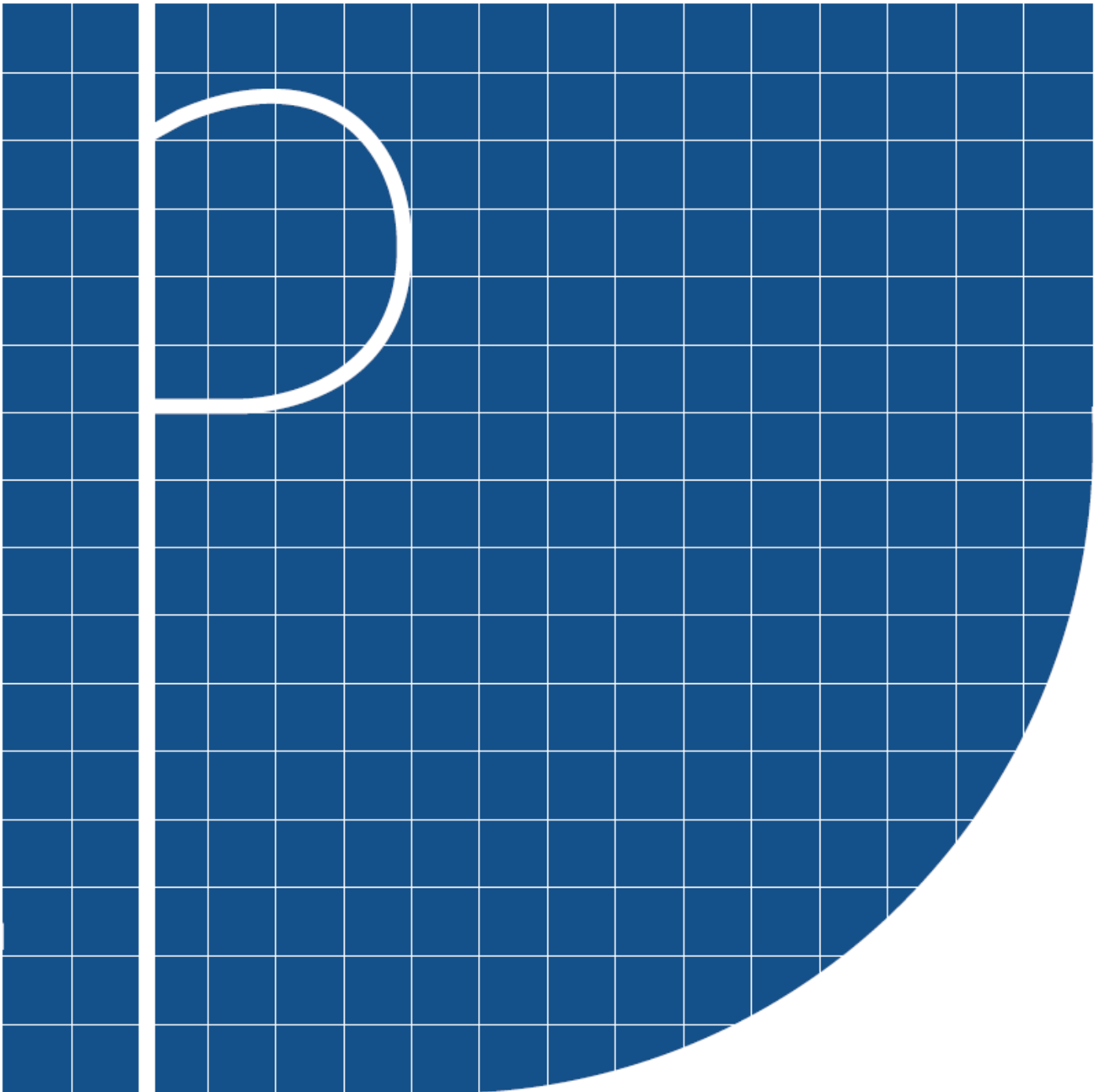


Paper: Stormy seas

The effects of 2 years of war in Ukraine and tensions in the Red Sea





Authors

Felice Adinolfi
Piermichele La Sala
Riccardo Fargione
Dario Vivani
Valentina Conti

Illustrations

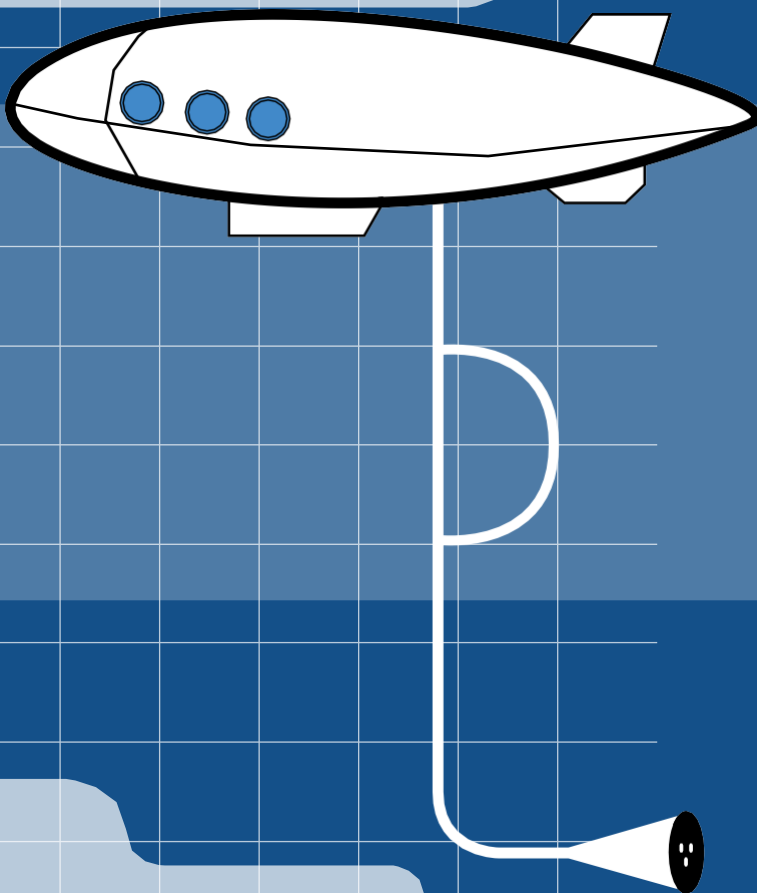
Matilde Masi

Contact us

info@divulgastudi.it

Issue Month February 2024

This work is available at
<https://divulgastudi.it>

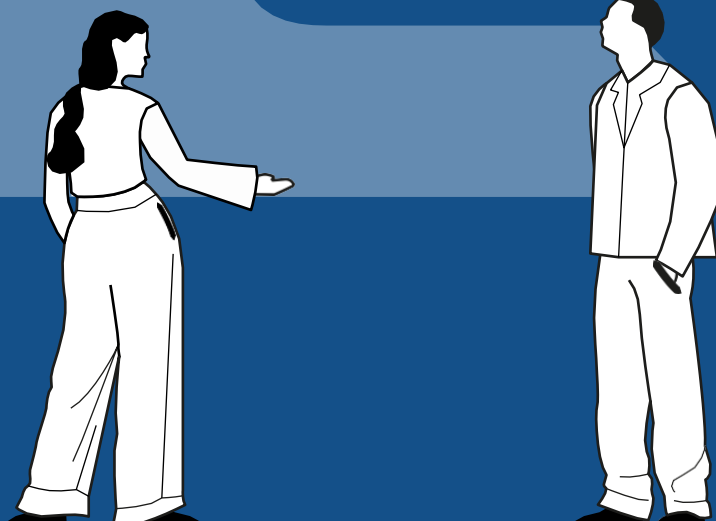


Two years of war have led to a change in the global geopolitical context, especially for agri-food systems.

The Israeli-Palestinian conflict and the exacerbation of tensions in the Red Sea, with the Yemeni Houthi militias who in recent months have been harassing maritime traffic transiting the Suez Canal, have contributed to worsening the situation.

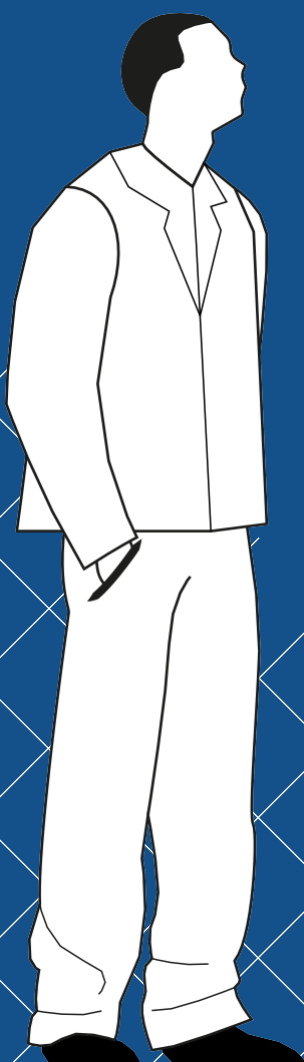
However, let's try to understand more in this paper's pages.

It has now been two years since the outbreak of the conflict in Ukraine. What were the consequences? What has changed?



Abstract

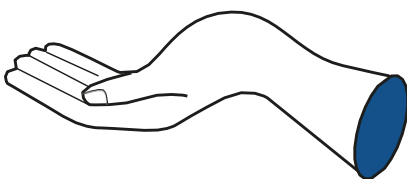
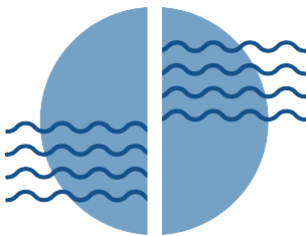
- Two years after the outbreak of the conflict in Ukraine, the global geopolitical dynamics of food are at the centre of an intense transformation process, with international markets characterized by strong inflationary pressures and vulnerability in supplies.
- Prior to the conflict, Ukraine occupied a strategic role for world supplies of some of the main agricultural products on a global scale such as: sunflower seeds, corn, wheat and other cereals. With the start of war operations between Russia and Ukraine, 1 in 3 farmers had to stop their activities in the areas most affected by the conflict with a drop in agricultural production between 2022 and 2023 of 36% for corn, 35% for wheat and 10% for sunflower seeds and oil.
- Over the same period, Russia increased its wheat production by 22% to 92 million tonnes, establishing itself as the third largest producer in the world after China (138 million tonnes) and India (104 million tonnes).
- The war between Russia and Ukraine has also had important repercussions on the dynamics of agricultural product stocks, with China now playing a dominant role with 50% of world wheat and 64% of corn stocks.
- The crisis triggered by the war in Ukraine had significant impacts on production costs in the agricultural sector. The World Bank's average energy price index showed a 103% growth in 2023 compared to before the conflict, while natural gas increased by 126%. The same applies to the prices of fertilisers, which increased by 106%. With the outbreak of the conflict, the prices of the main fertilizers registered significant peaks with an increase in average annual prices of 204% for diammonium phosphate, 230% for urea and 290% for potassium chloride.
- The picture just described is made even more complex by the war in the Middle East and the tensions in the Red Sea due to the attacks of a militia group, the Houthis, against merchant ships in transit through the Suez Canal.



Index

1. Introduction - Page 9
2. Two years of war in Ukraine - Page 13
 - 2.1 New production geographies - Page 13
 - 2.1.1 Worldwide wheat production - Page 18
 - 2.1.2 Worldwide corn production - Page 22
 - 2.1.3 The production of sunflower seeds, oil and flour - Page 26
 - Box 1 Worldwide forecasts 2023/2024 - Page 29
 - 2.2 The instability of the Black Sea - Page 30
 - 2.2.1 Failure to renew the agreement - Page 30
 - 2.2.2 The "Solidarity Lanes" - Page 34
 - Box 2 The "Black Sea Grain Initiative" Page 36
 - 2.2.3 Trade dynamics Italy - Ukraine - Russia - Page 39
 - Box. 3. Durum wheat, new scenarios between Turkey and Russia - Page 43
 - 2.3 The hegemony for stocks - Page 46
 - 2.3.1 World wheat reserves - Page 46
 - 2.3.2 World corn reserves - Page 49
3. The effects on costs and prices - Page 53
 - 3.1 – The international framework - Page 53
 - 3.2 – The effects on agricultural enterprises - Page 60
 - 3.2.1 The impact on financial statements - Page 60
 - 3.2.2 The cost of fertilisers - Page 62
 - 3.2.3 Agricultural diesel - Page 64
4. Tension in the Red Sea - Page 67
 - 4.1 – the Houthi offensive redraws ship routes - Page 67
 - 4.1.1 New avenues for trade - Page 68
 - Box 4. Energy supplies - Page 78
- Notes - Page 83
- Bibliography - Page 85

1.



1. Introduction

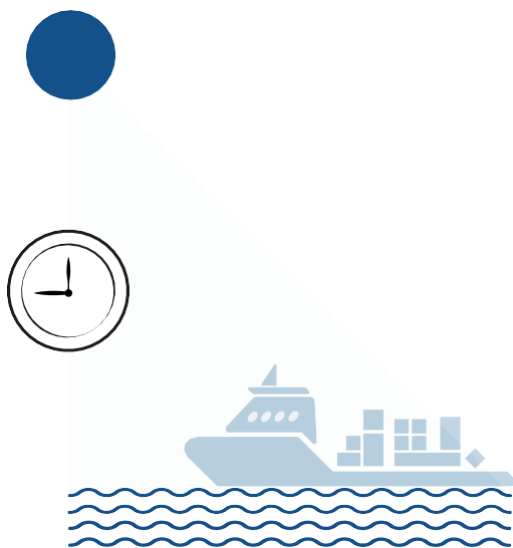
Two years after the outbreak of the conflict in Ukraine, we find ourselves facing a global geopolitical context characterized by strong uncertainties and vulnerabilities throughout world markets. Adding further fuel to the fire are the Israeli conflict and the exacerbation of tensions in the Red Sea with the Yemeni Houthi militias who in recent months have been attacking maritime traffic in transit through the Suez Canal.

These tensions on a global scale have led to, in the short term, into a considerable increase in production costs, substantial uncertainties with regard to supplies and prices of agricultural products as well as intense concerns concerning international trade flows. The effects were not long in coming, even on domestic markets, with obvious repercussions on the daily life of the national productive fabric and on consumers, which have helped to fuel business discontent.

The dramatic increase in production costs, energy costs and considerable price fluctuations have in many cases been passed on to the primary link of the supply chain, also due to phenomena of non-linear price transmission along the supply chain. A situation that has somehow amplified the vulnerability of the productive fabric, making the gap between prices paid to farmers and prices paid by consumers even more unsustainable. The analysis of the gap between producer prices and consumer prices confirms these sensations, once again highlighting the vulnerable position of agricultural companies along the supply chains. The list of examples is long, but just to name a few, the price of bread increases roughly 14 times with respect to the price paid to farmers for common wheat needed to make bread. The same goes for the pasta supply chain where the value from the field to the table increases by

as many as 5 times. In the case of beef, the price from the farms to the shelf increases 8 times, 4 for pork. This distance also appears considerable for milk with €0.50 per litre paid on average at production compared to over €1.60/litre paid on average by the consumer. In short, a picture that is not particularly reassuring with markets having experienced strong inflationary pressures on citizens and families in recent months.

2.



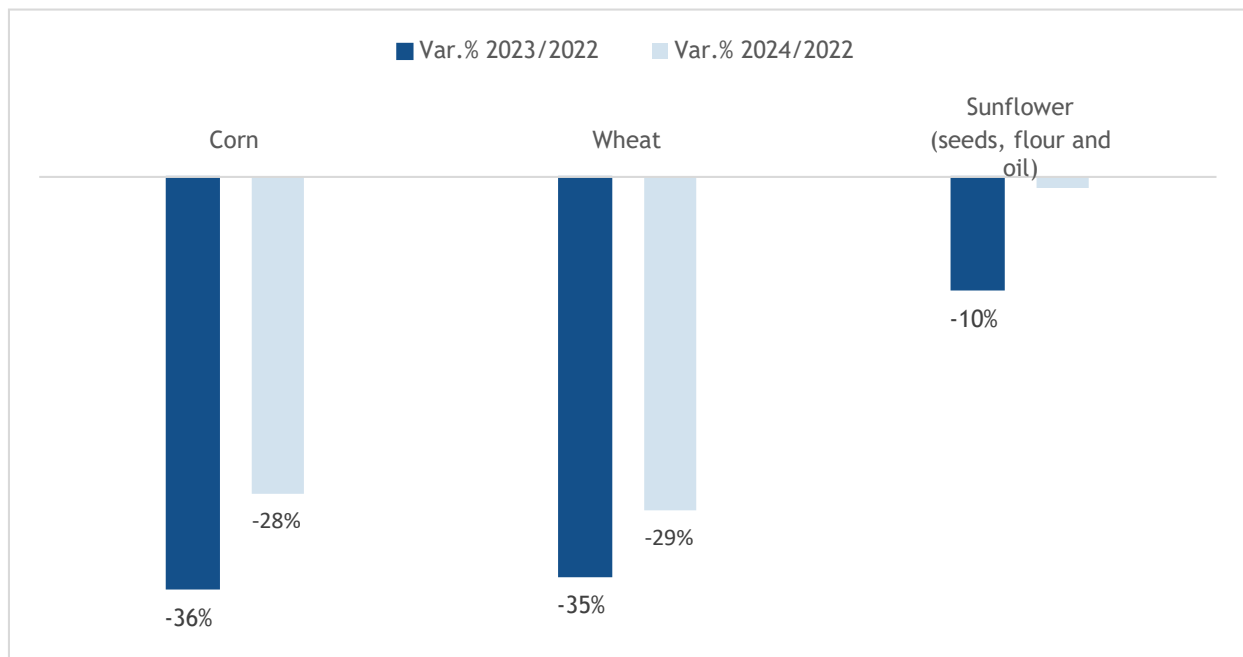
2. Two years of war in Ukraine

2.1 – New production geographies

The ongoing war has redesigned the production dynamics of the countries directly involved in the conflict. Ukraine, which until a few years ago played a strategic role in the supply of some of the world's main agricultural products such as sunflower seeds, corn, wheat and other cereals, has had to contend with obvious difficulties on the production front. War operations affected many agricultural areas with 1 in 3 farmers having to stop their activities in the areas most affected by the conflict [1]. In particular, the regions of the Russian-Ukrainian front are also the most important from an agricultural point of view,

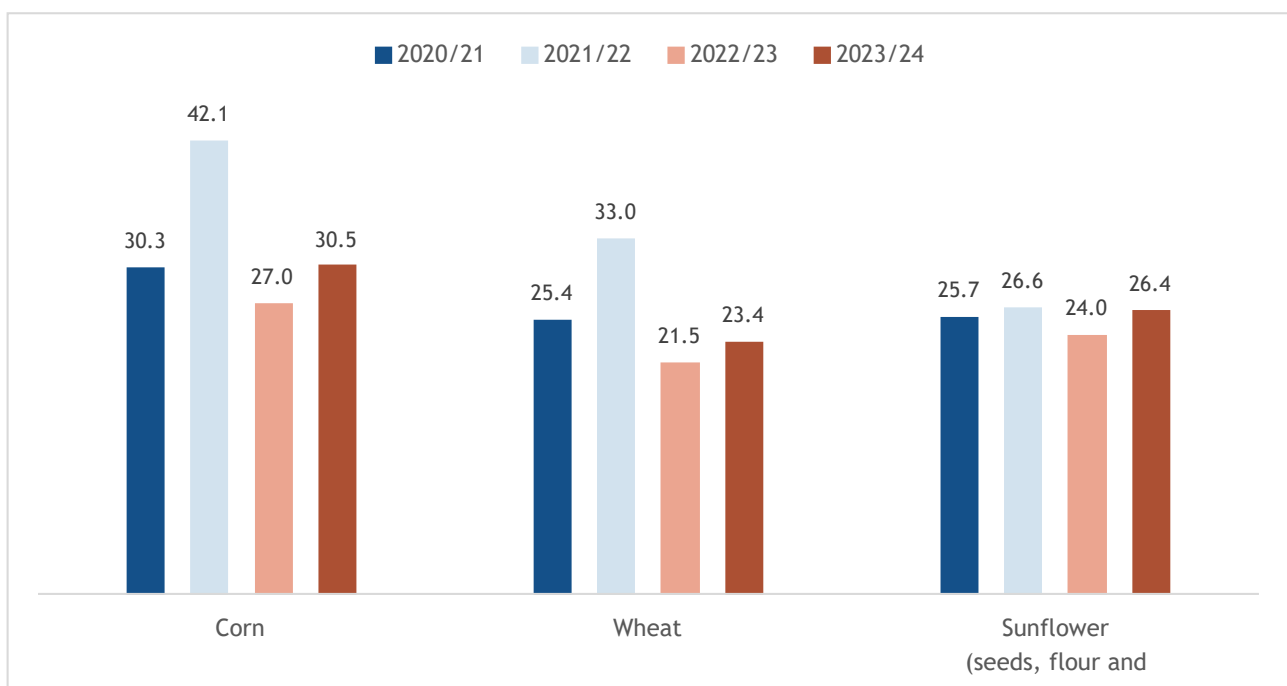
because most of the country's cereal and oilseed production is located in these areas. The areas occupied by the Russian army and affected by hostilities, in fact, represent roughly 60% of the national production potential for sunflower, 51% for wheat and over 18% for corn. Overall, in the 2022/2023 period, Ukrainian agricultural production suffered a 36% drop in corn production, 35% in wheat production and 10% for oil and sunflower seeds. The 2024 forecast defines a slight recovery with values that, however, remain lower than the pre-conflict levels.

Graph 2.1.1 – Ukrainian agricultural production from the beginning of the conflict to date



Source: processing by Centro Studi Divulga based on USDA data (Fas-Ipad)

Graph 2.1.2 – Main agricultural production of Ukraine (millions of tonnes)

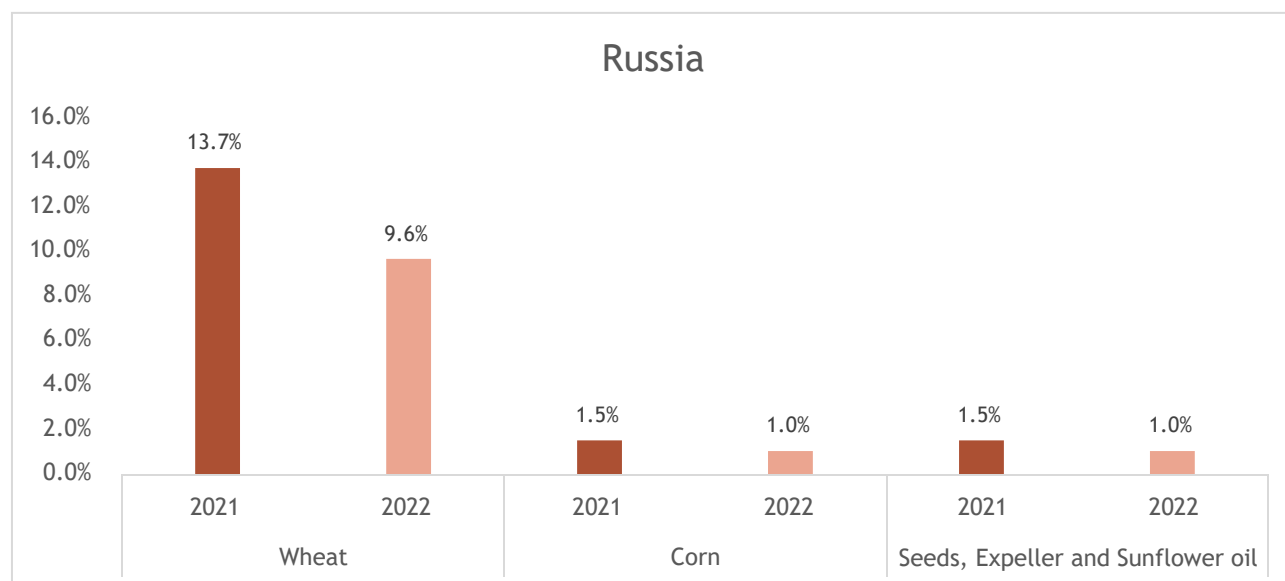


Source: processing by Centro Studi Divulga based on USDA data (Fas-Ipad)

Two years after the outbreak of the conflict, circa 10,000 Ukrainian farmers have continued their agricultural activities, with the FAO estimating that in 2023 alone there will be a need for about 205 million dollars in aid for Ukrainian agriculture and the rural populations closest to the front [2]. These resources are in addition to the over 180 million guaranteed for the first year of the war [3]. Since the beginning of the hostilities, about 315 thousand families in rural areas have received support with vegetable and cereal seeds, animal feed, poultry, food vouchers, temporary wheat storage equipment and generators. Also for 2024, the FAO has quantified the amount of aid to restore the minimum

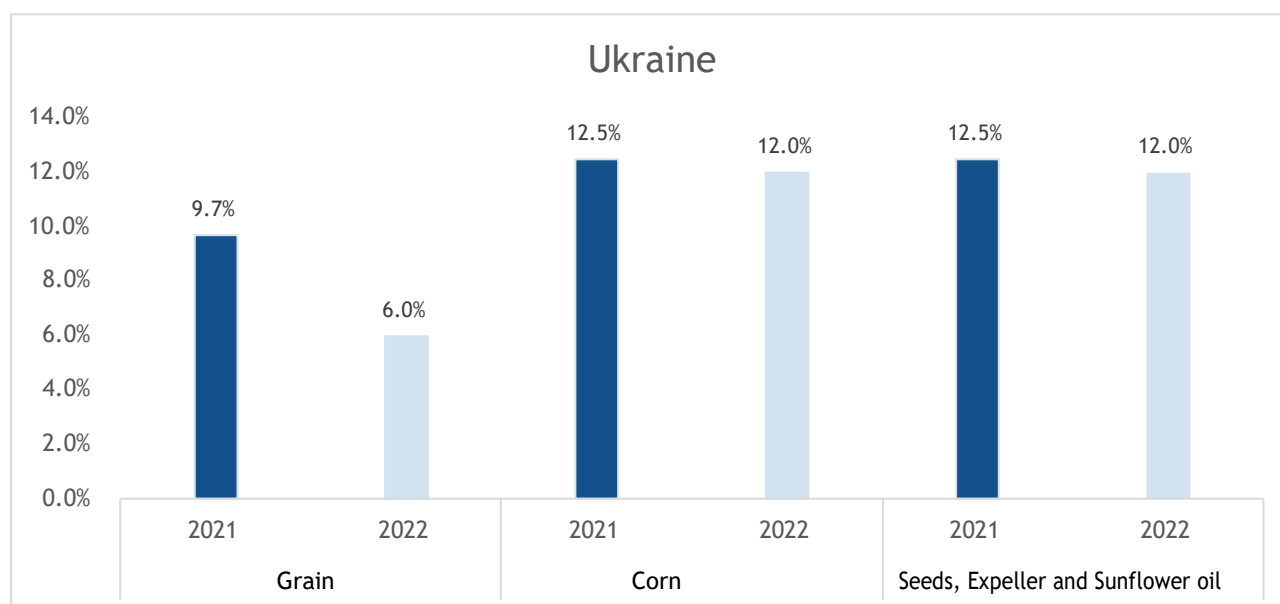
levels of primary production in Ukraine, the safe-keeping of spring and winter crops and maintenance of livestock. The international support guaranteed so far has already allowed aid to 821 thousand people who are currently find themselves in a serious situation and has guaranteed 25% of the storage needs for cereals and grains in the first phase of the conflict [4]. The conflict has also reshaped the impact of Russia and Ukraine on overall global trade flows for the main products analysed, including: wheat, corn, seeds and sunflower oil. In the first year of war, both countries lost market shares compared to the overall exports of these products.

Graph 2.1.3: Weight % Russia on world exports of Wheat, Corn and Sunflower



Source: processing by Centro Studi Divulga based on FAO data

Graph 2.1.4: Weight % Ukraine on world exports of Wheat, Corn and Sunflower

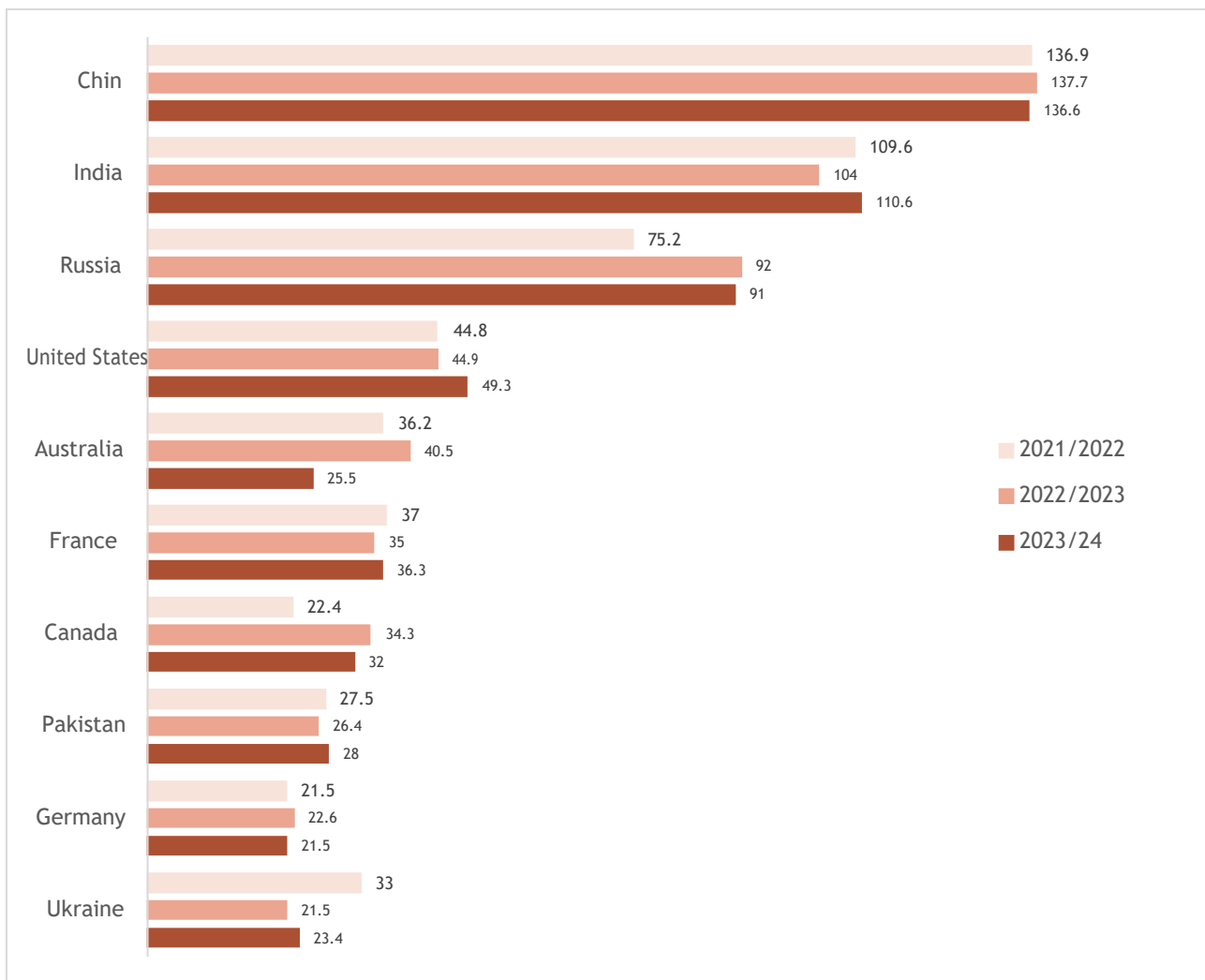


Source: processing by Centro Studi Divulga based on FAO data

2.1.1 - Worldwide production of wheat

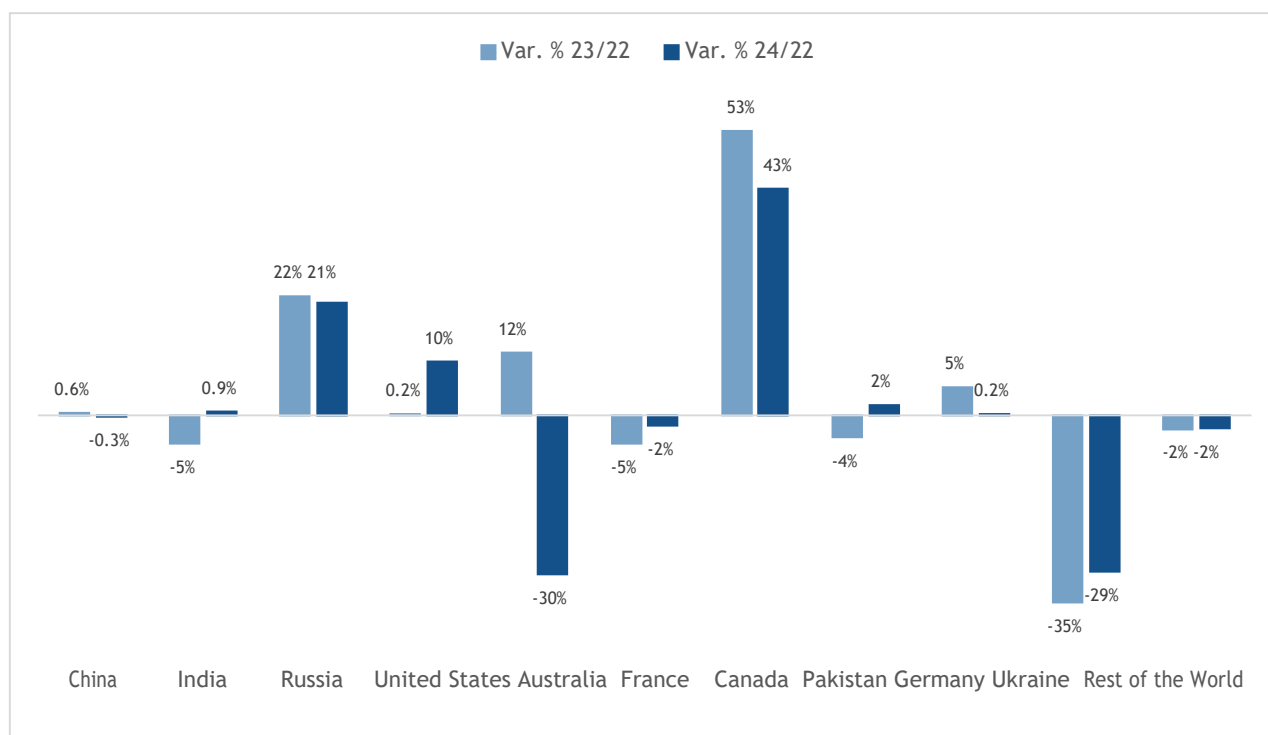
The war operations have led to a clear setback in Ukrainian wheat production in 2022/2023, down 35% with 21.5 million tonnes produced compared to 33 million the previous year. Conversely, Russia increased its production in the same period by 92 million tonnes, consolidating itself as the third largest producer in the world after China (138 million tonnes) and India (104 million tonnes). The production estimates for 2023/2024 confirm the picture just described above with Ukrainian production which should settle at 23 million tonnes, a slight recovery compared to last year, but increasingly lower when compared with previous production levels. The top three players worldwide, namely China, India and Russia, account for about half of the world's wheat production.

Graph 2.1.1.1 – World wheat production (millions of tonnes)



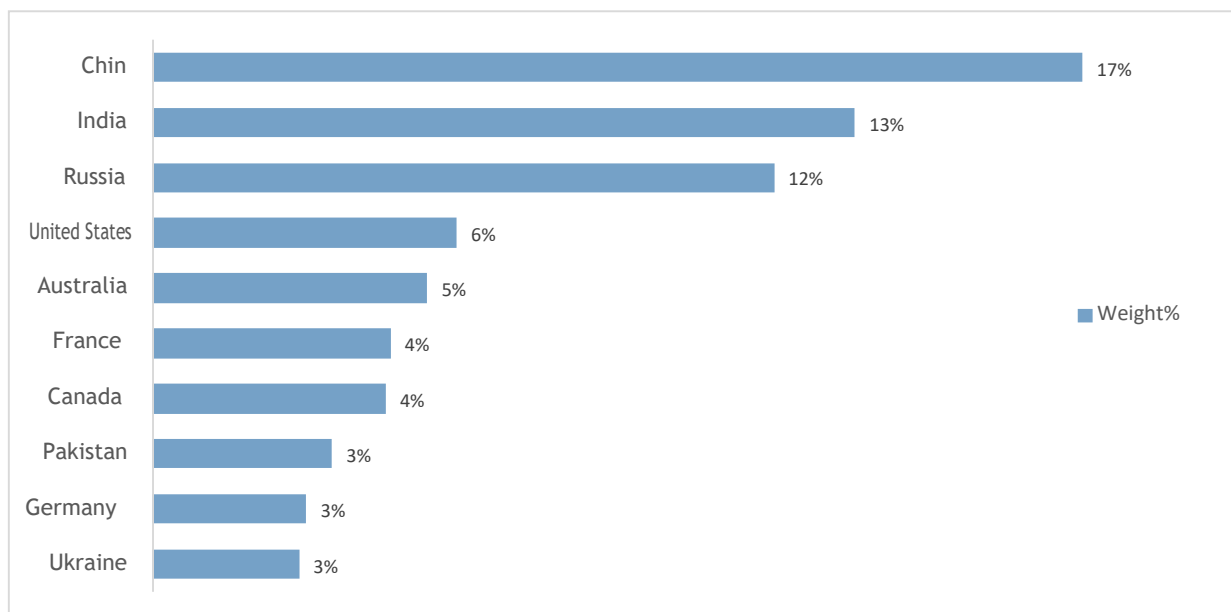
Source: processing by Centro Studi Divulga based on USDA data (Fas-Ipad)

Graph 2.1.1.2 – Wheat production from the beginning of the conflict to date in the main producing countries (percentage changes)



Source: processing by Centro Studi Divulga based on USDA data (Fas-Ipad)

Graph 2.1.1.3 – Top 10 world wheat production (percentage values)



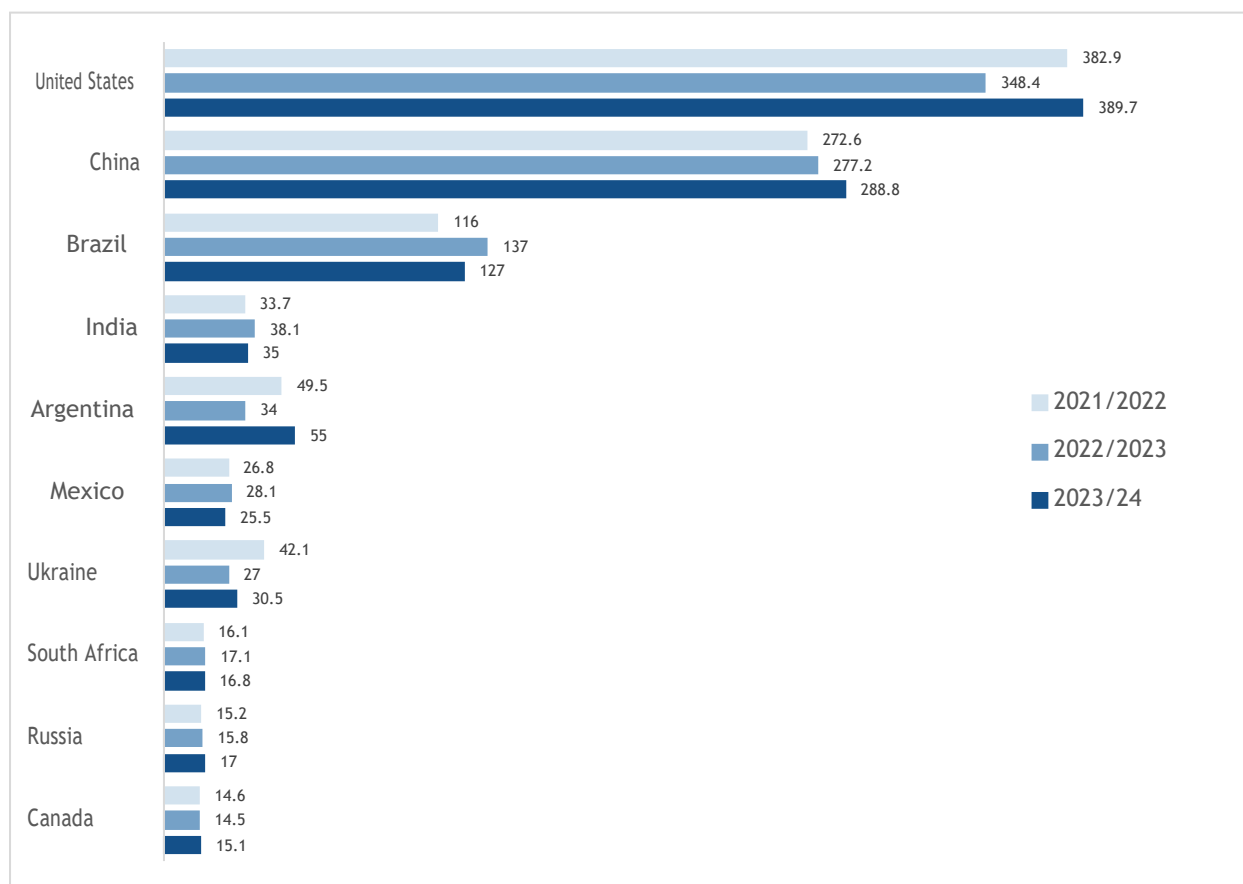
Source: processing by Centro Studi Divulga based on USDA data (Fas-Ipad)

2.1.2 – Worldwide production of corn

For corn too, there was a significant impact due to war operations with Ukrainian corn production decreasing by 36%, while Russian production increased by 4%. In addition to the overall reduction in world production of 5%, which is partly physiological, other countries have also suffered a contraction. These include Argentina - 31%, the EU -27% and the US -9% while Brazil +18% and

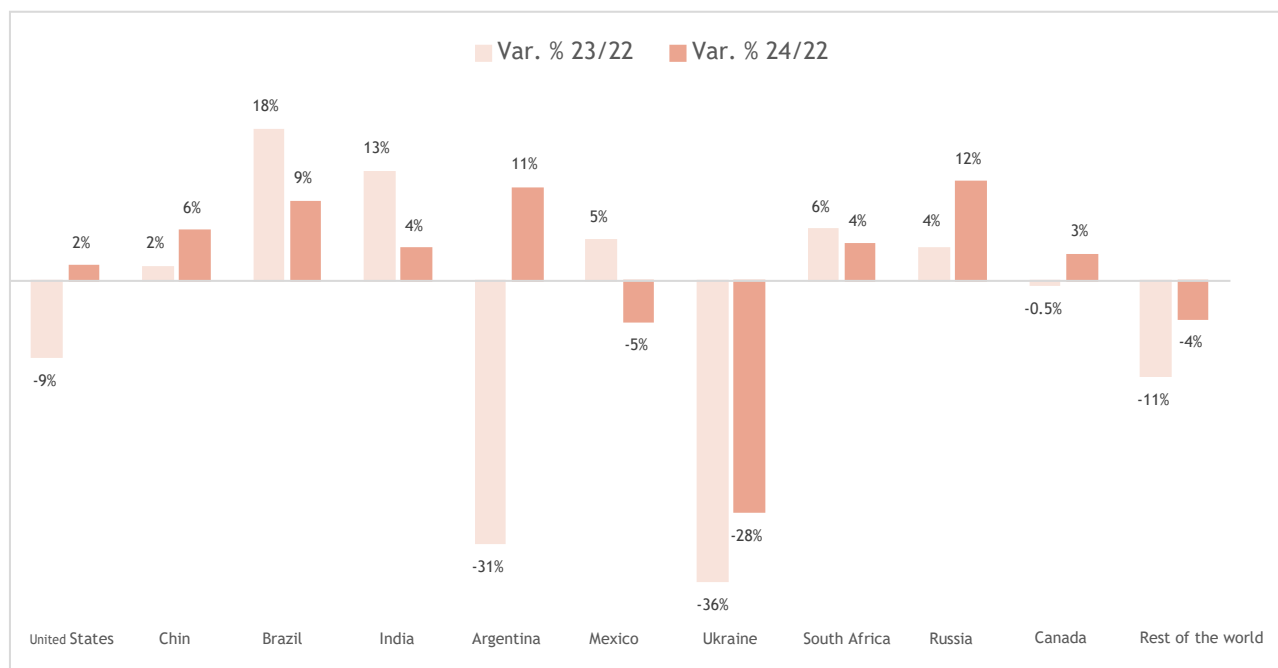
India +13%. The forecasts for 2024 seem to confirm a recovery for Ukraine to the production levels prior to the outbreak of hostilities, even if a lot of uncertainty obviously remains linked to the conflict. Russian production should also maintain a growth trend for next year. The first three producing countries in the world, namely the USA, China and Brazil, cover 64% of the world's corn production.

Graph 2.1.2.1 – Top 10 world corn production (millions of tonnes)



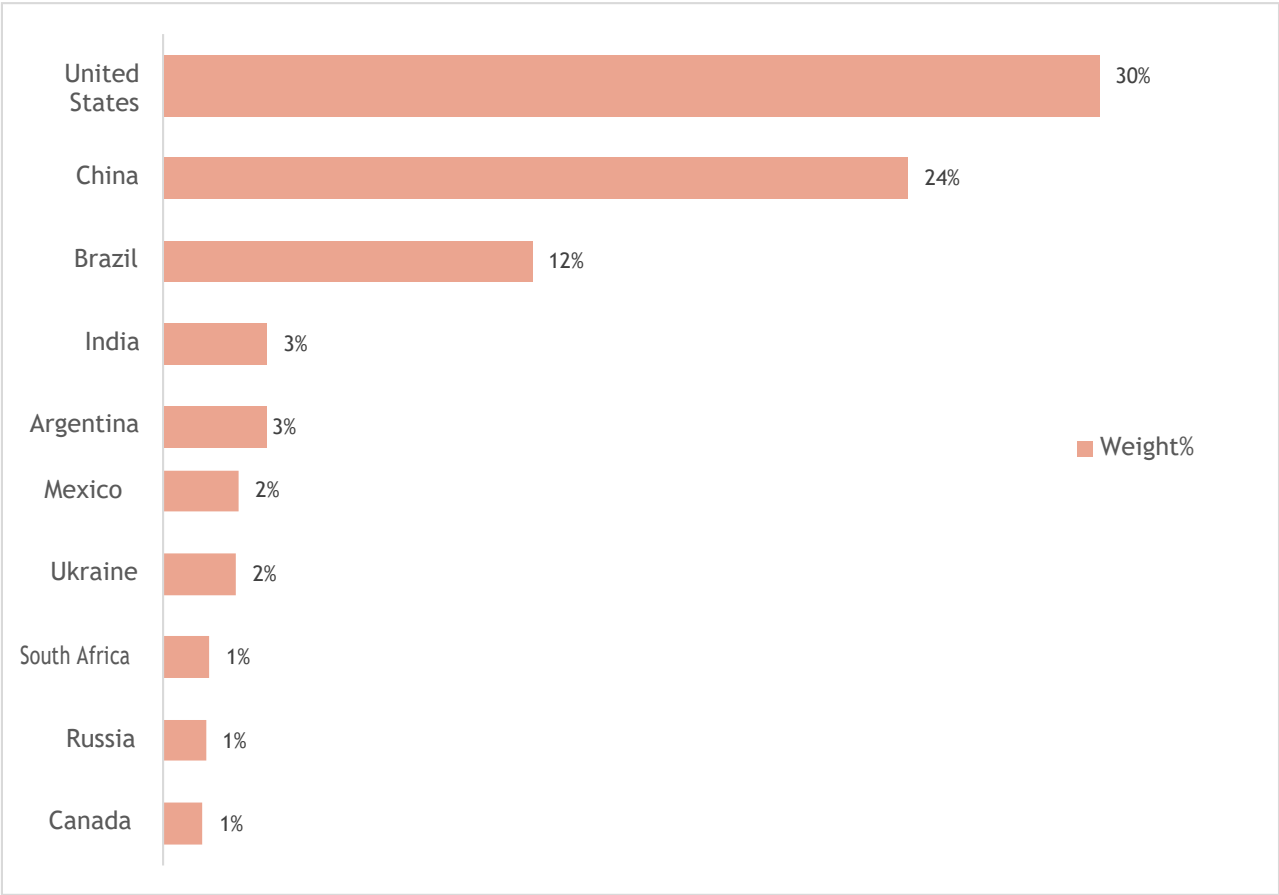
Source: processing by Centro Studi Divulga based on USDA data (Fas-Ipad)

Graph 2.1.2.2 – Corn production from the beginning of the conflict to date in the main producing countries (percentage changes)



Source: processing by Centro Studi Divulga based on USDA data (Fas-Ipad)

Graph 2.1.2.3 – Top 10 world corn production (% values)



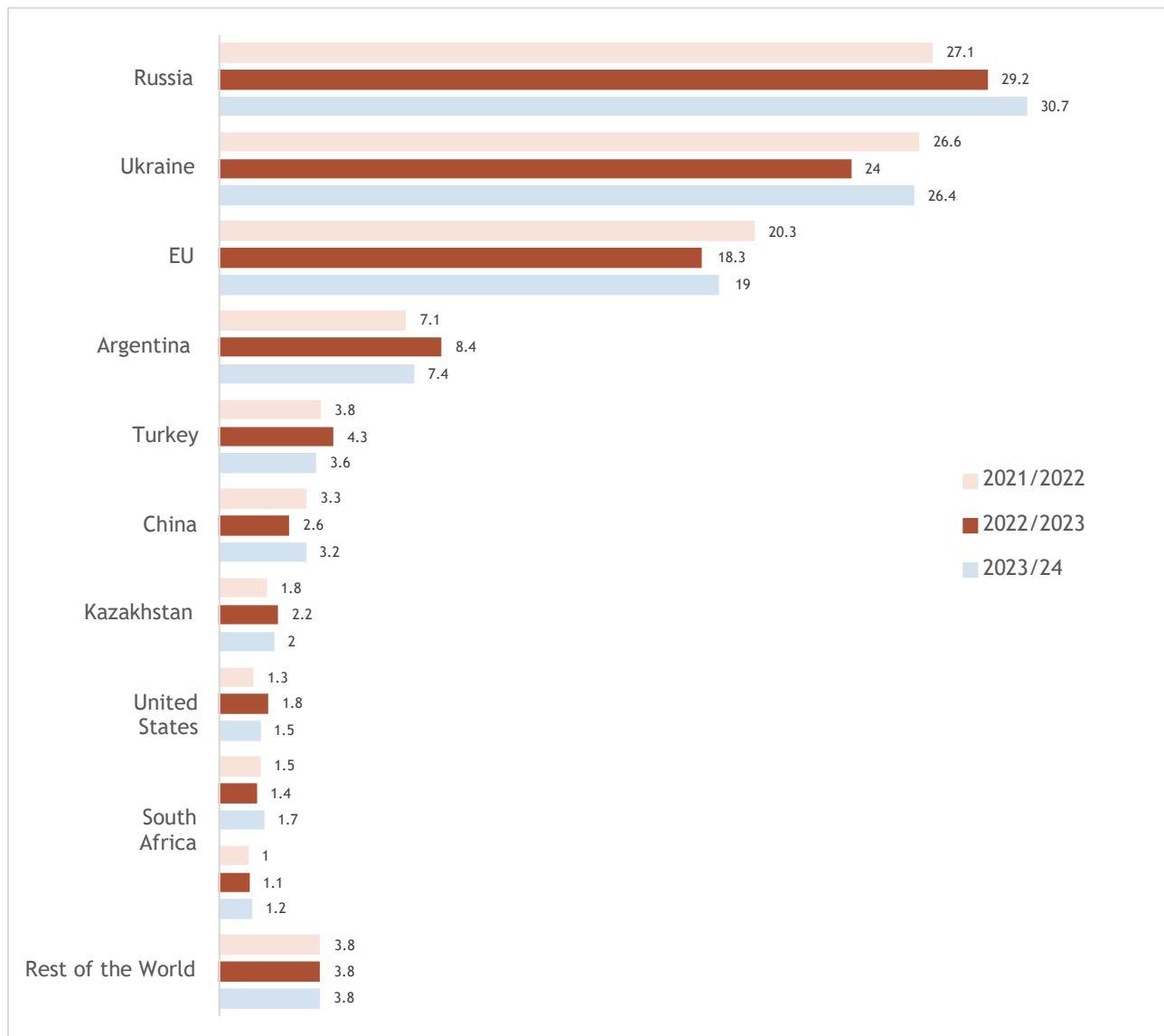
Source: processing by Centro Studi Divulga based on USDA data (Fas-Ipad)

2.1.3 – The production of sunflower seeds, oil and flour

Very significant for the analysis of war scenarios is the trend of the sunflower seed sector and its derivatives for which Russia and Ukraine play a crucial role, accounting for more than half of world production. However, the Ukrainian production of seeds has marked a minus 30% and the forecasts for 2024 do not appear too optimistic, confirming a decrease of 3 million tonnes of sunflower seeds compared to pre-war production (-17%).

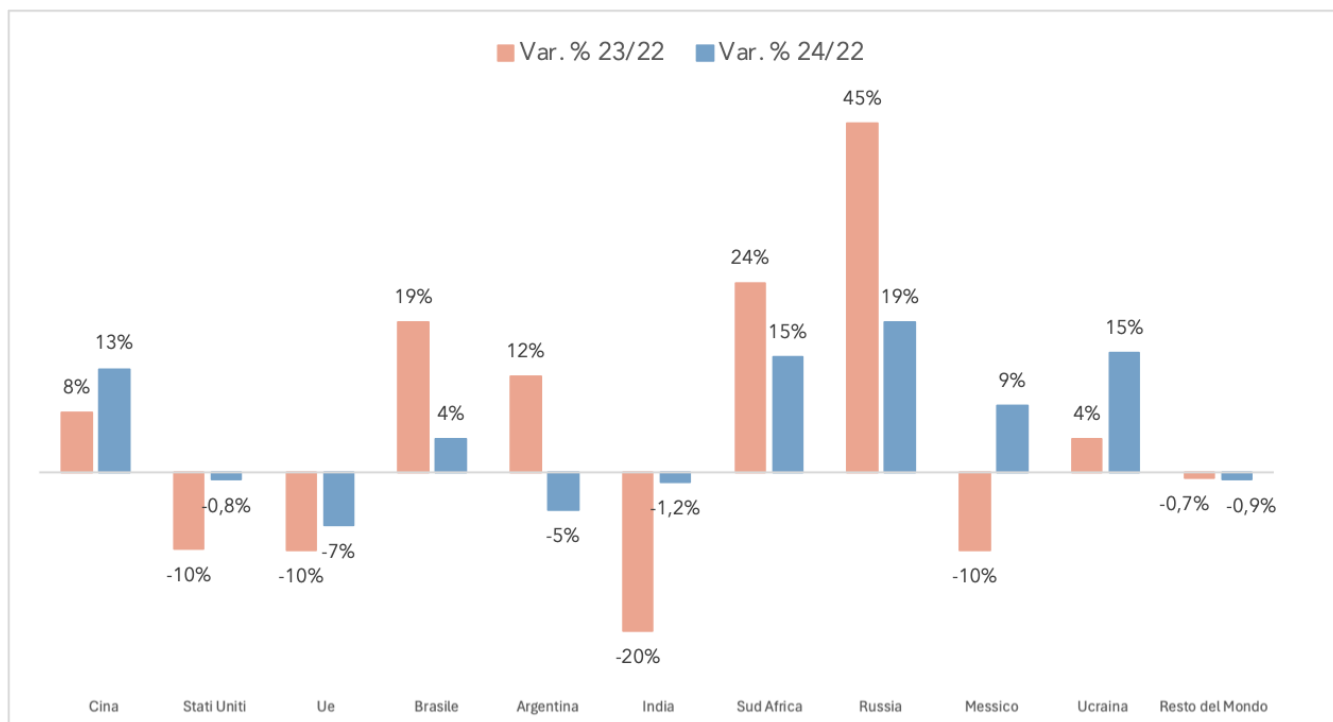
As for the products derived from the processing of sunflower seeds, the collapse was recorded particularly during the first year of the war: sunflower seed oil fell by 22% (from 5.9 million tons in 2020/21 to 4.6 million in 2021/22), while the quantities of sunflower seed flour fell by 21% (from 5.7 million to 4.5 million tonnes). The estimates for the 2023/2024 year confirm a gradual improvement in production for processed products, despite the continuing conflict.

Graph 2.1.3.1 – World production of sunflower seeds, oil and flour (million tonnes)



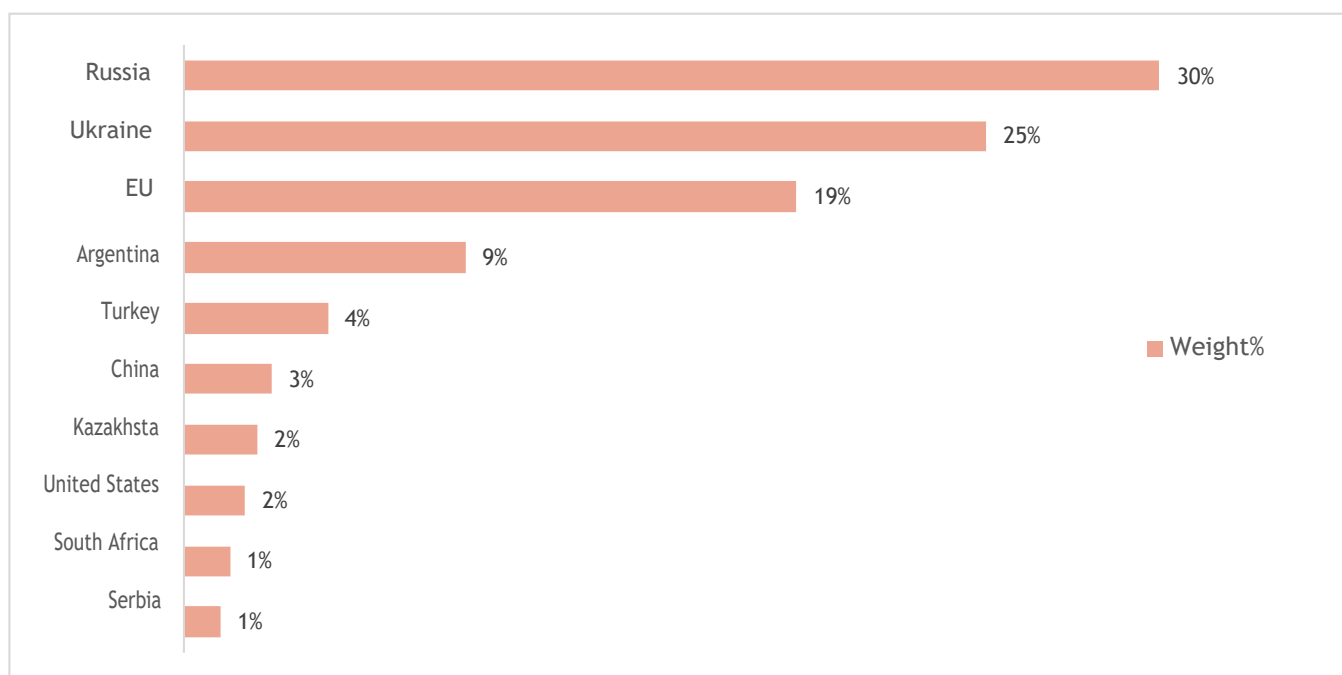
Source: processing by Centro Studi Divulga based on USDA data (Fas-Ipad)

Graph 2.1.3.2 – Production of sunflower seeds, oil and flour from the beginning of the conflict to date in the main producing countries (percentage changes)



Source: processing by Centro Studi Divulga based on USDA data (Fas-Ipad)

Graph 2.1.3.3 – Top 10 world production of sunflower seeds, oil and flours (percentage values)



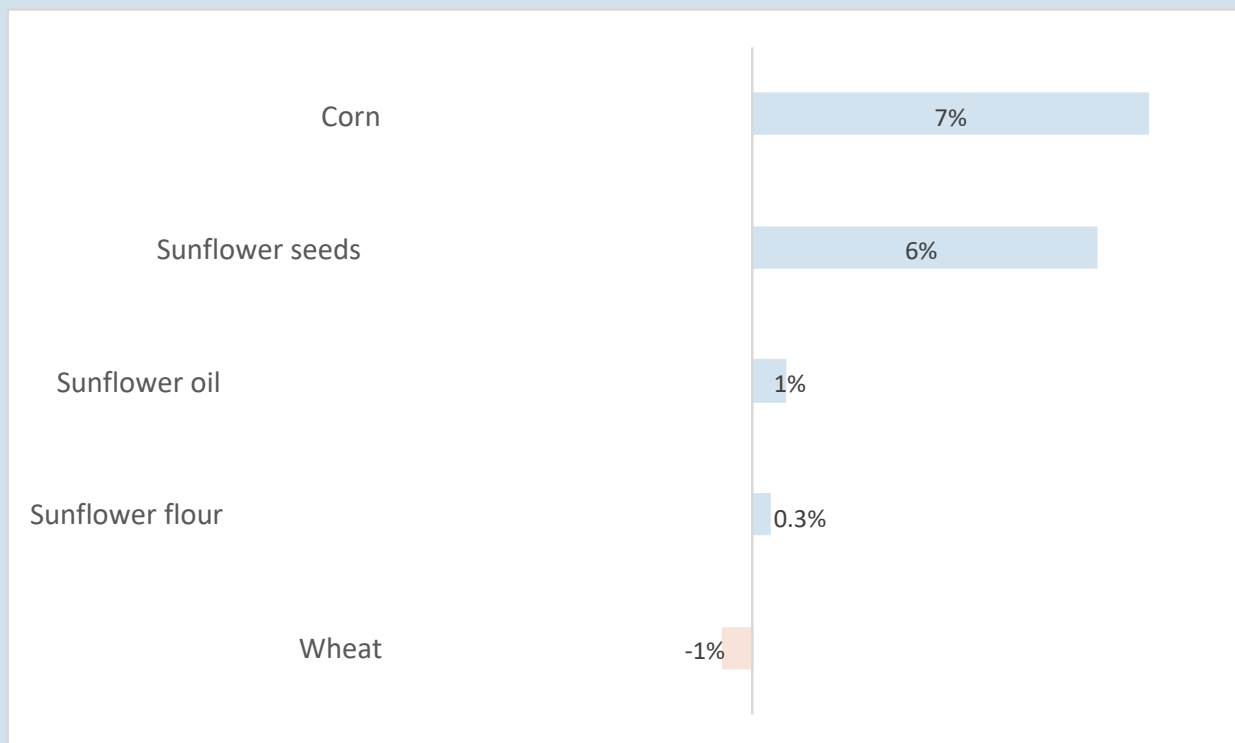
Source: processing by Centro Studi Divulga based on USDA data (Fas-Ipad)



Box 1. World forecasts 2023/2024

However, the production dynamics of the countries involved in the conflict must be framed within the global dynamics which, pending final estimates, forecast a global corn production for the 2023/24 commercial year, increasing by 7% to 1.2 billion tonnes. Sunflower seed production also increased by 6% (55.5 million tonnes), while wheat is expected to remain roughly stable at a total of 0.8 billion tonnes.

Graph 1: World production forecasts 23/24 of wheat, corn and seeds, oil and sunflower flour (% change)



Source: processing by Centro Studi Divulga based on USDA data (Fas-Ipad)

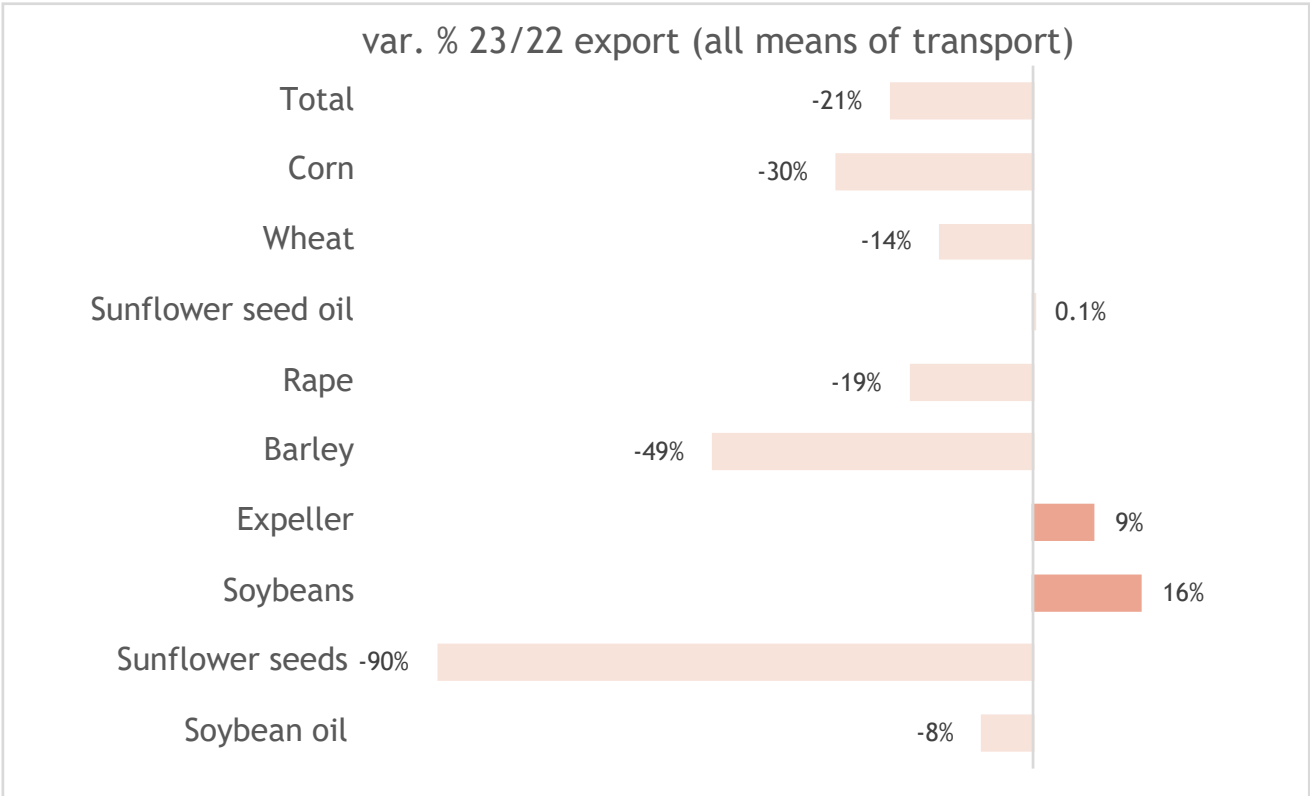
2.2 The instability in the Black Sea

2.2.1 Failure to renew the Agreement

The intensification of tension between Russia and Ukraine led, in July 2023, to the non-renewal of the "*Black Sea Grain Initiative*", the agreement signed in Istanbul on 22 July 2022 between Russia and Ukraine that guaranteed safe corridors for the transit of goods in Black Sea ports worldwide. And the effects on trade flows were not long in coming. In the last 5 months of 2023 alone, Ukraine's overall exports fell by 21%. A value destined to rise according to the forecasts of the United Nations Conference on Trade and Development (UNCTAD), [5] which in its latest report on

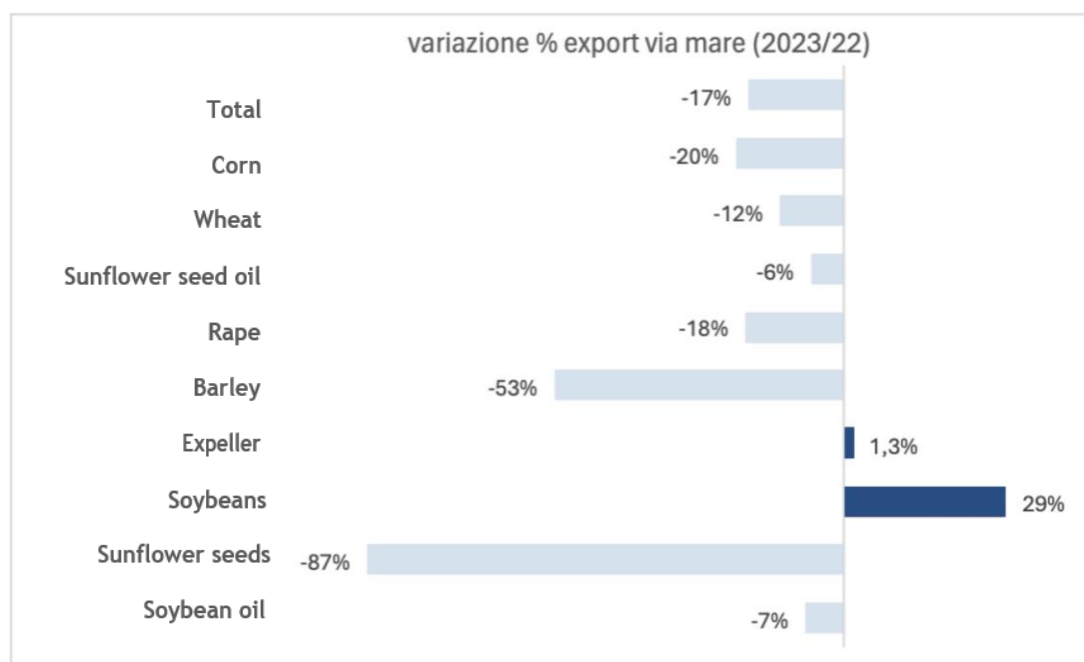
world trade estimates for Ukraine a 35% collapse in its foreign trade, against a global growth in trade in goods (+11.4%). Exports via sea are reduced by 17% (-4.1 million tonnes) but exports by land also suffer a significant setback of 33% (-2.7 million tonnes), although land movements in volume are less significant since they represent roughly a quarter of the total for Ukraine. Significant drops were noted for sunflower seeds, whose imports fell by 90%, but also for barley - 49%, corn -30% and wheat -14%.

Graph 2.2.1.1 – Total Ukrainian exports with and without the Black Sea agreement – % changes
(comparison 2022 and 2023 - August-December period)



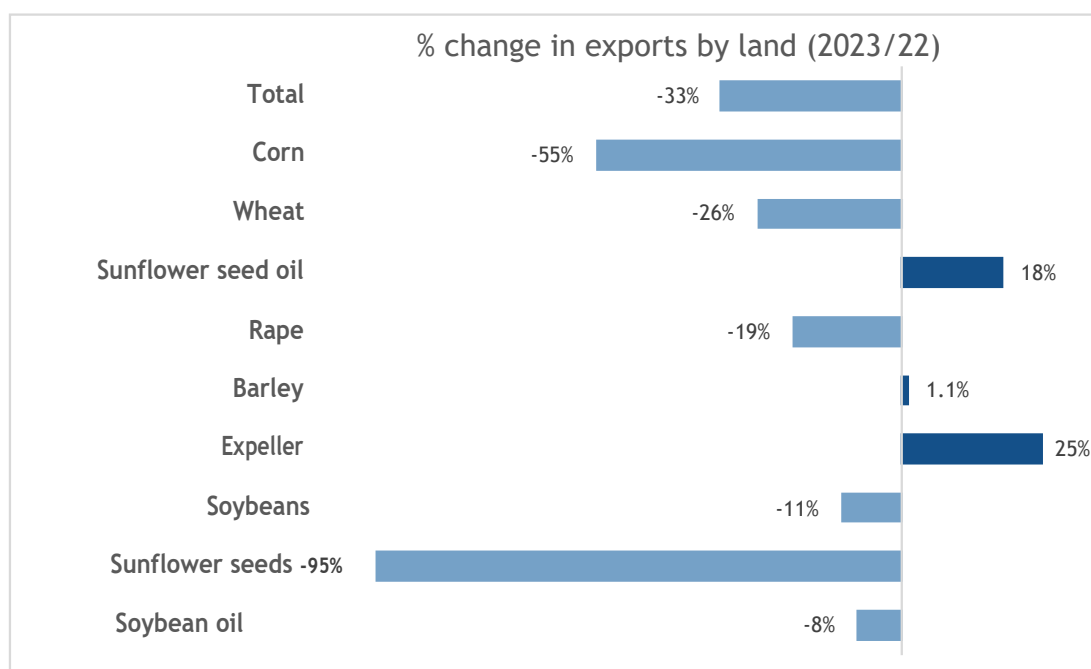
Source: Processing by Centro Studi Divulga based on data from the Ukrainian Ministry of Agriculture

Graph 2.2.1.2 – Ukrainian exports by sea with and without the Black Sea agreement
– % variations (comparison 2022 and 2023, August-December period)



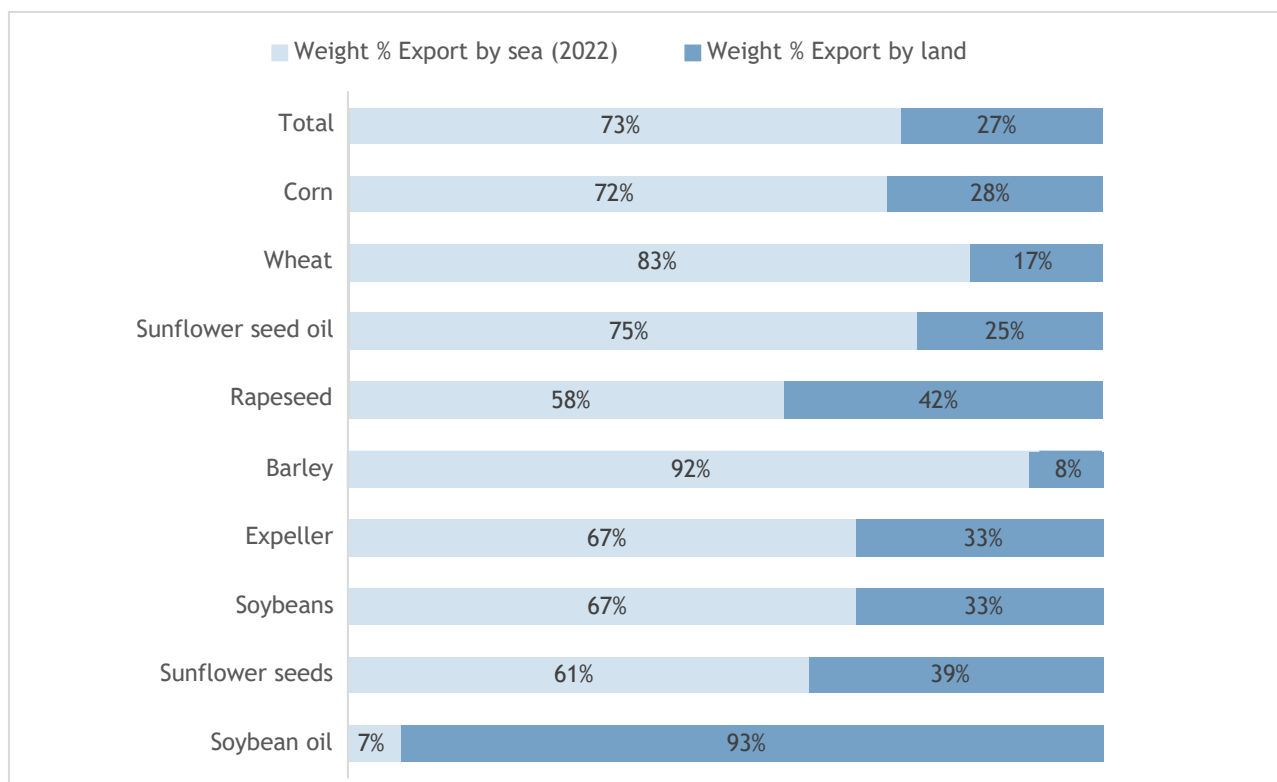
Source: processing by Centro Studi Divulga based on data from the Ukrainian Ministry of Agriculture

Graph 2.2.1.3 – Ukrainian exports by land with and without the Black Sea agreement – % variations (comparison 2022 and 2023, August-December period)



Source: processing by Centro Studi Divulga based on data from the Ukrainian Ministry of Agriculture

Graph 2.2.1.4 – Ukrainian exports by means of transport (year 2022) – percentage values



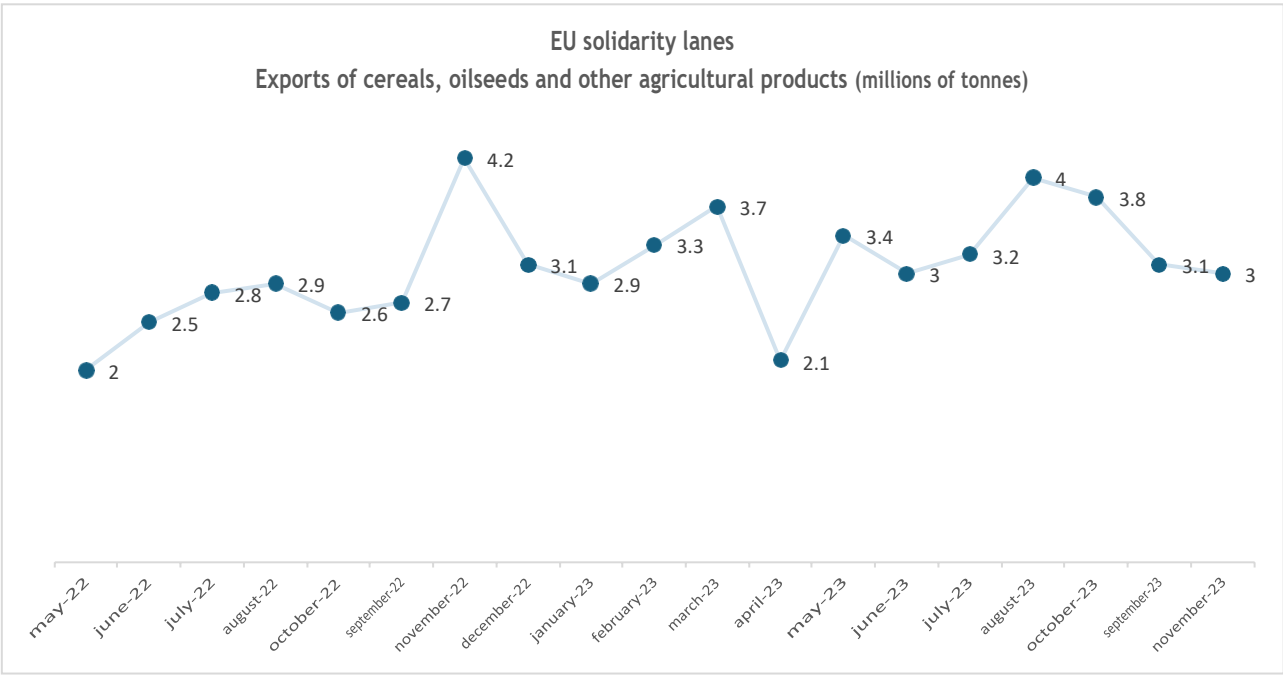
Source: processing by Centro Studi Divulga based on data from the Ukrainian Ministry of Agriculture

2.2.2 The "Solidarity Lanes"

In May 2022, a few months after the start of the conflict, the EU Commission approved an action plan to establish the so-called "solidarity lanes" [6] or rather safe corridors for the export of cereals and other farm products by land, that had been blocked due to the war. [7] During the same period, the Commission also approved

an action plan to liberalize the import into the EU of some agricultural products, including for example meat and eggs, honey, sugar, milk and some processed products such as butter, as well as cereals, industrial crops and their derivatives coming from Ukraine, valid for one year and then to be renewed until June 2024. [8]

Graph 2.2.2.1 – Ukraine Export via the "Solidarity Lanes" from May 2022 to November 2023



Sources: Processing by Centro Studi Divulga based on EU Commission data

Overall, the "solidarity lanes" have allowed Ukraine to export approximately 112 million tonnes of goods and import approximately 40 million tonnes of goods (military and humanitarian aid, fuel and other products) for a total value of trade of over 120 billion euros. According to estimates provided by the EU Commission, "solidarity lanes" have allowed the export of circa 60% of Ukrainian agricultural products since the beginning of the war. While on the one hand the solidarity lanes have eased the pressure for Ukraine, on the other, the significant exports of agricultural products, in particular cereals, to EU countries have contributed to fueling concerns about prices on European markets [9]. These interventions aimed at favouring the export of Ukrainian cereals and agricultural products to the EU are in fact creating distortions in the European internal market, in particular with regard to agriculture. In May 2023, in implementing regulation 2023/903, the EU Commission therefore decided

to partially suspend the free entry of 4 groups of agricultural goods, in particular wheat, corn, rapeseed and sunflower seeds from Ukraine [10] until 15 September

2023, [11] against Poland, Hungary, Slovakia, Bulgaria and Romania. These countries, in fact, complained that the measures for the free movement of Ukrainian agricultural goods had created a conflict of

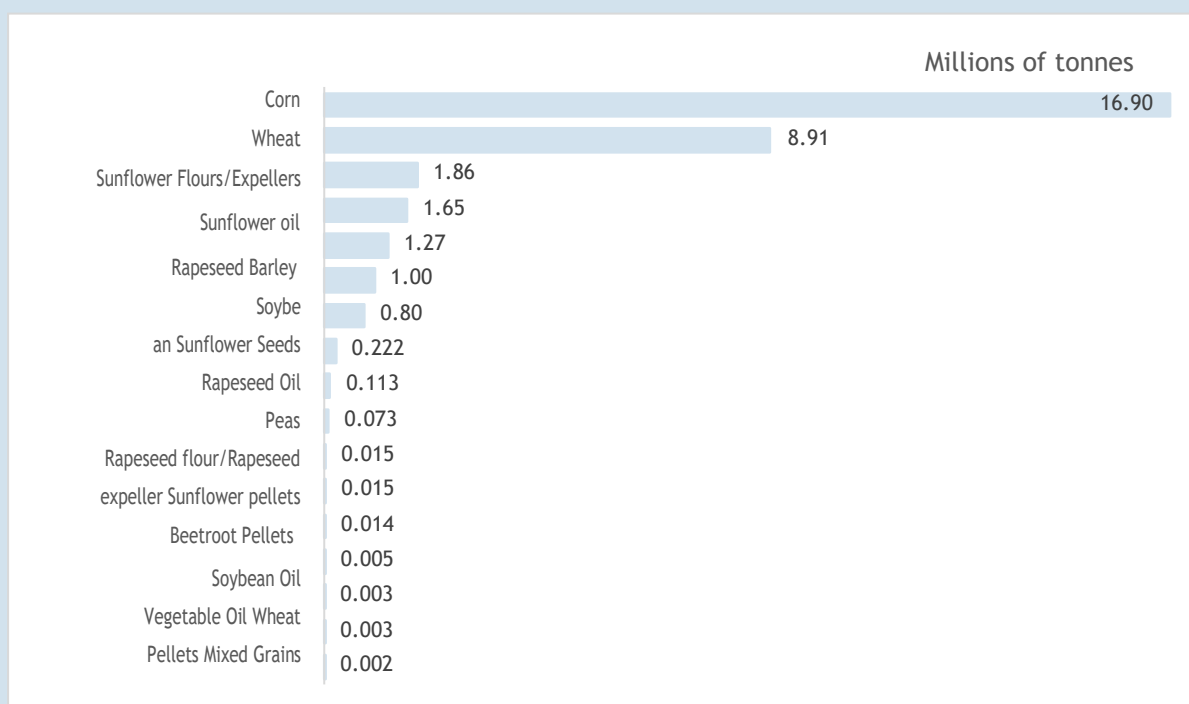
unfair competition with a consequential impact on the prices paid to local farmers. [12] In addition to the 5 countries mentioned, a further 12 Member States also complained of an infringement of Community law [13]. On 31 January 2024, the Commission therefore decided to issue a press release in which it stated that it continued to support Ukraine by liberalizing imports into the EU, but also left open the possibility of limiting its application with the provision of quotas for some agricultural products which will be considered capable of altering the functioning of the internal market. [14]



Box 2. The “Black Sea Grain Initiative”

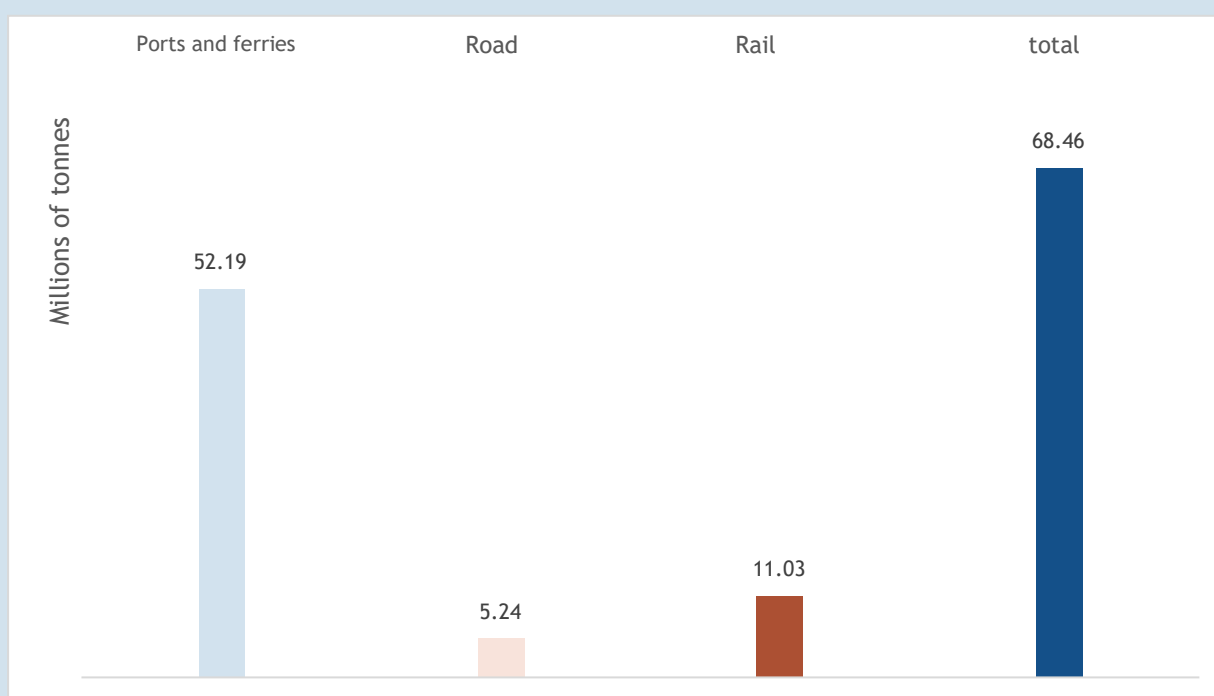
The agreement signed in Istanbul on 22 July 2022 remained in force for one year. The basis of the agreement was the Russian commitment not to prevent ships with agricultural products from Ukraine from sailing in the Black Sea. However, on July 17, 2023, Russia decided not to renew the agreement, despite repeated appeals from the United Nations. [15] In its year of application, the "Black Sea Grain Initiative", guaranteed 33 million tonnes of Ukrainian agricultural raw materials on the world markets with over 1,000 ships full of cereals and other food products that left Ukraine [16]. Just over half (17 million tonnes) is corn, crucial for livestock, the remaining 27% is wheat (9 million tonnes) while 5% is sunflower oil for 1.6 million tonnes. The remaining 17% is attributable to other products for 5.4 million tonnes. Among the countries that benefited most from the Agreement, China came first, followed by Spain and Turkey. Italy is in fourth place with 6.3% of the total. The UN Agreement has also proven to be vital for many of the most vulnerable countries in terms of food supplies and in particular the countries of the MENA area (Middle East and North Africa) which benefited from over 18.8 million tonnes of agricultural products (57.3% of the total exported from Black Sea ports). As a result, the agreement guaranteed, during its year of application, roughly 68% of the cereal trade flow exported by sea from Ukraine and about 45% of the flows of sunflower seeds and derivatives.

Graph 1– Ukrainian exports with the Black Sea Grain Initiative (millions of tonnes)



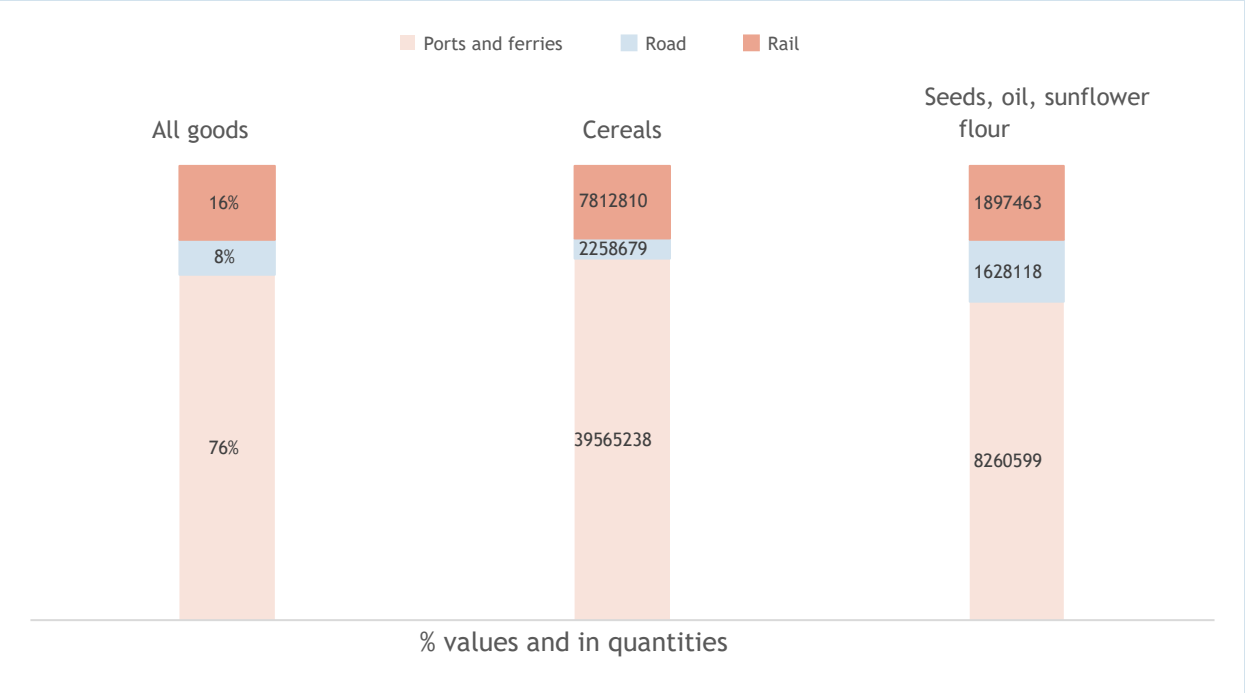
Source: processing Centro Studi Divulga on data from the Black Sea Grain Initiative Joint Coordination Centre of the United Nations

Graph 2 – Ukrainian agricultural exports by mea of transport (August 2022 - July 2023)



Source: processing by Centro Studi Divulga based on data from the Ukrainian Ministry of Agriculture

Graphi 3: Export of agricultural products during the Black Sea agreement (August 2022- July 2023)



Source: processing by Centro Studi Divulga based on data from the Ukrainian Ministry of Agriculture

2.2.3 Trade dynamics Italy – Ukraine - Russia

The conflict in Ukraine does not appear to have reduced the arrivals of agricultural products from the two countries affected by the conflict. Overall, in fact, in the first 10 months of 2023, imports from Ukraine grew by more than 150% compared to before the outbreak of the conflict, going from just over 1 million to 2.6 million tonnes. Sustained growth was noted for the arrival of cereals, including in particular common wheat (+260%), corn (+230%) and barley (+128%). In total, roughly $\frac{3}{4}$ of Italian imports from Ukraine concern these cereal products. However, the arrival of poultry meat is also growing, with imports from Ukraine exceeding 700 tonnes compared to the zero values in 2021. Significant increases are also reported for the arrivals of Ukrainian sugar, which went from zero to about 50,000 tonnes imported. Not to mention the growth in the import of sunflower seeds (+368%) and soybeans (+108%).

Table 2.2.3.1: Italian food imports from Ukraine – Main products (tonnes)

	2021 (first 10 months)	2022 (first 10 months)	2023 (first 10 months)	VAR % 23/22 (first 10 months)	VAR % 23/21 (first 10 months)
FRESH AND PROCESSED VEGETABLES	40647.5	12080	30902	155.8%	-24.0%
of which processed	40338.2	11894.6	30643.3	157.6%	-24.0%
FRESH AND PROCESSED FRUIT	3449.9	5263.9	5237	-0.5%	51.8%
OILS AND FATS	192412.2	222349.3	235409.8	5.9%	22.3%
of which sunflower oil	186299.2	220215.9	232273.3	5.5%	24.7%
WINE AND MUSTS	-	41.9	17.8	-57.6%	-
ANIMALS AND MEAT	1175.3	2000.6	4963.1	148.1%	322.3%
of which poultry meat	1	5.9	738.4	12431.6%	73740.0%
of which eggs	384	290.9	1344.0	362.0%	250.0%
of which honey	790.3	1703.8	1870.7	9.8%	136.7%
MILK AND DERIVATIVES	-	20	12.1	-39.6%	-
CEREALS, RICE AND DERIVATIVES	584801.6	984348.7	1966230.3	99.7%	236.2%
of which common wheat	107055.1	164736.3	384217.5	133.2%	258.9%
of which corn	466719.4	812256.3	1541464.6	89.8%	230.3%
of which barley	5916.3	4151.5	13479.7	224.7%	127.8%
INDUSTRIAL CROPS	202556	147842.4	300750	103.4%	48.5%
of which sunflower seeds	135.6	302.8	634.1	109.4%	367.6%
of which soybeans	69523.7	60346.9	144389.5	139.3%	107.7%
of which expellers and sunflower flour	131065.8	78803.7	143993.2	82.7%	9.9%
FORAGE	448.4	608.9	411.6	-32.4%	-8.2%
FLORICULTURE	39.6	56.3	-	-100%	-100.0%
FISH	-	-	1.7	-	-
OTHER BEVERAGES	1141.3	982.9	1035.6	5.4%	-9.3%
NON-DOMESTIC ANIMALS (game)	-	-	-	-	-
VARIOUS AGRI-FOOD PRODUCTS	1616	3018.7	50986.6	1589%	3055.1%
of which sugar and derivatives	-	1181.0	49618.1	4101.2%	-
NON-DOMESTIC ANIMALS (insects)	-	-	-	-	-
TOTAL	1028287.8	1378613.5	2595957.5	88.3%	152.5%

Source: processing by Centro Studi Divulga based on ISMEA data

The arrival of agricultural and agri-food products from Russia also increased by +9%, from 566 thousand tonnes in the first 10 months of 2021 to 617 thousand tonnes in the same period in 2023. These increases were driven, in particular, by the arrival of grown durum wheat and sunflower oil.



Table 2.2.3.2: Italian food imports from Russia – Main products (tonnes)

	2021 (first 10 months)	2022 (first 10 months)	2023 (first 10 months)	VAR % 23/22 (first 10 months)	VAR % 23/21 (first 10 months)
FRESH AND PROCESSED VEGETABLES	132389.3	112871.5	106247.1	-5.9%	-19.7%
of which processed	132151.8	112666.9	106111.5	-5.8%	-19.7%
FRESH AND PROCESSED FRUIT	241.8	43.9	85	93.6%	-64.8%
OILS AND FATS	5	12488.3	19.9	-99.8%	298.0%
of which sunflower oil	-	12248	-	-100%	-
WINE AND MUSTS	-	0.4	-	-100%	-
ANIMALS AND MEAT	-	-	1.7	-	-
MILK AND DERIVATIVES	-	0.3	-	-100%	-
CEREALS, RICE AND DERIVATIVES	179516.9	86116.8	390039.6	352.9%	117.3%
of which durum wheat	35891.3	28929	361310.2	1149%	906.7%
of which common wheat	44311.7	39142.6	1500	-96.2%	-96.6%
of which corn	99194.6	3200.2	27229.1	750.9%	-72.5%
INDUSTRIAL CROPS	245026.9	271261.3	116784.2	-56.9%	-52.3%
of which sunflower seeds	-	-	-	-	-
of which flax seed	17333.6	12167.9	7666.7	-37%	-55.8%
of which beetroot derivatives	61465.1	109445	82316.1	-24.8%	33.9%
of which expellers and sunflower flour	149550.3	130328.8	11015.1	-91.5%	-92.6%
of which expellers and flax flour	16229.1	10038.8	1576.9	-84.3%	-90.3%
FORAGE	699.4	107.1	888.3	729.7%	27.0%
FLORICULTURE	166.9	11.2	-	-100%	-100.0%
FISH	3067.3	1968.8	1539.5	-21.8%	-100.0%
OTHER BEVERAGES	423.4	327.9	-	-100%	-100.0%
NON-DOMESTIC ANIMALS (game)	0.5	-	-	-	-100.0%
VARIOUS AGRI-FOOD PRODUCTS	5201.5	1703.3	984	-42.2%	-81.1%
of which dog and cat food	3791.2	415.7	-	-100%	-100.0%
NON-DOMESTIC ANIMALS	-	-	-	-	-
TOTAL	566738.9	486900.7	616589.3	26.6%	8.8%

Source: processing by Centro Studi Divulga based on ISMEA data

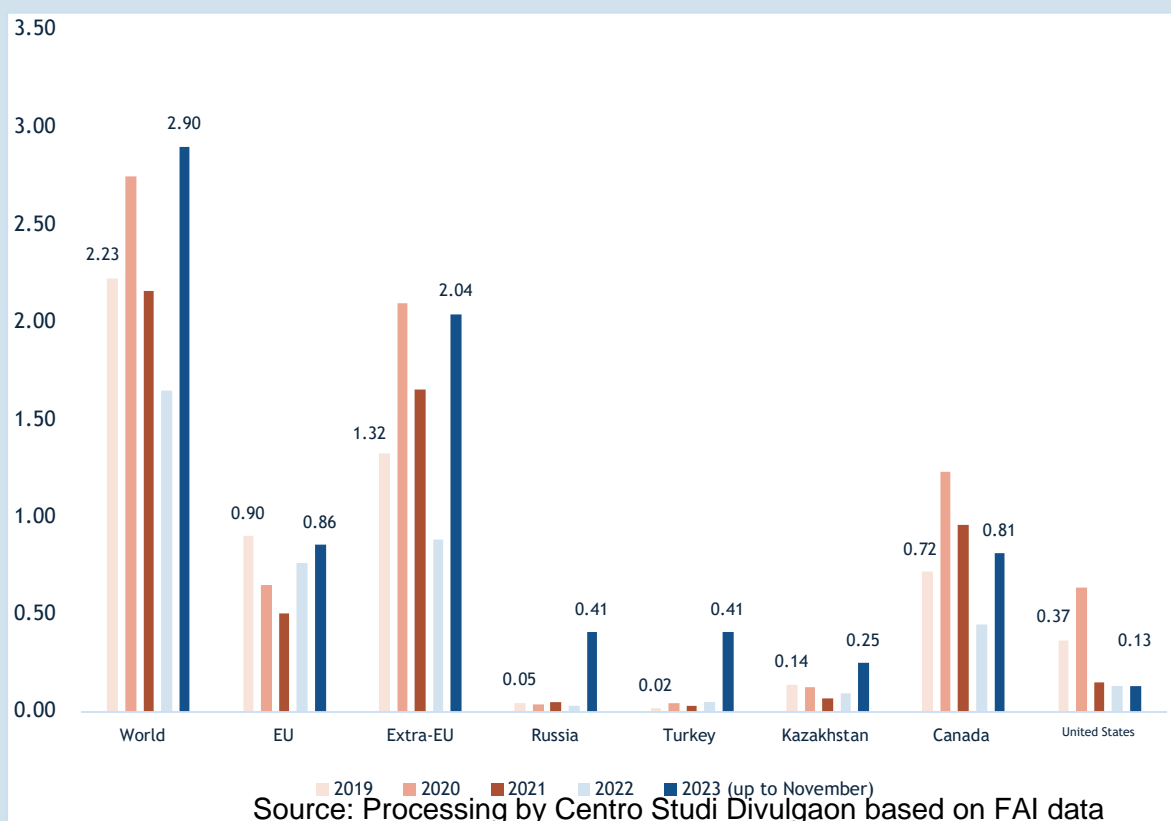


Box. 3: Durum wheat, new scenarios between Turkey and Russia

In recent months, durum wheat markets globally have been partly reshaped by the evolution of global geopolitical dynamics, also influenced by the Russian-Ukrainian conflict. This has helped to change the positioning of the main players worldwide, with consequential effects also for countries such as Italy, which boasts undisputed records worldwide in the pasta supply chain. 2023 (a) was characterized by a 130% increase on a trend basis in Italy's imports of durum wheat from non-EU countries. This growth is driven by the import of durum wheat from Turkey

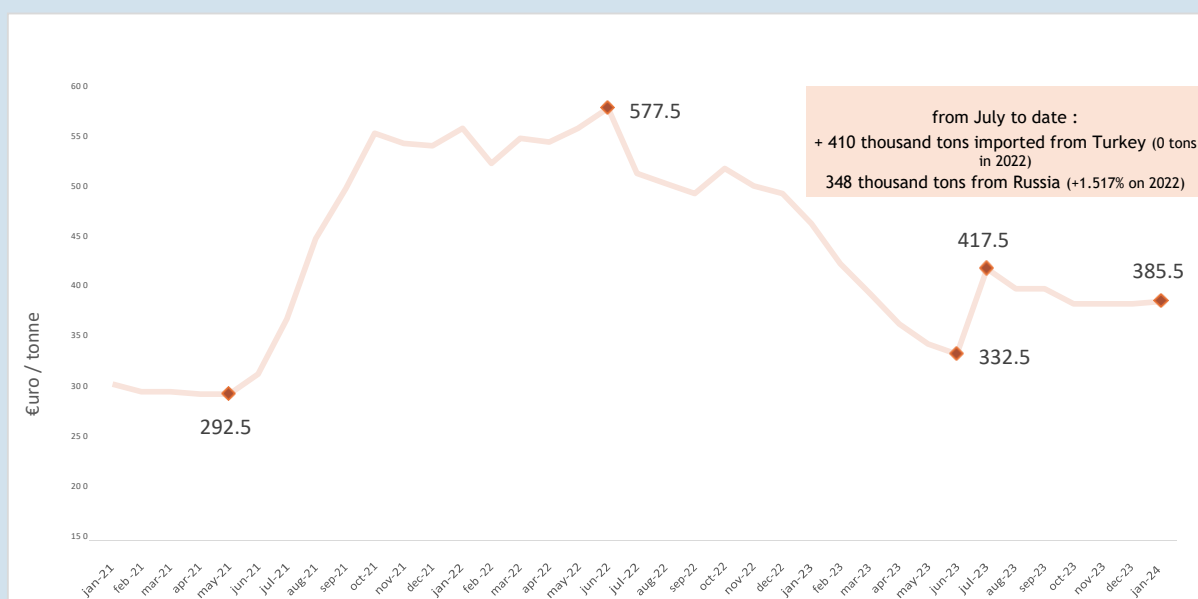
+798% and Russia +1.164% becoming the second and third Italian suppliers respectively, followed by Canada +83% (which remains the first supplier) and Kazakhstan +164%.

Graph 1: Import of durum wheat Italy (millions of tonnes)



The considerable growth in imports from these countries has had clear repercussions on domestic prices with a collapse in national prices recorded from July 2023 to date, a period in which there are massive arrivals of durum wheat from Turkey and Russia. In January 2024, prices fell by more than 70 euros per tonne compared to the same period last year. If we, instead, consider the prices recorded in June 2022, equal to 577 euros/tonne, the prices of national durum wheat suffered a setback of around 190 euros per tonne, equal to over 33%. Arrivals from non-EU countries have multiplied precisely at the same time as the harvesting phase of Italian wheat and the start of the new marketing campaign.

Graph 2: Durum wheat Price



Sources: Processed by Centro Studi Divulga based on the Foggia Chamber of Commerce

Expanding the scope of analysis at a European level, in the current 2023/2024 marketing year (i.e. from July 2023 onwards) more than 80% of imports from non-EU countries were absorbed by Italy alone. During this time, Turkey is ranked first among the main suppliers followed by Russia in second place. These two countries have somehow taken on a significant position compared to Canada, which drops to 3rd place among the main suppliers of the period July-November 2023. Out of a total of 1.1 million tonnes of durum wheat imported into Italy from non-EU countries, from July onwards, Turkey represents 37%, while Russia 31.4%. The 2023/2024 marketing year, in any case, could mark a historic turning point: for the first time, Canada, by far the leading supplier to the EU and Italy in recent years, could give way to the emerging countries of the world's durum wheat (Turkey and Russia).

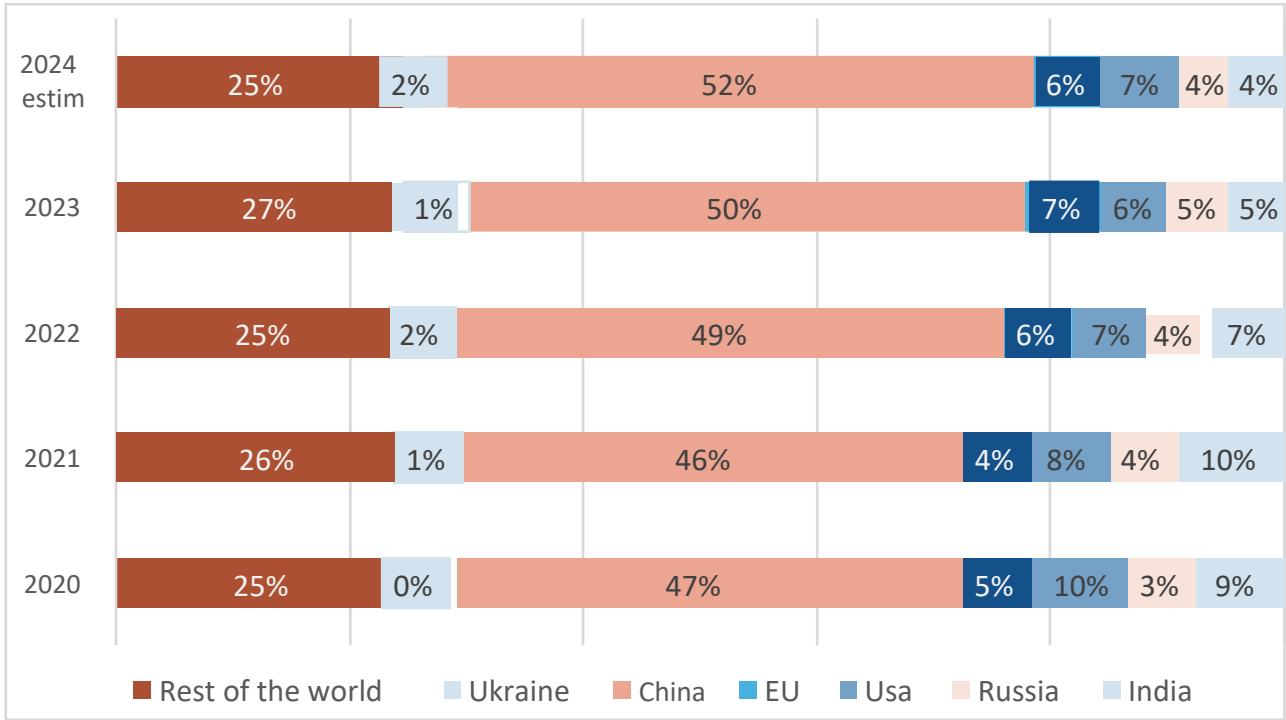
2.3 The hegemony for stocks

2.3.1 World wheat reserves

The war between Russia and Ukraine has also had important repercussions on the dynamics of agricultural product inventories, reshaping the positioning of the main players

worldwide, including China. The latter plays a primary role, holding 50% of the world's wheat stocks, equal to over 140 million tonnes.

Graph 2.3.1.1 - Distribution of wheat reserve worldwide



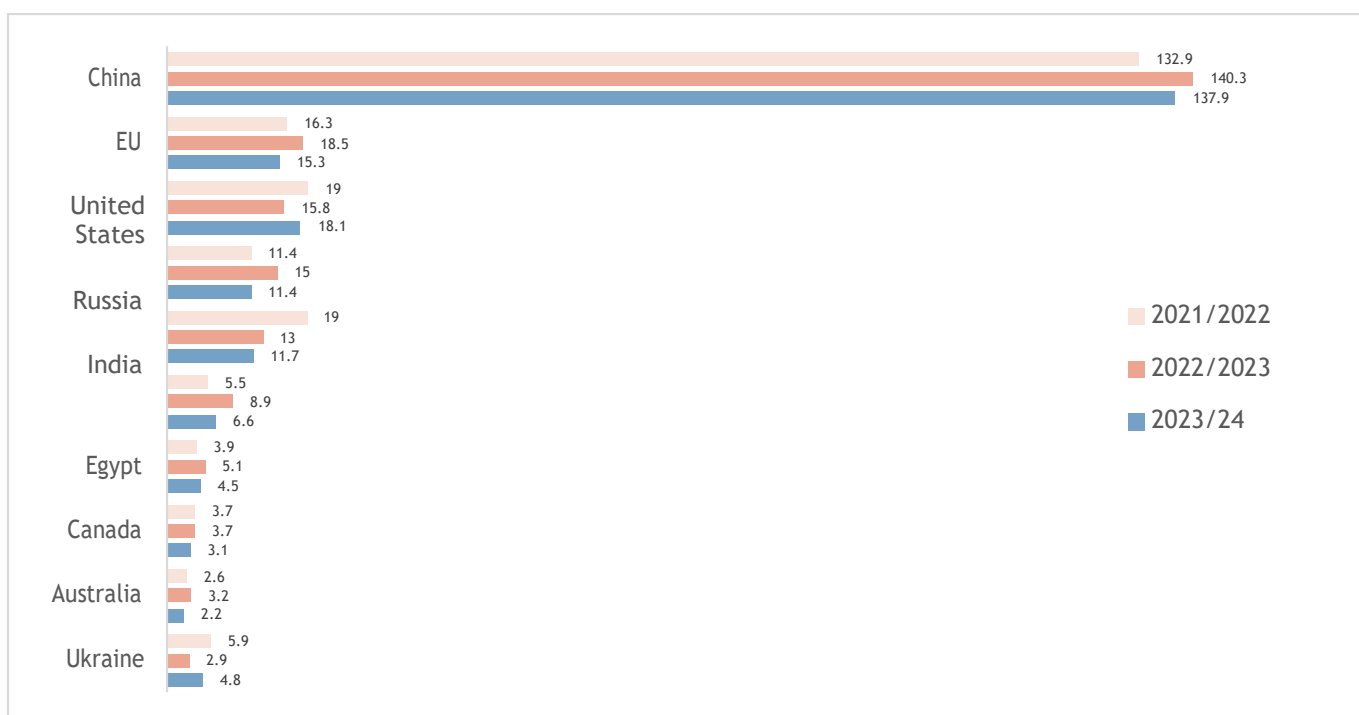
Source: processing by Centro Studi Divulga based on IGC data

Compared to pre-war levels in 2021, China increased its share of global wheat reserves by 4% (+12 million tonnes), but the EU also recorded growth from 4% to 7% (+4 million tonnes). On the other hand, the United States, has eroded its stocks (-7.2 million tonnes) and consequently reduced its weight globally from 8% to 6%. As far as the countries directly involved in the conflict are concerned, contrary to what was found for Ukraine, which marks a downfall

of wheat stocks by 51%, Russia has increased its wheat reserves by 32% in the last year.

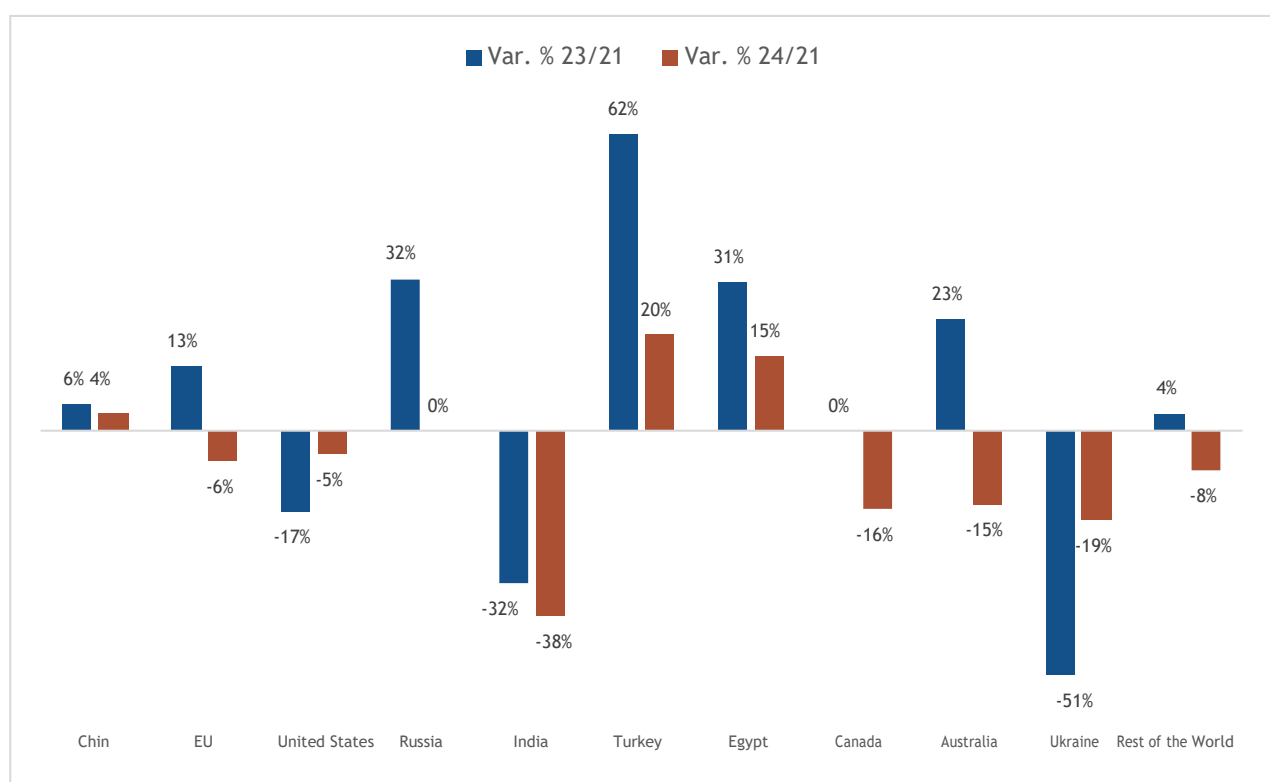
Among the main causes of the emptying of Ukrainian grain silos, worth highlighting are the uncertainties on the energy front with the increase in related costs which have been added to the decline in internal production due to the ongoing war.

Graph 2.3.1.2: Top 10 global wheat reserves in millions of tonnes



Source: processing by Centro Studi Divulga based on IGC data

Graph 2.3.1.3 Variations in world wheat reserves



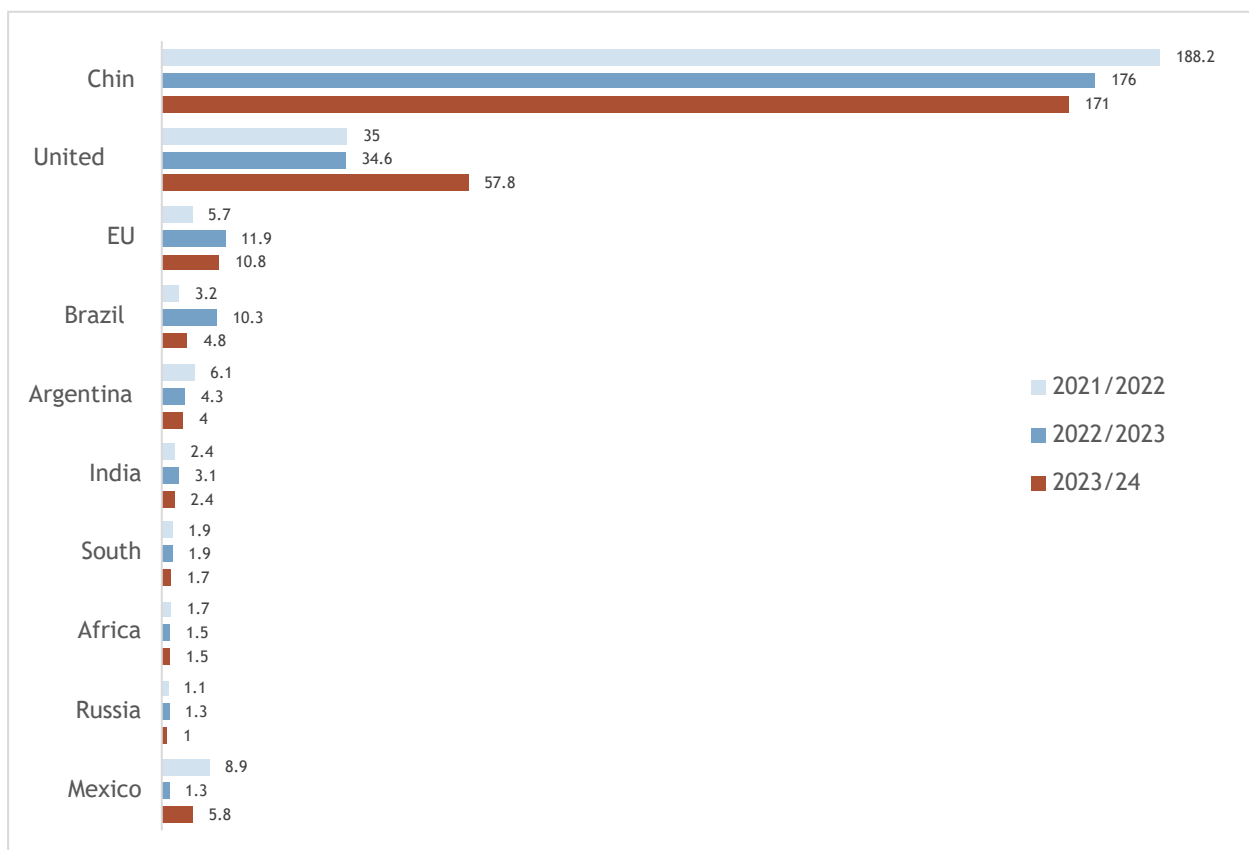
Source: processing by Centro Studi Divulga based on IGC data

2.3.2 World corn reserves

The effects of the conflict have been felt in particular on Ukrainian corn reserves which in the last year have almost disappeared with an 85% drop equal to 7.6 million tonnes less, going from 9 in 2022 to 1.3 million tonnes in 2023. The forecasts for 2024 define a

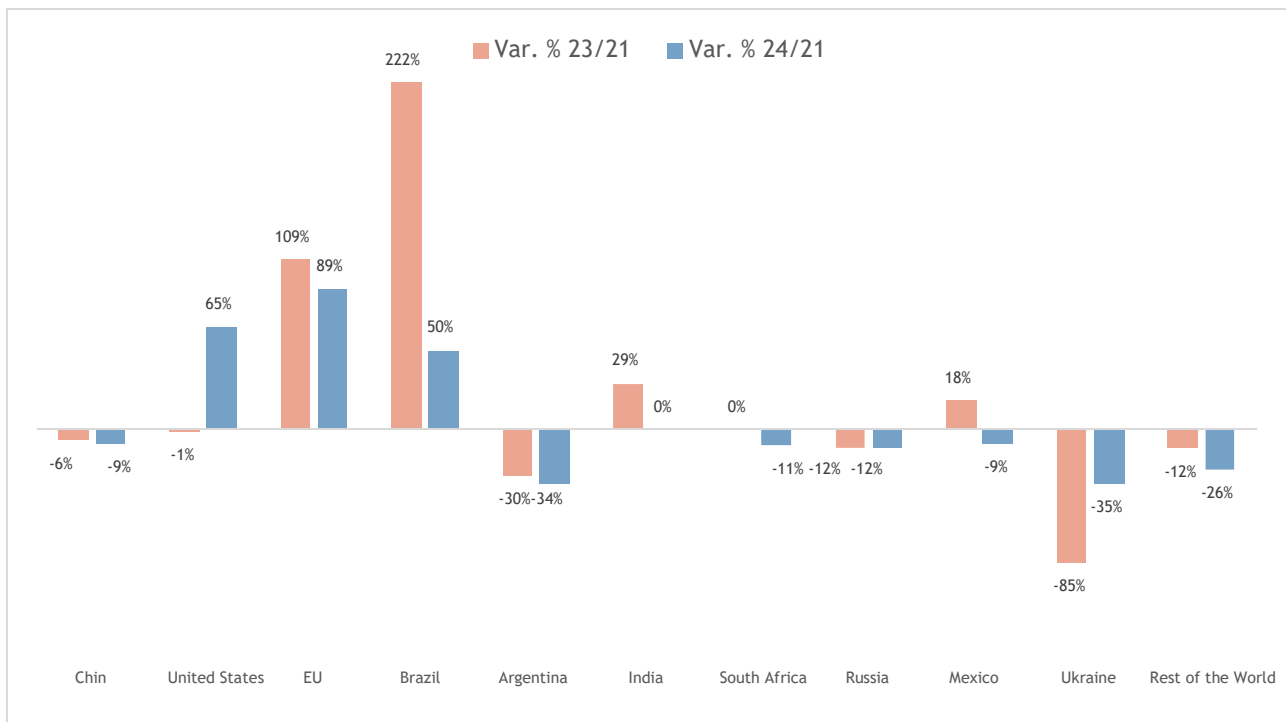
slight recovery in Ukrainian reserves that could stand at 5.8 million tonnes, in any case, 35% below pre-war levels. Growing in the management of global corn reserves are the EU and Brazil, which have respectively more than doubled (+109%) and tripled (+222%) their reserves in the last year.

Graph 2.3.2.1 – Top 10 global corn reserves in millions of tonnes



Source: processing by Centro Studi Divulga based on IGC data

Graph 2.3.2.2 – Variations in world corn reserves

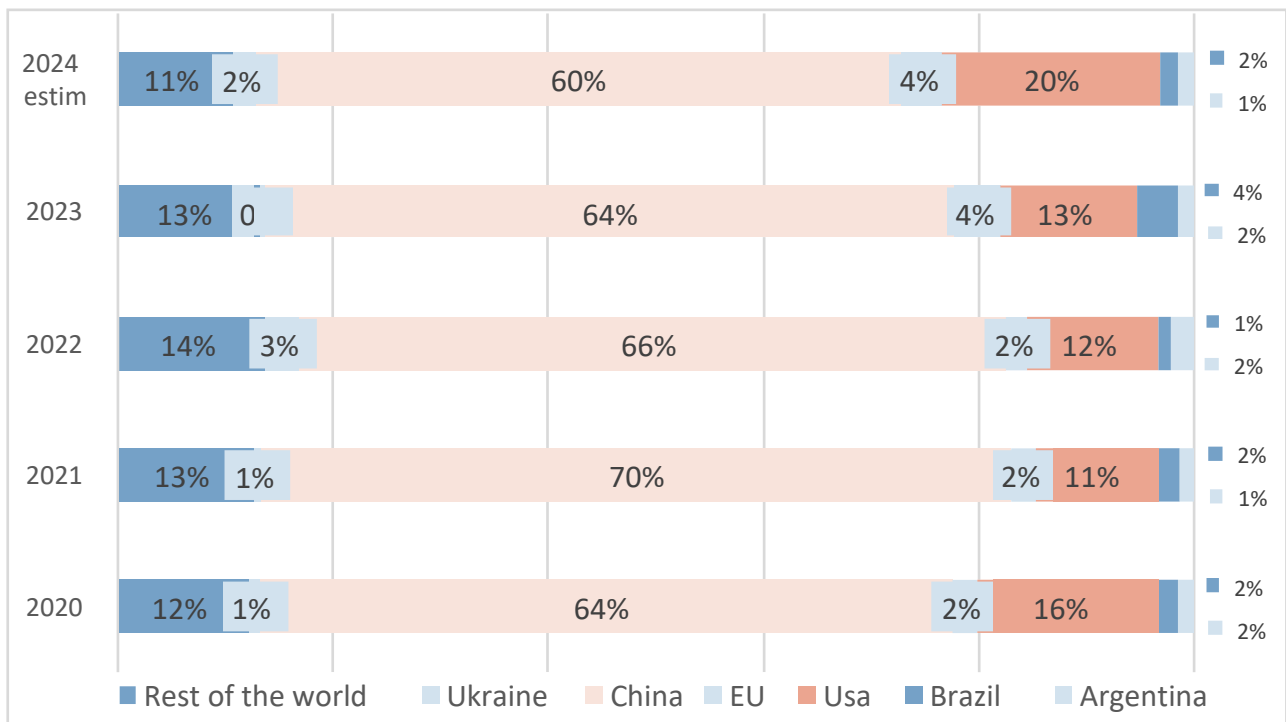


Source: processing by Centro Studi Divulga based on IGC data

Among the main owners of the world's corn reserves we find China with over 170 million tonnes of co representing 64% of the total global reserves.

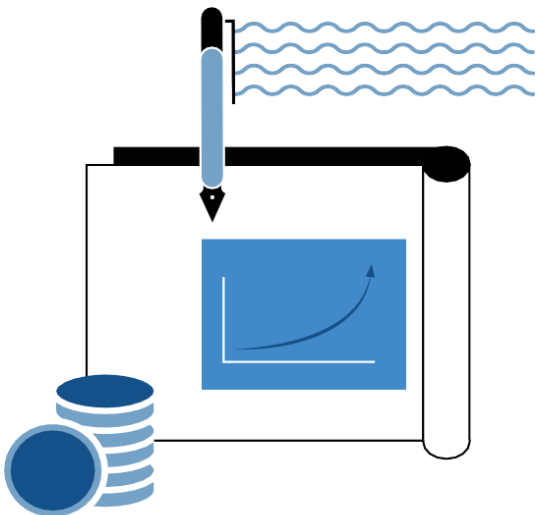
They are followed at a distance by the US with 34 million tonnes in 2023, equal to 13% of the total, and in third place by the EU with 12 million tonnes, 4% of the total.

Graph 2.3.3 - Distribution of corn reserves worldwide



Source: processing by Centro Studi Divulga based on IGC data

3.

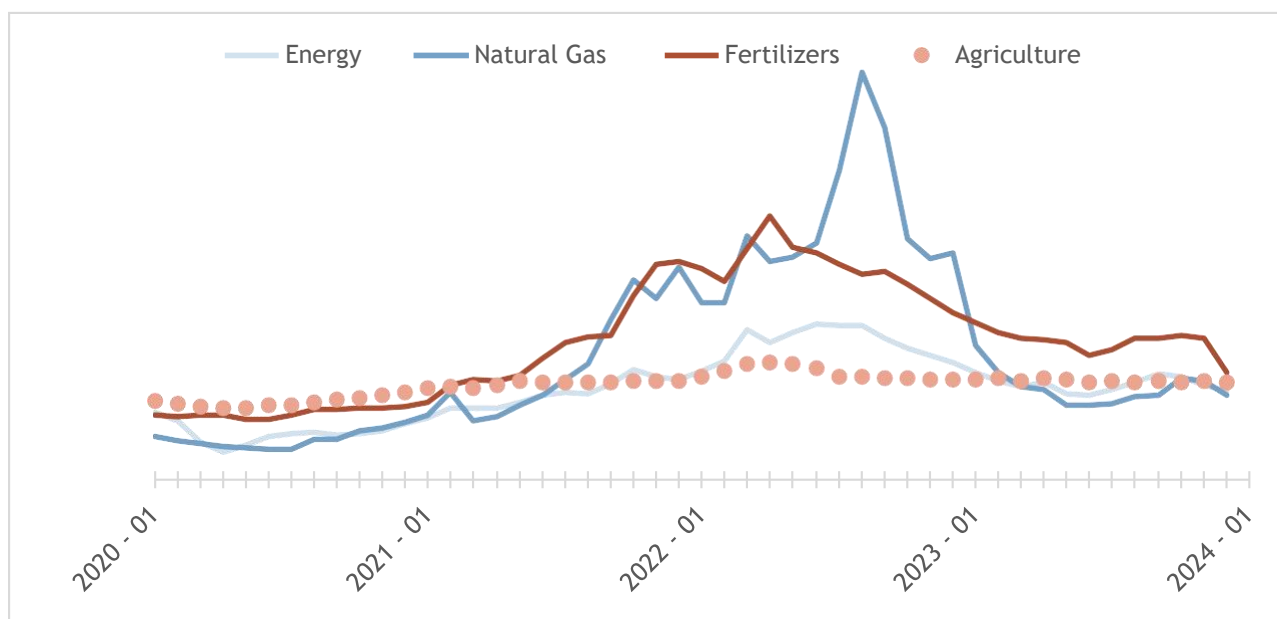


3. The effects on costs and prices

3.1 – The international framework

The instability generated by the ongoing tensions on a global scale has had an impact in recent months both on the prices of energy products and on the the main technical means of agricultural production. The analysis of the World Bank's price index suffered intense peaks for these prices right around the outbreak of the conflict.

Graph 3.1.1 – World Bank Price Indices (2020-2023)

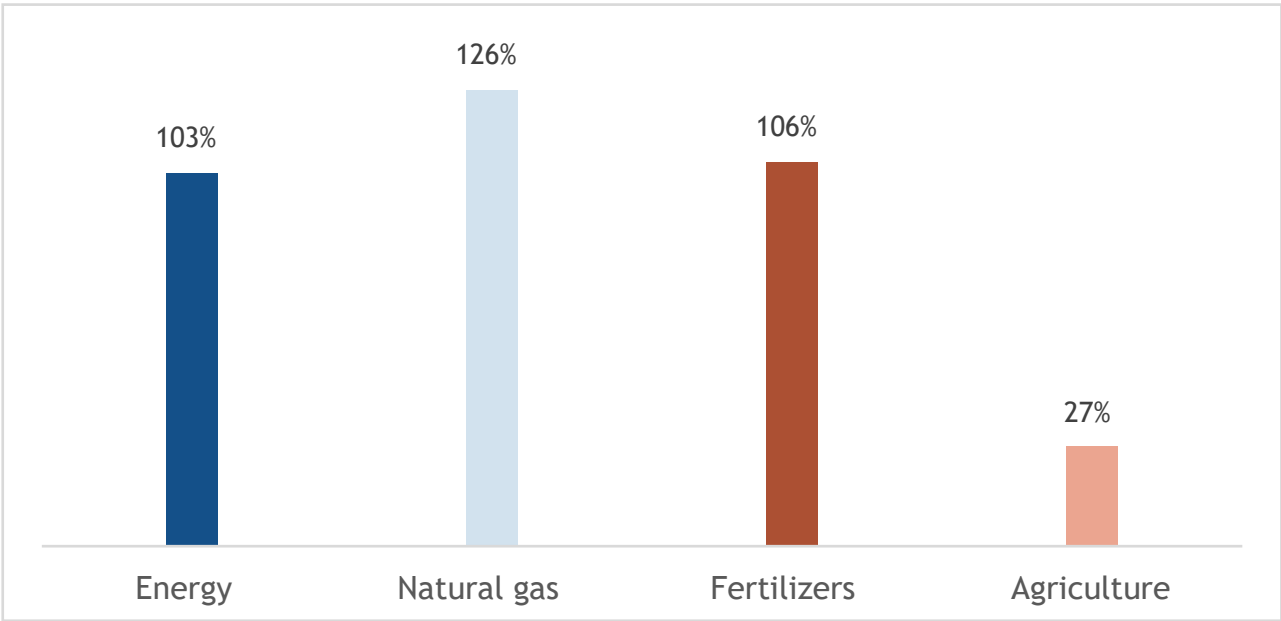


Source: processing by Centro Studi Divulga based on World Bank data

In fact, geopolitical tensions have caused an increase in the costs of production inputs to a greater extent than the increases recorded for food goods, with a differential largely absorbed by the agricultural production fabric. In 2023, the World Bank's energy price index showed a growth of

103% compared to 2020, while natural gas increased by 126%. The same applies to the prices of fertilisers, which increased by 106%. Prices paid to agriculture grew by 27% worldwide over the same period.

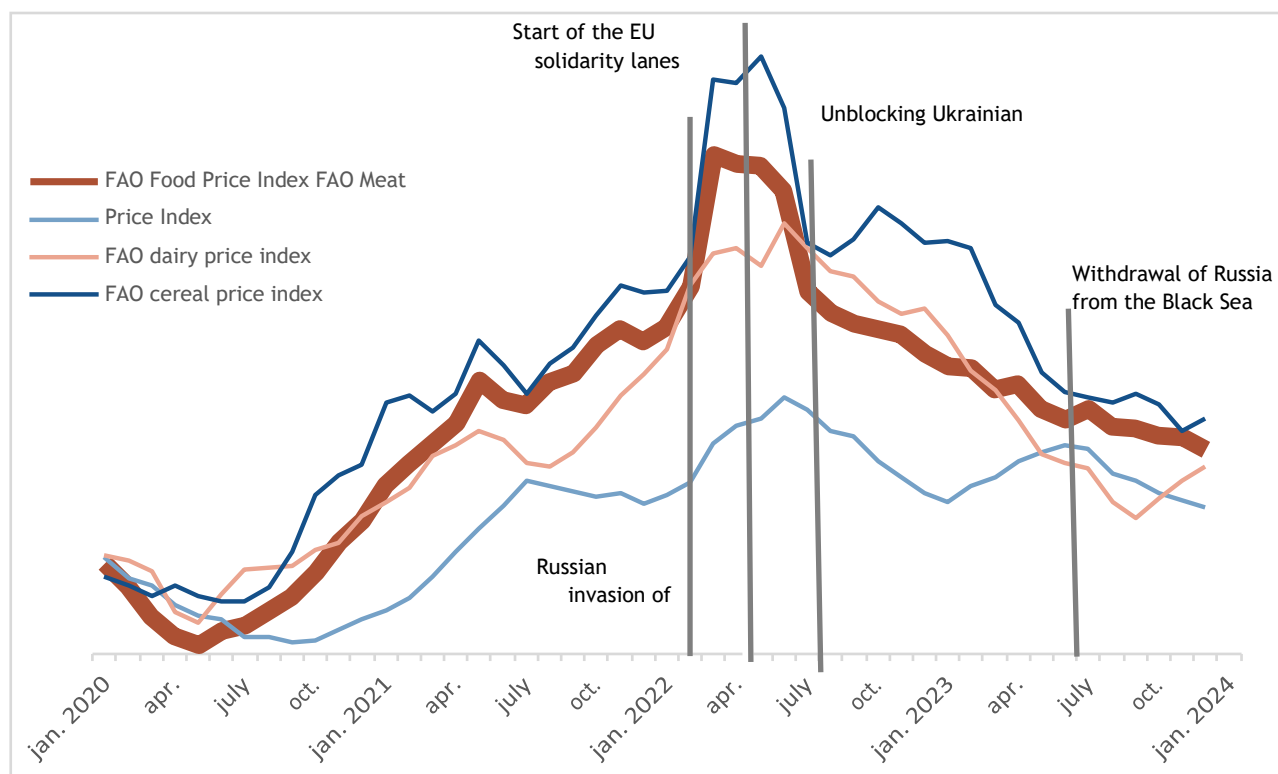
Graph 3.1.2 – % Change in World Bank Price Indices 2020-2023



Source: processing by Centro Studi Divulga based on World Bank data

The increase in the costs of production and energy factors was only minimally absorbed by the increase in prices of agricultural and food products as shown by the analysis of the FAO price index for food, meat, cereals and dairy products.

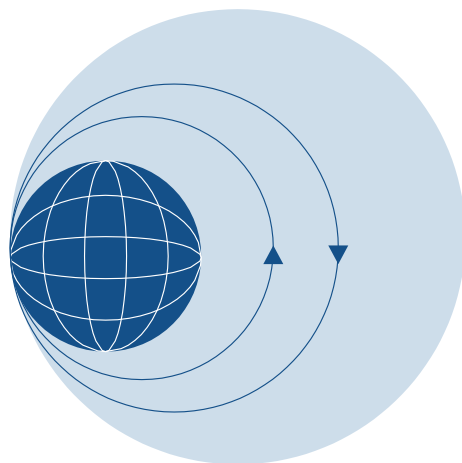
Graph 3.1.3 – FAO price indices (2020-2023)



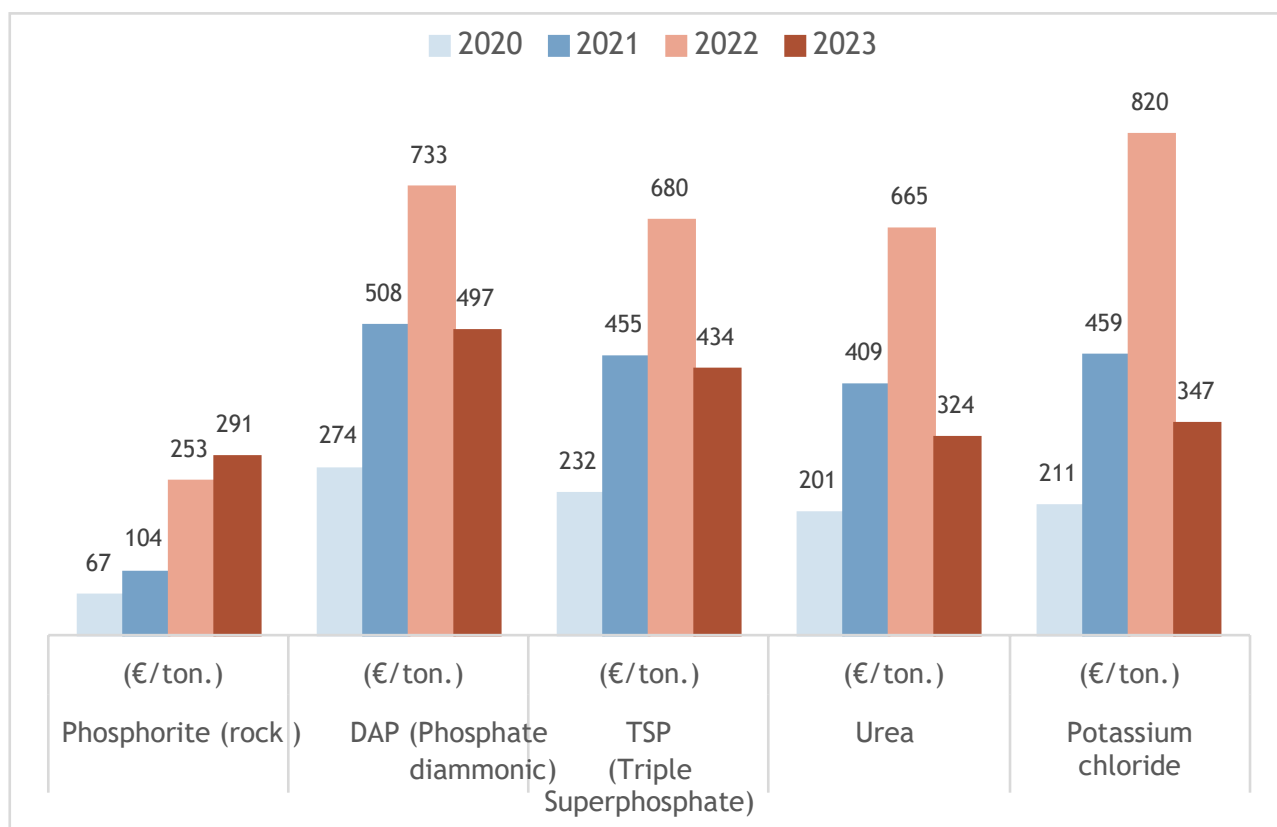
Source: processing byCentro Studi Divulga based on FAO data

In this regard, it is worth pointing out that the increase recorded by the FAO index of the main agricultural products, including meat, cereals and dairy products, is far from the increase in the related energy products and the technical means used for their production. In fact, if we look in detail at the technical means of production and focus in particular on fertilizers, the increase in prices, which began with the pandemic crisis and were fueled by the war in Ukraine, affected almost all types with urea which in 2022 reached an average of 700 euros/tonne and with even higher peaks diammonium phosphate exceeded 730 euros/tonne and potassium chloride 820 euros/tonne. In terms of

percentages from 2020, the first year of the pandemic, to 2022, the year of the outbreak of the conflict in Ukraine, the prices of the main fertilisers registered significant peaks with an increase in average annual prices of 204% for diammonium phosphate, 230% for urea and 290% for potassium chloride compared to 2021. In 2023, although the prices for these products recorded a slight reduction, the costs of fertilisers remained at higher levels than in 2020. In particular, compared to 2020, the costs of urea remain 61% higher, potassium chloride 64% higher and 82% higher for diammonium phosphate.

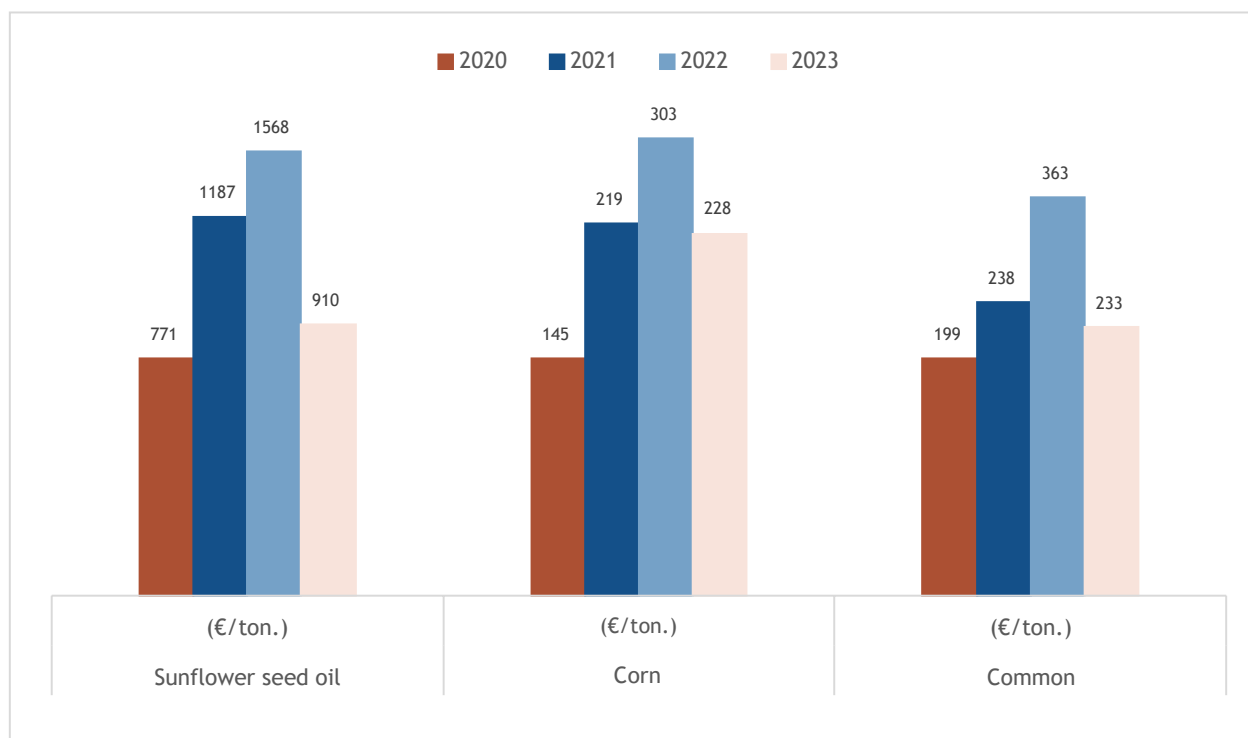


Graph 3.1.5 – International average prices (€/tonne) of basic fertiliser molecules



Source: processing by Centro Studi Divulga based on World Bank data

Graph 3.1.6 – International average prices (€/tonne) of seed oil



Source: processing by Centro Studi Divulga based on World Bank data

As previously mentioned, international tensions have caused a surge in international prices of the main agricultural products and derivatives such as sunflower oil and cereals used in the production process of the food industry or in the case of corn, which is crucial for livestock feeding. The average annual international quotas of sunflower seed oil in 2022 exceeded 1,500 euros per tonne, reaching values 103% higher than in 2020. The same goes for corn with prices reaching an

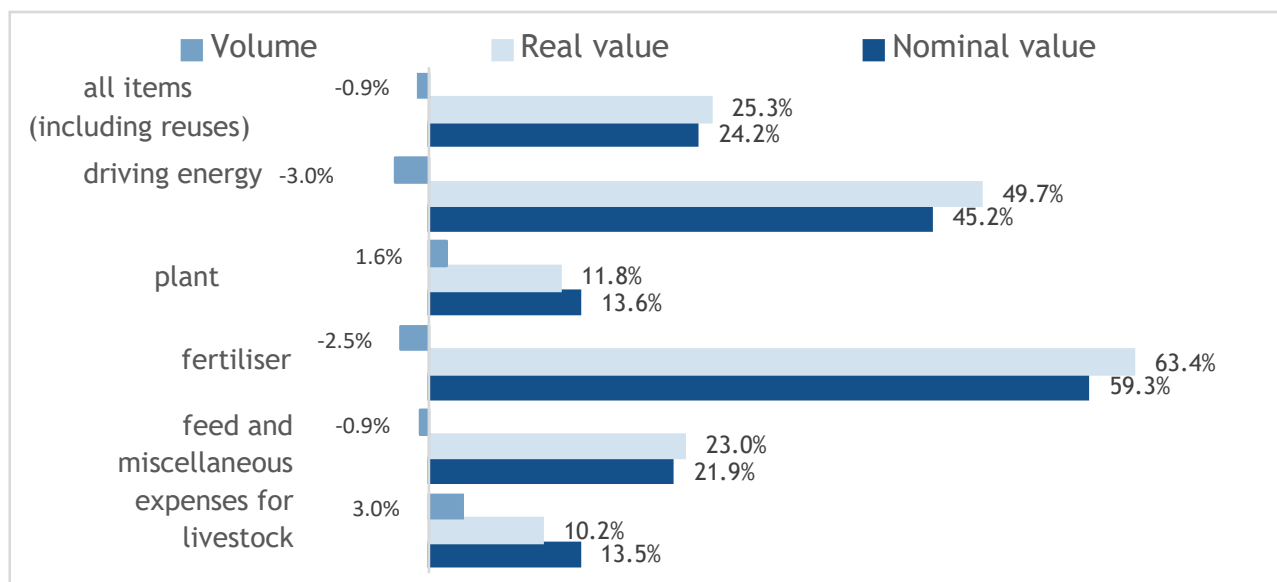
average of 303 euros per tonne in 2022; an increase of 109% compared to 2020. Price increases that have become a clear burden on the budgets of livestock farms, where corn represents an important cost item for livestock feeding. In fact, these considerable price fluctuations as mentioned, not only fuel the climate of uncertainty in global markets, they also represent, especially for national livestock farms, important critical issues in feed supplies.

3.2 – The effects on agricultural enterprises

3.2.1 The impact on the financial statements

The crisis triggered by the war in Ukraine had significant impacts on production costs in the agricultural sector. The national accounting data for the agriculture sector confirms that in 2022 the costs of intermediate consumption grew overall by more than 25% in actual terms against a decrease in the input volumes (-0.9%). On average, farms spent roughly 50% more than in 2021 to meet their energy consumption (down 3% in volume) and more than 63% on fertilisers (-2.5% in volume). It should also be taken into consideration that these two expenditure items represent on average 1/4 of the intermediate consumption of an Italian agricultural company. Aggravating the situation is an increase in costs also for feed and livestock expenses (+23% in actual terms compared to a drop in volumes of -0.9%) and for plant protection products (about 12% more), which represent 1/3 of company costs.

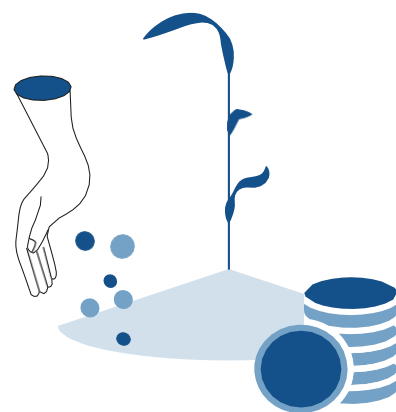
Graph 3.2.1 – Intermediate consumption of Italian farms – Change % 2022/2021



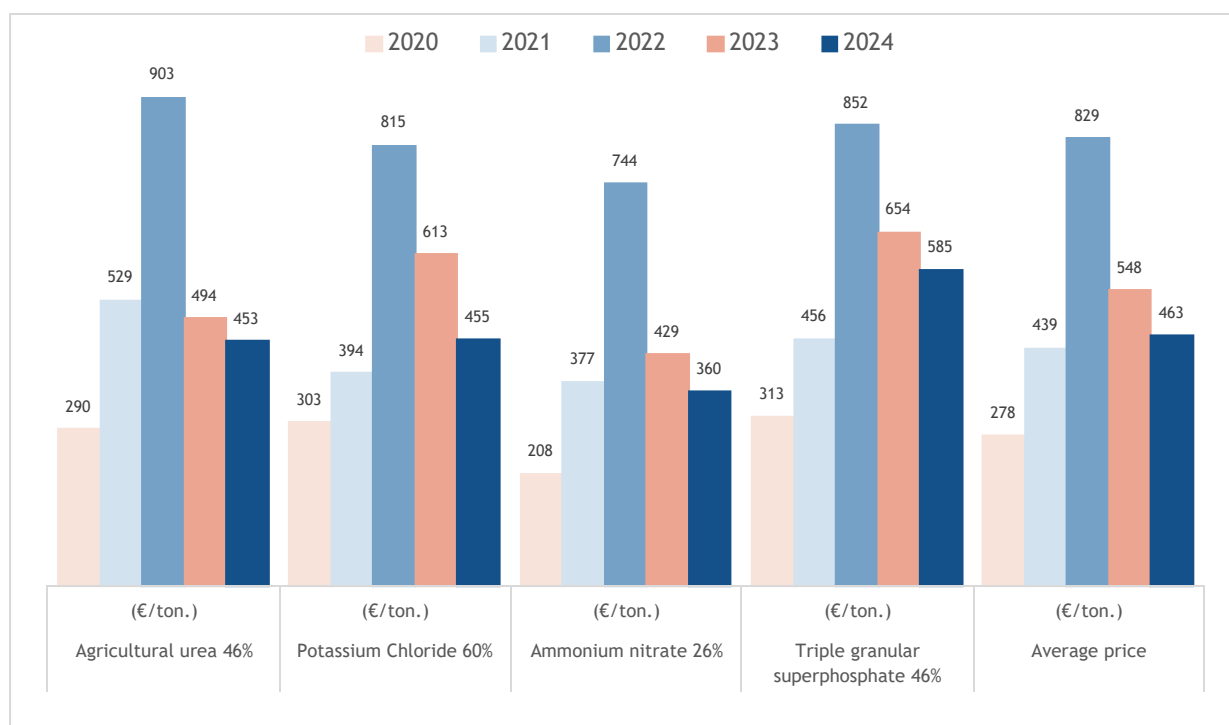
Source: processed by Centro Studi Divulga based on ISTAT – Accounting of the agriculture sector data

3.2.2 The cost of fertilisers

In the last 5 years, the prices of the main fertilisers have undergone vast fluctuations in Italy with significant peaks recorded in 2022, the year of the Ukrainian invasion. After the peaks recorded as a result of the outbreak of the conflict, the prices of fertilisers immediately went down slightly but in any case stand at decidedly higher values than in the past. On average, fertiliser prices in 2024 were 66% higher than in 2020.

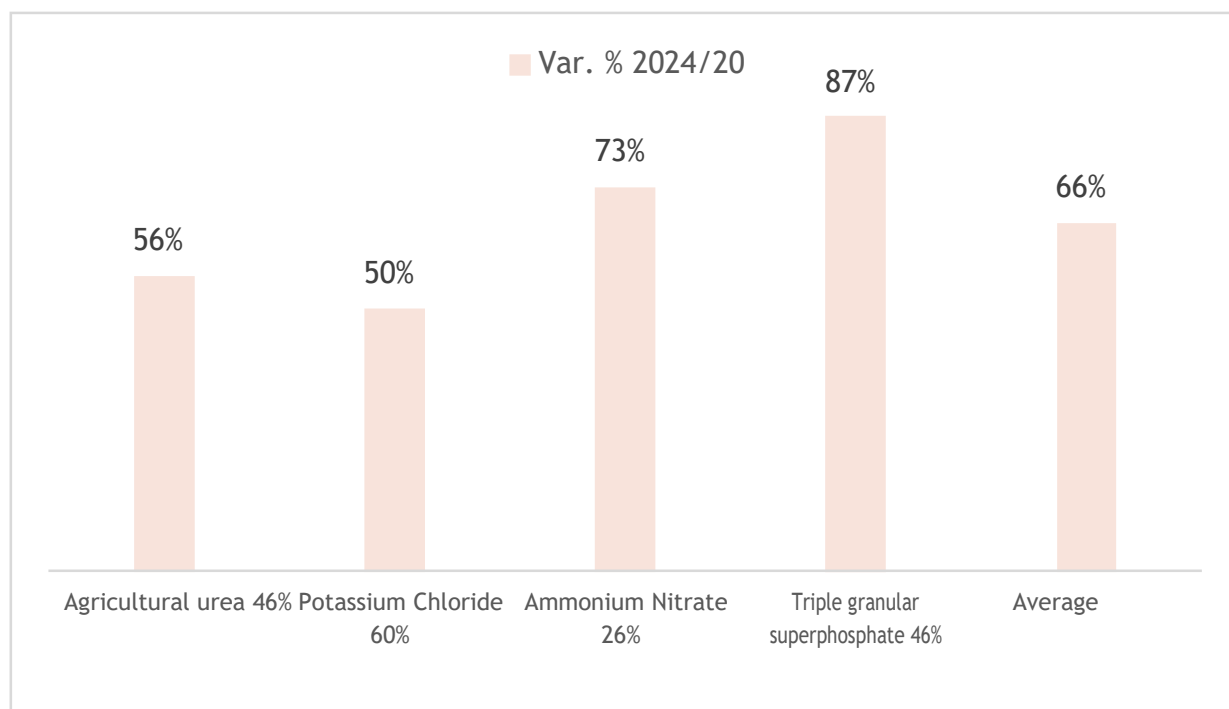


Graph 3.2.2.1 – Average annual prices of fertilisers in Italy (€/tonne)



Source: processing by Centro Studi Divulga based on data from the Turin Chamber of Commerce

Graph 3.2.2.3 – Increase in fertiliser prices from 2020 to date



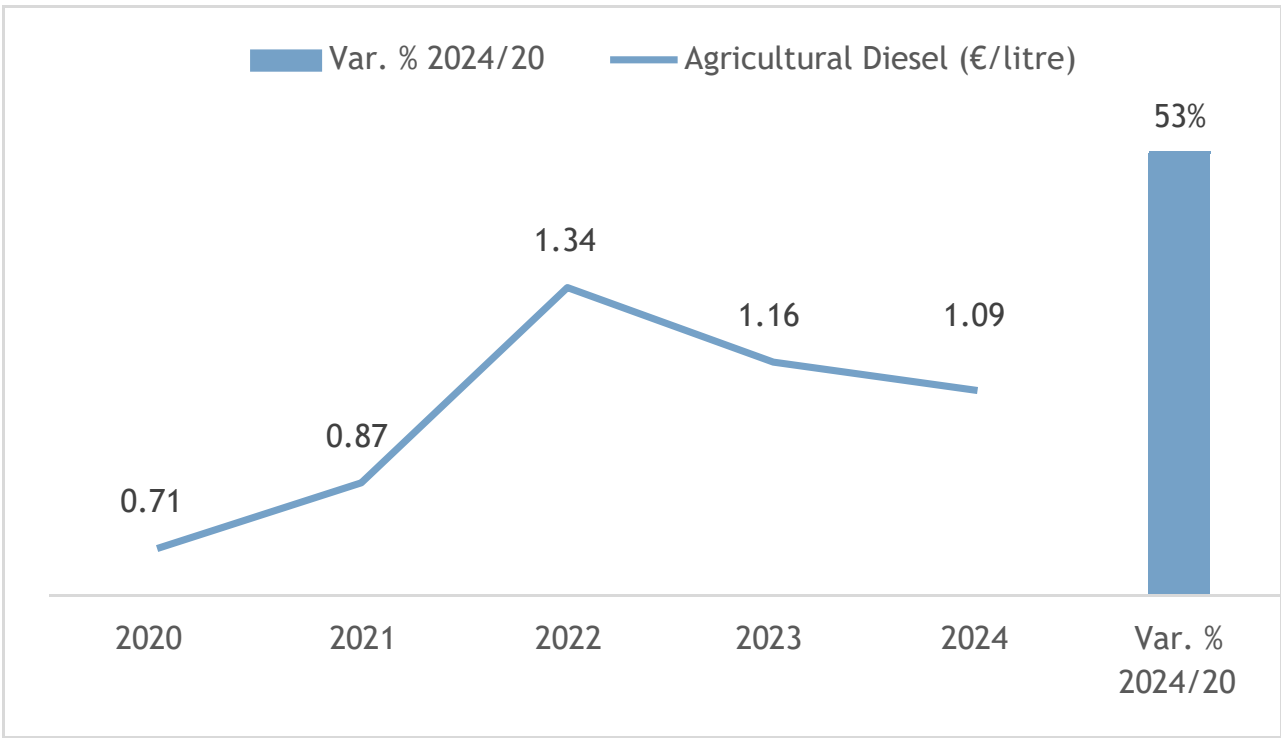
Source: processing by Centro Studi Divulga based on data from the Turin Chamber of Commerce

3.2.3 Agricultural diesel fuel

The rise in agricultural diesel prices that took place between 2022 and 2023 continues to be reflected in current prices, which remain 53% higher than 5 years ago, i.e. in 2020, the year the pandemic crisis

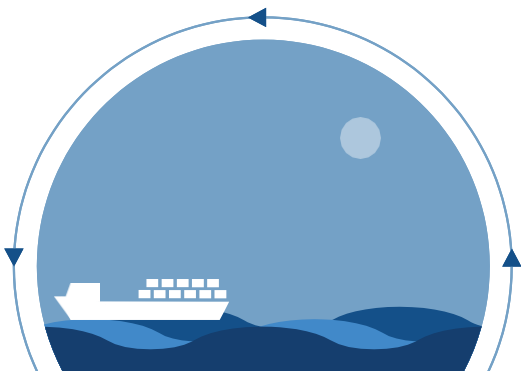
began. After the peaks recorded in 2022 with values of 1.34 euros per litre on average, in recent weeks there was a slight decline with 1.10 euros/litre, far from the 0.70 euros/litre of 2020.

Graph 3.2.3.1 – Average annual prices of agricultural diesel in Italy (€/litre) and % increase from 2020 to date



Source: Source: Processing by Centro Studi Divulga based on CLAL data (Milan Chamber of Commerce)

4.



4. Tensions in the Red Sea

4.1 – the Houthi offensive redraws ship routes

In addition to the repercussions of the war in Ukraine, and the consequences of the pandemic which still linger, further international tensions have contributed to adding more fuel to the fire in recent months. On the one hand, the outbreak of the Israeli-Palestinian conflict, initiated by the Hamas attack of October 7, 2023 from the Gaza Strip, on the other hand, the tension in the Red Sea due to the terrorist interventions launched by the Houthis(b), a Yemeni Islamic group which, following the events in Palestine, decided to join Hamas in the offensive against the Jewish State of Israel, carrying out acts of piracy in the

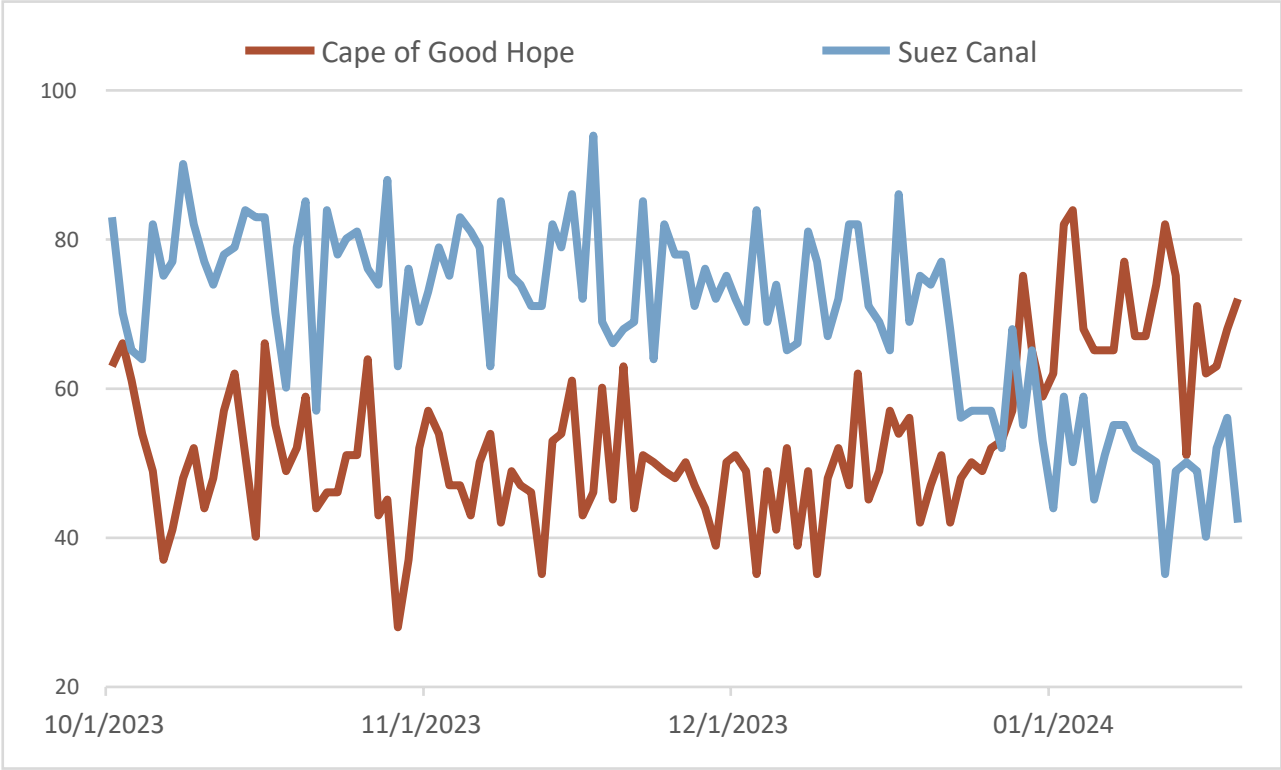
Red Sea. Since November 2023, there have been dozens and dozens of attacks carried out by the Houthis against transiting ships, which made it necessary, within a few days, to identify alternative routes. For this reason, shipping companies had to replace the passage through the Suez Canal with the circumnavigation of Africa. A route that involves a higher cost of fuel estimated at over 600 thousand dollars, over two weeks more for delivery times and personnel costs, as well as the increase in insurance rates for ships and goods.

4.1.1 New avenues for trade

Approximately 30% of the world's ship flows pass through the Suez Canal [17] with an average of 48 container ships and 25 oil tankers passing through every day, according to data from the International Monetary Fund. In volumes, this means 12% of the goods handled globally, equal to 1.4 billion tonnes of products per year [18]. Since last November

[19] the Houthi militiamen have undertaken offensive acts against merchant ships transiting the Bab al-Mandab(c) strait towards the State of Israel, the most important merchant companies Maersk, MSC and Hapag-Lloyd have decided to limit, or in many cases suspend transit routes through the Suez Canal. [20] Much of the traffic between Asia and Europe was then diverted by circumnavigating the African continent and passing through the Cape of Good Hope (South Africa). As previously mentioned, this interruption of the routes to Suez [21] means an average increase of approximately 6.3 thousand nautical miles, with travel times 40% longer, or approximately 17 additional days of navigation.

Graph 4.1.1 – Daily merchant transits (cargo and oil tankers) Suez Canal and Cape of Good Hope

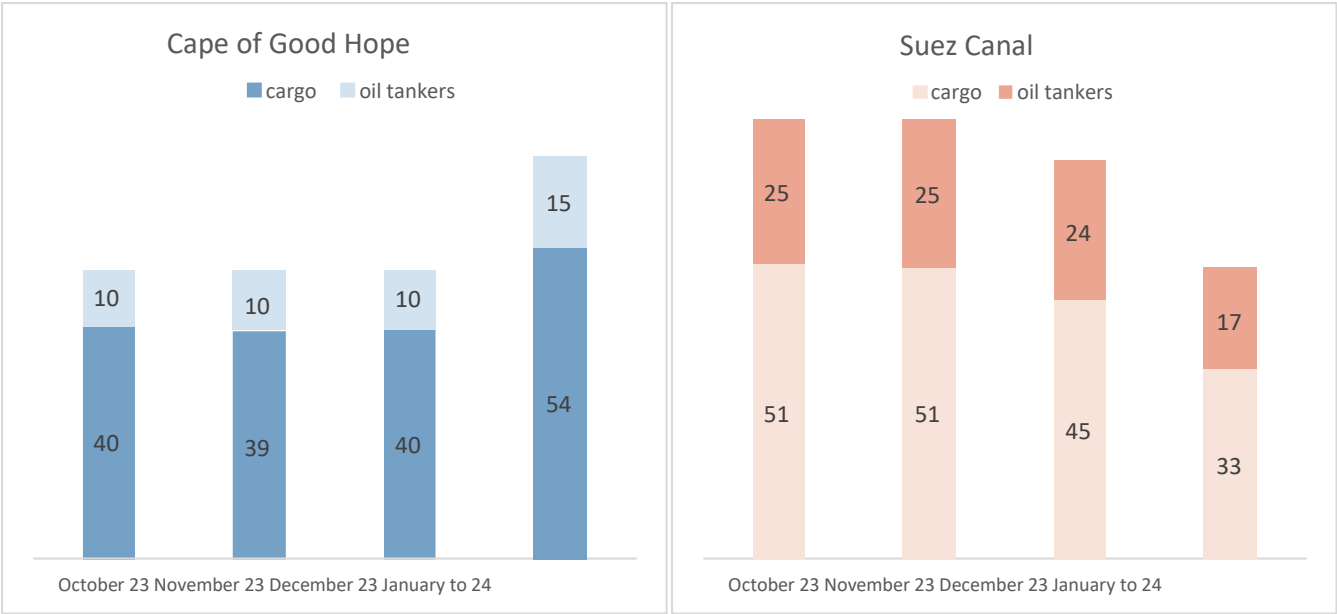


Source: Processing by Centro Studi Divulg based on IMF-PortWatch Data

On average, the overall traffic in the Suez Canal between October 2023 and January 2024 fell by 35%, while traffic passing through the Cape of Good Hope increased by 38%. The chairman of the Suez Canal Authority stated that 2024 had

started with a 40% drop in revenues and 30% in transits compared to the same period h previous year due to the fear triggered by the Houthi attacks in response to the Middle East crisis involving the State of Israel and the Palestinian people. [22]

Graph 4.1.2 – Average monthly transits of merchant ships (cargo and oil tankers)



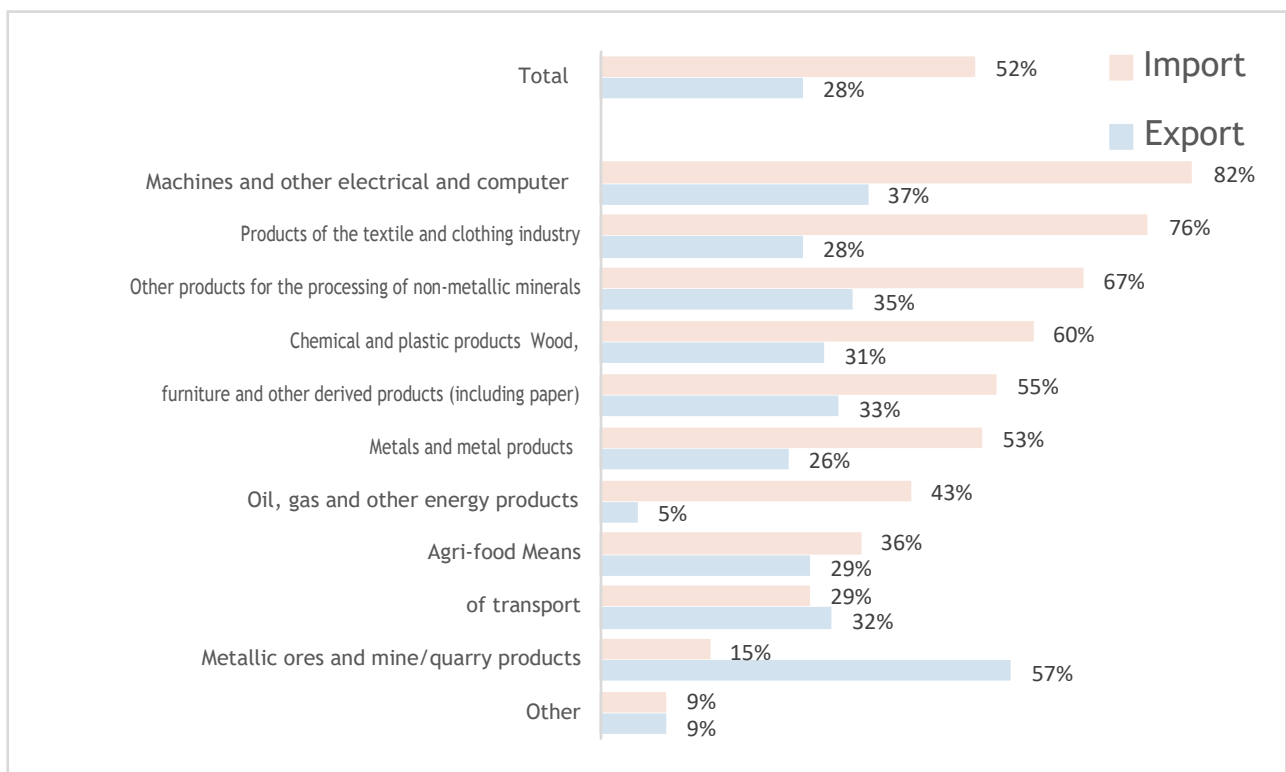
Source: Processing by Centro Studi Divulga based on IMF-PortWatch Data

4.1.2 The repercussions on Italy

The passage through the Suez Canal represents for Italy 28% of the value of exports by sea and 52% for imports. With regard to

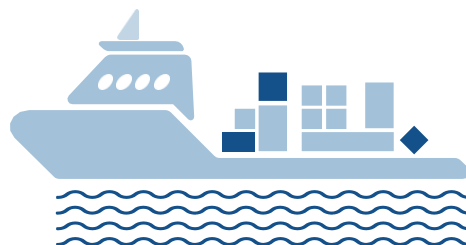
the agri-food sector, exports account for 32% of outbound and 29% of inbound maritime flows.

Graph 4.1.2.1 – % of Italian maritime trade in transit through the Suez Canal (year 2022)

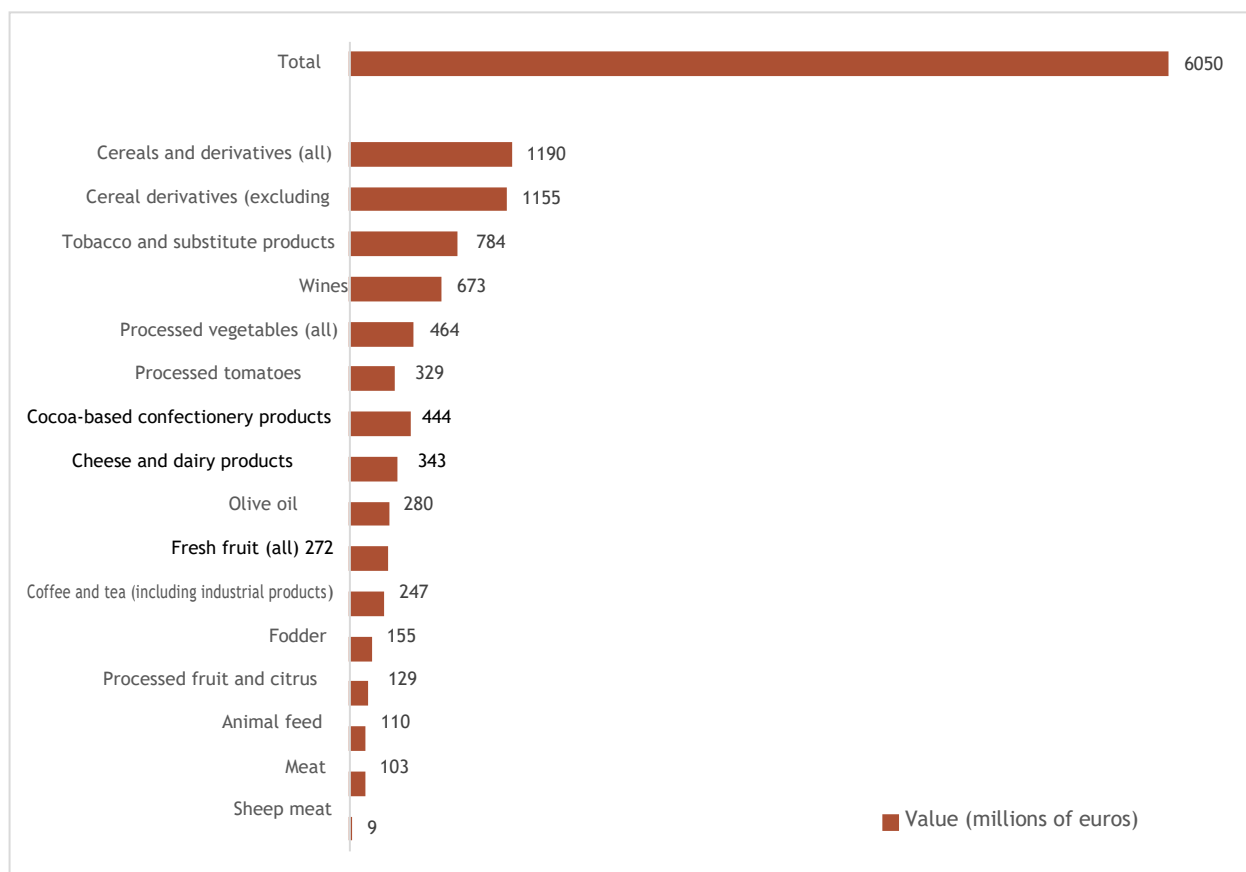


Source: processed by Centro Studi Divulga based on Istat data (maritime trade Asia and Oceania)

The agri-food products that leave or arrive in Italy passing through Suez are mainly products destined for or arriving from Asia and Oceania, of which the majority are transported by sea. Significant shares of Italian agri-food exports pass through the Suez Canal. It accounts for 16% of the total volumes of olive oil, 15% of products derived from the processing of cereals (excluding rice), and 14% of processed tomatoes. Including tobacco (33% of total exports) and fodder (40%). The total value amounts to 6 billion euros of Italian agri-food exports transiting the Suez Canal.

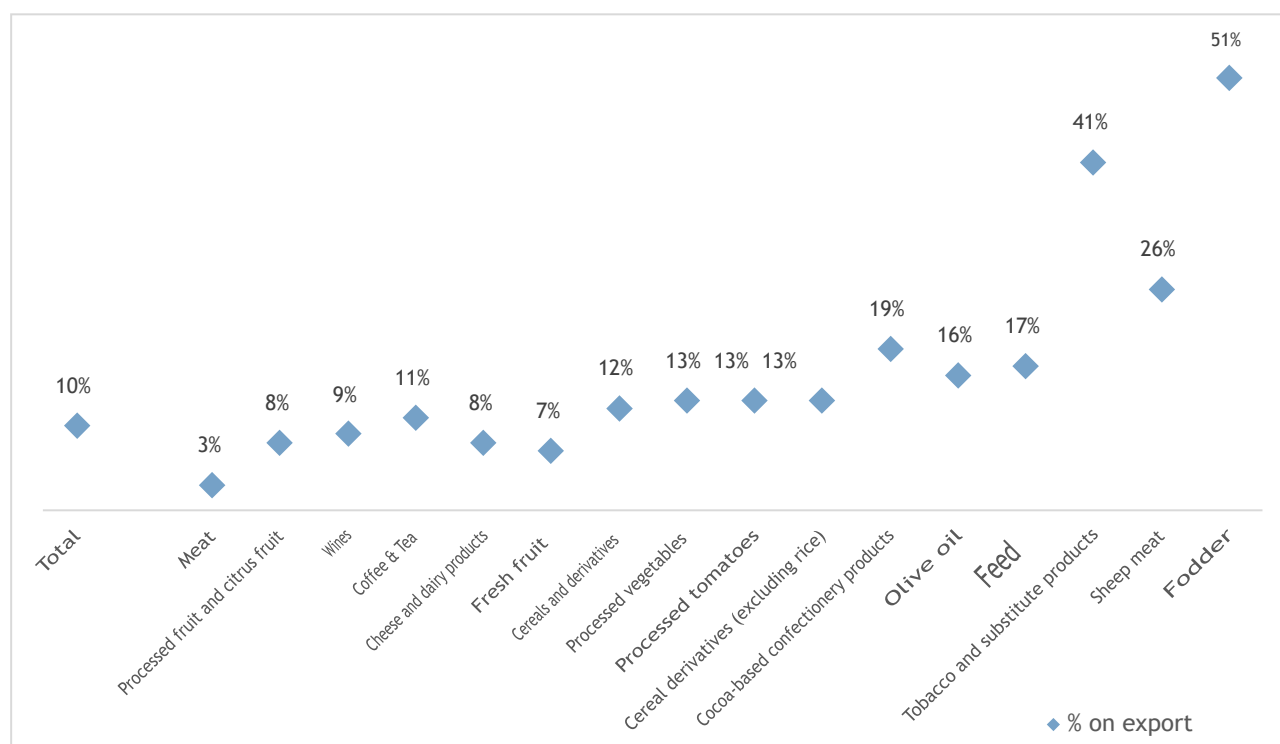


Graph 4.1.2.2 – Italian agri-food exports to Asia and Oceania (in value)



Source: processing by Centro Studi Divulga based on Istat and Ismea data

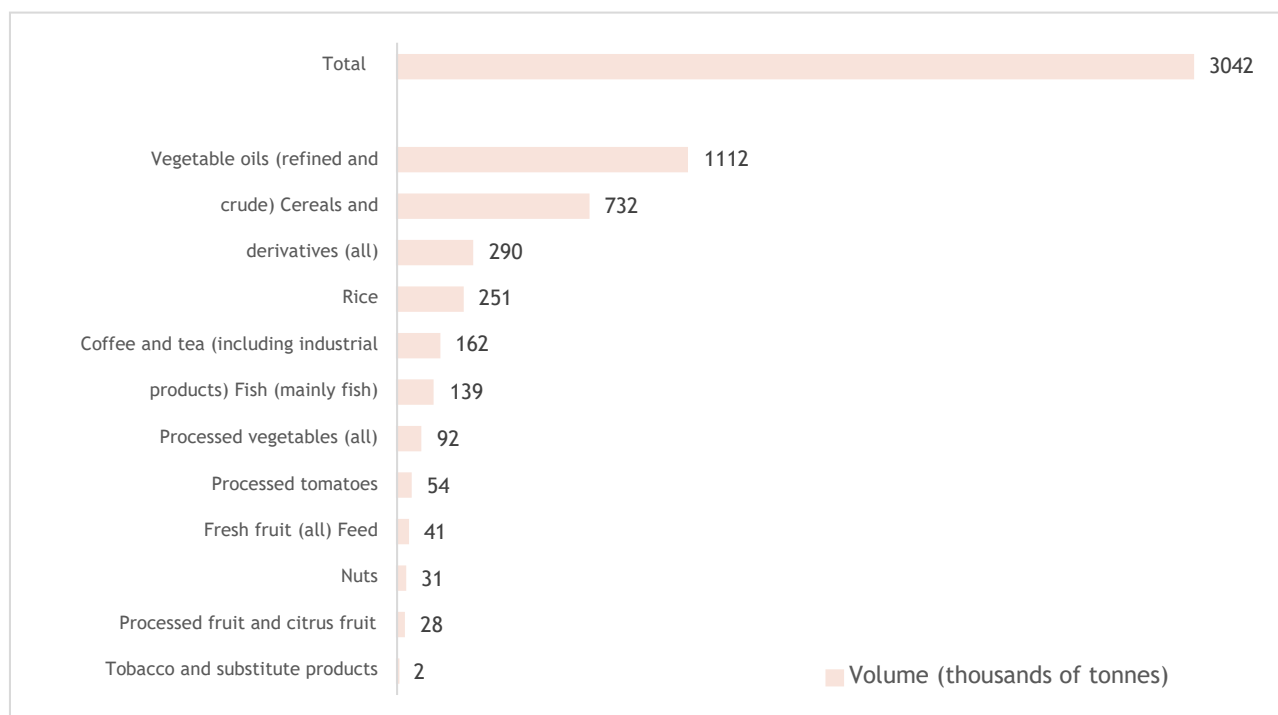
Graph 4.1.2.3 – Share of exports to Asia and Oceania by product (in value)



Source: processed by Centro Studi Divulga based on Istat and Ismea data

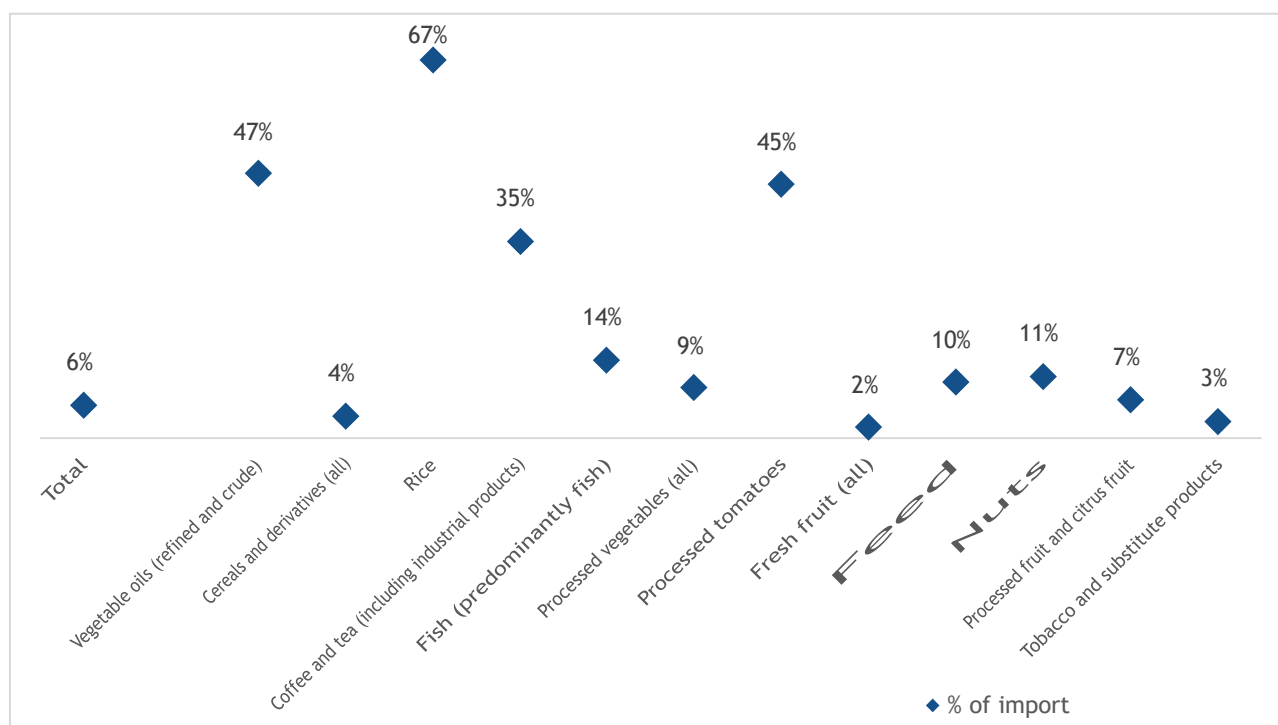
Among the main products imported into Italy and transiting the Red Sea, there is rice in first place with 67% of the volumes arriving in Italy, followed by vegetable oils (other than olive or seed oils) at 47%, processed tomatoes at 45%, tea and coffee at 35%, fish products at 14%, nuts at 11% and animal feed at 10%.

Graph 4.1.2.4 – Agri-food imports from Asia and Oceania (by volume)



Source: processed by Centro Studi Divulga based on Istat and Ismea data

Graph 4.1.2.5 – Share of imports into Asia and Oceania by product (by volume)



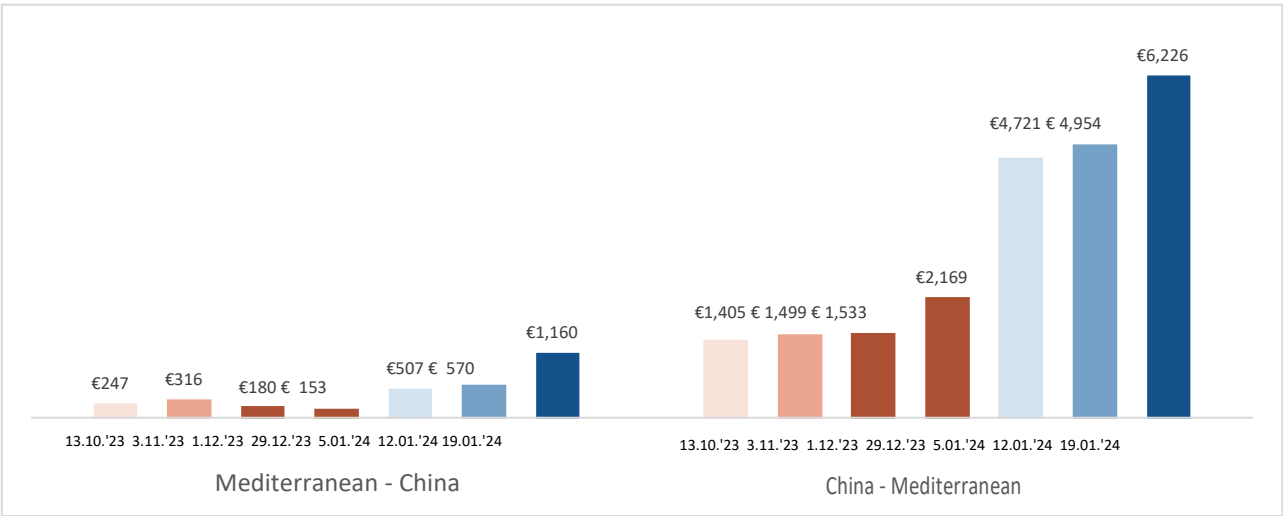
Source: processed by Centro Studi Divulga based on Istat and Ismea data

4.2 – High costs for logistics

The interruption of the passage of ships through the Suez Canal has caused an escalation in maritime transport costs, in particular in trade between Asia and the Mediterranean. From December 2023 to January 2024, the prices of transport from the Mediterranean to China

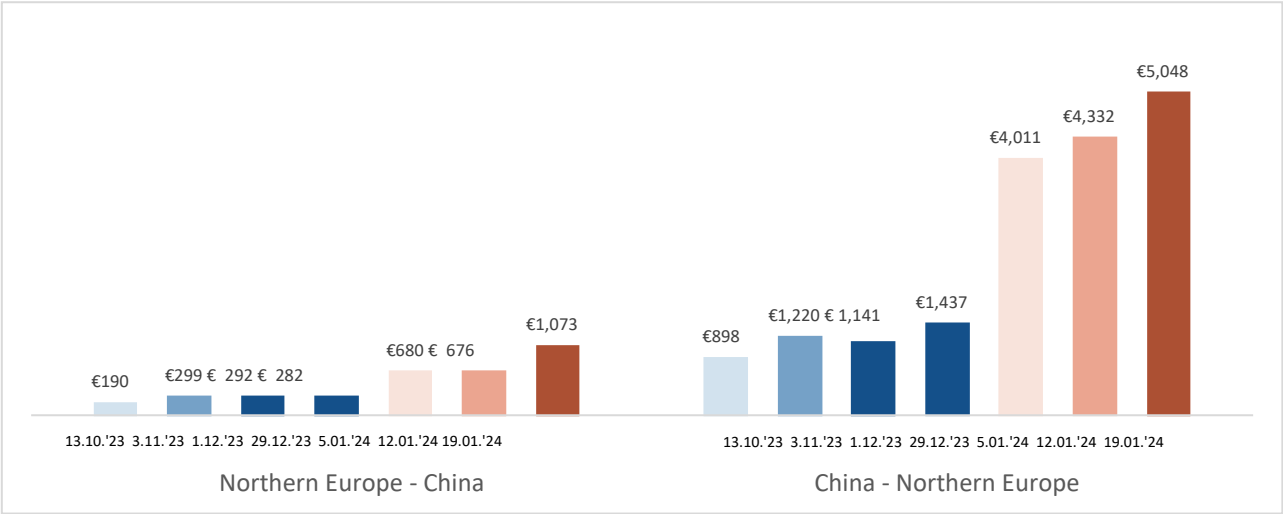
have increased by 659%, while costs from China have increased by 187%. At the same time, transporting goods from Northern Europe to Asia today costs between 251% and 281% more than at the end of 2023.

Graph 4.2.1 - FBX Quotes - Merchant routes through SUEZ (China and Mediterranean)



Source: processing by Centro Studi Divulga based on Freightos data

Graph 4.2.2 - FBX Quotes - Merchant routes through SUEZ (China and Northern Europe)



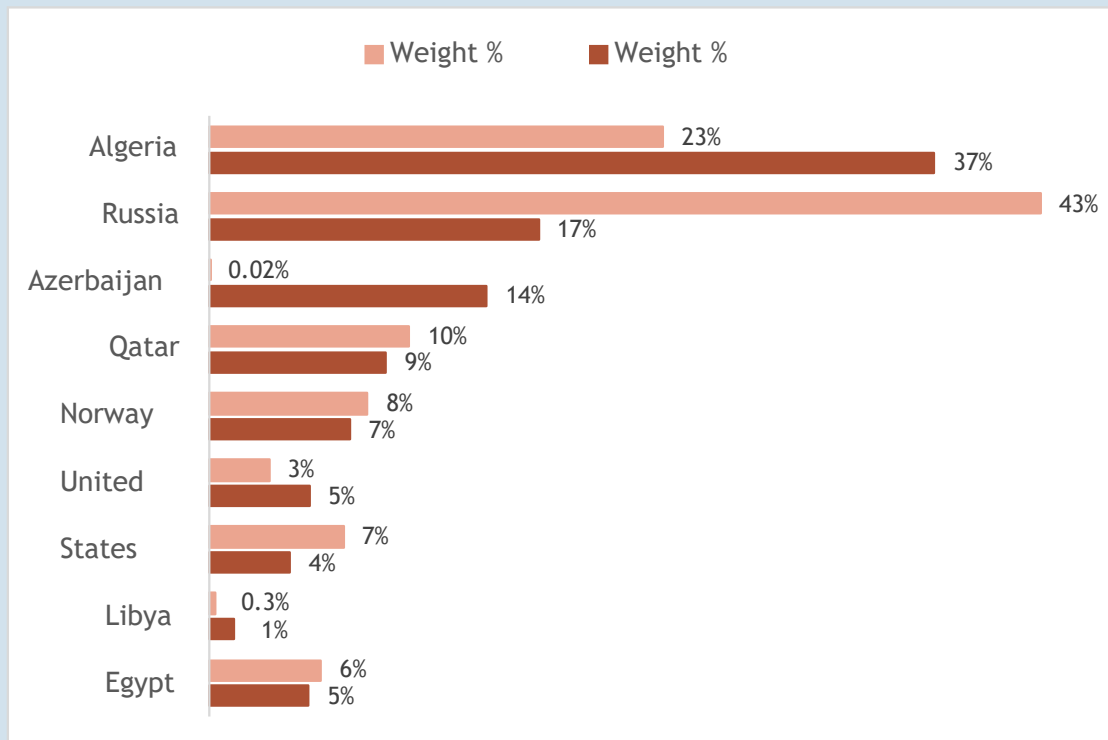
Source: processing by Centro Studi Divulga based on Freightos data



Box 4. Energy supplies

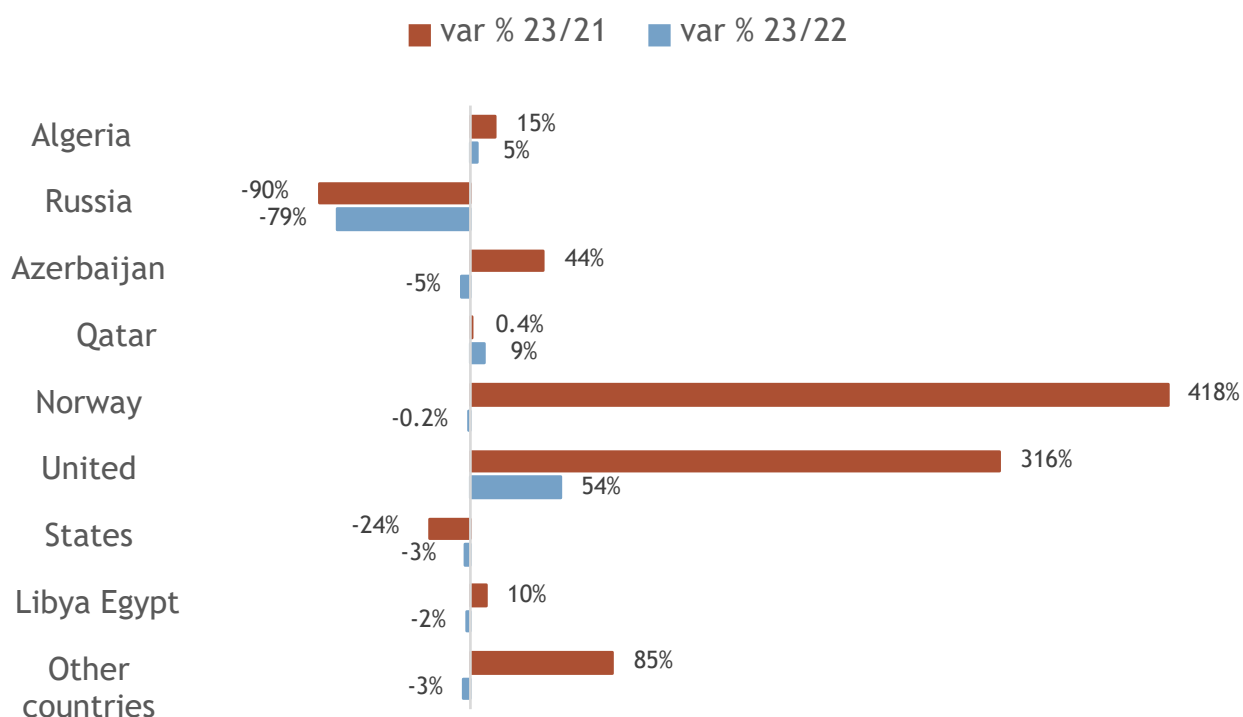
The war in Ukraine has forced Italy to review its energy supplies from Russia which, before the conflict, represented more than 40% of the import of natural gas and 13% of oil. With regard to natural gas, for example, imports from the Kremlin decreased by 60% in 2022 compared to 2020 while imports from Algeria grew in equal measure (+63%). The North African country is confirmed as the main gas supply basin with 37% of total arrivals compared to Russia, which instead drops to 17% of supplies, compared to 43% in 2020. In third place is Azerbaijan, which today accounts for 14% of natural gas imports and has recorded significant growth in recent years, considering that in 2020 imports from this country were almost nil. This trend is also confirmed in the first 10 months of 2023 with a decrease in gas imports from Russia of about 80% compared to a growth of 5% for Algeria.

Graph 1 - Main gas supply countries for Italy - in percentage



Source: processing by Centro Studi Divulga based on Istat data

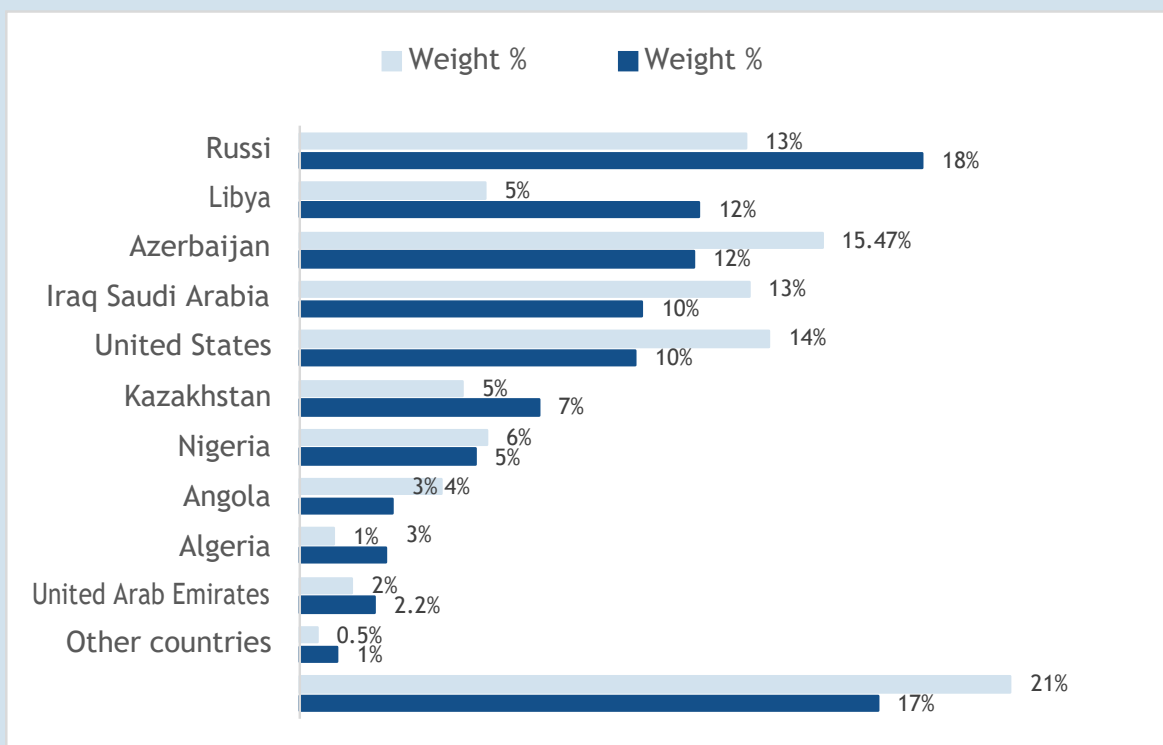
Graph 2 Changes in % of gas imports (cumulative volumes January-October 2023)



Source: processing by Centro Studi Divulga based on Istat data

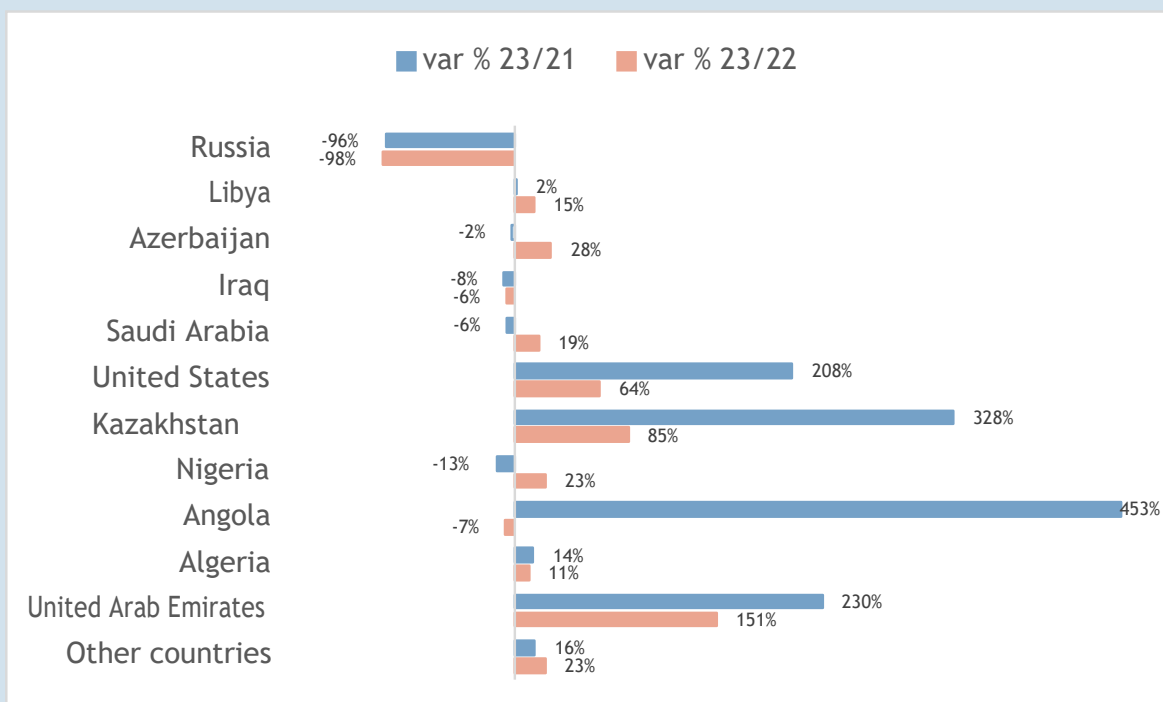
A similar situation applies to oil supplies. Russia, which in 2022 represented the main basin of supply worldwide with 18% of total supplies, compared to Libya and Azerbaijan (both at 12%), practically cancelled its role in Italian oil supplies in the first 10 months of 2023, marking a -98%, from 12.5 thousand tonnes in 2022 to 284 tonnes in 2023. During the same period in 2023, there was an increase in arrivals from Libya (+15%) and Azerbaijan (+28%), but also from Saudi Arabia (19%), the United States (64%) and Kazakhstan (85%).

Graph 3 - Main oil supply countries for Italy - in percentage



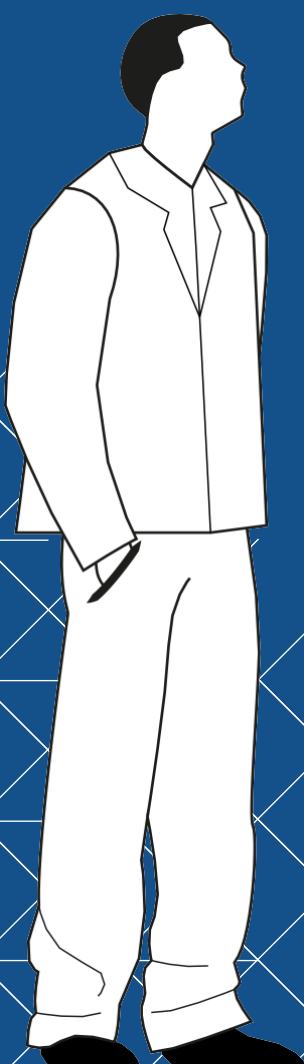
Source: processing by Centro Studi Divulga based on Istat data

Graph 4 % variations in oil imports (cumulative volumes January-October)



Source: processing by Centro Studi Divulga based on Istat data

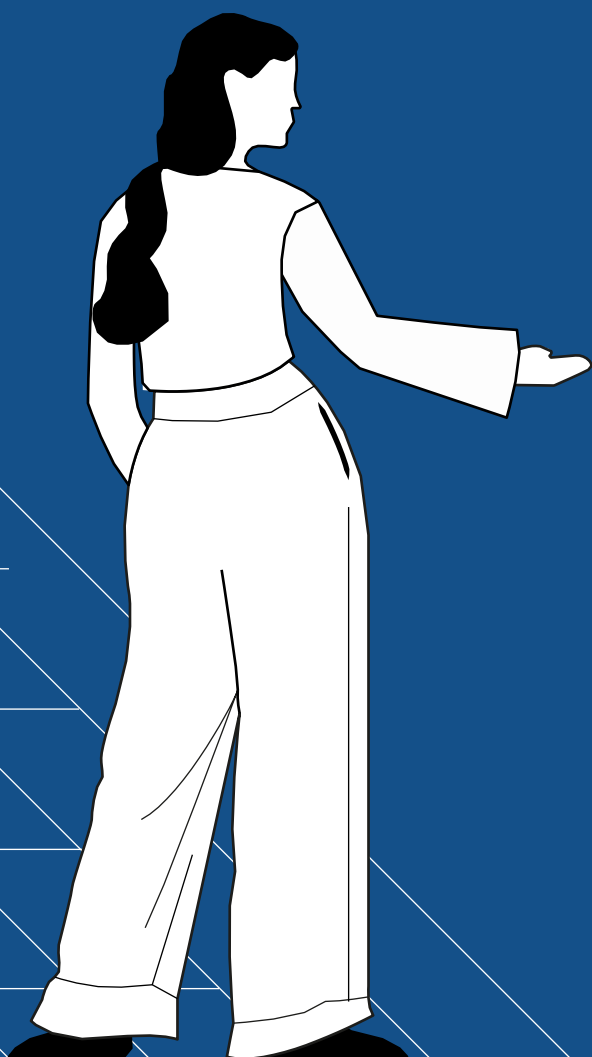
n.



Notes

- a. The analysis carried out based on the first 11 months (January-November)
- b. The group, named after its founder, Hussein al-Houthi, is mainly made up of Shiite Muslims and in 2004 staged a revolt against Yemen's official Sunni-majority government. Since 2014, the Houthis have controlled the capital Sanaa and large areas of the north-western part of the country.
- c. The strait connects the Red Sea with the Gulf of Aden.

b.



Bibliography

- [1] FAO, "Ukraine: Impact of the war on agricultural enterprises"<https://www.fao.org/documents/card/en/cc5755en>
- [2] FAO, "Ukraine: Humanitarian response update", updated 12.12.2023 - <https://www.fao.org/3/cc9038en/cc9038en.pdf>
- [3] FAO, "Ukraine: Humanitarian response update", update of 18.10.2022 - <https://www.fao.org/3/cc2505en/cc2505en.pdf>
- [4] FAO, "Ukraine: Humanitarian response update", update of 18.10.2022 - <https://www.fao.org/3/cc2505en/cc2505en.pdf>
- [5] UNCTAD, "Handbook of Statistics 2023 - Total merchandise trade" - <https://hbs.unctad.org/total-merchandise-trade/>
- [6] EU Commission, "EU-Ukraine Solidarity Lanes" - https://eu-solidarity-ukraine.ec.europa.eu/eu-assistance-ukraine/eu-ukraine-solidarity-lanes_en
- [7] EU Commission, "Solidarity Lanes to help Ukraine export agricultural goods", of 12.05.2022 - https://ec.europa.eu/commission/presscorner/detail/en/ip_22_3002
- [8] Regulation (EU) 2022/870 of 30 May 2022 and Regulation (EU) 2023/1077 of 31 May 2023
- [9] Council of the European Union, "Infographic – Ukrainian grain exports explained" – <https://www.consilium.europa.eu/en/infographics/ukrainian-grain-exports-explained/>
- [10] EU Commission, "EU extends trade benefits for Ukraine", of 05.06.2023 - https://ec.europa.eu/commission/presscorner/detail/en/ip_23_3059
- [11] EU Commission, "Following the expiry of the restrictive measures on Ukrainian exports of grain and other

foodstuff to the EU, Ukraine agrees to introduce measures to avoid a renewed surge in EU imports", of 15.09.2023 - https://ec.europa.eu/commission/presscorner/detail/en/ip_23_4497

[12] EU Commission, "Commission adopts exceptional and temporary preventive measures on limited imports from Ukraine", 02.05.2023 - https://ec.europa.eu/commission/presscorner/detail/en/ip_23_2562

[13] Euronews, "12 member states raise 'serious concerns' about EU deal on Ukrainian grain, reigniting controversy", 12.05.2023 - <https://www.euronews.com/my-europe/2023/05/12/12-member-states-raise-serious-concerns-about-eu-deal-on-ukrainian-grain-reigniting-contra>

[14] EU Commission, "EU reaffirms trade support for Ukraine and Moldova", of 31.01.2024 - https://ec.europa.eu/commission/presscorner/detail/en/ip_24_562

[15] United Nations, "Secretary-General's press encounter on the Black Sea Initiative", of 17.07.2023 - <https://www.un.org/sg/en/content/sg/press-encounter/2023-07-17/secretary-generals-press-encounter-the-black-sea-initiative> The agreement remained in force from 3 August 2022 to 16 July 2023

[16] Council of the European Union, "Infographic - Explanation of Ukrainian grain

exports" - <https://www.consilium.europa.eu/it/infographics/ukrainian-grain-exports-explained/>

[17] World Economic Forum, "The Suez Canal in numbers" - <https://www.weforum.org/agenda/2021/03/the-suez-canal-in-numbers/>

[18] <https://www.sis.gov.eg/Story/171459/Suez-Canal?lang=en-us>. Press sources report a flow for 2022 higher than 1.41 billion tonnes ([link](#))

[19] <https://lloydslist.com/hot-topics/red-sea-risk/spotlight-data> e <https://www.lloydslist.com/LL1147910/Updated-US-and-UK-launch-strikes-against-the-Houthis>

[20] Ice, "Maersk, MSC and Hapag-Lloyd have suspended routes through the Suez Canal", of 18.12.2023 - <https://www.ice.it/it/news/notizie-dal-world/254458>

[21] IMF PortWatch, "Trade disruption in the Red Sea" - <https://bywatch.imf.org/pages/573013af3b6545deaeb50ed1cbaf9444>

[22] Reuters, "Egypt's Suez Canal revenues down 40% due to Houthi attacks", 12.01.2024 - <https://www.reuters.com/markets/commodities/egypts-suez-canal-revenues-down-40-due-houthi-attacks-2024-01-11/>

ISBN 979-12-81249-17-2



9 791281 249172