

**Voluntary Report** – Voluntary - Public Distribution

**Date:** May 23, 2022

**Report Number:** UP2022-0030

**Report Name:** Households Agricultural Production

**Country:** Ukraine

**Post:** Kyiv

**Report Category:** Agricultural Situation

**Prepared By:** Oleksandr Tarassevych

**Approved By:** Laura Geller

**Report Highlights:**

Russia's invasion of Ukraine has become an ultimate test of the resilience of Ukrainian agriculture. The country's food security depends on a variety of factors, including farmers' ability to produce key staple foods. During the war, the Ukrainian household sector has become a vital supplier of dairy products, beef, pork, vegetables, fruits, berries, and many other non-commodity food products. Thanks to the natural resilience of household farming, Ukraine should not be expecting a major food shortage, but humanitarian food assistance may be needed in active conflict areas. This report provides basic information on the 8.3 million Ukrainian households involved in agricultural production, and how they support food security during the war.

## **Executive Summary**

Over half of Ukraine's 14.7 million households are involved in small-scale agricultural production of some sort. These 8.3 million households provide for the food needs of their families and communities. Most households operate on relatively small plots of land and concentrate on non-commodity crops, dairy, and poultry production. Rural families have long viewed their vegetable gardens and agricultural animals as a "safety net" meant to provide families with stable food (and/or income) in the case of extraordinary events such as major economic crises, temporary unemployment, epidemics, or a war. Regretfully, this system has been tested many times in recent years and is now undergoing a major test after Russia invaded Ukraine in February 2022.

There are well-rooted cultural traditions that have kept household production in place during short periods of economic recoveries. Over time, the number of households in Ukraine is decreasing, but this decrease should sooner be attributed to general urbanization and rural population decrease, rather than to a drop in the popularity of household farming. In private conversations, Ukrainian rural residents often reject economic arguments about the lack of efficiency and profitability of household activities. Ukrainian industrial farming has gradually increased its efficiency over the last 20 years, while household practices remained comparatively inefficient and unchanged. A significant use of hand labor, basic agronomic practices, lack of veterinary support, basic feeding techniques, and under-performing, but resilient animal genetics resulted in modest, but very sturdy performance which has proved to be immune to many external shocks. The war is expected to fortify Ukrainian households and increase the perception of them as the only risk management tool available to many Ukrainians. Although statistics are unavailable, some households responded by increasing sown area or other production in response to the start of the war.

The recent COVID-19 pandemic tested Ukrainian household production as well. Many open-air markets were closed due to the pandemic, breaking the link between rural households and their consumers in larger towns and cities. In many cases, local authorities were unable to close those markets completely due to local resistance and the growth of unofficial trade. A shortage of certain vegetables, fruits, meats, and basic dairy products was another reason for soft quarantine enforcement. Eventually, the Ukrainian central government had to retreat to a more flexible "adaptive quarantine" policy that allowed for open-air markets to function, providing uninterrupted sales to rural families.

**NOTE:** The data below is based on the State Statistical Service of Ukraine (SSSU) 2020 Households Survey, and agricultural production data. Very little current data is available, as SSSU has officially stopped publishing all new data until the war is over.



*Open-air market in Odessa, Ukraine*

### **Ukrainian Households Structure**

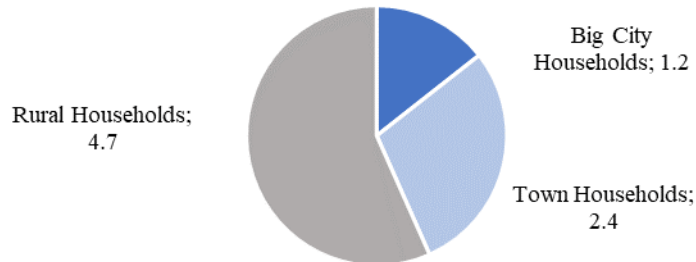
Households concentrate on small-scale production and rely on their own or locally procured inputs. The efficiency of such a production model is not very high. In previous sectoral GAIN Reports, they were criticized for lower productivity in comparison to their larger-scale industrial competitors. However, the Russian invasion of Ukraine resulted in major supply chain breaks causing challenges for big industrial farms in the procurement of inputs and significant uncertainty over the export of commodities. Meanwhile, family households that have always relied on local inputs and sales were better insulated from the supply chain shocks. Products that were not consumed in households were sold/shared with neighbors or sold in nearby towns and villages, playing a significant role ensuring food security during wartime.

The general definition of a household used in economics and Ukrainian official statistics describe it as an economic unit of one or several persons who live in the same dwelling and share meals. It may also consist of a single-family or another group of people. The household is the basic unit of analysis in many social, microeconomic, and government models, and is important to economics and inheritance.

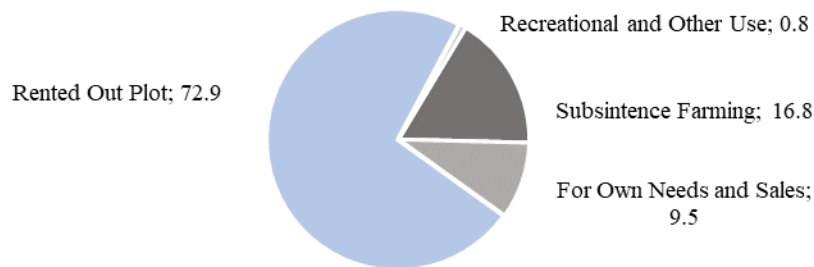
The Statistical Service of Ukraine encounters over 14.7 million households, each consisting of 2.58 individuals. Over time, the number of households is decreasing, following the population decline due to natural causes and immigration. The number of rural households is also on a long-term decline, following urbanization trends. Although 8.3 million Ukrainian households possess land plots, only 2.1 million are involved in working on the

land. The majority of those are concentrated in rural areas, although town and city household farming does exist. Many households rent out their plots to industrial farms, independent farmers, or to other households.

### Distribution of Households with Land Plots by Administrative Division, Million

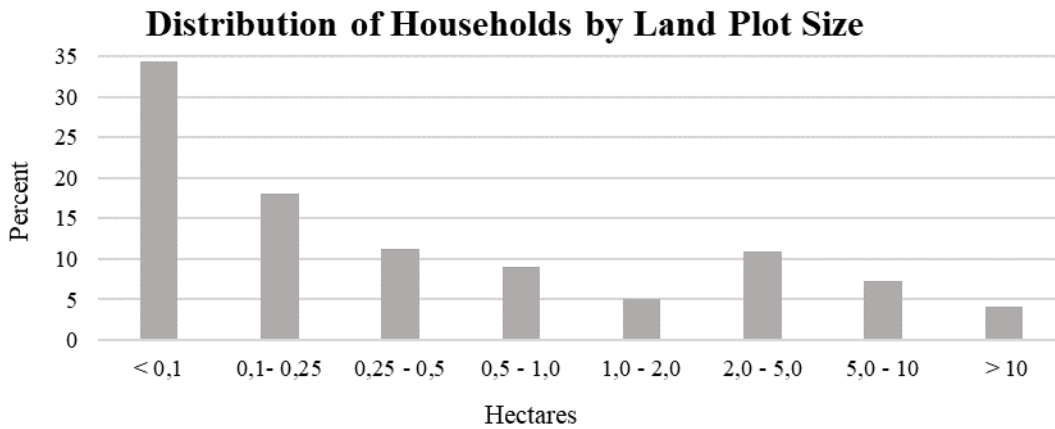


### Distribution of Households Land Area by Types, Percent



Source: State Statics Service of Ukraine

Although households can contract services on a commercial basis for plowing or seeding, a great deal of manual labor is involved. In most cases, rural families contract services for hard work such as plowing, potato planting, or harvesting. They also purchase fertilizers and feeds for livestock and poultry. In most cases, householders use their own vehicles to deliver produce to an open-air market in a nearby town or a city, although transportation services are sometimes procured for that purpose. Over time, some households grew in size and became western-type family farms or small businesses. However, most of the larger units are still qualified as household farms.



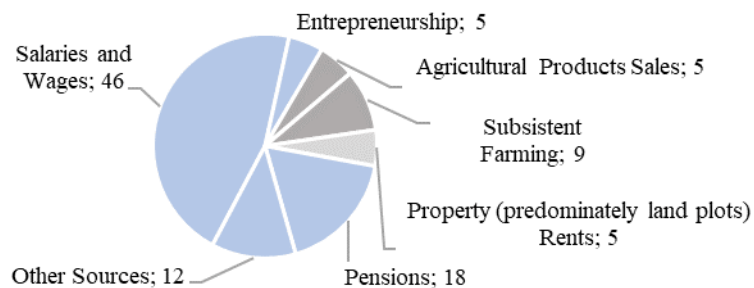
*Source: State Statics Service of Ukraine*

An aging rural population and a significant need for manual labor put a cap on household land plot size. Over half of plots do not exceed one-quarter of a hectare. Those households that treat their agricultural production as a business could not make it profitable on such small plots. They must grow in size, adding their land titles (received after collective farm titling in the early 2000’s) to near-house plots or renting additional plots from the neighbors. This explains the increased number of households operating on 2-5- and 5-10-hectare plots. This way the number of households that use their land as a profit-oriented crops business in contrast to “traditional” households that are viewed as not profit-oriented “safety nets” is close to 1.5 million (operating on 2-10 hectares plots).

Plots above 10 hectares move into the commercially-oriented households category. Although more vulnerable during wartime than traditional households due to their reliance on procured inputs and services, commercially-oriented households produce the majority of vegetables, fruits, and berries in the country. Anecdotal evidence suggests that commercial households have managed to keep or even expand operations in warfare-unaffected areas.

Limited household income data shows that agricultural production is responsible only for 11 percent of household incomes, which mainly covers the family’s food needs.

### Structure of Households Income in Rural Areas in 2020, Percent

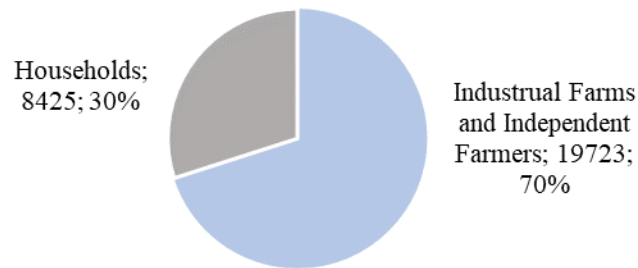


*Source: State Statics Service of Ukraine*

## Production of Plant Products

Although large industrial holdings and independent family farms are responsible for the majority of sown agricultural area, household farms remain important land users with a 30 percent share of total agricultural land. During land titling of the early 2000s most rural dwellers received 1-5 hectares plots, but most of them are rented out to larger businesses.

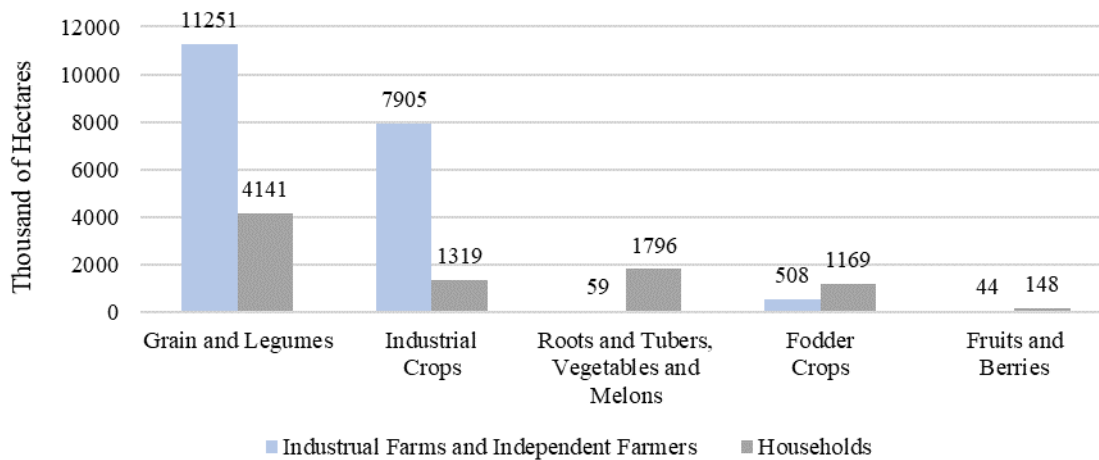
### **Agricultural Crops Sown Area, Thousand of Hectares**



*Source: State Statics Service of Ukraine*

Traditionally households concentrated on high value-added crops that do not require a lot of land: vegetables (with potatoes being by far the most important crop), grapes, and other fruits. The recent price increase of grains and legumes resulted in the expansion of the household role in those crops as well. If tillage and harvesting services are commercially available, grain production on smaller plots may generate higher incomes than on rented plots. However, small plot size combined with the inability to use modern production techniques tends to result in lower yields in comparison to industrial farms. The increased household role in the production of industrial crops is also profit driven. For example, sky-high sunflower prices make small-scale production worthwhile, while lower priced sugar beets are not as attractive.

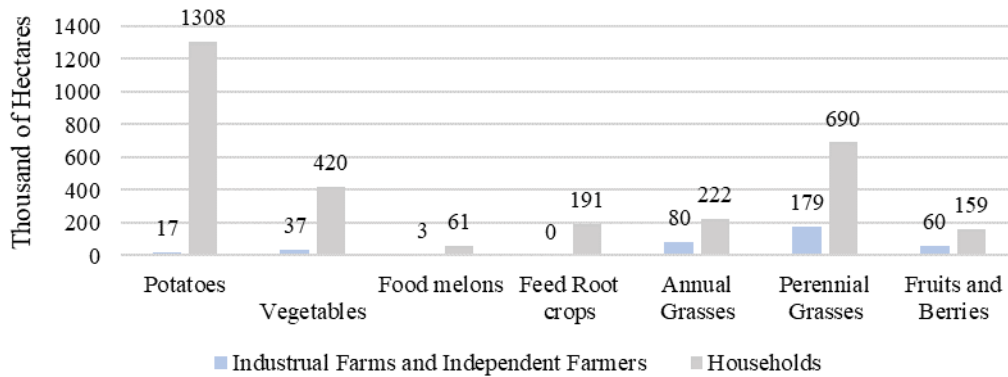
### **Sown Area of Agricultural Crops**



*Source: State Statics Service of Ukraine; FAS Kyiv Calculations*

Household agriculture’s dominance in livestock production and its strong role in swine breeding results in an increased area for fodder crops, including feed beets and grasses. In livestock (mainly dairy) production households rely on low-cost models. Thus, the availability of large pastures and hay production is important.

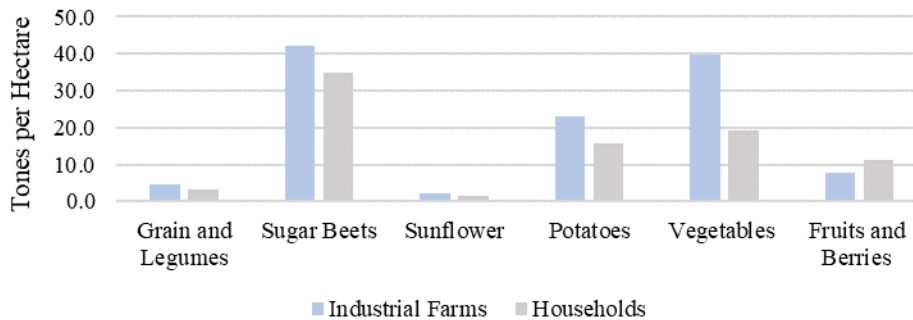
### Crop Area Where Households Dominate



Source: State Statics Service of Ukraine

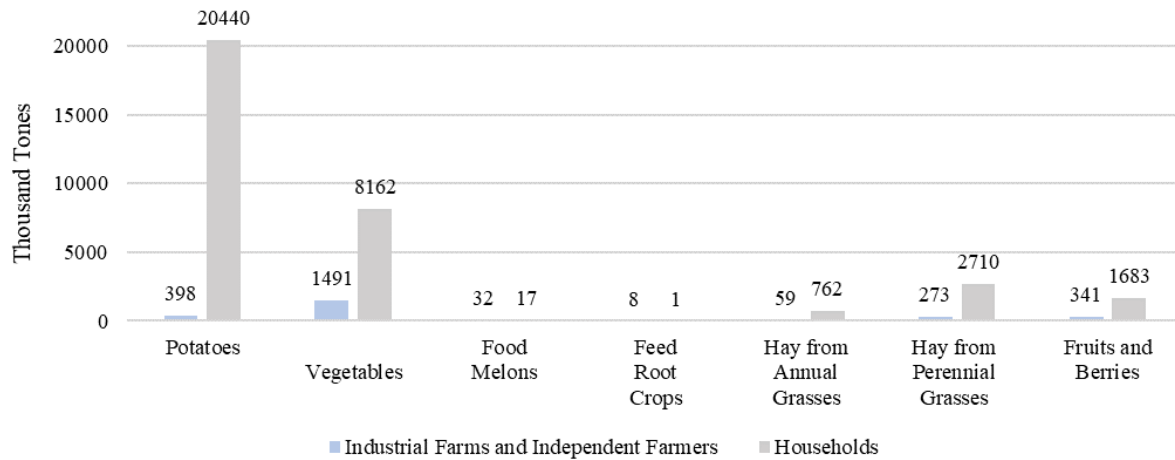
Although the efficiency of households is generally lower than in industrial farms (with exception of fruits and berries), their role in food supplies of these products remains decisive. Industrial farms continue to be non-competitive in almost all fruits and vegetables including potatoes, which occupy an important role in the Ukrainian diet and are often regarded as important staple food as bread products.

### Productivity of the Major Crops



Source: State Statics Service of Ukraine

### Volume of Production by Households and Industrial Farms

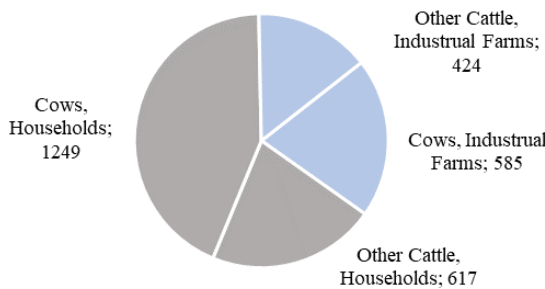


Source: State Statics Service of Ukraine

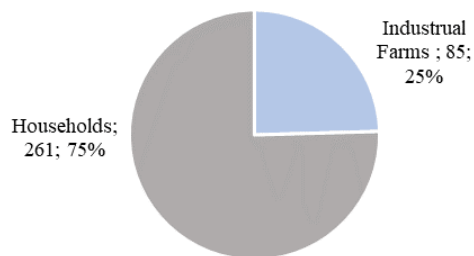
### Production of Livestock Products

Households traditionally dominate in the production of milk and (more as a side-product) beef. Those rural families which view household production as a “safety net” rely on milk as a critically important feature of the household agricultural operations, especially for children. Those families that rely on additional cash flow from their households view milk production as a reliable source of constant income throughout the entire year. In contrast, beef production provides a one-time significant payment at slaughter. Since a dairy cow sale for slaughter in the case of extreme need would serve this purpose, specialized beef production was never developed by the households and all beef production is treated as an auxiliary enterprise to dairy production.

**Cattle Population Distribution, Thousand Heads**



**Beef Production in Slaughter Weight, Thousand Metric Tones\***



Source: State Statics Service of Ukraine

\*Statistics does not differentiate between dairy-purpose cattle and beef cattle derived beef



## Beef and Live Animal Export

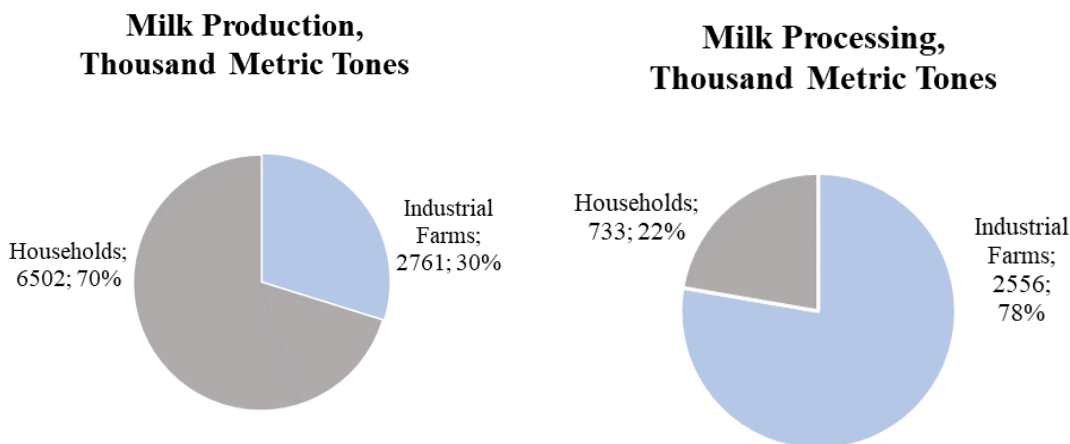
Households use traditional low-cost techniques for male calves feeding. Grazing is used intensively to save on feed costs. The vast majority of animals are either slaughtered or exported live at a young age. Official statistics indicate that 274 kilograms was the average live cattle slaughter weight for households in 2020. This number includes steers and non-performing cows for slaughter. Still, industrial farm performance is not much better with 386 kilograms (LWE).

Numerous attempts to increase beef production and efficiency by introducing western-style feedlots have failed. The main reasons include the inability to procure a sufficient number of gender animals when needed, uneven age of animals in different feedlot groups, poor veterinary conditions of purchased animals, low daily gains at feedlots, and a variety of business-related issues from a long pay-back period to other high business risks.

Ukraine remains a lower-middle-income country according to the World Bank classification. Demand for more expensive animal proteins such as beef remains limited. Excess supply results in lower domestic beef prices (world market price minus export-related cost) creating export incentives. Unexpectedly this situation resulted in the discovery of the live animal export markets, as beef exports remained limited. Households discovered several export markets for live cattle in North Africa and Central Asia, which somewhat supported household cattle production. Those export markets were put on hold after Russia invaded and blocked Ukrainian seaports. The recent transit agreement between Ukraine and EU will allow for the resumption of beef exports to third-country markets. Live cattle transit through the EU remains restricted.

## Dairy

Although household production is responsible for 70 percent of all Ukrainian milk, the majority of this milk is either consumed by families or sold at local open-air market in a nearby town or a city. A significant share of milk sold at open-air markets is processed into basic traditional products: soft cheese and sour cream. Production of butter and other dairy products does exist but is insignificant. Milk is not pasteurized prior to processing; thus, the shelf lives of these home-made dairy products are rather short.



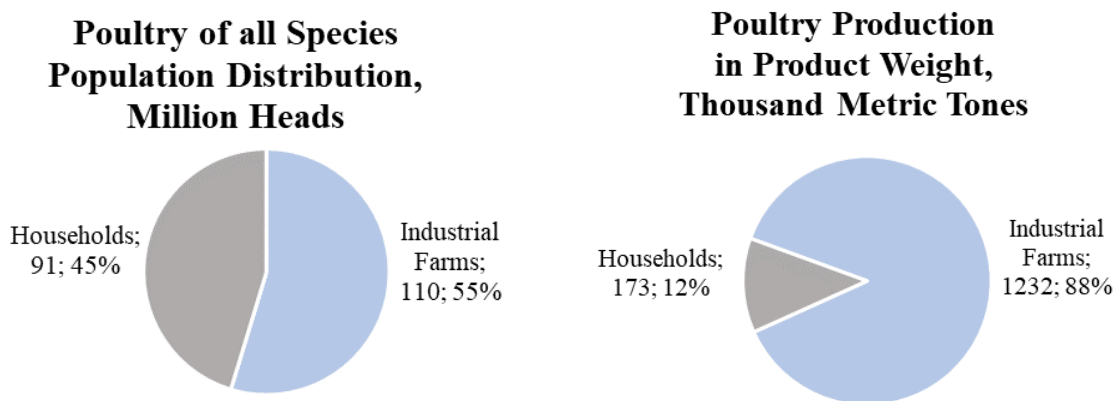
Source: State Statics Service of Ukraine

The great deal of manual labor during milk production (including milking) leads to higher bacterial insemination and an overall poor quality of Ukrainian household milk. Primitive animal husbandry practices and a lack of proper veterinary controls also result in high levels of somatic cells present in milk. Pulled milk batches collected by milk processors are at risk of being spoiled by individual households that are not following proper sanitation procedures, which is difficult to identify and address. Overall low milk quality has resulted in a gradual decrease in the use of households as suppliers by industrial Ukrainian dairy processors. Being responsible for 70 percent of all milk produced in the country, households are responsible only for 22 percent of industrially procured and processed milk. Decreased processing industry demand also resulted in a price discount limiting household milk to open-air market sales. During the first month of Russian aggression, when many industrial processors had to stop operations, the entire country relied on open-air markets for its dairy products need. As dairy processing is resuming, open-air markets remain a resilient alternative for the majority of Ukrainians.

**Poultry**

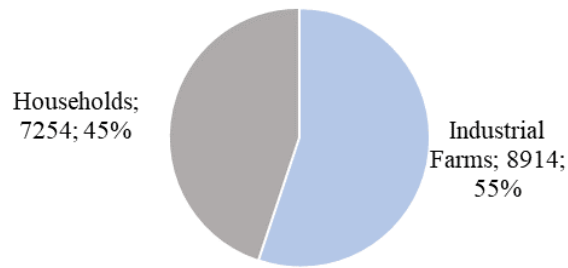
Poultry is the least industrialized household enterprise. A significant number of households keep chickens or other poultry due to very low production costs and little labor need. Both eggs and poultry meat are considered important. However, only a small share of household-produced eggs and an even smaller share of poultry meat are sold in open-air markets. Most of the poultry and eggs produced are consumed by the families themselves. The majority of chicken breeds are dual-purpose, but egg layers and broilers and not uncommon. Specialized breeds are especially popular among larger households which sell their products in open-air markets.

Ukraine’s industrial broiler and egg production sector is very efficient. In 2020, Ukraine was the world’s seventh largest poultry exporter and a significant producer and exporter of egg products. Households will not be able to increase chicken production significantly during the war, so the maintenance of industrial broiler production in central and western Ukraine will be important to maintain an uninterrupted supply of poultry meat to the population. This protein is responsible for 49 percent of all animal protein in the Ukrainian diet.



Source: State Statics Service of Ukraine

### Eggs Production, Million

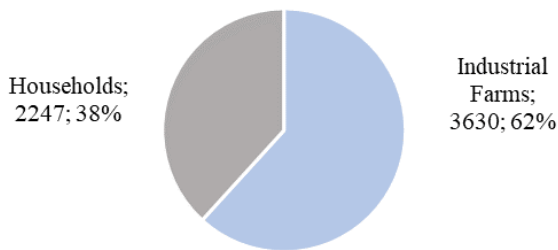


Source: State Statics Service of Ukraine

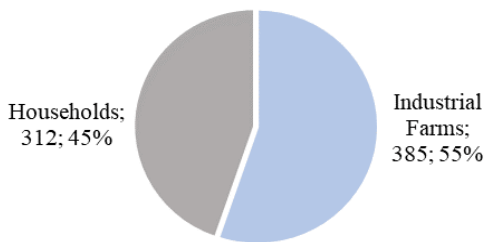
### Pork

Dominant in pork production in the late 1990s and early 2000s, Ukrainian households lost their role as the major supplier in the mid-2000s when modern, integrated swine breeding industrial farms slowly took over the market. Nevertheless, households remain responsible for almost half of Ukrainian pork production. Although industrial slaughter and processing exist, the biggest share of pork is sold in open-air markets after backyard slaughter. In most cases, pork is sold by small rural butcher businesses, not by the families themselves. The war will have some negative impacts on household pork production as some feed ingredients and veterinary inputs supplies will be interrupted by supply chain breaks. However, the majority of feeds are locally produced or procured, so this enterprise is expected to remain resilient to war-related shocks.

### Pigs Population Distribution, Thousand Heads



### Pork Production in Slaughter Weight, Thousand Metric Tones



Source: State Statics Service of Ukraine

### Conclusion

In 2020, Ukrainian households were responsible for almost 42 percent of total agricultural production, with activities concentrated predominately in non-commodity products or products that are not exported by Ukraine in significant quantities. Their shares in the production of milk (70 percent), beef (75 percent), and pork (45 percent) are very significant. The share of household farms' agricultural output is expected to be even higher in 2022 as many industrial farms had to curtail their operations. Thanks to the natural resilience of household farming,

Ukraine should not be expecting a major food shortage. Ukrainian consumers may have to increase their shopping at open-air markets and accept smaller supplies of industrially processed products (especially dairy), but Ukraine will remain food security despite the Russian invasion. Although these conclusions are expected to stand true for the entire country in general, the need for humanitarian food aid may be significant in areas active combat areas.

**Attachments:**

No Attachments.