result, MDA exporters are also increasingly using the ports of Romania, which are further away and thus more expensive to reach
 - Thus, the cost of exporting per tonne is determined as the sum of production cost at farmgate, plus cost of transport to port, plus trader's margin (as a percentage of market price)

Assessment of changes in cost structure

- The analysis aims to illustrate how the cost of producing and exporting key agri-food commodities in MDA has changed due to the war in Ukraine
- The cost of production depends on the cost of key inputs **per hectare of land** incl.
 - Production materials (seeds, fertilizers, crop protection)
 - Mechanical works and labour cost
 - Other expenditures (e.g. administrative expenses, usage fees for equipment, etc.)
- The cost for drying and storage **per tonne** of commodity
- To which is added, in case of export:
 - Traders margin as a **percentage of the market price** (on average 5%)
 - Variable export costs (transportation to port, transboarding cost, etc.) **per tonne** of exported commodity
- Thus, the cost per unit depends not only on the development of prices for inputs, but also on the expected yield for the harvesting season. When a higher yield per hectare is realized, the cost of producing one tonne of a certain commodity decreases
- Our analysis estimates the increase in production and export costs for the 2022 harvest compared to the pre-war 4-year average

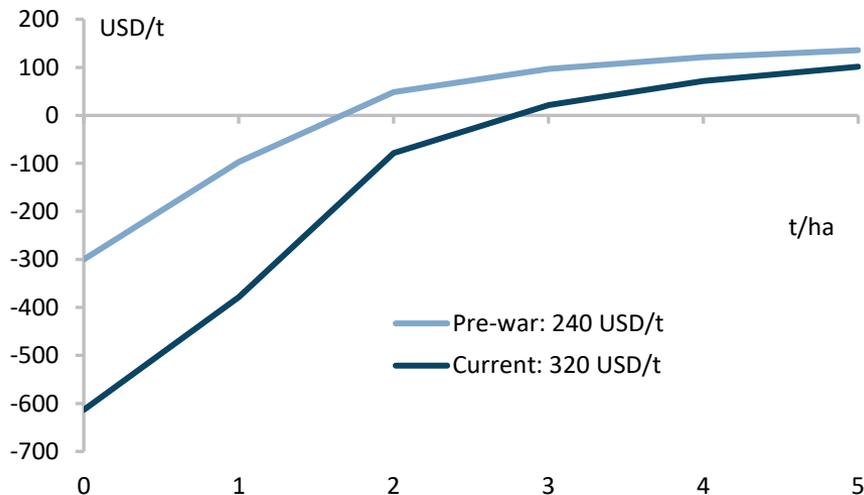
Cost structure - wheat

Change in wheat export cost structure

Cost structure for a 3 t/ha yield, USD	pre-war	2022	difference
Materials	51	123	141%
Mechanical works and labour	37	59	60%
Other expenditures	9	18	107%
Drying and storage (variable cost)	10	13	30%
Production cost	107	213	99%
Trader's margin	10	10	0%
Export costs (variable costs)	25	70	180%
TOTAL COST, USD	142	294	106%

Source: own research

Expected loss/profit before the war vs. now



Source: own research

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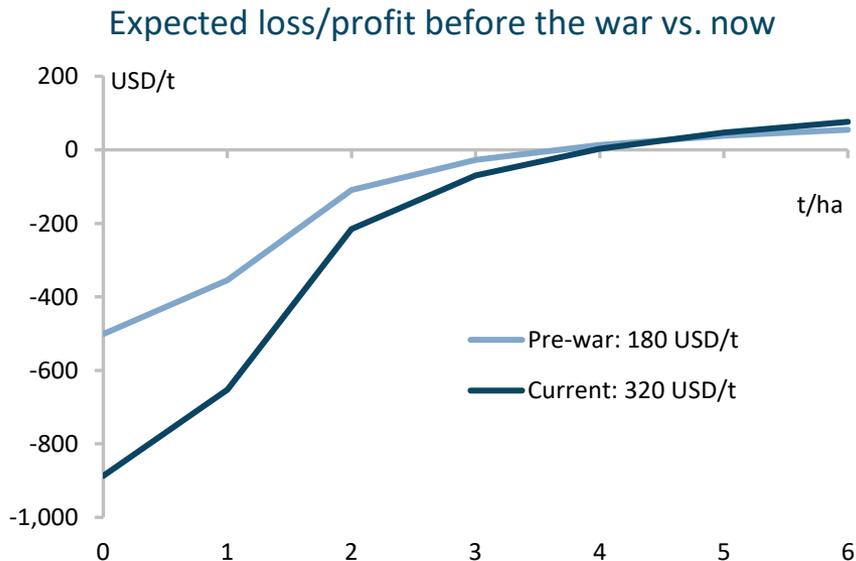
- Cost of exporting 1 t of wheat in MDA has increased by 106% due to the war in UKR; production cost +99%, transport cost +180%
- Whether wheat production is profitable given the new cost structure, depends on the yield realised as well as the market price
- Average yields in MDA are around 3.3 t/ha; however, during drought years it has been as low as 1.9 t/ha
- At current prices of 320 USD/t, farmers would make a profit with yields above 3 t/ha
- Prior to the war, average prices were around 240 USD/t; but due to the lower cost, farmers made profits even with yields from 2 t/ha
- For this year: expected yield around 3 t/ha on average; but much lower in South and Centre regions, could be as low as 1.5 t/ha
- **Profitability of wheat export in MDA 2022 decreased as cost increases are higher than additional revenues due to higher prices**

Cost structure - maize

Change in maize export cost structure

Cost structure for a 3 t/ha yield, USD	pre-war	2022	difference
Materials	88	167	91%
Mechanical works and labour	61	98	60%
Other expenditures	15	27	78%
Drying and storage (variable cost)	10	13	30%
Production cost	174	304	75%
Trader's margin	9	9	0%
Export costs (variable costs)	25	70	180%
TOTAL COST, USD	207	383	85%

Source: own research



Source: own research

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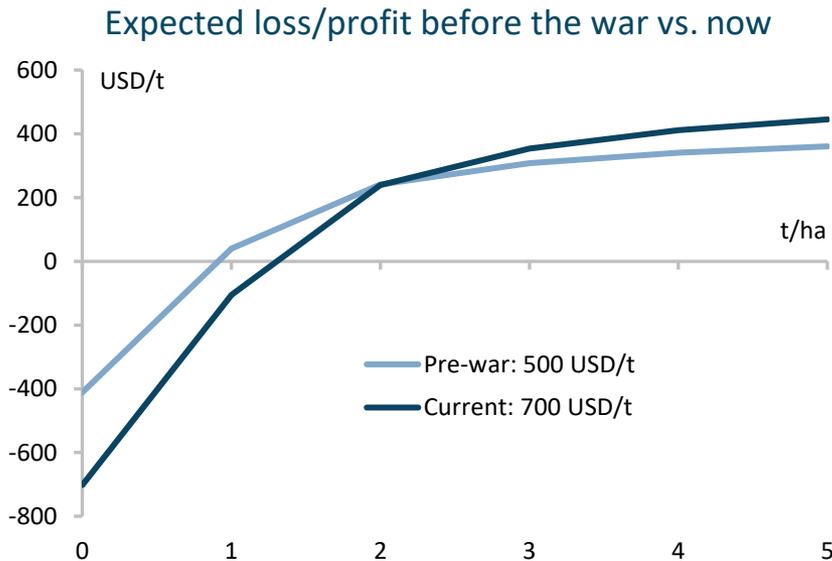
- Cost of exporting 1 t of maize in MDA increased by 85% due to war in UKR; production cost +75%, transport cost +180%
- Average yields for maize in Moldova are around 3.8 t/ha, but during drought conditions they can be much lower; e.g. in 2020: 1.9 t/ha
- Current market prices are around 320 USD/t; at this price, yields would need to be at least 4 t/ha for MDA farmers to make a profit
- Prior to the war, the situation was only slightly better for farmers, as prices were much lower
- Average yield expected to be around 4 t/ha; but South and Centre regions affected by severe drought and thus with much lower expected yield
- **Profitability of maize export in MDA in 2022 decreased as costs overcompensate increased revenues**

Cost structure – sunflower seed

Change in sunflower seed export cost structure

Cost structure for a 3 t/ha yield, USD	pre-war	2022	difference
Materials	88	156	77%
Mechanical works and labour	33	53	60%
Other expenditures	12	21	72%
Drying and storage (variable cost)	10	13	30%
Production cost	143	243	70%
Trader's margin	21	21	0%
Export costs (variable costs)	25	70	180%
TOTAL COST, USD	190	334	76%

Source: own research



Source: own research

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- Cost of exporting 1 t of sunflower seed in MDA increased by 76% due to the war; production cost +70%, transport cost +180%
 - Average yields in MDA are around 2 t/ha, but can be much lower during drought years; e.g. in 2020: 1.3 t/ha
 - Current market prices in the region are around 690 USD/t, which means that farmers will make a considerable profit at yields of 2 t/ha
 - With the cost structure prior to the war, profits would have been higher at yields below 2 t/ha, despite lower market prices
 - However, at current prices farmers are better off with yields above 2 t/ha despite increased costs
 - Yields for this year are expected to be very low, around 50% of average in South and Centre regions affected by drought
- **With current prices and average yields farmers in MDA will make a profit exporting sunflower seed even with increased costs**

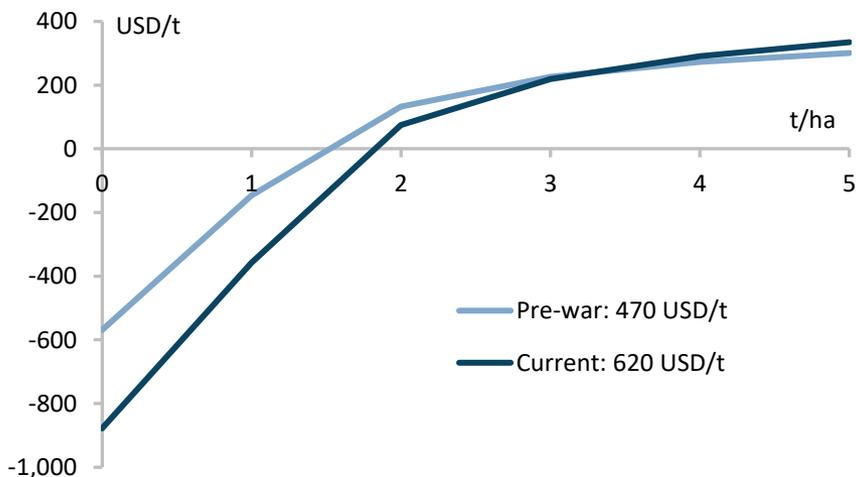
Cost structure – rapeseed

Change in rapeseed export cost structure

Cost structure for a 3 t/ha yield, USD	pre-war	2022	difference
Materials	116	176	52%
Mechanical works and labour	54	86	60%
Other expenditures	17	26	55%
Drying and storage (variable cost)	10	13	30%
Production cost	197	301	53%
Trader's margin	20	20	0%
Export costs (variable costs)	25	70	180%
TOTAL COST, USD	241	391	62%

Source: own research

Expected loss/profit before the war vs. now



Source: own research
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- The cost of exporting 1 t of rapeseed in MDA increased by 62% due to the war; production cost +53%, transport +180%
- Average yields in MDA are 2.3 t/ha, during drought in 2020: approx. 2 t/ha
- At current prices of around 620 USD/t, farmers would need a yield of around 2 t/ha or higher to be profitable
- Prior to the war, the break-even yield was slightly lower despite much lower market prices
- Considering average yields, farmers in MDA are worse off than before the war due to the increased cost
- However, due to the high market prices, export of rapeseed is still profitable even with higher costs
- **Even if yield below average, farmers will be able to make a profit exporting rapeseed considering current high market prices**

Changes in cost structure

- The cost structure for producing key agri-food commodities for export in MDA has changed considerably due to the war in Ukraine
- The cost of producing and exporting increased for all four commodities, with the smallest increase (for rapeseed) at 62% and the highest increase (for wheat) at 106%
- Whether farmers win or lose depends on increased costs vs increased revenues (higher market prices)
- With average yields, current prices and costs, farmers in MDA are slightly better off for sunflower seed; for wheat, maize and rapeseed they are worse off
- However, ultimately yields are crucial to determine whether or not farmers in MDA can make a profit during the 2022/2023 marketing year
- Weather conditions for this season have overall not been favourable in Moldova with drought affecting several regions of the country, especially in the South and Centre regions
- Considering current market prices and expected yields for this harvesting seasons, farmers in MDA are likely to make a profit with
 - Sunflower seeds (31% of total harvested area of analysed crops)
 - Rapeseeds (3% of total harvested area of analysed crops)
- On the other hand, problems with profitability are likely at least in some regions for
 - Wheat (27% of total harvested area of analysed crops)
 - Maize (39% of total harvested area of analysed crops)

6. Key immediate challenges in the agriculture sector

Input cost

- As illustrated in the previous section, the price for key inputs increased considerably due to the war in UKR (key drivers: energy cost and logistics problems), which has increased the cost of production for farmers
- High input costs could lead to liquidity shortages ahead of next planting season, in case producers make no or little profits with this year's harvest

Logistics

- War in UKR has disrupted traditional transport routes for UKR exporters of agricultural products (UKR black sea ports); even after partial opening of UKR ports, capacities are very limited
- Both MDA and UKR are now using MDA transport infrastructure (Danube ports, railway, road), which have very limited capacity; result: major congestion, which drives up transport cost
- Producers receive an export parity price that equals the world market price minus the cost of bringing domestic products to the world market
- Result: MDA farmers receive much lower prices than world market due their unique location right next to UKR; thus more negatively affected by war than farmers in other countries

Access to and cost of financing

- Cost of credit for producers has increased due to higher base rate in response to inflation in MDA
- Access to finance always a challenge for agricultural producers to due risk profile; now, higher market insecurity due to war worsens the situation

7. Policy Response

Food price increase for consumers

- Basic question: whether to let domestic prices adjust to global prices or insulate the domestic market to protect consumers
- Common interventions to insulate domestic markets (tax reductions, price controls, export restrictions) may be effective in the short-term; but overall impact is negative
- MDA passed export ban for wheat (March – June), maize (lifted after 10 days) and sugar due to food security concerns
- However, research shows that export bans:
 - increase domestic price volatility
 - set negative incentives for production
 - further drive up global prices
 - incentivise over-consumption
- Better: targeted social policy measures to limit negative impacts on most vulnerable populations. Current situation could give impulse for improvements in the social security system, e.g. information technology solutions to better target and monitor support measures
- **MDA export ban hurt domestic producers by reducing output prices at a time when inputs became much more expensive**
- **Export bans hurt the business climate in the long-run by increasing planning insecurity**

Policy recommendations

Input cost

- Temporary support for producers (if any) should be designed to set positive incentives, e.g. ex-ante subsidies or tax relief to improve planning security of producers

Logistics

- Improvements in logistics infrastructure (road, rail and Danube ports) could relieve some of the pressure on transport corridors (e.g. improvements in rail lines, purchase of additional wagons), incl. facilitation of private investments into logistics infrastructure, where feasible

Access to and cost of financing

- Cost of financing for farmers can be reduced with instruments such as credit guarantees or interest rate subsidies; e.g. existing instruments could be temporarily extended
- However, important not to create long-term dependence on support instruments

Long-term perspective

- Improvements and extension of irrigation infrastructure could reduce the vulnerability to weather related external shocks
- Improved post-harvest infrastructure (storage, processing) can give MDA farmers more flexibility in reacting to changes in international prices and increase profit margins
- Focus on product development (i.e. infrastructure, marketing) to switch from commodities exports to higher value-added products export
- Support for transition to climate-resilient cultivation systems (incl. research, education & extension services)

About the German Economic Team



Financed by the Federal Ministry for Economic Affairs and Climate Action, the German Economic Team (GET) advises the governments of Ukraine, Belarus*, Moldova, Kosovo, Armenia, Georgia and Uzbekistan on economic policy matters. Berlin Economics has been commissioned with the implementation of the consultancy.

**Advisory activities in Belarus are currently suspended.*

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Annex: changes in cost structure - wheat

Cost structure per yield and market price: pre-war 4-year average

Tonnes per ha		1	2	3	4	5
Farmers Cost per tonne		300	155	107	83	68
Market price	Traders' price to farmer*	The numbers in this table show potential gain or loss a farmer could wait for given market conditions. The amount is calculated as a difference between what a trader could offer and production costs.				
		180	146	-154	-9	40
200	165	-135	10	59	83	97
220	185	-116	29	78	102	116
240	204	-97	48	97	121	136
260	223	-78	67	116	140	155
280	242	-59	87	135	159	174
300	261	-40	106	154	178	193
320	280	-21	125	173	197	212
340	299	-2	144	192	216	231
360	318	18	163	211	235	250

Cost structure per yield and market price: after start of war in UKR

Tonnes per ha		1	2	3	4	5
Production cost per tonne		613	313	213	163	133
Market price	Traders' price to farmer*	The numbers in this table show potential gain or loss a farmer could wait for given market conditions. The amount is calculated as a difference between what a trader could offer and production costs.				
		180	101	-512	-212	-112
200	120	-493	-193	-93	-43	-13
220	140	-474	-174	-74	-24	6
240	159	-455	-155	-55	-5	25
260	178	-436	-136	-36	14	45
280	197	-417	-117	-16	34	64
300	216	-398	-98	3	53	83
320	235	-379	-78	22	72	102
340	254	-360	-59	41	91	121
360	273	-341	-40	60	110	140

Source: own research; *market price reduced by trader's margin & transport cost

Annex: changes in cost structure - maize

Cost structure per yield and market price: pre-war 4-year average

Tonnes per ha		1	2	3	4	5	6
Farmers Cost per tonne		501	255	174	133	108	92
Market price	Traders' price to farmer*	The numbers in this table show potential gain or loss a farmer could wait for given market conditions. The amount is calculated as a difference between what a trader could offer and production costs.					
		140	108	-392	-147	-65	-24
160	127	-373	-128	-46	-5	19	36
180	146	-354	-109	-27	14	38	55
200	165	-335	-90	-8	33	57	74
220	185	-316	-71	11	52	76	93
240	204	-297	-52	30	71	95	112
260	223	-278	-33	49	90	114	131
280	242	-259	-14	68	109	134	150
300	261	-240	5	87	128	153	169
320	280	-221	24	106	147	172	188

Cost structure per yield and market price: after start of war in UKR

Tonnes per ha		1	2	3	4	5	6
Production cost per tonne		887	450	304	232	188	159
Market price	Traders' price to farmer*	The numbers in this table show potential gain or loss a farmer could wait for given market conditions. The amount is calculated as a difference between what a trader could offer and production costs.					
		140	63	-824	-387	-241	-168
160	82	-805	-368	-222	-149	-105	-76
180	101	-786	-349	-203	-130	-86	-57
200	120	-767	-330	-184	-111	-67	-38
220	140	-748	-311	-165	-92	-48	-19
240	159	-729	-292	-146	-73	-29	0
260	178	-710	-273	-127	-54	-10	19
280	197	-691	-253	-108	-35	9	38
300	216	-672	-234	-89	-16	28	57
320	235	-653	-215	-70	3	47	76

Source: own research; *market price reduced by trader's margin & transport cost

Annex: changes in cost structure – sunflower seed

Cost structure per yield and market price: pre-war 4-year average

Tonnes per ha		1	2	3	4	5
Farmers Cost per tonne		411	210	144	110	90
Market price	Traders' price to farmer*	The numbers in this table show potential gain or loss a farmer could wait for given market conditions. The amount is calculated as a difference between what a trader could offer and production costs.				
		350	308	-102	98	165
400	356	-55	146	212	246	266
450	404	-7	193	260	293	313
500	451	41	241	308	341	361
550	499	88	288	355	389	409
600	546	136	336	403	436	456
650	594	183	384	451	484	504
700	642	231	431	498	532	552
750	689	279	479	546	579	599
800	737	326	527	593	627	647

Cost structure per yield and market price: after start of war in UKR

Tonnes per ha		1	2	3	4	5
Production cost per tonne		702	358	243	185	151
Market price	Traders' price to farmer*	The numbers in this table show potential gain or loss a farmer could wait for given market conditions. The amount is calculated as a difference between what a trader could offer and production costs.				
		350	263	-439	-94	21
400	311	-391	-47	68	126	160
450	359	-344	1	116	173	208
500	406	-296	49	163	221	255
550	454	-249	96	211	268	303
600	501	-201	144	259	316	351
650	549	-153	191	306	364	398
700	597	-106	239	354	411	446
750	644	-58	287	402	459	493
800	692	-10	334	449	507	541

Source: own research; *market price reduced by trader's margin & transport cost

Annex: changes in cost structure - rapeseed

Cost structure per yield and market price: pre-war 4-year average

Tonnes per ha		1	2	3	4	5
Farmers Cost per tonne		569	290	196	150	122
Market price	Traders' price to farmer*	The numbers in this table show potential gain or loss a farmer could wait for given market conditions. The amount is calculated as a difference between what a trader could offer and production costs.				
		320	280	-289	-10	83
370	327	-242	38	131	178	206
420	375	-194	85	179	225	253
470	423	-147	133	226	273	301
520	470	-99	181	274	320	348
570	518	-51	228	321	368	396
620	565	-4	276	369	416	444
670	613	44	323	417	463	491
720	661	91	371	464	511	539
770	708	139	419	512	559	586

Cost structure per yield and market price: after start of war in UKR

Tonnes per ha		1	2	3	4	5
Production cost per tonne		878	446	301	229	186
Market price	Traders' price to farmer*	The numbers in this table show potential gain or loss a farmer could wait for given market conditions. The amount is calculated as a difference between what a trader could offer and production costs.				
		320	235	-643	-211	-67
370	282	-596	-163	-19	53	96
420	330	-548	-116	29	101	144
470	378	-500	-68	76	148	192
520	425	-453	-20	124	196	239
570	473	-405	27	171	244	287
620	520	-358	75	219	291	334
670	568	-310	123	267	339	382
720	616	-262	170	314	386	430
770	663	-215	218	362	434	477

Source: own research; *market price reduced by trader's margin & transport cost