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UKRAINE

Impact of the war on agriculture and rural livelihoods in Ukraine

Findings of a nation-wide rural household survey

December 2022



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Executive summary

Background

Since February 2014, eastern Ukraine has been affected by conflict and insecurity. The protracted nature of the conflict has led to an erosion of resilience capacity, significant loss of lives, concerns over the protection of civilians, and extensive damage to critical infrastructure in conflict-affected areas.

The large-scale invasion of Ukraine by the Russian Federation, which started on 24 February 2022, exacerbated an already dire situation. Intense hostilities and fighting have left at least 17.7 million people in need of humanitarian assistance and protection,¹ and have resulted in significant damage to all economic activities in Ukraine, including agriculture, which is a key driver of the economy at all levels. The war has triggered population displacement, damaged civil infrastructure and restricted the movements of people and goods, preventing farmers from tending their fields, and harvesting and marketing their crops and livestock products.

According to the latest assessment,² the war has already resulted in total damage of USD 2.2 billion for the agriculture sector, while the aggregate losses total USD 28.3 billion. The damages include partial or full destruction of machinery and equipment, storage facilities, livestock, and perennial crops, as well as stolen inputs and outputs and agricultural land that needs re-cultivation. The losses include production loss, including unharvested winter crops, higher farm production costs, and lower farm gate prices due to the export logistic disruptions, which are significant for Ukraine's export-oriented agriculture.

Ukraine's agriculture sector is an important source of livelihoods for the roughly 13 million Ukrainians living in rural areas involved in small-scale agricultural production. While around two-thirds of agricultural production is made by enterprises, households³ produce around 32 percent (including around half the production of livestock).⁴ Mostly involved in backyard farming/small-scale agricultural production and not officially registered, they play a pivotal role in ensuring the food security, incomes and livelihoods of rural populations by providing for their own food consumption as well as selling products locally, thus contributing to local supply chains.

Objectives of the assessment

Against this background, the Food and Agriculture Organization of the United Nations (FAO) has conducted a nation-wide survey, targeting 5 230 rural households across the country, with the objectives of:

- collecting necessary evidence of the impact of the war on rural livelihoods to inform programming decisions and support advocacy efforts; and
- complementing the data from consolidated and ongoing analyses including sectoral damage and loss assessments.

Therefore, the analysis is part of a series of complementary assessments that aim at providing a comprehensive understanding of the impact of the war on Ukraine's agriculture sector and identifying possible programming and policy responses.

Main findings and implications

After eight months of active war, rural households are increasingly affected by the negative impact of the conflict. Thanks to their diversified agricultural production, rural households are able to mitigate the negative effects of the war by providing for their own consumption, and at the same time supporting displaced persons in rural areas. However, the impact of the war on the broad production system, characterized by disruption of value and supply chains and unpredictability of prices, has repercussions on the rural population, underlining their interdependence with the country's agricultural economy.

The analysis shows that the war has negatively affected agricultural production of one fourth of the rural households interviewed nationally. One in every four respondents (25 percent) of the rural population reported stopped or reduced agricultural production due to war. The trend is higher in areas along the front-line, with more than one in three respondents reporting to have stopped or reduced agricultural production (38 percent). While the effects of the war are more prominent in the oblasts along the front-line, these are also widely experienced in the rest of the country. Rural households are hosting an increasing number of displaced people therefore increasing their vulnerability to the effects of the war on the disruption of their livelihoods, their productive capacities and their capacity to support displaced people.

Increase in agricultural production costs for both crops and livestock activities due to war was widely felt across the country, negatively affecting income levels of rural households with drastic and significant decreases reported by more than a third of the interviewed households. Almost three quarters (72 percent) of the respondents involved in crops production and 64 percent of the respondents involved in livestock production reported increases in production costs. The more significant and drastic is the increase in production costs, the more is the severity in the income decrease.

Since the start of the war, rural households have reported decreased levels of income. This is evident across the country, with 55 percent of the respondents recording such decrease between June and September 2022, compared with the same period during the previous year. Internally displaced persons (IDPs) and returnees are the most affected by this income decrease, with almost 80 percent of them recording a decline in income. Further analysis revealed that rural households who rely on agriculture as one of their main sources of income (including production



and sale as well as other agriculture-related activities) have experienced a more significant decrease in their income levels, compared with those households who rely on non-agricultural activities.

In terms of the total damages and losses for the rural households, estimates amount to almost USD 2.25 billion in the first six months of the war. Of this, USD 1.26 billion in the crops sector and USD 0.98 billion in the livestock sector. The cattle sub-sector has been most affected with over 64 percent of the total value of damages and losses within the livestock sector, while the grains and oil seeds sub-sector amounted to over 67 percent of the overall value reduction in the crops sector.

To mitigate the effects of the conflict on their agricultural production, rural households incurred additional expenditures for maintaining their productivity. These additional unforeseen costs have amounted to USD 234.8 million in the crops sector and USD 48.5 million in the livestock sector.

Food expenditure was utilized as a proxy of the level of vulnerability in terms of food access of the surveyed households. **In terms of food expenditure between June and September 2022, the analysis showed that on average more than half of the rural households surveyed spent over 50 percent of their total expenditure on food.** This proportion is even higher for the rural households in areas along the front-line. Of most concern, around 20 percent of the rural households in these oblasts reported to spend on food over two thirds of their total expenditure.

The distress situation of the rural population is even more evident when looking at the adoption of negative coping strategies to ensure access to essential needs. Whilst there is still a significant portion of the rural population (39 percent) that has not adopted negative coping strategies on average at national level, around 57 percent of the interviewed are adopting Stress and Crisis coping strategies. This results in a gradual erosion of their coping capacities particularly in oblasts along the front-line, where over 50 percent of the rural households are adopting Crisis and Emergency coping strategies to secure essential needs.⁵

The war in Ukraine has severely affected livelihoods and households' access to basic services and needs. This alarming humanitarian situation has led the government and other partners to initiate assistance activities mainly in the areas along the front-line oblasts. **At the national level, one third of the rural households have reported to receive some kind of aid or assistance between June and September 2022, in addition to usual pension or benefits.** The recorded levels of aid or assistance vary significantly amongst the different oblasts.

With the war likely to continue, the current situation risks to persist and aggravate. Compounded by the upcoming winter season and large segment of the population potentially to be further displaced in the rural areas, coping capacities are expected to progressively be strained.

Against this background, it is important to immediately protect and support the rural population in maintaining their productive capacity. Thus, protect and support their capacity to mitigate the effects of the war on their livelihoods and food security, as well as sustain their capacity to receive IDPs while preventing further displacement. At the same time, there is a need to revitalize the small-scale agriculture sector to strengthen and secure rural households' contribution to the broader agricultural system and enhance the benefits they can access in return. Response should be in line with the different needs and characteristics of rural households residing in different oblasts as described in this analysis. Finally, on the one hand, it is critical to monitor the dynamic situation and on the other hand, to provide complementary assessments and integrated analysis on the impact of the war on Ukraine's agricultural system to better inform short, medium and long-term actions.

Target population and geographical coverage

Profile of respondents and household demographics

This analysis is the result of a national assessment that comprises a target sample of 5 230 rural households in 22 oblasts (with the exception of the occupied oblasts of Luhanska and Khersonska).

The oblasts have been grouped into clusters as follows:

- **Western oblasts:** Chernivetska, Ivano-Frankivska, Khmelnytska, Lvivska, Rivnenska, Ternopilska, Volynska and Zakarpatska.
- **Central oblasts:** Cherkaska, Kirovohradska, Kyivska, Odeska, Poltavska, Vinnytska and Zhytomyrska.
- **Front-line oblasts:** Chernihivska, Dnipropetrovska, Donetska (covering only the Ukrainian controlled parts of the oblast), Kharkivska (covering only the Ukrainian controlled parts of the oblast), Mykolaivska, Sumska and Zaporizka (covering only the Ukrainian controlled parts of the oblast).

For those oblasts considered heavily affected by war – Chernihivska, Dnipropetrovska, Donetska, Kharkivska, Mykolaivska, Sumska and Zaporizka – a second sample of households have been selected from a number of hromadas to provide more granularity on the needs of the rural population for programming purposes. The selection of these hromadas was prepared in consultation with the implemented partners to identify priority areas for intervention based on most affected ones. The analysis

Figure 1. Sample distribution



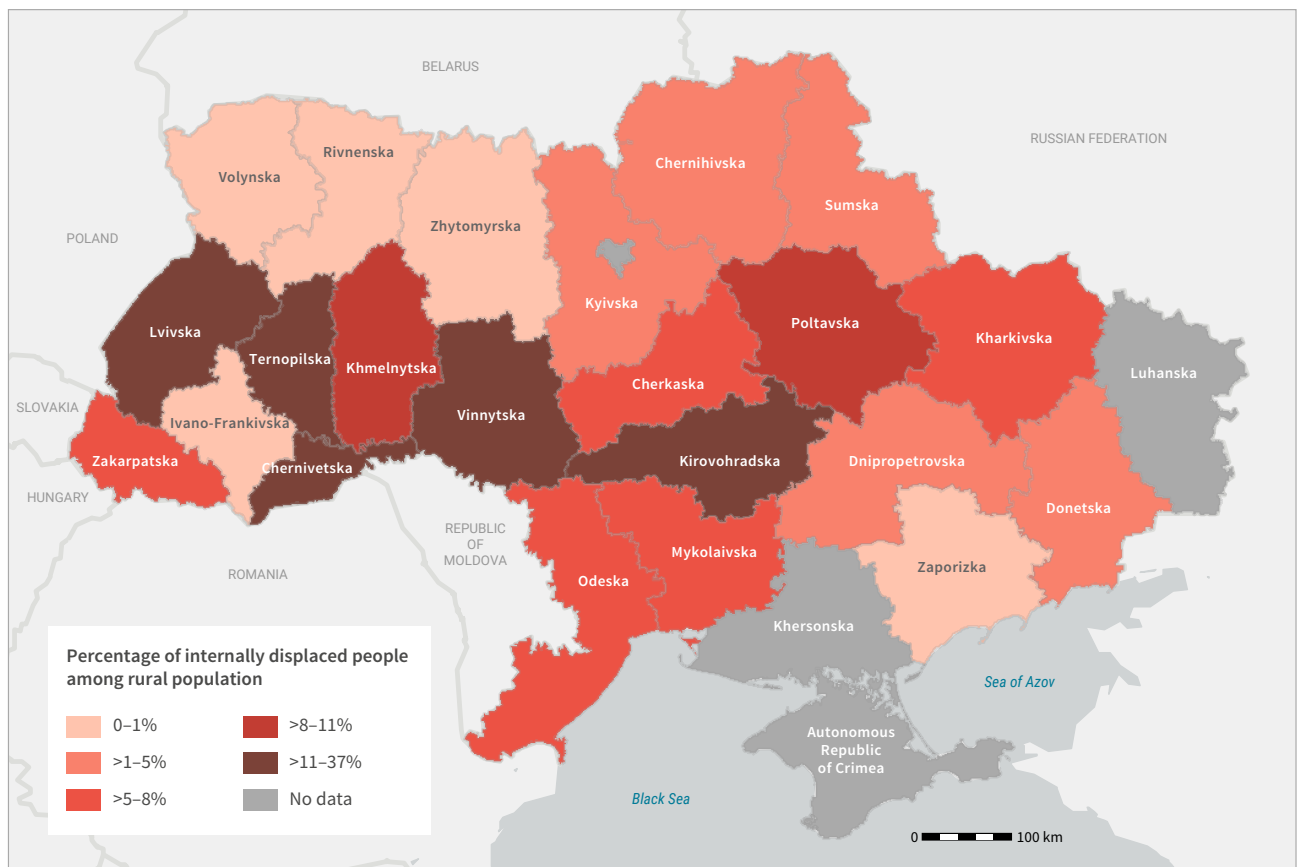
Source: FAO. 2022. Ukraine: Impact assessment results (September–October 2022). In: *FAO Data in Emergencies Hub*. Rome. Cited 28 November 2022. <https://data-in-emergencies.fao.org>

does not include occupied/non-government-controlled areas (at the time of the data collection) in Donetsk, Kharkivska, and Zaporizka, as well as the Autonomous Republic of Crimea and the city of Sevastopol.

The sample also comprises around 11 percent of IDPs nationally.

Oblasts such as Lvivska (23 percent), Chernivetska (29 percent), Vinnytska (30 percent), and Ternopilska (36 percent) showed the most concentration of IDPs across the country’s rural areas. Moreover, at the national level, **around 12 percent of the rural households reported to host IDPs.** The share is notably higher in Poltavska, Ternopilska and Zakarpatska oblasts, where more than 30 percent of the households reported to host IDPs.

Figure 2. Internally displaced persons among rural populations



Source: FAO. 2022. Ukraine: Impact assessment results (September–October 2022). In: *FAO Data in Emergencies Hub*. Rome. Cited 28 November 2022. <https://data-in-emergencies.fao.org>

Table 1. Characteristics of the sample

Oblast	Residential status (%)			Gender of the head of household (%)		Presence of vulnerable people in the household (%)			
	IDP	Resident	Returnee	Female	Male	Persons with disabilities	Chronically ill people	Welfare beneficiaries	Pension beneficiaries
Cherkaska	8	92	0	38	62	11	17	14	40
Chernihivska	3	92	5	50	50	11	15	11	33
Chernivetska	29	70	1	53	47	16	12	13	30
Dnipropetrovska	3	97	0	58	42	17	23	11	39
Donetska	4	91	4	30	70	6	2	4	32
Ivano-Frankivska	0	100	0	24	76	9	8	9	42
Kharkivska	7	91	2	38	62	9	17	9	36
Khmelnyska	9	91	0	49	51	25	34	17	49
Kirovohradska	11	89	0	49	51	17	24	13	45
Kyivska	5	84	11	42	58	8	11	12	33
Lvivska	23	77	0	58	42	12	13	7	38
Mykolaivska	8	90	3	27	73	7	7	9	24
Odeska	6	94	0	46	54	11	7	9	21
Poltavska	9	91	0	36	64	16	16	12	36
Rivnenska	1	99	0	32	68	11	10	9	44
Sumska	4	95	2	40	60	12	11	13	36
Ternopilska	36	64	0	51	49	20	21	24	41
Vinnyska	30	70	0	43	57	7	9	7	41
Volynska	0	100	0	30	70	7	12	13	49
Zakarpatska	6	93	1	49	51	20	17	13	34
Zaporizka	1	99	1	46	54	13	24	13	42
Zhytomyrska	1	99	1	44	56	8	20	10	37
National	11	88	1	44	57	13	15	11	37

Source: FAO, 2022. Ukraine: Impact assessment results (September–October 2022). [Internal document]. Rome.

Impact on agricultural production

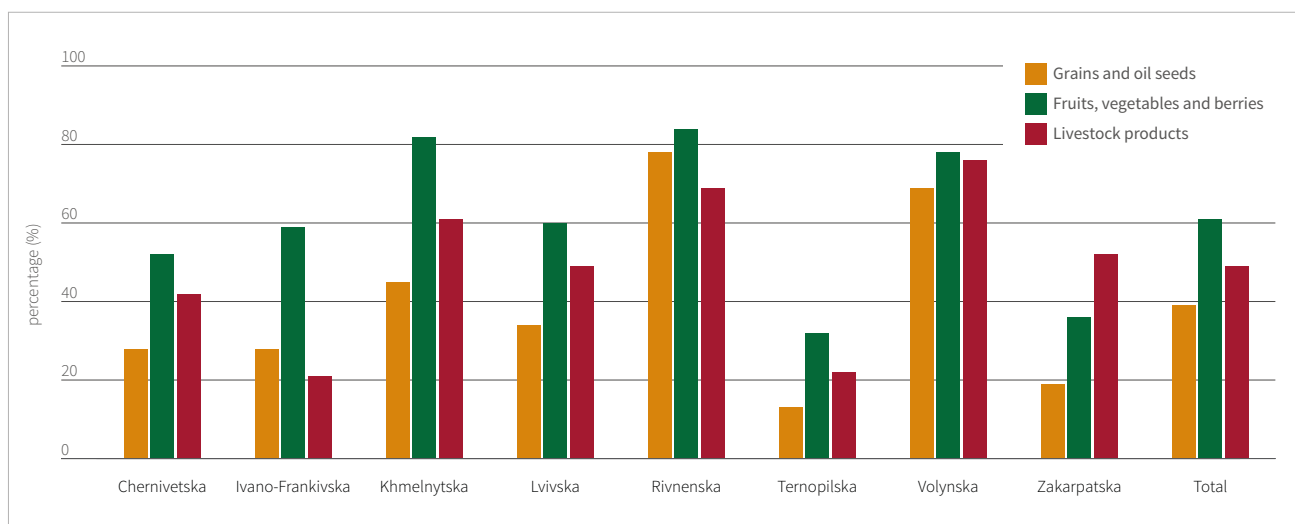
This section provides an overview of the impact of the war on agricultural production of rural households, including national overview and regional granularity by group of oblasts (western, central, and front-line). It provides analyses of the main agricultural activities, both in terms of crops and livestock production and related sale of products, whether the production has been suspended or interrupted due to war, the increases in production costs, as well as the estimated damages and losses of the agricultural sectors faced by the rural population.

Involvement in agriculture

The majority of the rural households interviewed are involved in agricultural production (72 percent at national level). The type of agricultural production varies across oblasts and their respective categories: crops (grain and oil seeds), vegetables (including root crops, tubers, fruits and berries), and livestock products.

In Western oblasts, 68 percent of the rural households are involved in agriculture and the main specialization is production and sale of vegetables. Rivnenska and Volynska oblasts stand out with a high level of specialization in all the three categories of agricultural activities, with around 70 percent and above of the households. The two oblasts of Rivnenska and Volynska have higher percentages of involvement for livestock production and sale compared with the average of the region (69 percent and 76 percent, respectively). Poultry farming remains the most widespread pastoral specialization, as it is carried out by 94 percent of rural households in western oblasts.

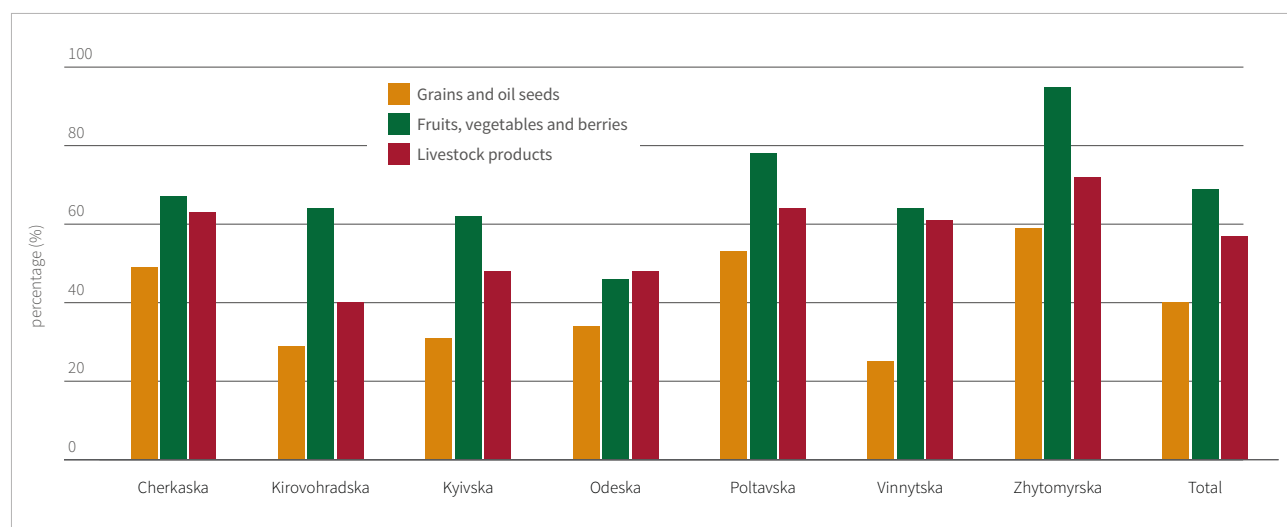
Figure 3. Percentage of rural households involved in agricultural production in western oblasts



Source: FAO. 2022. Ukraine: Impact assessment results (September–October 2022). [Internal document]. Rome.

Over 80 percent of the rural households in central oblasts are involved in agriculture, representing the group of oblasts with the highest involvement in agricultural production and sale. The main specialization is production and sale of vegetables, with Zhytomyrska oblast representing the highest involvement (95 percent of the respondents). Moreover, central oblasts have the highest involvement in production and sale of livestock products (57 percent of households), particularly in Vinnytska (61 percent), Cherkaska (63 percent), Poltavska (64 percent), and Zhytomyrska (72 percent). Poultry (92 percent) and pigs (48 percent) remain the main livestock species bred by rural households in areas along the central oblasts.

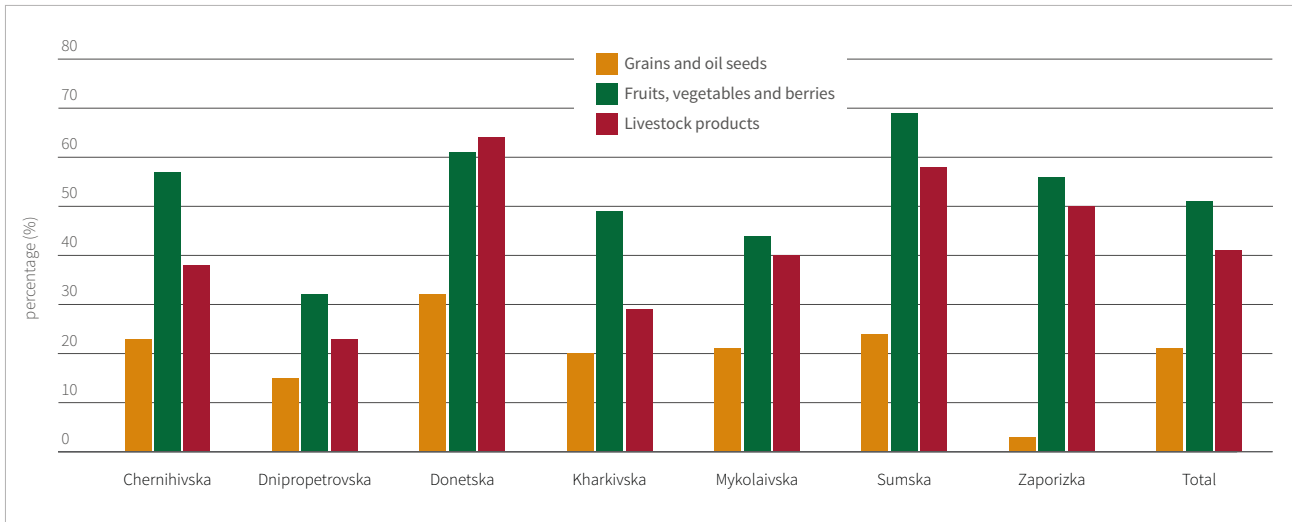
Figure 4. Percentage of rural households involved in agricultural production in central oblasts



Source: FAO. 2022. *Ukraine: Impact assessment results (September–October 2022)*. [Internal document]. Rome.

Whereas in front-line oblasts, approximately 63 percent of rural households is engaged in agriculture and the majority are involved in production and sale of vegetables, with the highest level of involvement in Chernihivska (57 percent), Donetsk (61 percent), Sumska (69 percent), and Zaporizka (56 percent) oblasts. Approximately 40 percent of rural households are involved in livestock production with focus on poultry farming (91 percent of the respondents).

Figure 5. Percentage of rural households involved in agricultural production in front-line oblasts

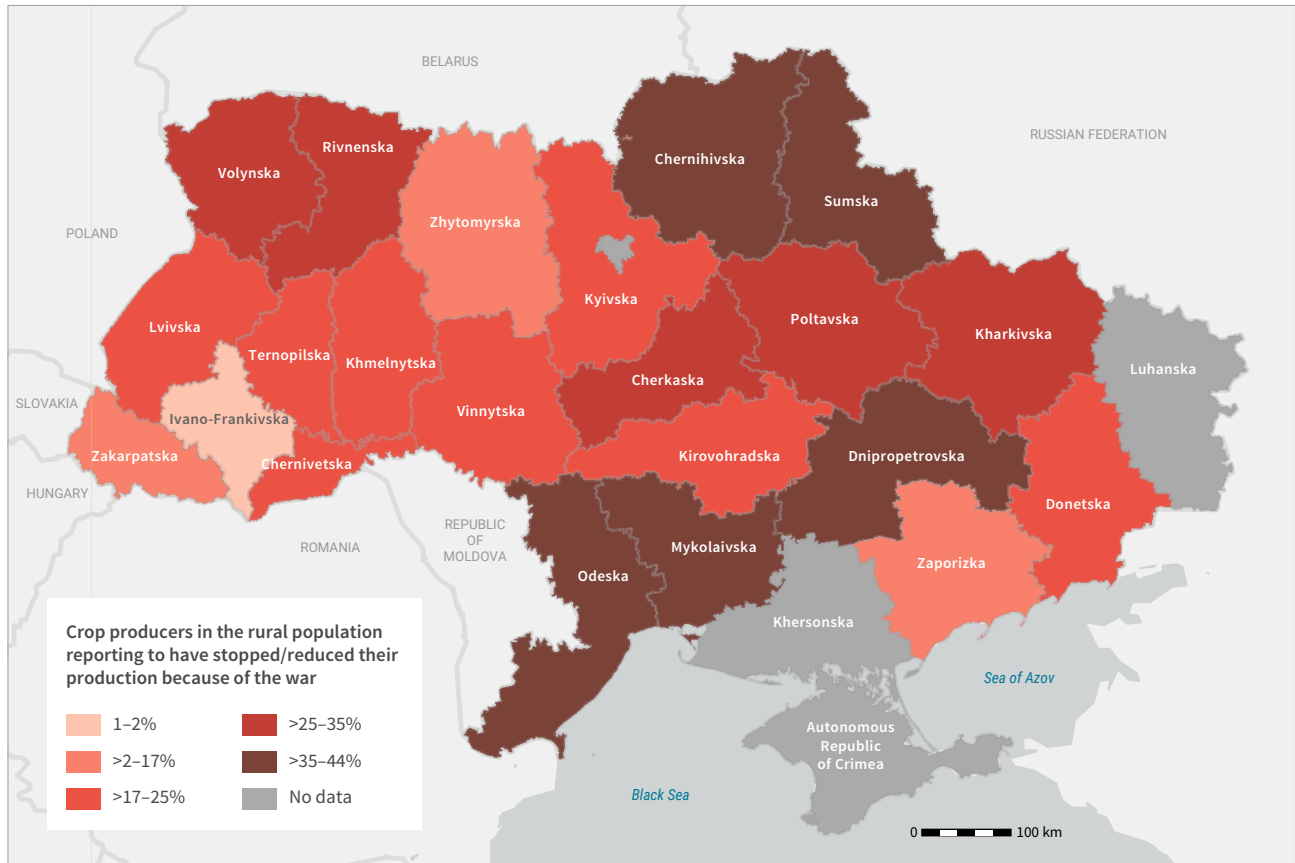


Source: FAO, 2022. *Ukraine: Impact assessment results (September–October 2022)*. [Internal document]. Rome.

Interruption and suspension of agricultural production

The analysis shows that the war has negatively affected agricultural production of one fourth of the rural households interviewed nationally. One in every four respondents (25 percent) of the rural population reported that they have suspended or reduced agricultural production as a result of the war. The trend is higher in areas along the front-line, where more than one in every three respondents reported suspension or reduction of agricultural production (38 percent). In some oblasts, the situation is even more concerning. For example, over 40 percent of the rural households surveyed in Sum'ska, Dnipropetrovska, Odeska, Chernihivska, and Mykolaivska, have suspended or reduced agricultural production due to the war.

Figure 6. Stopped or reduced agricultural production

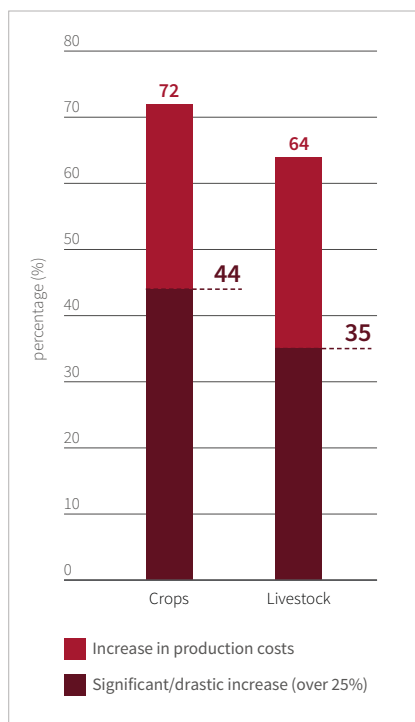


Source: FAO. 2022. Ukraine: Impact assessment results (September–October 2022). In: *FAO Data in Emergencies Hub*. Rome. Cited 28 November 2022. <https://data-in-emergencies.fao.org>

Regression analysis indicated that reducing or suspending agricultural production had a relevant impact on significant (25–50 percent) or drastic (over 50 percent) income decline. Rural households that reported suspension or reduction of agricultural production, were 16 percent more likely to experience a drastic or significant decline in income. Furthermore, the majority of the oblasts that have reported an above-average percentage of suspension or reduction in production (over 25 percent), have also recorded an above-average percentage in significant and drastic income decline (over 30 percent). For example, oblasts such as Cherkaska, Dnipropetrovska, Mykolaivska, Odeska, Poltavska and Sumska have all reported over 25 percent of suspension or reduction in agricultural production and at the same time over 30 percent of the households have recorded significant or drastic decrease in income.

Production costs

Figure 7. Increase in production costs by sector



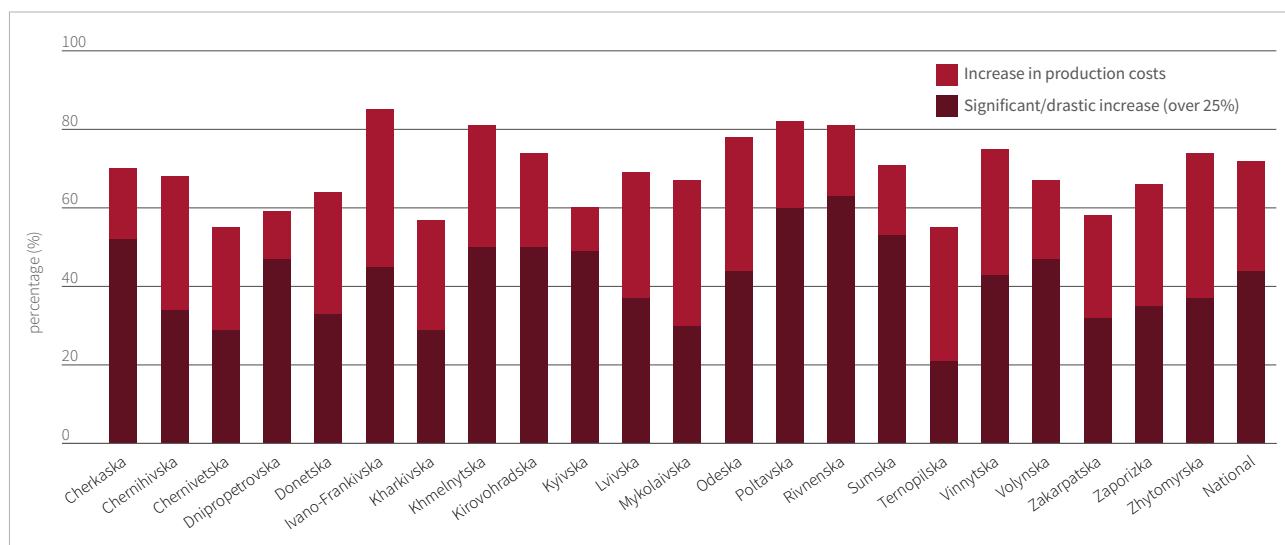
Source: FAO. 2022. *Ukraine: Impact assessment results (September–October 2022)*. [Internal document]. Rome.

Increase in agricultural production costs for both crop and livestock activities due to war were widely felt across the country. Almost three quarters (72 percent) of the respondents involved in crop production reported increases, including 44 percent that reported significant or drastic increases, ranging between 25 percent and over 50 percent. For the livestock sector, 64 percent of the rural households reported increases, including 35 percent that reported significant or drastic increases. Regression analysis revealed a strong causal relation between significant and drastic increases in agricultural production costs and related significant and drastic decreases in the income of the rural population. In fact, it appears that the more significant and drastic is the increase in production costs, the more is the severity in the income decrease.

When disaggregating at the oblast level, Ivano-Frankivska, Khmelnytska, Poltavaska and Rivnenska reported significantly higher levels of increase in production costs compared with the national average, with more than 80 percent of respondents reporting an increase in production costs. Moreover, Poltavaska and Rivnenska also recorded significant or drastic increase that is higher than the national average (60 percent and 63 percent, respectively).

In September 2022, the major difficulties expected for the next few months in terms of agricultural production were low benefits from the sale of products, access to fertilizers or pesticides, access to fuel or electricity to power equipment, and access to animal feed. Similarly, among the greatest needs, rural households mentioned access to seeds, fertilizers and animal feed. Animal feed was most requested (around 40 percent and above) by the rural households in Chernivetska, Donetsk, Sumska, Vinnytska, Zakarpatska, and Zaporizka.

Figure 8. Increase in production costs by oblast



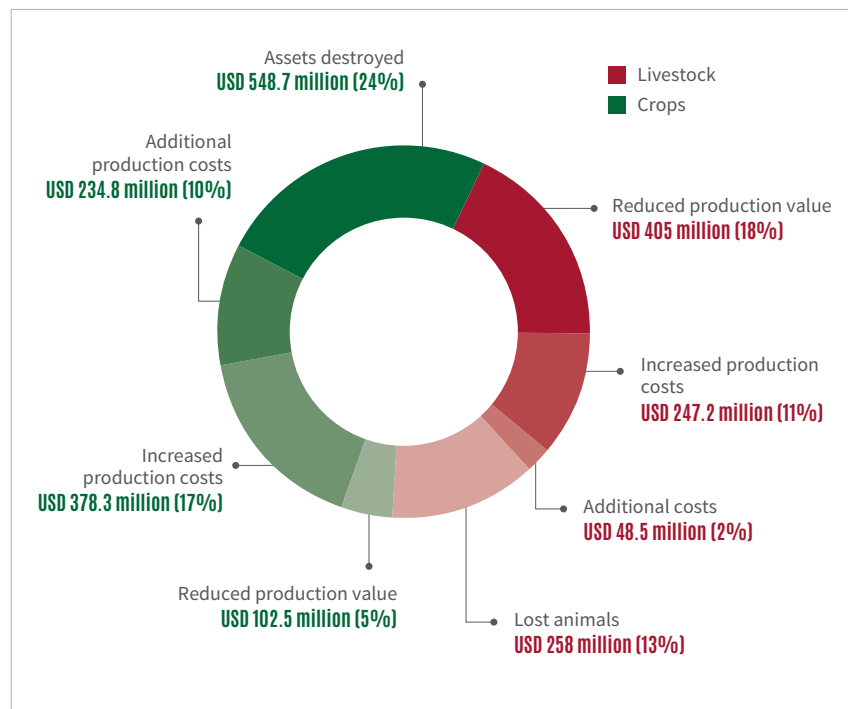
Source: FAO. 2022. *Ukraine: Impact assessment results (September–October 2022)*. [Internal document]. Rome.

Agricultural damage and loss

The segment of rural households in Ukraine accounts for less than a fifth of the overall cultivated area, including a small share of the production of grains and oil crops (up to 2.99 million ha) and the majority of the area is under labour-intensive crops (e.g. fruits and vegetables). In the livestock sector, rural households account for the majority of large and small ruminants, rabbits, and apiaries and less than half of the national pig and poultry population.

The feedback from the respondents indicates that the total damages and losses for the Ukrainian households in rural areas amount to almost USD 2.25 billion in the first six months of the war, including USD 1.26 billion in the crops sector and USD 0.98 billion in the livestock sector. The cattle sub-sector has been most affected with over 64 percent of the total value of damages and losses within the livestock sector, while the grains and oil seeds sub-sector amounted to 67.5 percent of the overall value reduction in the crops sector. These damages and losses account to approximately USD 483 per rural household on average, not considering the temporarily occupied territories.

Figure 9. Agricultural damages and losses



Source: FAO. 2022. *Ukraine: Impact assessment results (September–October 2022)*. [Internal document]. Rome.

Damages

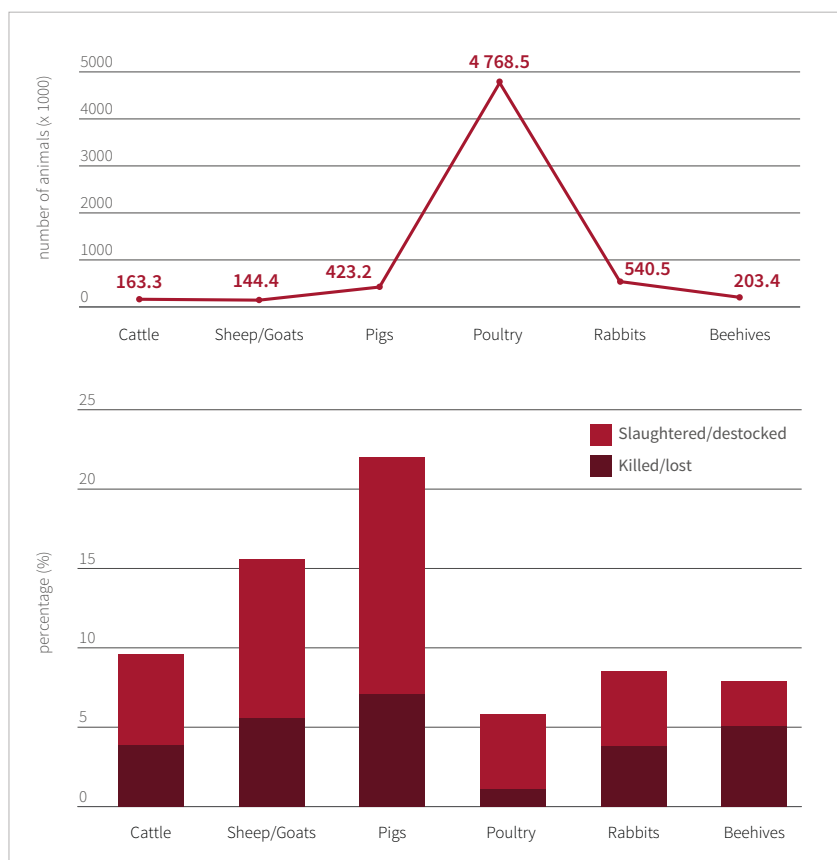
The overall damages in the agriculture sector accounted for approximately USD 834 million, accounting for damage of approximately USD 185 per rural household.

Livestock sector: Lost animals

In addition to the changes in the number of farmers engaged in livestock, the number of animals grown per farmer declined (5.5–22 percent), with the pig population being most affected. The value of the lost animals on all accounts constitutes overall damages of approximately USD 250 million.

As provided in Figure 10, a fairly consistent share per species has been killed by direct exposure to the fighting, however, a more significant loss has been recorded on account of uncertainty driven by distress slaughtering and destocking, mainly at the start of the war. The effects for the small ruminant population have been also compounded by drought, leading to reduction of pasture availability in particular in the west of Ukraine, which has been confirmed by more than half of the producers from the concerned oblasts. For the majority of the livestock species, rural households in the front-line oblasts have been somewhat more affected in terms of losses.

Figure 10. Damages in the livestock sector



Source: FAO. 2022. *Ukraine: Impact assessment results (September–October 2022)*. [Internal document], Rome.

Crops sector: Destroyed assets

On average, 5 percent of the rural households at the national level, 3.6 percent in the western and central oblasts and 6.3 percent in the front-line oblasts, have experienced damage to property (equipment and infrastructure), amounting to some USD 548 million. It should also be noted that 9.75 percent of the damages reported in the western and central oblasts were from IDPs originating from the front-line oblasts.

About 40 percent of the value of these damages were incurred by 25 percent of rural households residing in the front-line oblasts before the war, amounting to USD 189 per household. Approximately, 75 percent of the households residing in western and central oblasts accounted for 60 percent of the damages, amounting to USD 94 per household. Most notable damages on assets are reported in Donetsk (12 percent of the households), in Kyivska (8.7 percent) and Zhytomyrska (9.7 percent), while highest values of damages were reported in Donetsk with USD with 331 and in Kyiv with USD 314 per household.

Losses

The losses (changes in financial flows) in the agriculture sector accounted for approximately USD 1.41 billion, almost equally distributed among the crops and livestock sectors.

Reduced production value

The production value derived from the livestock sector was reduced by USD 192.5 million on account of decreased number of animals kept (e.g. the decreased production of animal products). In addition, the effects of the war decreased the productivity of the remaining animals by 2.7 percent for poultry and 12 percent for large ruminants, resulting in additional loss of value and income of USD 212.6 million.

The production value in the crops sector (yields and quality) was reduced by a total of USD 102.5 million, including loss of USD 172.8 million on account of reduced yields of crops, and increase of the value of production by USD 70 million on account of increase of planted area (2.6–4.4 percent) under all crops, apart from grains and oil crops where the harvested area contracted by 0.8 percent. Rural households in the front-line oblasts experienced 9 percent higher yield reduction compared with the national average for most crops, most notably in grain and oil crops (7.1–11.6 percent) and vegetables (5.6–11.1 percent).

Figure 11. Damages and losses in crops

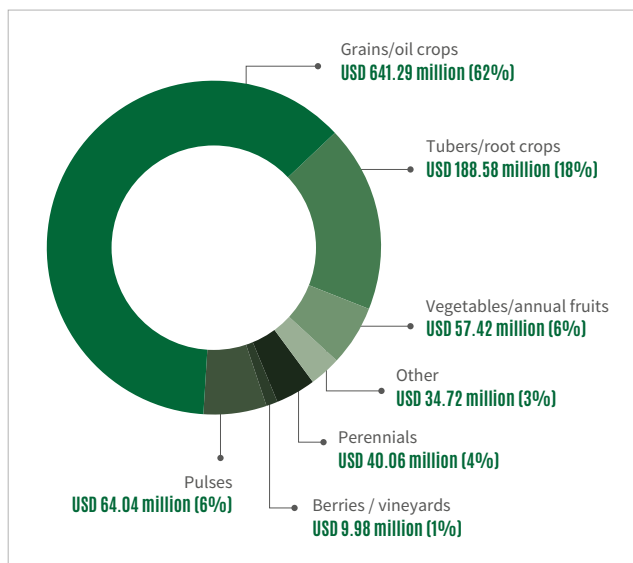
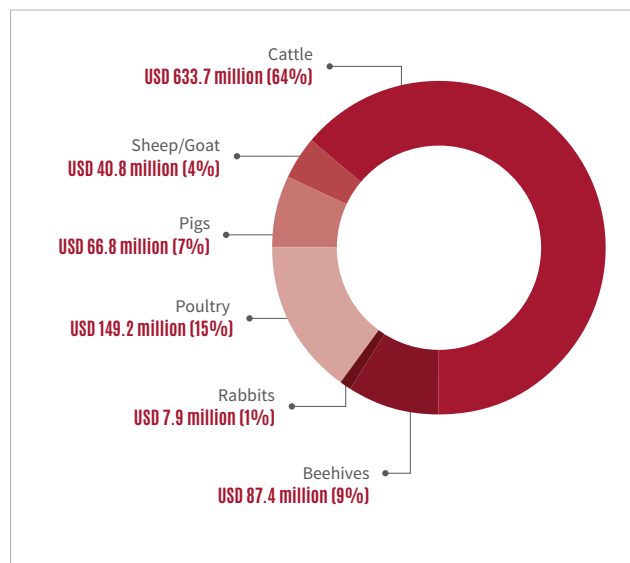


Figure 12. Damages and losses in livestock



Source: FAO. 2022. Ukraine: Impact assessment results (September–October 2022). [Internal document]. Rome.

Increased production costs

Due to market disruptions, problematic logistics and supply issues, the prices of most production inputs (e.g. animal feed, fuel and medicines) used by livestock producers have increased by 20.1 percent on average, accounting for an overall increase in expenditures of USD 247.2 million, or an average of USD 55 per household.

Within the crops sector, the effects on the input and services supply chains have increased the production costs on average by 25 percent (up to 50 percent for some items), amounting to USD 378.3 million, or an average of USD 84 per household or USD 70 per ha.

Additional costs

To mitigate the effects of the conflict on their agricultural production, rural households incurred additional expenditures for maintaining their production. These additional unforeseen costs have amounted to USD 234.8 million (approximately 14 USD per household) in the crops sector and USD 48.5 million in the livestock sector.

These values also include some USD 169.7 million for clearing and demining of approximately 18 000 ha contaminated by mines and unexploded ordinances in the front-line oblasts. The contaminated plots account for 1–3 percent of the oblasts' arable land, owned by an average 4 percent of the households (ranging between 1 percent of the households in Kharkivska and 9 percent in Mykolaivska).

Income, livelihoods and vulnerabilities

The section provides an overview of the livelihoods profile, including income sources and variation in income levels of the rural population. The objective of this section is to present an overall picture of the socio-economic vulnerabilities of rural households.

Income

Main income sources

The typical composition of the rural household's income comprises sources from welfare and transfers (including pensions and humanitarian aid), non-agricultural activities (including self-employment or liberal professions, off-farm daily wages and other non-agricultural casual employment, stable employment in non-agricultural sector and public sector employment, among others), agriculture-based income (including production and sale of crops and livestock products, agricultural trade, daily wage on farms, other casual employment in the agriculture sector and stable employment in agricultural sector), and non-work sources of income (including charity, remittances and rents). Despite the fact that rural households can rely on a mix of income sources, the analysis provides a more detailed picture, showing a less diversified composition of income for many respondents as well as a significant impact of the war on their income levels.

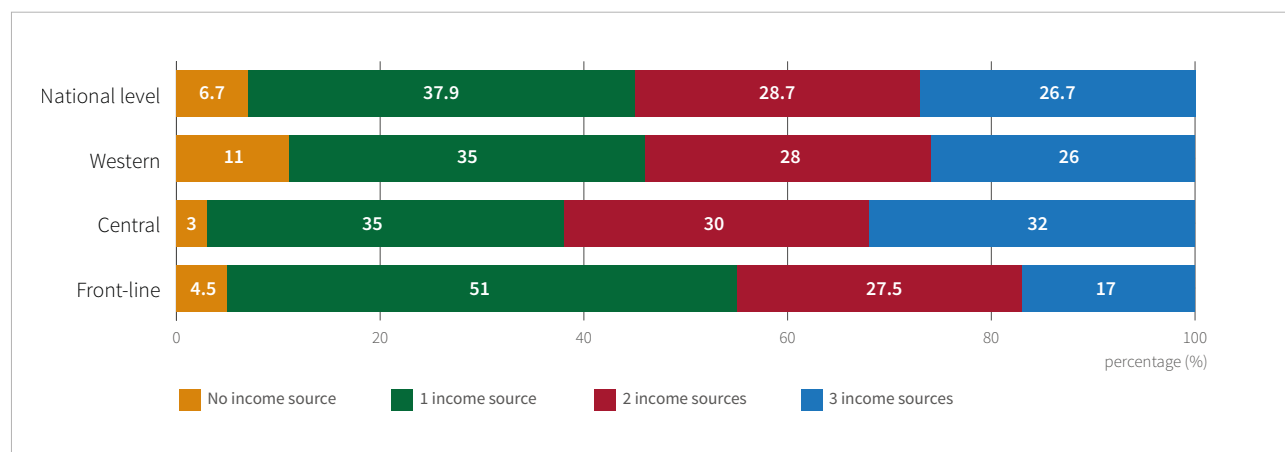
Welfare and transfers are an important source of income for the rural population. This can be explained by the high number of pensioners in the rural areas as well as the significant levels of assistance received in the past three months from government and humanitarian organizations. Around 30 percent of the surveyed rural households have reported receiving some kind of aid or assistance in the past three months, in addition to usual pension or benefits. This is even more evident in oblasts along the front-line, where, on average, 40 percent of the households received assistance. For example, oblasts such as Zaporizka and Mykolaivska reported around 56 percent and 60 percent, respectively.

Diversity of income sources

Diversity of income sources is an important determinant of resilience against possible economic shocks. **At the national level, nearly half of the rural households surveyed (45 percent) reported having no income sources or depending only on one "main" source of income, indicating a higher risk of vulnerability against possible economic shocks.** When analyzing by category of oblasts, significant differences were observed. While the western and central oblasts have values closer to the national average, the front-line oblasts have a lower degree of diversification in income sources, with over half of the respondents

(56 percent) reporting to have no income source or relying only on one main source of income, pointing to a significant vulnerability to possible economic shocks.

Figure 13. Number of income sources by group of oblasts

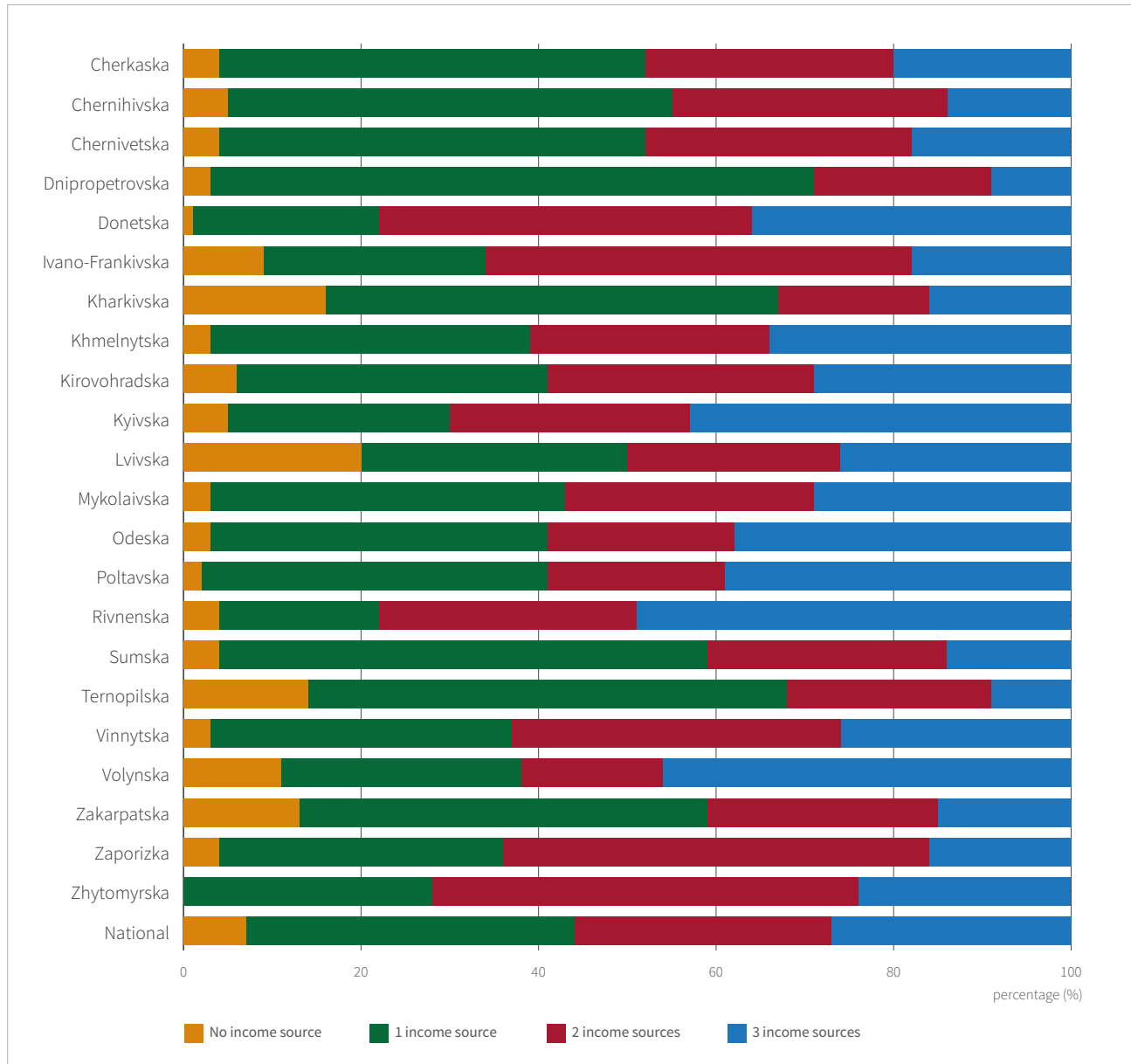


Source: FAO. 2022. *Ukraine: Impact assessment results (September–October 2022)*. [Internal document]. Rome.

The disaggregation by oblasts shows how the lower diversification in income sources in the front-line is particularly evident in Kharkivska (50 percent), Chernihivska (51 percent), Sumska (55 percent), and Dnipropetrovska (68 percent). In the rest of the analyzed oblasts, instead, more than half of the households show some degree of diversification by having two–three main sources of income, with the only exception of Ternopil'ska oblast, which presents values similar to the oblasts in the front-line.

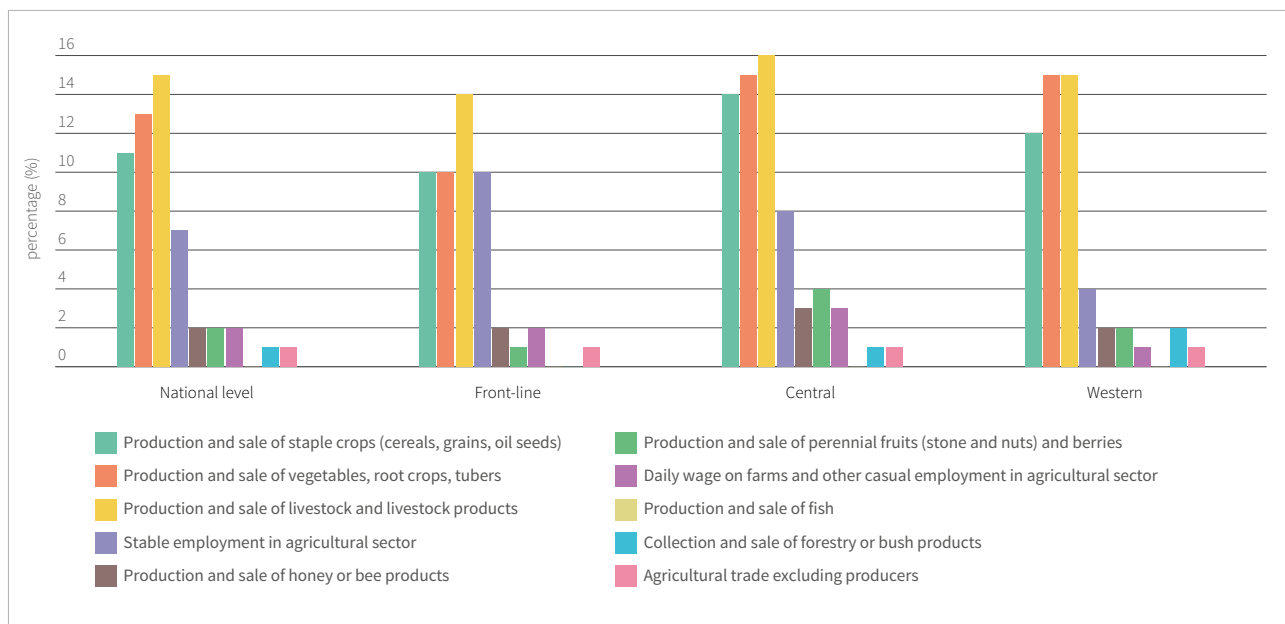
On average, in the three groups of oblasts, around 37 percent of the households reported agriculture as one of the three main income sources. In terms of type of agricultural activities (Figure 15), the majority of the rural households surveyed reported to derive income from livestock (e.g. production and sale of livestock products), as well as production and sale of vegetables, roots and tubers, and staple crops (e.g. cereals, grains and oil seeds). In central and front-line oblasts, 8 and 10 percent, respectively, also reported to derive their income from stable and/or casual employment in the agriculture sector, while this is less significant in western oblasts (4 percent).

Figure 14. Number of income sources by oblast



Source: FAO. 2022. *Ukraine: Impact assessment results (September–October 2022)*. [Internal document]. Rome.

Figure 15. Number of income sources by group of oblasts



Source: FAO. 2022. Ukraine: Impact assessment results (September–October 2022). [Internal document]. Rome.

Income variation

Since the start of the war, rural households have reported decreased levels of income. This is evident across the country, with 55 percent of the respondents recording such decrease between June and September 2022, compared to the same period of the previous year. IDPs and returnees are the most affected by this income decrease, with almost 80 percent of IDPs and returnees recording a decline in income, compared to approximately 54 percent reported by resident households.

Figure 16. Decrease in income by group of oblasts

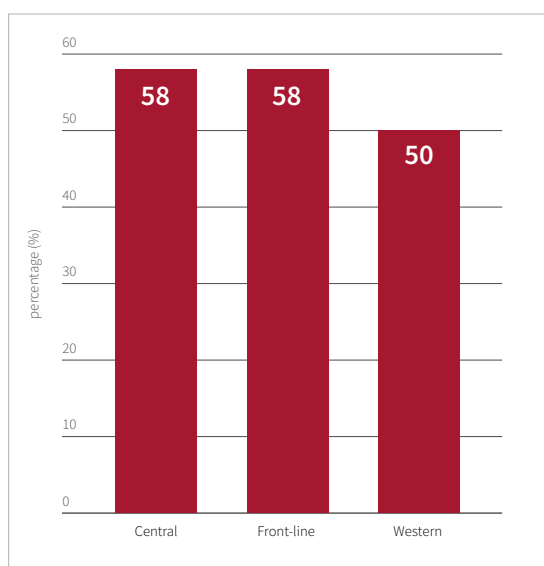
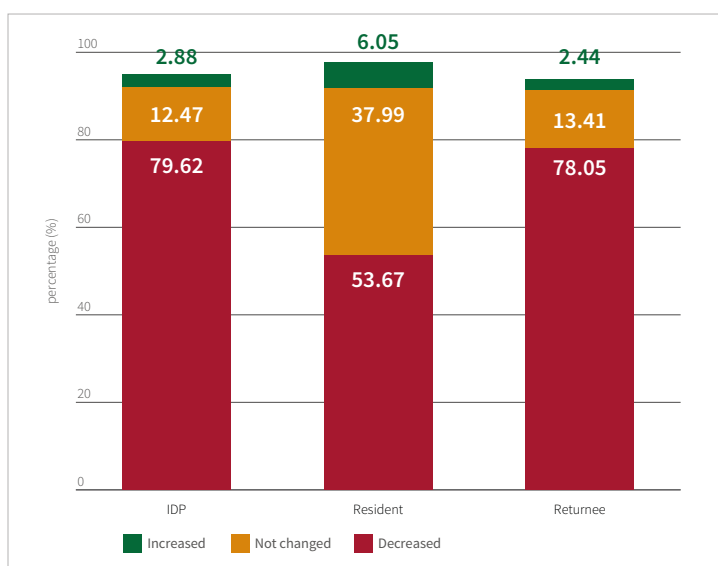


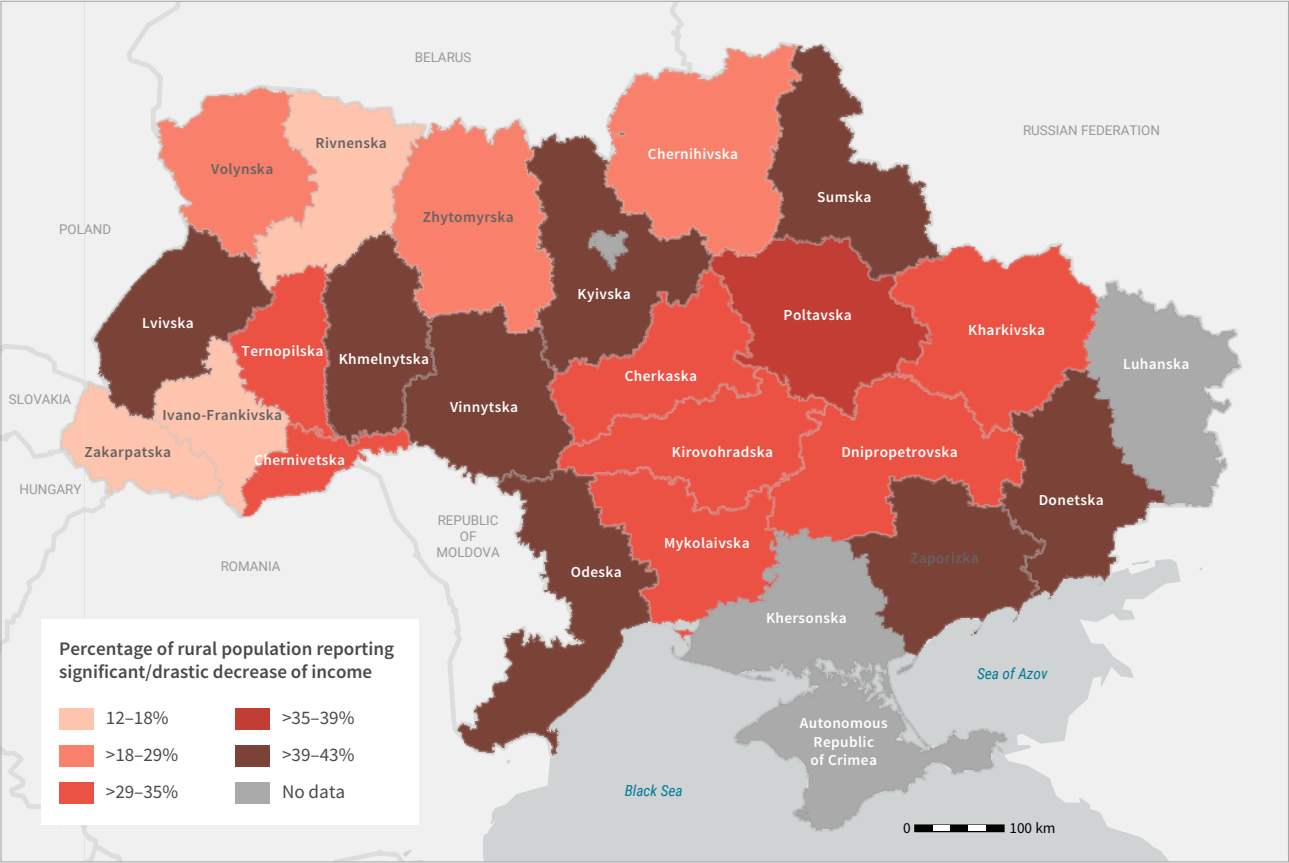
Figure 17. Decrease in income by residential status



Source: FAO. 2022. Ukraine: Impact assessment results (September–October 2022). [Internal document]. Rome.

Around 32 percent of the surveyed households reported to have faced significant and/or drastic income reduction (from 25 percent to over 50 percent). Significant and drastic decrease in income is more evident in Donetsk, Khmelnytska, Kyivska, Lvivska, Odeska, Sumska, Vinnytska and Zaporizka oblasts, where 39–43 percent of the rural households reported such decrease.

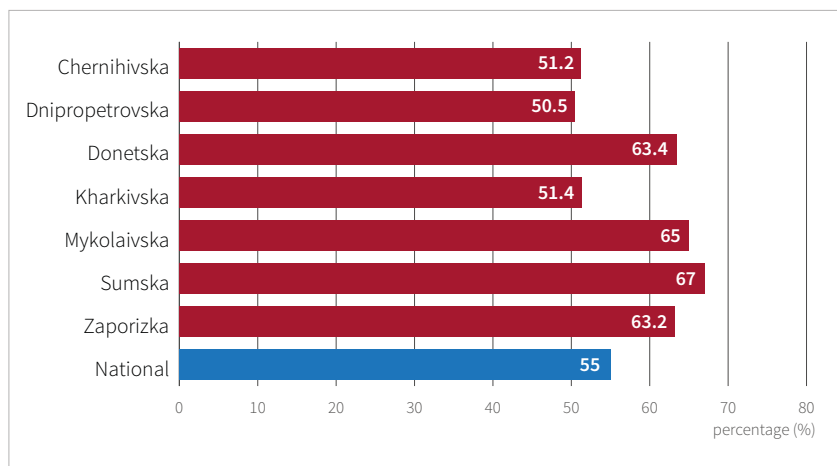
Figure 18. Rural population reporting significant/dramatic decrease in income (between 25 and 50 percent)



Source: FAO. 2022. Ukraine: Impact assessment results (September–October 2022). In: *FAO Data in Emergencies Hub*. Rome. Cited 28 November 2022. <https://data-in-emergencies.fao.org>

Oblasts in areas along the front-line show a higher decrease compared with the rest of the country. As highlighted in Figure 19, around 67 percent of the rural population in Sumska experienced a reduction of income, 65 percent in Mykolaivska and 63 percent in Zaporizka and Donetsk.

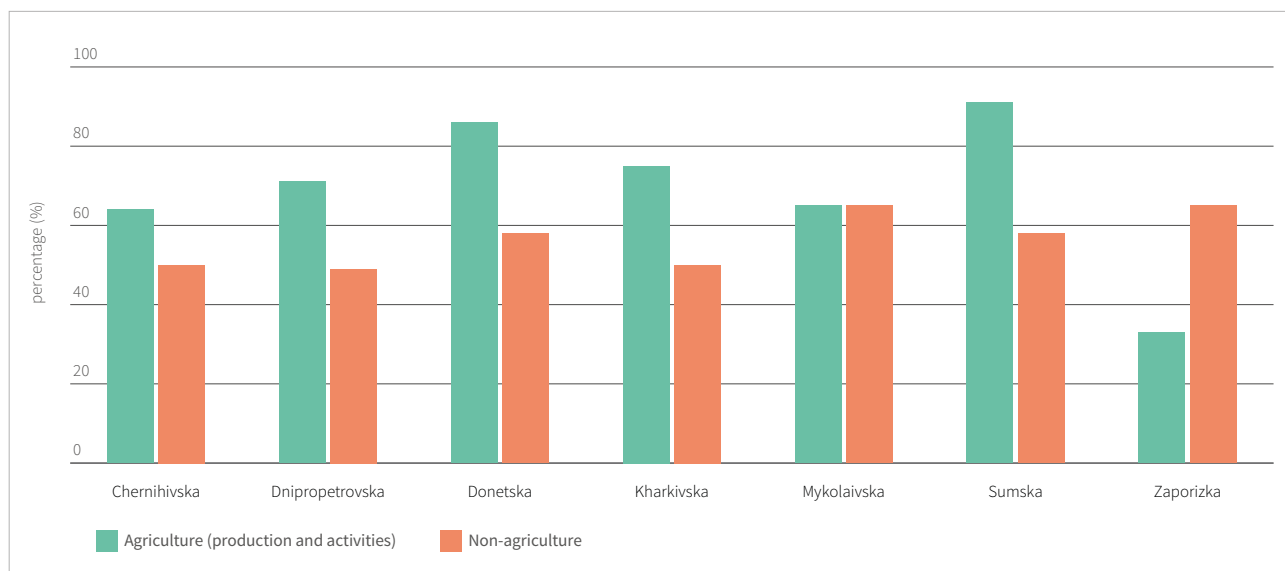
Figure 19. Decreased income in front-line oblasts



Source: FAO. 2022. *Ukraine: Impact assessment results (September–October 2022)*. [Internal document]. Rome.

Moreover, rural households who rely on agriculture as one of their main sources of income (including production and sale as well as other agriculture-related activities) have experienced a more significant decrease of income levels, compared to those households who rely on non-agriculture activities. This trend is similar throughout the country, however, is more accentuated in areas along the front-line. For example, in Sumska, 58 percent of the rural population not involved in agriculture reported a decrease in income, compared with 91 percent of those who rely on agriculture (Figure 20).

Figure 20. Decrease in agricultural versus non-agricultural sources of income

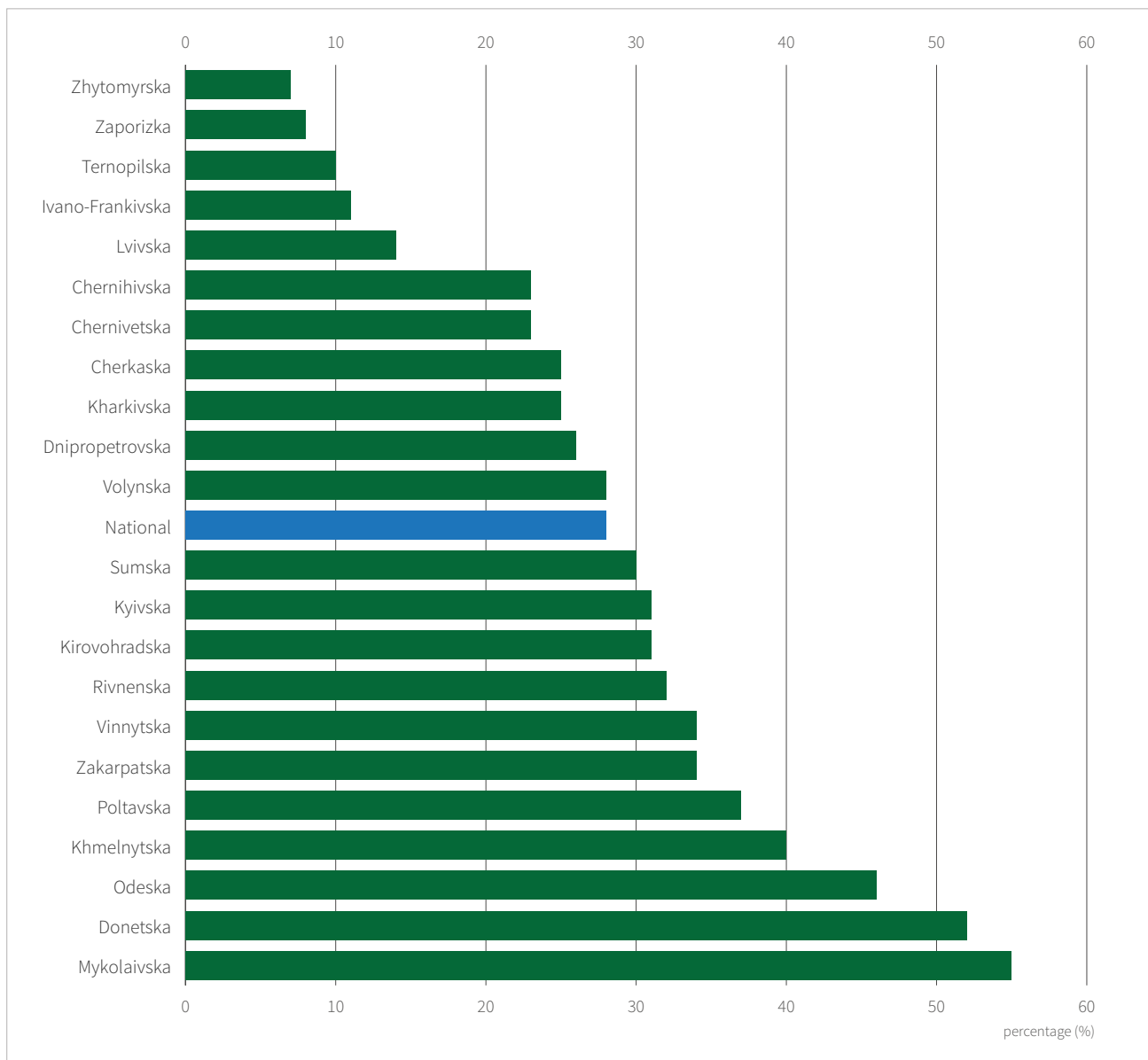


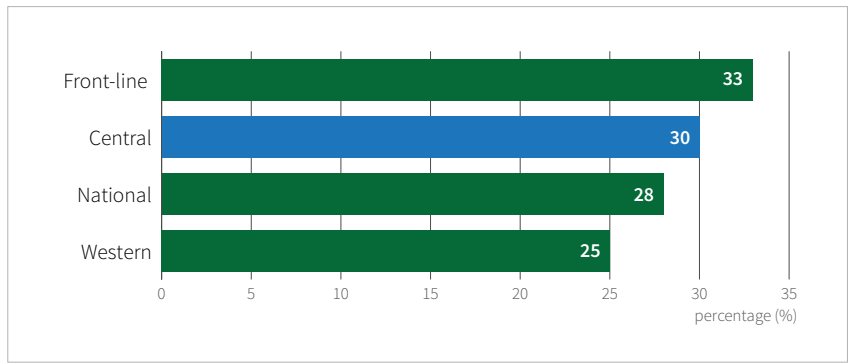
Source: FAO. 2022. *Ukraine: Impact assessment results (September–October 2022)*. [Internal document]. Rome.

In particular, when analyzing income from selling livestock products, 27 percent of the rural households surveyed have experienced a decrease at the national level. This trend is even higher in oblasts along the front-line, with 34 percent of the rural households surveyed reporting a decrease in income. Rural households involved in the livestock sector in Sumska (46 percent), Mykolaivska (40 percent), and Donetsk (35 percent) oblasts appear to be the most affected.

Similarly, at the national level, around 28 percent of the rural households with income from selling crops (e.g. grains and oil seeds, vegetables, root crops, tubers, fruits and berries) reported decreases in income. In oblasts along the front-line, this percentage was higher (around 33 percent). In Donetsk and Mykolaivska oblasts, more than half of the rural households recorded the decrease (52 and 55 percent, respectively).

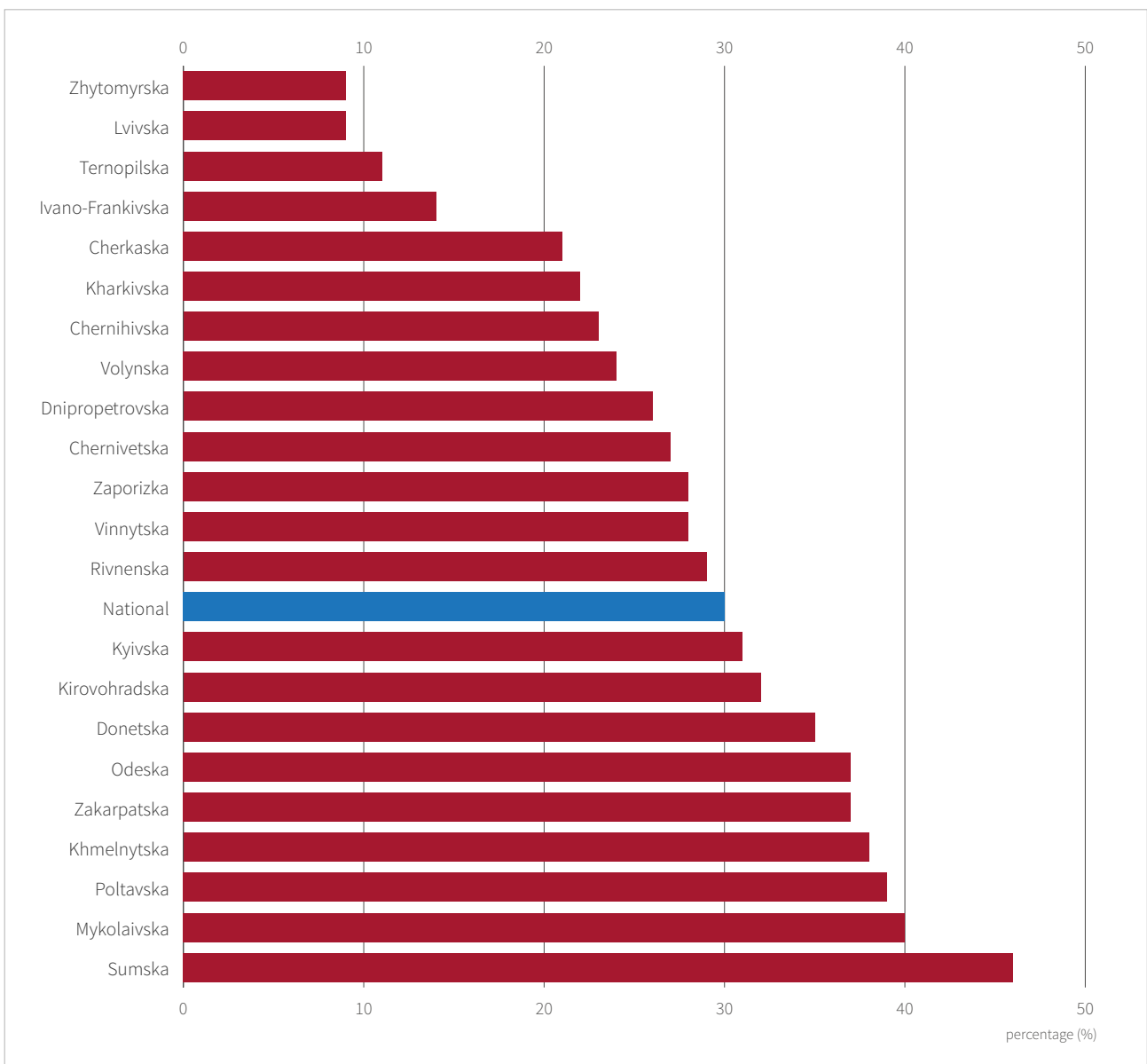
Figure 21. Decrease in income from selling crop products

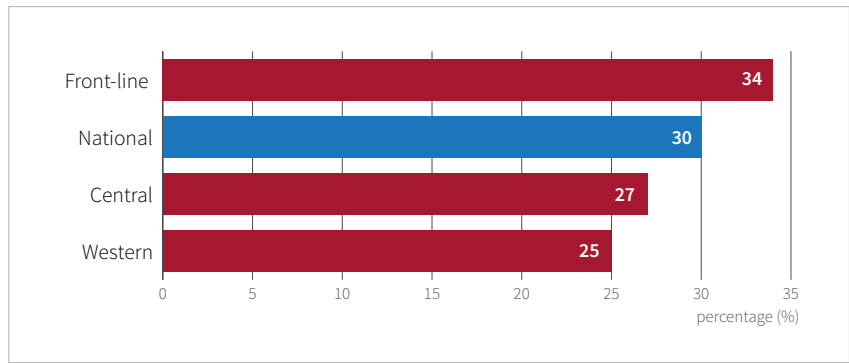




Source: FAO, 2022. Ukraine: Impact assessment results (September–October 2022). [Internal document], Rome.

Figure 22. Decrease in income from selling crop products





Source: FAO. 2022. *Ukraine: Impact assessment results (September–October 2022)*. [Internal document]. Rome.

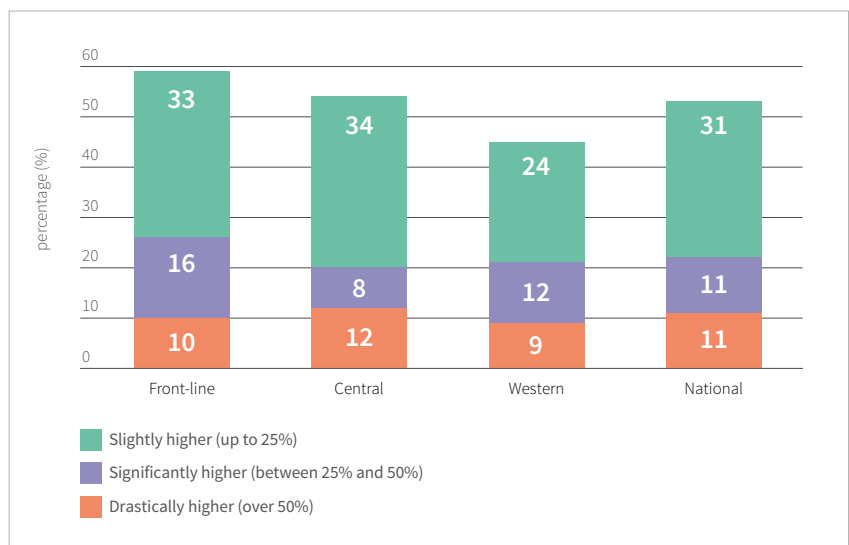
Levels of indebtedness

Parallel to the decrease in income, it is noted that rural households across the country have taken on new debts since the war started.

In fact, compared with the same period of the previous year, around 52 percent of the rural population recorded additional debts between June and September 2022. In particular, almost one in every three respondents (31 percent) recorded up to 25 percent higher levels of debt, while 22 percent reported much higher and drastically higher levels of increased of debts (between 25 percent and over 50 percent).

When disaggregating the analysis by group of oblasts, the front-line oblasts appear to be the most affected. Around 60 percent of the respondents has experienced increased levels of debts, with one in four respondents reporting a much higher and drastically higher increase (between 25 percent and over 50 percent). Furthermore, more than 30 percent of the surveyed rural households in Zaporizka (31 percent), Kharkivska (34 percent), Odeska (35 percent), Sumska (38 percent), and Lvivska (37 percent) oblasts reported between much higher and drastically higher levels of debts.

Figure 23. Debt trend by region compared to the year 2021



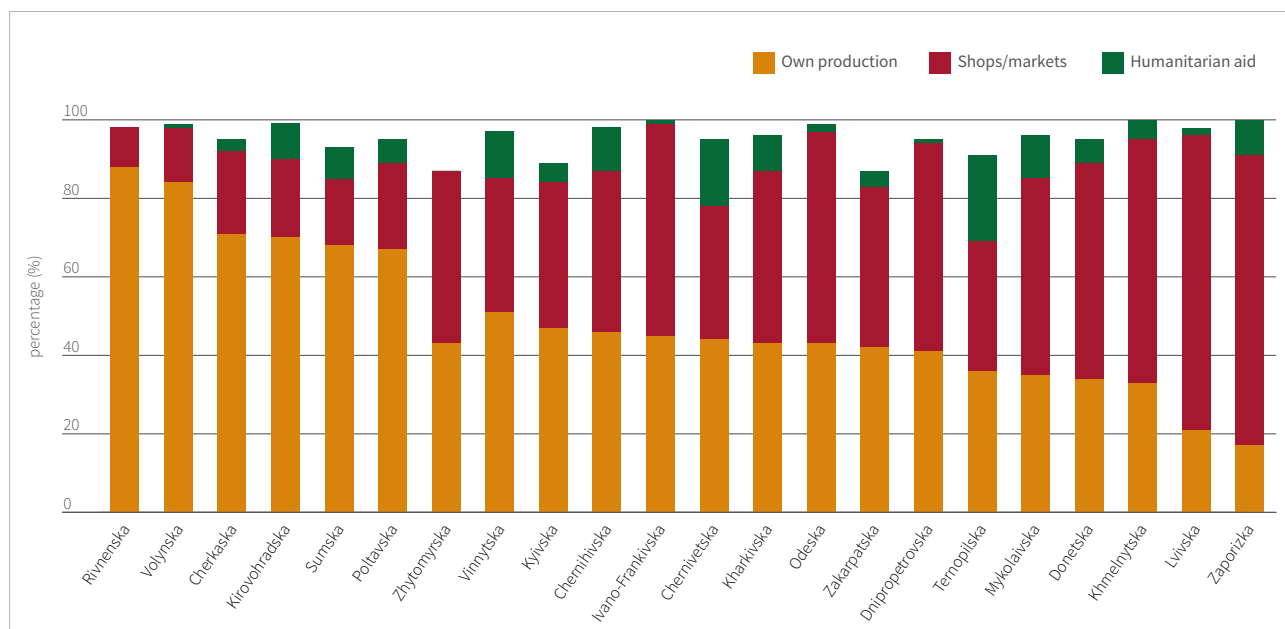
Source: FAO. 2022. *Ukraine: Impact assessment results (September–October 2022)*. [Internal document]. Rome.

Main sources of food and food expenditure

This section examines the main sources of food for rural households as well as the reported share of income spent on food, on average, over the period June–September 2022. Food expenditure was utilized as a proxy of the level of vulnerability in terms of food access of the surveyed households.

The majority of the rural households rely on their own production as a source of food (almost 50 percent of the respondents), while slightly over 40 percent rely on markets and shops. However, the main source of food varies significantly across oblasts. For example, in Rivnenska almost 90 percent of the rural households interviewed reported to rely on their own production as the main source of food, while in Zaporizka less than 20 percent reported the same (Figure 24). The remaining is divided between humanitarian assistance (6 percent), gifts from relatives (1 percent) and local farmers (1 percent).⁶ In light of this, it is worth considering, on the one hand, the potential negative repercussions from increased production costs and the impact of the war on interruption or reduction of agricultural activities on access to food for those who rely on their own production, while on the other, the negative effects that decreases in income level can have on those households who rely mainly on the markets as their main source of food.

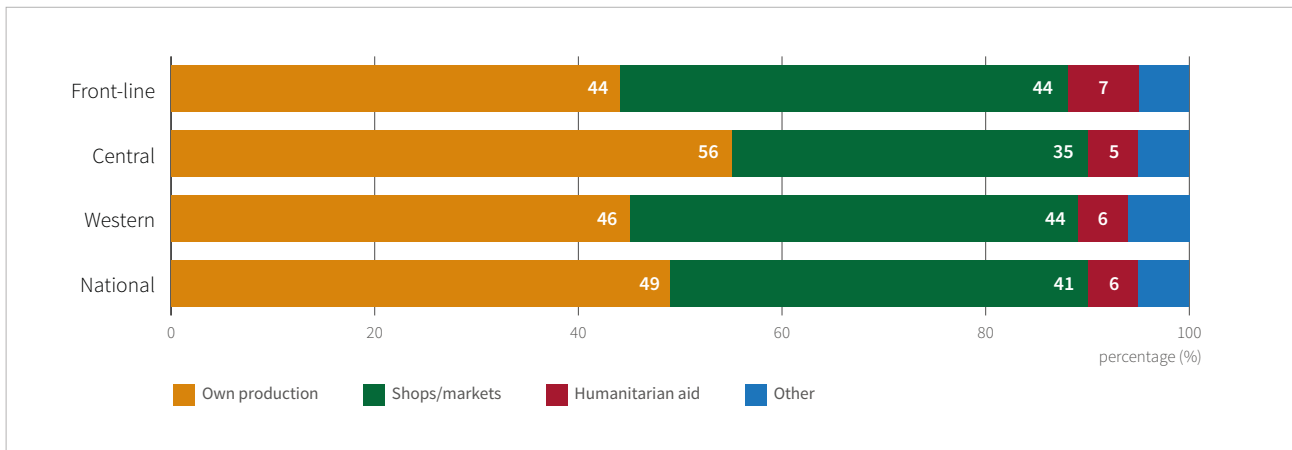
Figure 24. Main sources of food by oblast



Source: FAO. 2022. *Ukraine: Impact assessment results (September–October 2022)*. [Internal document]. Rome.

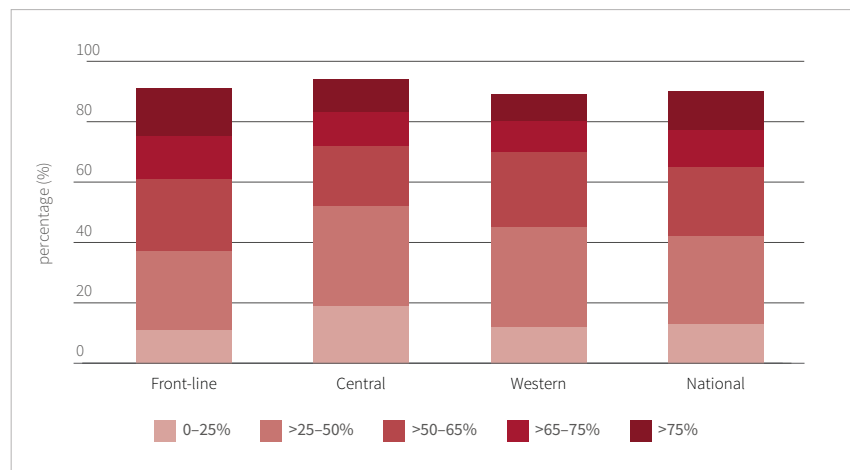
Interestingly, in terms of food expenditure in the last three months, the analysis showed that on average more than half of the rural households surveyed spent over 50 percent of their total expenditure on food. This proportion is even higher for the rural households in areas along the front-line, where almost 60 percent of them reported to spend half of their total expenditure on food. Of most concern, around 20 percent of the rural population in these oblasts reported to spend on food over two-thirds of their total expenditure.

Figure 25. Main sources of food by group of oblasts



Source: FAO. 2022. *Ukraine: Impact assessment results (September–October 2022)*. [Internal document]. Rome.

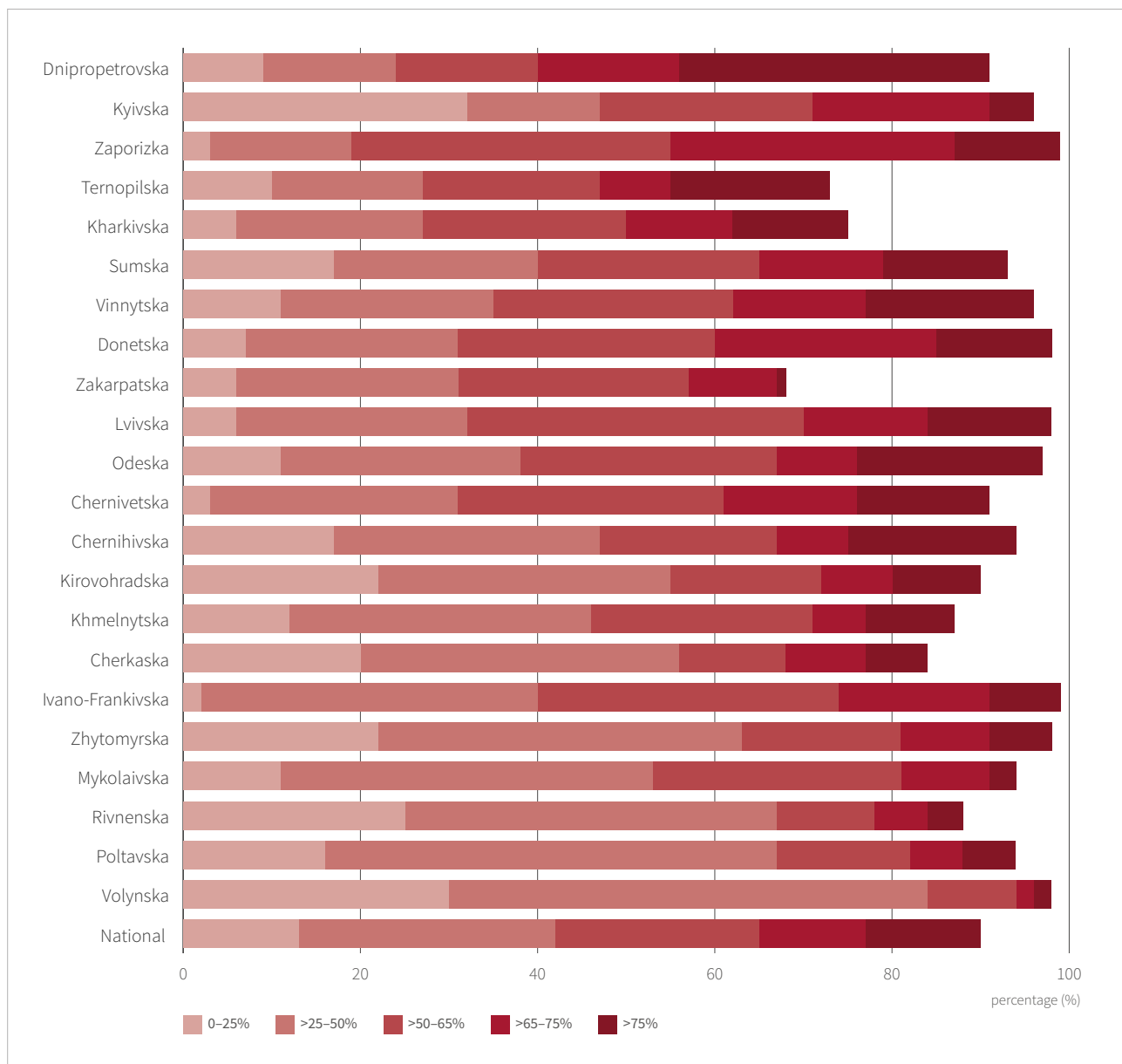
Figure 26. Food expenditure by oblast



Source: FAO. 2022. *Ukraine: Impact assessment results (September–October 2022)*. [Internal document]. Rome.

When analyzing at oblast level, more than one in three rural households interviewed in Chernivetska, Donetska, Kharkivska, Odeska, Sumska, Ternopil'ska, Vinnytska and Zaporizka have reported over 65 percent of their total expenditure on food. In Dnipropetrovska, this percentage reached over 75 percent of the total households' expenditure.

Figure 27. Proportion of households' total expenditure on food



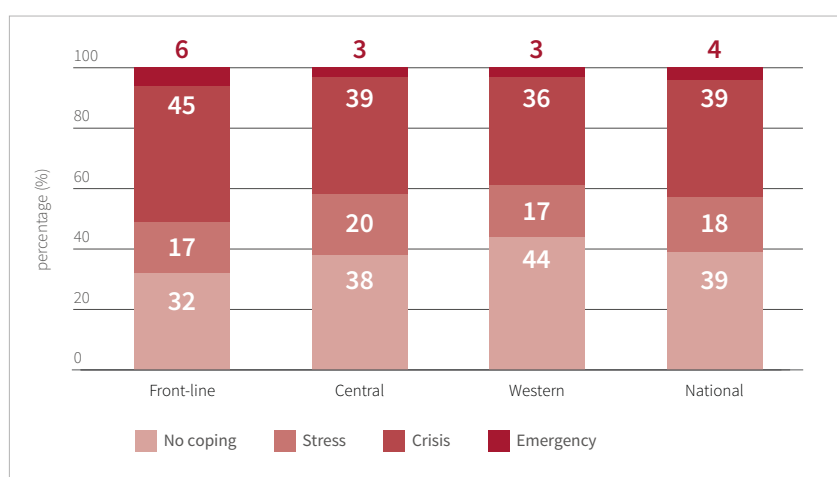
Source: FAO. 2022. *Ukraine: Impact assessment results (September–October 2022)*. [Internal document]. Rome.

Further analysis also revealed a strong causal relation between food expenditure, decrease in income, and stopped or reduced agricultural production. In fact, food expenditure of rural households tends to increase as a result of decreased income levels and stopped or reduced production.

Coping strategies for essential needs

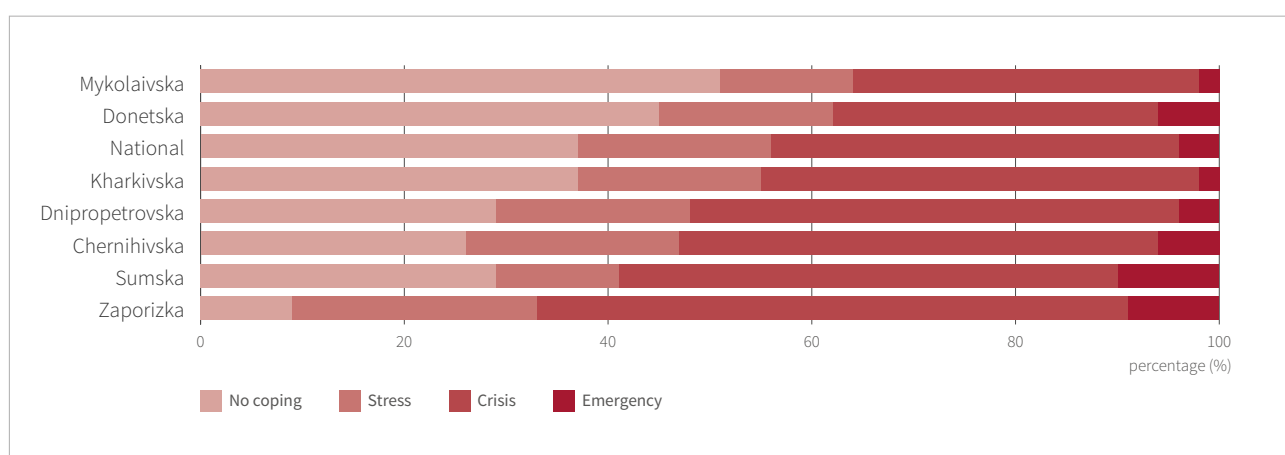
The distress situation of the rural population is even more evident when looking at the adoption of negative coping strategies to ensure access to essential needs. Whilst there is still a significant portion of the rural population (39 percent) that has not adopted negative coping strategies on average at the national level, around 57 percent of the interviewed are adopting Stress and Crisis coping strategies. Rural households have indicated selling productive assets, reducing expenditure on health, decreasing expenditure on fertilizers, pesticides, animal feed, and veterinary services as the most adopted Crisis coping strategies. While in terms of Stress coping strategies, spending savings and borrowing money were the most adopted.

Figure 28. Adoption of negative coping strategies by oblast



Source: FAO. 2022. *Ukraine: Impact assessment results (September–October 2022)*. [Internal document]. Rome.

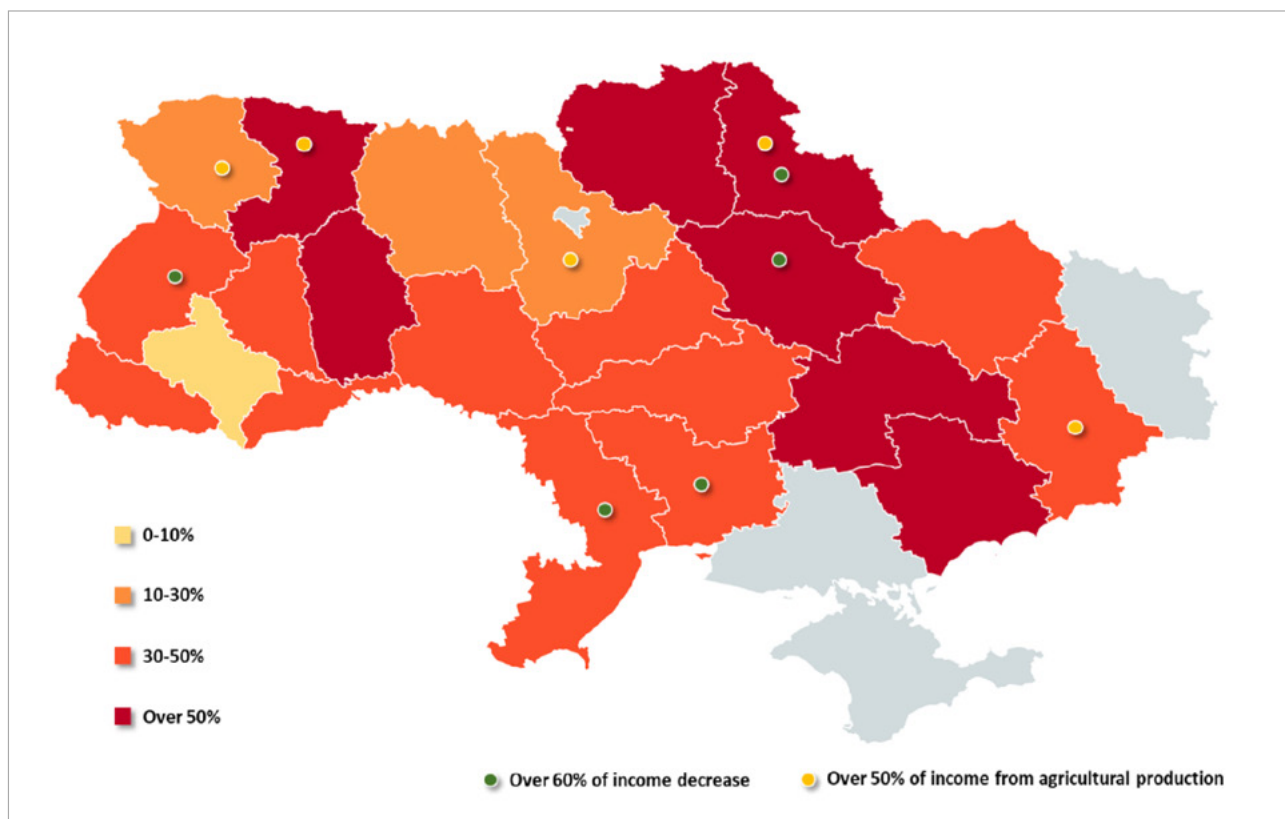
Figure 29. Adoption of negative coping strategies in front-line oblasts



Source: FAO. 2022. *Ukraine: Impact assessment results (September–October 2022)*. [Internal document]. Rome.

Along the front-line areas, oblasts such as Kharkivska (43 percent), Chernihivska (47 percent), Sumska and Dnipropetrovska (49 percent), and Zaporizka (almost 58 percent) showed higher percentage of rural households adopting Crisis coping strategies. What is even more concerning is the use of Emergency coping strategies (4 percent at the national level), which are irreversible mechanisms. In areas along the front-line, approximately 6 percent of the rural households interviewed reported adopting Emergency coping strategies, compared to 3 percent of rural households in the central and western regions. This indicates that the resilience of rural populations is being gradually eroded, and more so in front-line oblasts.

Figure 30. Rural households adopting Crisis and Emergency coping strategies



Source: FAO. 2022. Ukraine: Impact assessment results (September–October 2022). In: *FAO Data in Emergencies Hub*. Rome. Cited 28 November 2022. <https://data-in-emergencies.fao.org>

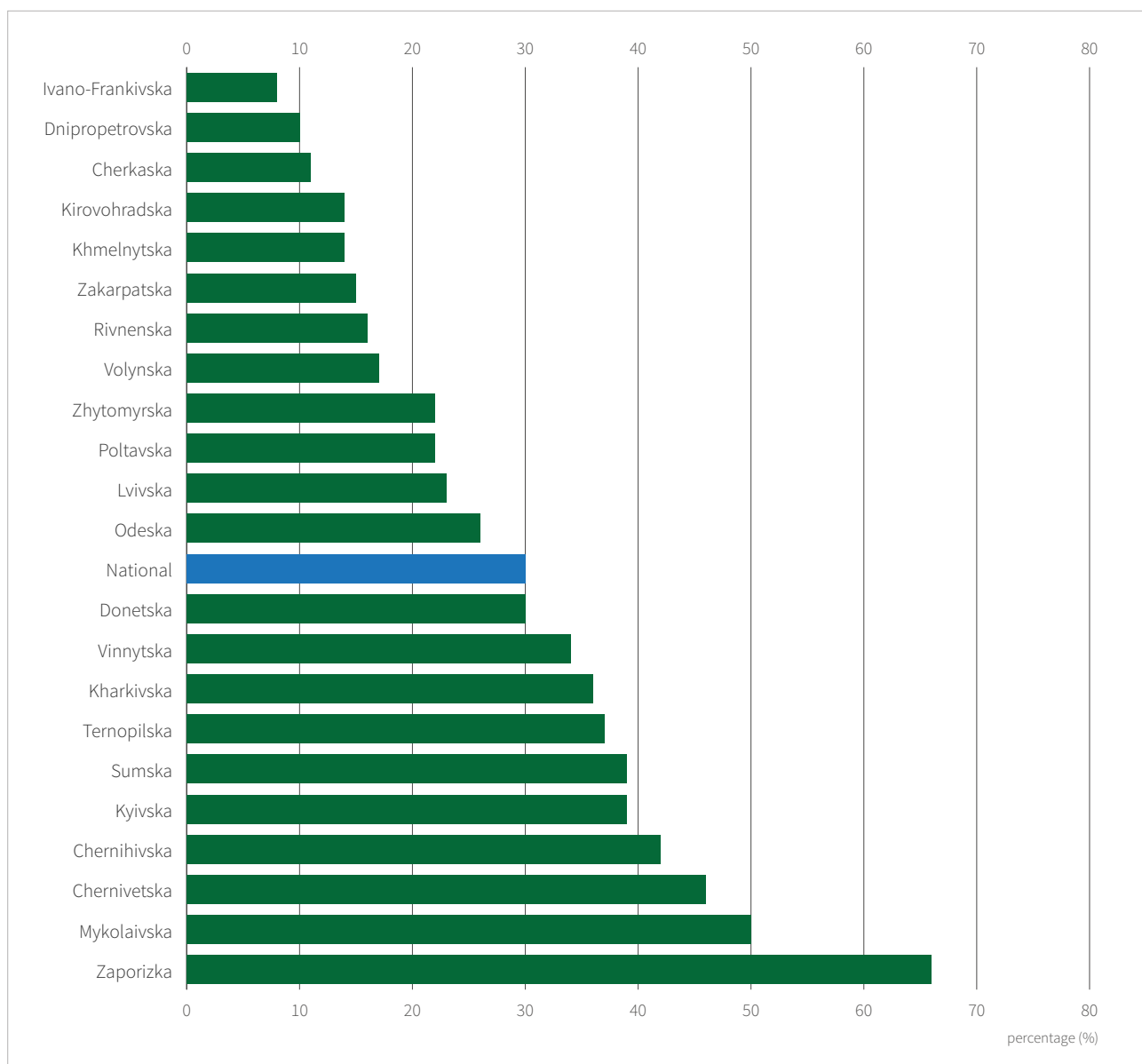
The analysis confirmed that households that derive their income from agricultural production are 10 percent more likely to adopt Crisis/ Emergency coping strategies. Moreover, households that reported income decrease are 18 percent more likely to adopt Crisis/Emergency coping strategies than other households.

Assistance and needs

The war in Ukraine has severely affected livelihoods and households' access to basic services and needs. This alarming humanitarian situation has led the government and other partners to initiate assistance activities mainly in the areas along the front-line oblasts. This section examines the levels of assistance received by rural households as well as the main difficulties and related needs reported during the survey.

At the national level, one third of the rural households have reported to receive some kind of aid or assistance in the last three months, in addition to usual pension or benefits. The recorded levels of aid or assistance vary significantly amongst the different oblasts. For instance, between 30 percent and 40 percent of the rural households surveyed have recorded some kind of aid or assistance in Donetsk, Vinnytska, Kharkivska, Kyivska, Ternopil'ska and Sumska; between 40 percent and 50 percent in Chernihiv'ska and Chernivets'ka, while Zaporizka reported the highest percentage (over 60 percent).

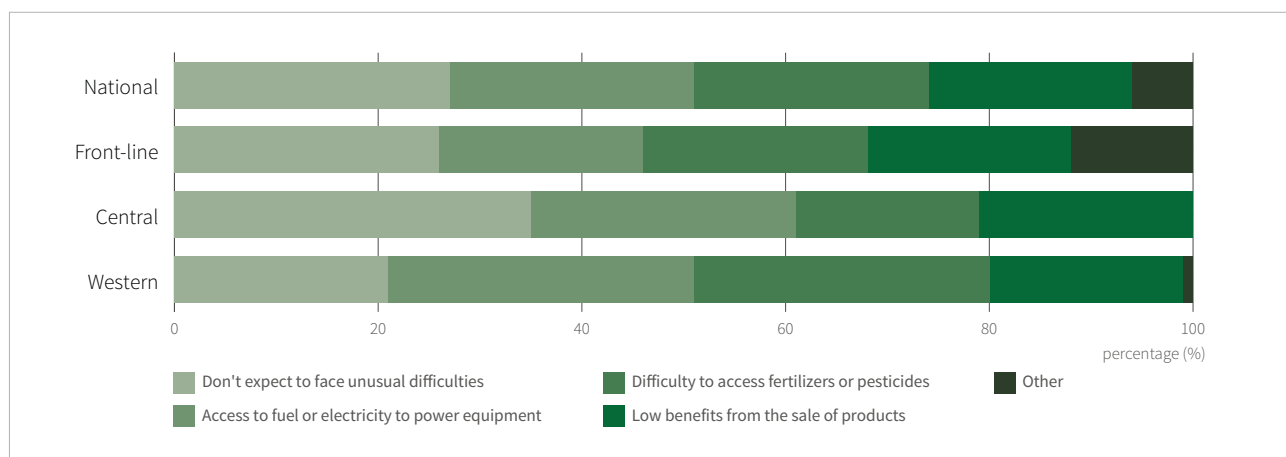
Figure 31. Rural households adopting Crisis and Emergency coping strategies



Source: FAO. 2022. Ukraine: Impact assessment results (September–October 2022). [Internal document]. Rome.

At the national level, the major difficulties expected by the rural households involved in production and sale of crop products are: access to fuel or electricity to power equipment (for over 24 percent of the respondents), access to fertilizers or pesticides (nearly 23 percent), low benefits from sale of products (around 20 percent), and access to seeds (18 percent). For oblasts along the front-line, the major difficulty to be expected in the next few months is access to seeds (over 22 percent of the respondents), while in western and central regions around one third of the respondents reported difficulties in accessing fertilizers/pesticides and fuel/electricity to power equipment.

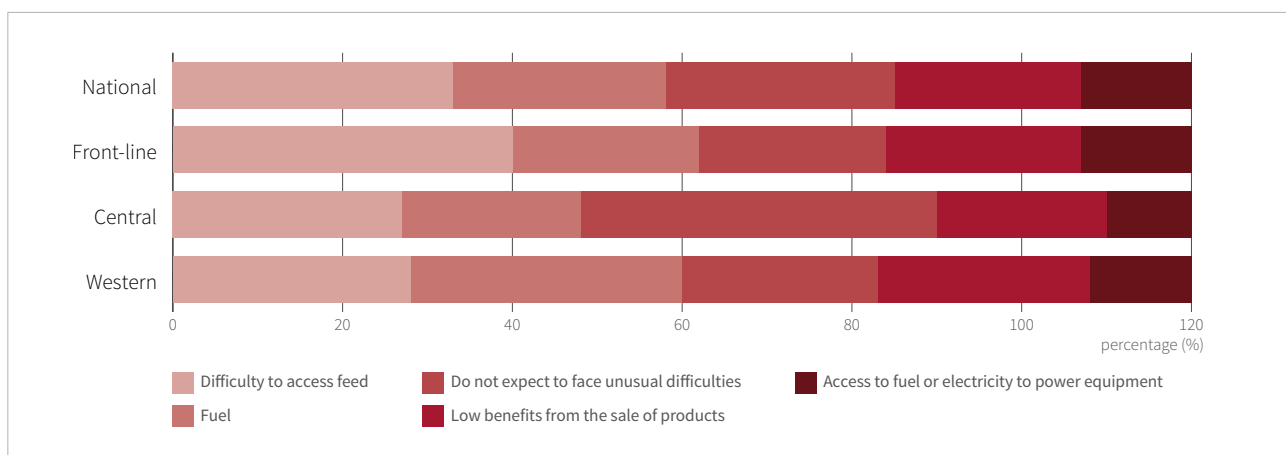
Figure 32. The main difficulties expected in the production and sale of crop products



Source: FAO. 2022. *Ukraine: Impact assessment results (September–October 2022)*. [Internal document]. Rome.

In terms of production and sale of livestock products, nationally, over 30 percent of the rural households expected difficulties in accessing animal feed, around 25 percent mentioned fuel, and slightly over 20 percent mentioned low benefits from the sale of products. When looking at the oblast level, it is observed that almost 70 percent of the respondents in Donetsk expected difficulties in accessing animal feed, followed by Lvivska (58 percent), Odeska (55 percent), Zakarpatska (51 percent) and Sumska (50 percent).

Figure 33. The main difficulties expected in the production and sale of livestock products

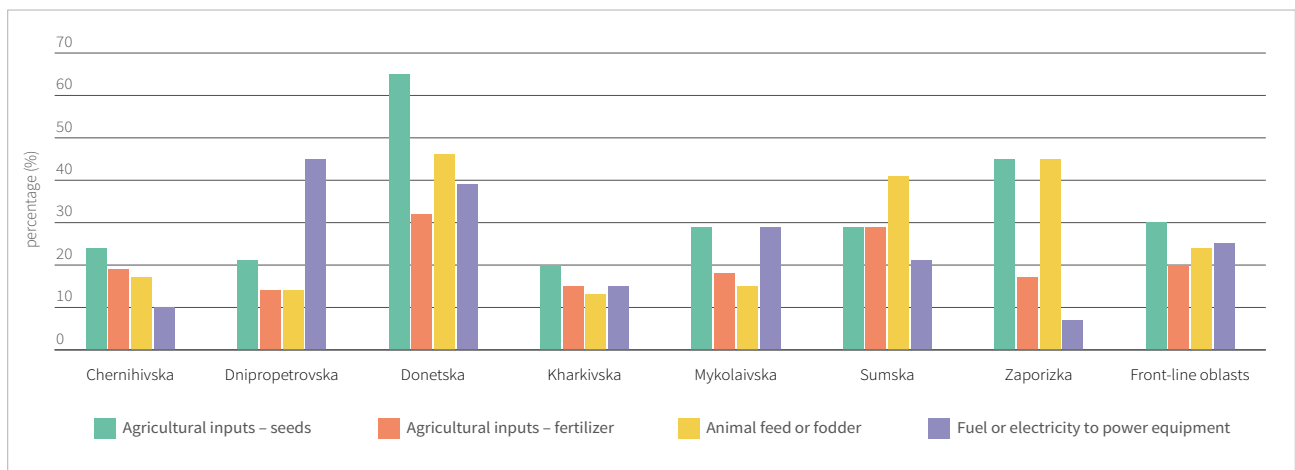


Source: FAO. 2022. *Ukraine: Impact assessment results (September–October 2022)*. [Internal document]. Rome.

Among the greatest needs, around one in three rural households (34 percent) mentioned access to seeds (cereal/vegetable), while slightly over one in four respondents (26 percent) reported access to fertilizers, animal feed and fuel or electricity to power equipment. Access to seeds was most requested (around 40 percent and above) in Donetsk, Khmelnytska, Kirovohradska, Lvivska, Poltavska, Rivnenska, Zakarpatska, and Zaporizka.

The type of assistance needs varies depending on the oblast of residence. In the front-line oblasts, Donetsk (65 percent) and Zaporizka (45 percent) reported the highest need for access to seeds. Access to electricity appears as an urgent concern mainly in Dnipropetrovska (45 percent) and Donetsk (39 percent). In addition, there is a significant need for assistance with feed or fodder in Zaporizka (45 percent) and Sumska (41 percent).

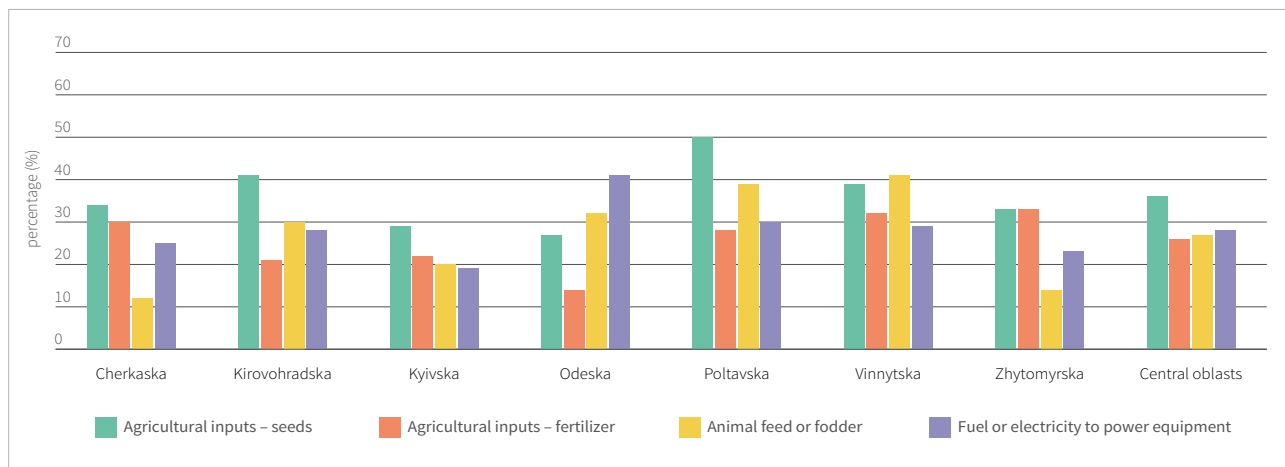
Figure 34. Needs in front-line oblasts



Source: FAO. 2022. *Ukraine: Impact assessment results (September–October 2022)*. [Internal document]. Rome.

In the central oblasts, access to seeds emerged as the main need for assistance in Poltavska (50 percent) and Kirovohradska (41 percent). Needs in terms of access to feed are mainly reported in Vinnytska (41 percent) while in Odeska, 41 percent of rural households expressed needs for access to fuel or electricity to power equipment.

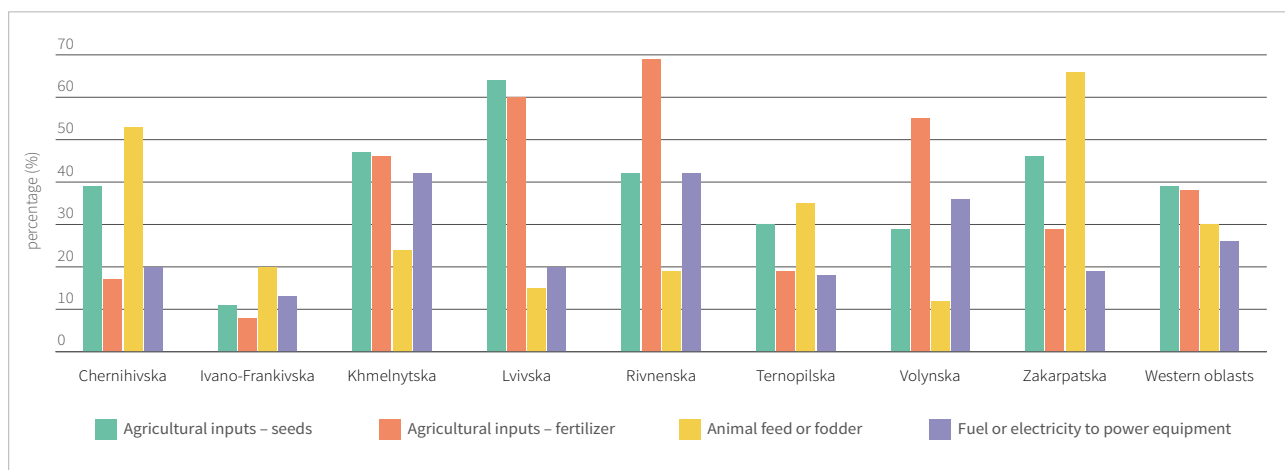
Figure 35. Needs in central oblasts



Source: FAO. 2022. *Ukraine: Impact assessment results (September–October 2022)*. [Internal document]. Rome.

In the western areas of the country, the need for assistance to access fertilizer was reported by more than half of the households in Rivnenska (69 percent), Volynska (55 percent) and Lvivska (60 percent) oblasts. The need for seed assistance is mainly expressed by rural households in Lvivska (64 percent), Zakarpatska (46 percent) and Khmelnytska (47 percent). In the pastoral domain, two-thirds of the surveyed households in Zakarpatska reported a need for assistance to access livestock feed and fodder.

Figure 36. Needs in western oblasts



Source: FAO. 2022. *Ukraine: Impact assessment results (September–October 2022)*. [Internal document]. Rome.

Critical overview by group of oblasts

Front-line (Chernihivska, Dnipropetrovska, Donetska, Kharkivska, Mykolaivska, Sumska and Zaporizka)

Front-line oblasts are the most affected by the impact of the war. Rural households living in these areas show the most concerning findings when compared with households in central and western oblasts. In fact, it emerges that many of the indicators compiled in the analysis are depicting an alarming picture, mutually reinforcing and/or aggravating each other. In these oblasts, more than half of the respondents rely on a single source of income. For most of them, this source of income is the production or sale of agricultural products, both in terms of crops and livestock. Lack of diversity of income is a clear symptom of the vulnerability against possible economic shocks, resulting in a progressive deterioration of the resilience of this population.

On average, 63 percent of the rural households interviewed are involved in agricultural activities – 27 percent report to derive their income from agricultural production and sale of products, while 11 percent derive their income from stable and casual employment in the agriculture sector. In these oblasts, more than one in three respondents (38 percent) reported to have suspended or reduced production due to war. Moreover, 39 percent of households reported significant or drastic (over 25 percent) increase of agricultural (crops sector) production costs while 36 percent experienced increase of livestock production costs, affecting their capacity to produce or to maintain their income levels. The situation is even more concerning in oblasts such as Sumska, Dnipropetrovska, Chernihivska, and Mykolaivska where over 40 percent of the rural households surveyed have suspended or reduced agricultural production due to the war. In addition to increased production costs, 24 percent of surveyed households incurred additional expenses for agricultural production (crops sector) and 22 percent had incurred additional or unusual expenses for livestock production.

The majority of the oblasts along the front-line have also recorded an above national average percentage (over 30 percent) of significant and drastic income decline: Mykolaivska (34 percent), Dnipropetrovska (35 percent), Odeska (39 percent), Sumska (40 percent), Donetska (41 percent), and Zaporizka (43 percent). Some oblasts also reported above national average (15 percent) levels of indebtedness compared with the period before the war, for instance Sumska (28 percent), Zaporizka (26 percent) and Chernivetska (28 percent).

Difficulties in maintaining income levels as per before the war, and the erosion of the capacity to produce is affecting households' access to food and resulting in high share of food expenditure, with approximately 60 percent of households interviewed reporting to spend over half of their total expenditure on food between June and September 2022. The case of Dnipropetrovska is worth noting, where over one in three respondents (35 percent) reported spending over 75 percent of their total expenditure on food.

In terms of coping strategies, 17 percent have adopted Stress coping strategies, 45 percent have adopted Crisis coping strategies and 6 percent have adopted Emergency coping strategies. Higher percentage of rural households adopting Crisis coping strategies are in oblasts such as Kharkivska (43 percent), Chernihivska (47 percent), Sumska and Dnipropetrovska (49 percent) and Zaporizka (almost 58 percent).

In the midst of the alarming humanitarian situation, assistance efforts have been undertaken to assist the populations impacted by the war. Thirty-five percent of rural households in the front-line oblasts received assistance over the period June–September 2022. The oblasts primarily assisted are Zaporizka (66 percent), Mykolaivska (50 percent) and Chernihivska (42 percent). In perspective to the winter season, access to seeds, feed and fodder animals and electricity appear as the greatest needs reported by household for their agricultural production.

Central region (Vinnytska, Cherkaska, Kirovohradka, Poltavska, Odeska, Kyivska, Zhytomyrska)

Findings of the analysis demonstrated that rural households in central oblasts are also extensively impacted by the negative effects of the war. In these oblasts, 81 percent of rural households are involved in agricultural activities – 38 percent reported to derive their income from agricultural production and sale of products, while 11 percent derive their income from stable and casual employment in the agriculture sector. More than one in four respondents reported to have suspended or reduced production due to war (27 percent). In some oblasts the situation is even more concerning, for instance Odesa and Poltava, where respectively 30 percent and 40 percent of the rural households surveyed have suspended or reduced agricultural production due to the war. Moreover, 47 percent of households declared more than 25 percent increase of agricultural (crops sector) production costs while 36 percent experienced increase of livestock production cost. In addition to increased production costs, 24 percent of the rural households incurred in additional expenses for agricultural (crops sector) production and 22 percent had incurred additional or unusual expenses for livestock production.

The majority of these oblasts have also recorded an above average percentage in significant and drastic income decline. Approximately 36 percent of rural households reported significant or drastic decrease of income. Vinnytsya has reported the highest share (over 42 percent) of the households interviewed with significant or drastic decrease in income. When looking at the number of income sources, the majority of these households (62 percent) have a diversified portfolio, relying on two or three sources of income. However, around 19 percent of the rural households also declared to have taken on new debt compared with the period before the war, with oblasts such as Odeska recording 32 percent and Poltavska recording 33 percent.

In terms of food expenditure, on average, 27 percent of the rural households reported to spend over 65 percent of their total expenditure on food, and around 11 percent of them spent three quarter of their total expenditure on food. Kirovohradska, Odeska and Vinnytska reported highest level of food expenditure share. In terms of coping strategies, 20 percent have adopted Stress coping strategies, 39 percent have adopted Crisis coping strategies and 3 percent have adopted Emergency coping strategies. Higher percentage of rural households adopting Crisis coping strategies are observed in Poltavaska (54 percent) and Odeska (45 percent). Assistance was provided to a quarter of the households, with a higher coverage in Kyivska (39 percent) and Vinnytska (34 percent). To ensure continuity of agricultural production, the greatest needs expressed by rural household in central oblasts are access to seed, access to fuel and electricity and access to animal feed or fodder.

Western region (Volynska, Rivnenska, Lvivska, Zakarpatska, Ivano-Frankivska, Chernivetska, Ternopilska, Khmelnytska)

The conflict has triggered most internal displacements in Ukraine in recent years, forcing millions of people to abandon their homes, moving from eastern areas affected by active military operations. Oblasts in the western region report the highest levels of IDPs and refugees with Chernivetska (29 percent), Lvivska (23 percent) and Ternopilska (36 percent) accounting for a significant number of displaced households.

In the western oblasts, 68 percent of the rural households are involved in agricultural activities – 30 percent reported to derive their income from agricultural production and sale of products, while 5 percent derive their income from stable and casual employment in the agricultural sector. Almost one out of every five respondents reported to have stopped or reduced production due to war (19 percent). In some oblasts, the situation is even more concerning, for instance Volynska and Rivnenska, over 25 percent of the rural households surveyed have suspended or reduced agricultural production due to the war. Moreover, 43 percent of the households reported significant and drastic (over 25 percent) increased of agricultural (crops sector) production costs while 34 percent experienced increase of livestock production cost (over 25 percent).

In addition to increased production costs, 40 percent of the surveyed households incurred additional expenses for agricultural production (crops sector) and 73 percent incurred additional or unusual expenses for livestock production. The majority of these oblasts have also recorded an above average percentage in significant and drastic income decline (over 25 percent). In Lvivska, 40 percent of the households reported over 25 percent of significant or drastic decrease in income.

When looking at the number of income sources, more than half of the rural households (54 percent) have a diversified portfolio, relying on two or three sources of income. Approximately 10 percent of the surveyed

reported to have taken on new debts compared with the period before the war, Khmelnytska (17 percent) and Lvivska (14 percent) showed the highest percentages. Although still very high, this is the lowest increase of new debts among the groups of oblasts. On average, around 19 percent of the rural households interviewed reported to spend over 65 percent of their total expenditure on food and around 9 percent of them reported to spend three quarter of their total expenditure on food. Oblasts such as Ternopil'ska and Lvivska reported high level of food expenditure share (18 percent and 14 percent, respectively).

In terms of coping strategies, 17 percent have adopted Stress coping strategies, 36 percent have adopted Crisis coping strategies and 4 percent have adopted Emergency coping strategies. Higher percentage of rural households adopting Crisis coping strategies are observed in oblasts such as Lvivska (51 percent) and Khmelnytska (58 percent).

Although less exposed to the direct impact of the conflict than the front-line and central areas, 21 percent of the rural households received assistance between June and September 2022. This proportion is even higher in Chernivetska (46 percent) and Ternopil'ska (37 percent). Needs reported by households are comparable with those mentioned in the other groups of oblasts: access to seeds (40 percent), pesticides (38 percent) and feed (30 percent) were the most frequently reported needs related to winter agricultural production.

Final considerations

While the situation in Ukraine remains dynamic and unpredictable, rural households, who contribute to a significant portion of the country's agricultural production, are increasingly exposed to the consequences of the war which is affecting their productive capacity and their agricultural-based livelihoods. As a result, progressive adoption of negative coping strategies has been observed and it is already eroding their resilience.

Rural households rely on diversified but limited agricultural production for their own food consumption as well as for displaced persons in rural areas, who are likely to increase in the near future. Their agricultural production depends on and is integrated into the national market, therefore not protected from the negative effects of the war. Significant increases in production costs for both crop and livestock production, interruption and suspension of agricultural production due to war, and related decreases in income are negatively impacting agricultural livelihoods. In turn, this situation results in the use of Stress, Crisis and Emergency coping strategies which show constrained ability to access essential needs, particularly food, as well as to maintain their productive capacities including inputs, fertilizers, animal feed and veterinary services and to access health services.

The rural households living in oblasts along the front-line areas showed the most concerning findings when compared with households in central and western oblasts. However, it is important to note that the impacts are widely spread across the country with rural households in central and western regions also being increasingly affected. These households are hosting a significant number of displaced people with this trend likely to continue in the coming future with the continuation of military operations as well as the damages to the power supply and strategic infrastructures.

In addition, the connection and interdependence between their livelihoods and the overall agricultural economy leaves them exposed to the broader effects of the war on the agricultural sector as observed by repercussion on the costs of production and incomes. Their constrained production, also affected by limited processing capacity, difficulties in accessing the markets and low revenues from selling products is expected to be further compounded by the winter season, when rural households expect major difficulties in access to fuel or electricity to power agricultural equipment, access to fertilizers or pesticides, low benefits from sale of products, and access to seeds.

With the war likely to continue, the current situation risks remaining or worsen. The upcoming winter season and likely further displacement toward the rural areas, the coping capacities of the rural population are likely to progressively be strained. Although households have reported to receive some kind of aid or assistance in the last three months, in addition to usual pension or benefits, the recorded levels of aid or assistance vary significantly amongst the different oblasts. It is critical to protect those households from further deterioration of their productive capacities which are the basis for their resilience. Support rural households' food

production is a mean to mitigate the negative effects of the war on their food security and livelihoods and improve and maintain rural households' hosting capacities. Revitalize and sustain local agriculture while integrate it in the small-scale agricultural economy will strengthen and protect rural households' contribution to the broader agri-food system and enhance the benefits they can access in return.

In addition, it is important to continuously monitor the situation while also provide complementary assessments to reach a comprehensive understanding of the impact of the war on the agriculture sector and how the war is affecting the capacity to produce and market products in Ukraine and outside the country.

Notes

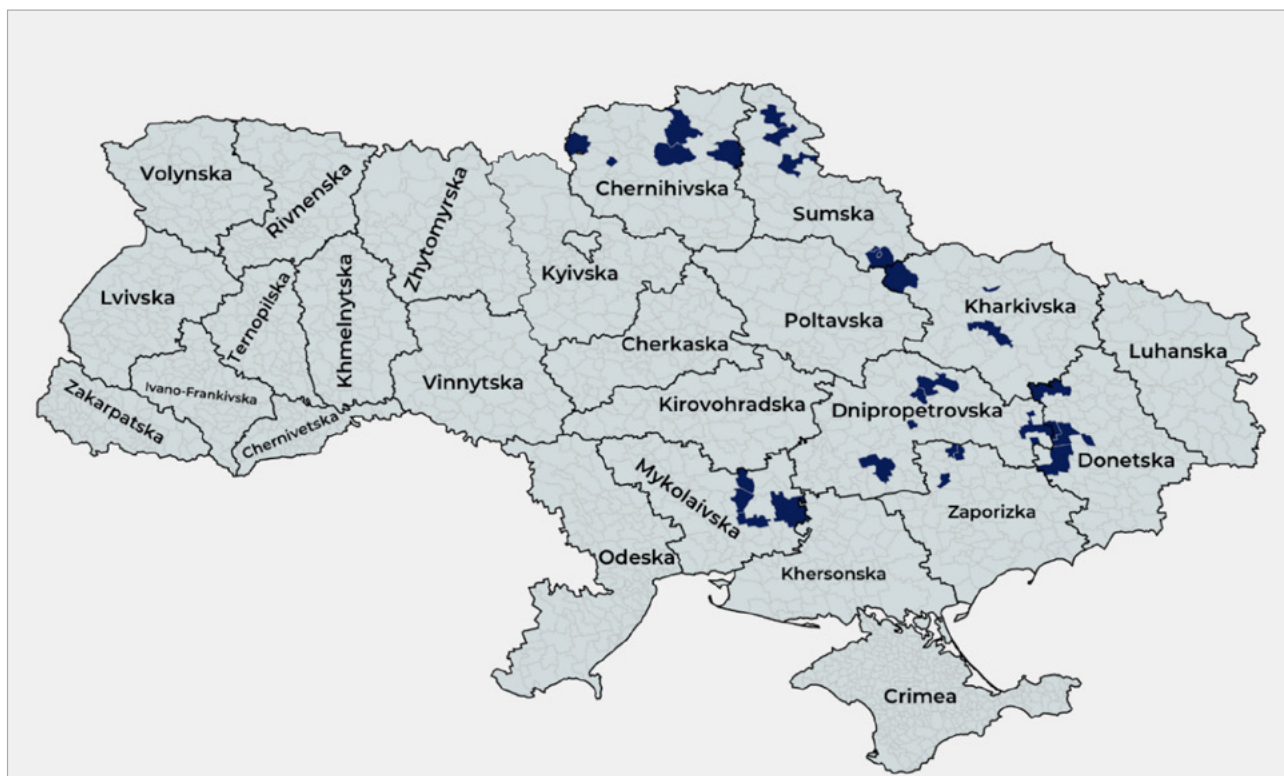
- ¹ **OCHA.** 2022. *Ukraine situation report (12 October 2022)*. New York. <https://reliefweb.int/report/ukraine/ukraine-situation-report-12-oct-2022-enuk>
- ² **World Bank.** 2022. *Ukraine: Rapid Damage and needs assessment*. Washington. <http://documents.worldbank.org/curated/en/099445209072239810/P17884304837910630b9c6040ac12428d5c>
- ³ Individual rural farms natural persons (households) were introduced in 2003 by the Law of Ukraine number 742-IV “On individual rural farms”. For ease of reference, this category is referred to as “rural households” throughout this document. For more information, consult the following link: <https://kse.ua/wp-content/uploads/2021/02/KSE-Smallholders.pdf>
- ⁴ **State Statistics Service of Ukraine.** 2022. *Statistical yearbook of Ukraine 2021*. Kiev. Cited 20 November 2022. www.ukrstat.gov.ua
- ⁵ The Livelihood Coping Strategies – Food Security (LCS-FS) is an indicator used to understand medium and longer-term coping capacity of households in response to lack of food or lack of money to buy food and their ability to overcome challenges in the future. The indicator is derived from a series of questions regarding the households’ experiences with livelihood stress and asset depletion to cope with food shortages. For more information on LCS-FS calculations, please refer to https://wfp-vam.github.io/RBD_FS_CH_guide_EN/livelihood-coping-strategies.html
- ⁶ Other categories were “don’t know” or “refuse” with around 2 percent.
- ⁷ Rural households are rural residents mostly involved in backyard farming/small-scale agricultural production not officially registered that rely on their own or locally procured inputs and provide for their own consumption. They also sell products locally, contributing to local supply chains.
- ⁸ **Conforti, P., Markova, G., & Tochkov, D.** 2020. *FAO’s methodology for damage and loss assessment in agriculture*. *FAO Statistics Working Paper 19-17*. Rome. <https://doi.org/10.4060/ca6990en>
- ⁹ **FAO.** 2017. *Counting the cost: Agriculture in Syria after six years of crisis*. Rome. fao.org/documents/card/en/c/170d7955-8d8d-45a8-aed2-5a7dcb143461

Sample design and methodology

The sample is nationally representative of the rural population⁷ and includes 20 oblasts (excluding Zaporizhzhia, and Donetsk oblasts for which the analysis is conducted only in selected hromadas). A sample stratified approach was adopted at oblast level targeting 5 230 households randomly selected from lists made available by local authorities. The sample size for rural households has a theoretical statistical error of 10.0 percent for a level of confidence of 95 percent.

In addition, considering (i) the limitations of access for specific oblasts that are partially occupied (e.g. Donetsk, Kharkivska, and Zaporizka), (ii) the specific conditions of de-occupied oblasts (e.g. Chernihivska and Sumska) and (iii) oblasts near the front-line and most affected by active military operations (e.g. Dnipropetrovska and Mykolaivska), specific case studies on hromadas were conducted according to accessibility of the hromadas and areas for potential intervention (Figure 37).

Figure 37. Map indicating the selected hromadas in oblasts most affected by the war



Source: FAO. 2022. Ukraine: Impact assessment results (September–October 2022). In: *FAO Data in Emergencies Hub*. Rome. Cited 28 November 2022. <https://data-in-emergencies.fao.org>

FAO implemented the assessment with the support of three local implementing partners, including i) All-Ukrainian Association of village councils and amalgamated communities; ii) East-Ukrainian Agricultural Advisory Services for conducting the survey in Donetsk oblast; and iii) Office of perspective development for conducting the survey in Zaporizka oblast. The All-Ukrainian Association of village councils and amalgamated

communities have a wide network structure in all regions of Ukraine, where direct communication with communities is carried out by regional leaders therefore access to lists of contacts for rural residents and farmers in all rural hromada level for each oblast.

FAO prepared, translated, and adapted to the local context the questionnaires for rural households. The enumerators of the implementing partners were trained to ensure accurate common understanding of the overall questionnaire, and to agree on the interview strategy. Considering the ongoing war and diminished security in some of the targeted areas, the implementing partners conducted phone interviews, based on the instructions and sample methodology provided by FAO. The respondents were selected randomly, and the interviews were implemented until the established number of interviews had been completed in each oblast. As result, the implementing partners delivered a final and cleaned dataset in KoBo Collect format to FAO for data analysis and preparation of the report. Data have been processed taking the appropriate sampling weights into consideration so that results refer to the entire target population of the people living in the studied areas.

The FAO Agriculture Damage and Loss methodology⁸ was used to understand the impact of the war on the crop and livestock sectors. The same methodology that was previously used by FAO in 2016 during the conflict in the Syrian Arab Republic,⁹ was further adjusted and extended to account for the complexities related to accessing the target population and the duration of the conflict.

For all surveys, the data collection was done remotely through phone calls, on basis of random sampling. The enumerators entered the data in an electronic database, which following call-backs for verification and data cleaning were used for extrapolation of various indicators for the calculations related to damages and losses. Asset valuations (e.g. replacement values of assets, production costs and average yields) were established based on literature reviews and statistics. The results on the various indicators for the sample were correlated in multiplication frames to the national statistical data for development of the totals, at the oblast and national levels. As a final step, the values from the asset valuations were added to the multiplication frames to produce the overall damage and loss valuations.

Study limitations

- The main limitation of the study is that Ukraine is currently under active military operations. People's reaction to a phone or face-to-face interview is in general positive but there are clear limitations to reaching people and to the actions FAO can undertake.
- Many standard statistical approaches are not valid for sampling, due to the huge relocations of the population and absence of relevant statistics about the current status of the rural population.

- The Ukrainian government has introduced mandatory evacuation of residents of Ukrainian-controlled parts of Donetsk Oblast.
- The oblasts of Donetsk, Kharkiv, Zaporizka were partially occupied at the time of conducting the survey (i.e. September), so the survey covered only the Ukrainian controlled parts of the oblasts.

Table 2. Sampling for households (by rural population)

Oblast	Rural population	Sample number of households
Cherkaska	495 183	169
Chernihivska*	325 980	479
Chernivetska	504 485	171
Dnipropetrovska*	490 406	473
Donetska**	365 922	247
Ivano-Frankivska	749 252	171
Kharkivska**	483 844	318
Khmelnyska	515 517	173
Kirovohradska	327 854	187
Kyivska	686 521	133
Lvivska	961 776	197
Mykolaivska*	341 123	495
Odeska	769 856	170
Poltavska	504 203	171
Rivnenska	599 942	170
Sumska*	312 597	471
Ternopilska	550 354	173
Vinnyska	719 927	175
Volynska	487 867	179
Zakarpatska	781 115	168
Zaporizka**	368 552	153
Zhytomyrska	475 772	187
Total	11 818 048	5 230

Sample based on official State Statistics Service of Ukraine data

*Oblast with hromada case studies conducted

** Partially occupied oblast

Source: FAO. 2022. *Ukraine: Impact assessment results (September–October 2022)*. [Internal document], Rome.

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