

Food and drinking water supply in times of war

Lessons from Ukraine and Poland in the context of a large influx of refugees



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Preface

Russia's full-scale invasion of Ukraine in 2022 has had far-reaching consequences for food and drinking water supply in Ukraine and Poland. To strengthen Sweden's preparedness, the National Food Agency is gathering experiences and lessons learned from food and water supply during the war.

This publication aims to compile and disseminate knowledge about the challenges and solutions identified in Ukraine and Poland during the first two months of the full-scale invasion, with a focus on cities that have experienced a large influx of refugees.

The assignment has been commissioned by the Swedish Food Agency to Stockholm University in collaboration with Norconsult. The content is based on interviews with representatives from organisations and authorities present in Ukraine and Poland during the invasion of Ukraine in 2022. Interviews were conducted in two Polish cities - Rzeszów och Kraków – and two Ukrainian cities – Lviv och Uzjhorod. This is complemented by analyses of open sources. The work is carried out within the framework of the agency's responsibility to strengthen food and water preparedness and supply capacity in Sweden.

The information gathered can serve as support in planning and developing strategies to ensure access to food and drinking water during crisis and war, and to build a resilient system for food and drinking water supply in Sweden.

The target groups for this report are actors who work with food and drinking water preparedness within national, regional and local government authorities, food companies, drinking water production and distribution and non-governmental organisations.

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Abbreviations

IDPs	Internally displaced people
INGO	International non-governmental organisation
IOM	International Organisation for Migration
NGO	Non-governmental organisation
UN	United Nations
UNHCR	UN Refugee Agency
WCK	World Central Kitchen

Glossary

Food bank - An NGO or nonprofit organisation with the main goal of collecting, storing and distributing food to people in need.

Forcibly displaced persons - A broader term covering both IDPs or refugees, referring to those who have been forced to leave their homes due to war, persecution, or disaster.

Martial law - The temporary substitution of military authority for civilian rule.

NGOs - Independent, non-profit organisations that provide humanitarian assistance, social services, and advocacy without direct government control.

IDPs - Individuals forced to flee their homes due to conflict, violence or disasters but who remain within their country's borders.

INGOs - NGOs that operate across multiple countries.

International humanitarian organizations - Large-scale global agencies that provide emergency relief and long-term assistance.

Refugees - Individuals who cross international borders to escape conflict, persecution, or disasters and seek and see protection in another country.

Voucher system - A financial assistance mechanism that allows beneficiaries to purchase essential goods and services through prepaid vouchers.

Vodokanals - A Ukrainian term for municipal water utilities or water management.

Voivodeship - A Polish term for an administrative division or province. Poland is divided into 16 voivodeships which function as a regional government unit.¹

¹ For more on Poland's voivodeships, see: https://european-union.europa.eu/principles-countries-history/eu-countries/poland_en

Introduction

On 24 February 2022, the Russian Federation launched an unlawful and unprovoked full-scale invasion of Ukraine. This led to millions of people fleeing their homes in search of safer locations. Approximately one-third of Ukrainians were forced from their homes in 2022 (Freedom House, 2023). As of mid-2023, the estimated number of forcibly displaced persons was around 11.3 million. More than 6 million individuals had crossed the border to escape the war, while about 5.1 million Ukrainians were estimated to be internally displaced persons (IDPs). Poland has welcomed the largest number of Ukrainian refugees, hosting nearly 60 percent of all refugees from Ukraine (Freedom House, 2023). Of those who have fled the country, it is estimated that 90% are women and children, while most men aged 18 to 60 are required to remain in Ukraine under martial law (UN Women & CARE International, 2022).

Due to the large influx of forcefully displaced people, especially in the early months of the full-scale war, both Ukraine and Poland faced significant food- and drinking water-related challenges. The refugees who passed through Poland on their way to other European countries also had needs that had to be met. The sheer number of forcefully displaced persons overwhelmed regional and local authorities in both countries and challenged both nations' ability to provide drinking water and food to the people in need.

The purpose of this report is to draw lessons from the experiences of Ukraine and Poland in managing food and water supplies during the first two months of Russia's full-scale invasion of Ukraine. This report is structured around five main focus areas:

- The overall state of preparedness in Ukraine and Poland
- The main challenges in food and water supply to forcefully displaced people
- The role of various actors engaged in early crisis response
- Systems for funding during the war
- Coordination of actors involved

The report is based on interviews with representatives of non-governmental organisations (NGOs), business representatives, international NGOs (INGOs), regional and municipal authorities, as well as international humanitarian organisations in Poland and Ukraine. The interviews were collected between February and June 2024 and covered the interviewees' experiences during the first two months of the full-scale invasion. A total of 28 interviews were conducted and analysed: 10 in Poland and 18 in Ukraine (for the full list of anonymised interviews, see Appendix 1). The interviews lasted between 20 and 120 minutes, depending on the interviewees' relevant experience and involvement. The interviews were conducted in Polish and Ukrainian, respectively, to facilitate discussions. Interviews with international humanitarian organisations were conducted in English. The interviews were held in two Polish cities - Rzeszów and Kraków - and two Ukrainian cities - Lviv and Uzhhorod. These cities were selected for their significant roles in hosting or facilitating the movement of a large number of forcefully displaced Ukrainians. For the location of the cities, see Appendix 2.

Key findings

The analysis revealed a number of key findings:

- The significant displacement of people from and within Ukraine revealed various vulnerabilities in both Ukraine and Poland, along with a general unpreparedness for such a scenario.
- Neither Ukraine nor Poland experienced significant impacts from the war on the quality of centrally supplied drinking water or sewage services. The primary difficulties were instead related to food supply and the delivery of food and bottled water to IDPs and refugees.
- In both countries, particularly in the early weeks of the war, local and regional authorities relied significantly on local businesses, NGOs, and citizens before international humanitarian organizations could commence their operations.
- Local NGOs' and citizens' self-mobilisation were vital for an early response in both countries. From a long-term perspective, coordinating all parties involved was crucial to ensuring a consistent and sufficient supply of food and water for displaced individuals. Poor coordination among involved actors in both countries, particularly in the initial days and weeks, resulted in food waste and ineffective resource management.
- Unlike in Ukraine, where local authorities faced numerous war-related challenges, in Poland, local and regional authorities took on a more significant role, where they coordinated actors and aid supply.
- Local businesses (large and small) - including food producers, municipal water companies, restaurants, and logistics companies - played a vital role in both countries by supplying bottled water, food, and hot meals. They also provided essential logistical support, utilising their extensive supplier networks, access to resources such as transportation and fuel, and experience in delivering large volumes of goods.
- A shortage of warehouses, limited cooking equipment and storage facilities, poor coordination, and insufficient communication among the various actors involved in crisis management hindered the effective supply and storage of food and bottled water.
- Food waste, the abundance of plastic bottles, and the lack of sustainable tableware solutions created challenges for recycling and waste management for local authorities in both countries.
- In Poland, the operations of national NGOs, INGOs, and international humanitarian organizations were hindered by the absence of a legislative framework to regulate their activities during crisis situations. This issue arose from the lack of experience in coordinating with such actors on this large scale.

Results and discussion

Overall preparedness and prior experiences

Lessons learned:

- It is important to have robust contingency plans for all possible scenarios, including highly unlikely but potentially severe ones, such as a full-scale invasion of Sweden or its neighbouring countries.
- It is necessary to review how legislation and regulations may need to be adapted to the new conditions that could arise as a result of armed conflict.
- The experience and networks of key actors involved in past crisis management efforts should be systematically leveraged for future crises.

Lack of comprehensive preparedness for all scenarios

In the initial months of Russia's full-scale war, both Ukraine and Poland faced overwhelming challenges due to their general lack of preparedness (with some exceptions, as discussed below). Ukraine was not equipped to handle the vast number of IDPs, while Poland was unprepared for the massive influx of refugees seeking temporary protection or passing through on their way to other European countries. A representative from a bread-producing company in Lviv stated:

“It was difficult to work with a government that was in chaos. It is not a criticism; it was a horror movie that we all found ourselves in [...]. They did not know what to do... In the end, we found solutions, but time was lost. For me, it's all because of the lack of preparedness for war. Although they [the government] mobilised quite quickly and made good decisions that we are using, but in the first six months they were absolutely unprepared.”

This lack of preparedness in both countries resulted in poor coordination in addressing the food and water needs, often leading to ineffective management of provisions for Ukrainian IDPs/refugees. As a representative of a local business in Lviv noted, the lack of coordinated response made it difficult for small-scale companies to help:

“There was no centralised hub or centre where a kitchen could be set up and where supplies of food could be coordinated from [...]. Even as product providers, we refused delivery and asked people to come for the products themselves because it was impossible to handle a million requests with our single vehicle, especially when that vehicle also had to distribute products to stores.”

Out of 28 interviewees, only three indicated some level of preparedness for war: two in Ukraine and one in Poland. In Ukraine, the respondents who reported initial preparedness represented a bread-producing business and an NGO. A representative of a large-scale bread producer in Lviv stated:

“When the first serious warning signals about the possibility of Russian invasion emerged, [...] we developed protocols for each function, who would do what in case of an invasion, and took various preventive measures. [...] As a person, I personally did not accept the idea of

war, but as a manager, I had clear protocols with deadlines and tasks. This allowed us to maintain production. We kept our supply chains; we had alternative supply chains. We had the appropriate financial safeguards in place [...]. This allowed us to stay afloat during this crazy stressful period. [...] We also had bomb shelters from before, those that had not been opened for 40 years, and were cluttered. So, [before the full-scale invasion] we renovated and cleaned them, installed air-conditioning and Wi-Fi.”

The importance of pre-established legislation

One reason this business was better prepared than others was its pre-established legislation, monitoring systems, and experience in addressing war-related challenges since 2014, when Russia first attacked Ukraine in the east and occupied Crimea.

“As a big enterprise, even before the full-scale invasion, as the relevant law states, we had certain mobilisation tasks – our obligations to the Armed Forces of Ukraine. We had [the corresponding] documents and calculations about how we would provide for the Armed Forces of Ukraine. This is what the law says and what we have had ready for a long time; it was updated, and the government monitors this issue [...].”

While some laws and regulations have been in place in Ukraine since 2014 to assist certain producers in their preparations, non-state actors in Poland encountered administrative and legal challenges. For instance, the absence of legal clarity surrounding the collection of financial donations, coupled with subsequent bureaucratic scrutiny, imposed additional burdens on NGOs who helped during the emergency. A representative of an NGO in Rzeszów stated:

“Now we have hard times with control institutions; financial authorities demand various documents and explanations. [...] here [in Poland] you have to have a full set of documentation from the Ukrainian side which received our aid. [...] This is the most painful to me because we worked so hard [...] and now there are misunderstandings [...].”

In 2022, various Polish organisations operated in legally grey areas. They had to act swiftly to meet urgent needs, often without the necessary legal frameworks. This legal limbo was particularly evident in the testimonies of those involved in food supply efforts, who operated without the necessary permits and documents.

Advantage of prior experience and crisis preparedness

Organizations who had prior experience in dealing with crisis situations responded in a more efficient way. A representative from an NGO in Rzeszów mentioned that the existing networks, material resources, facilities, equipment, and infrastructure developed for flood response in previous years enabled them to mobilise quickly and assist Ukrainian refugees:

“We had it worked out during floods, so for certain, such cooperation, information exchange and suitable people, [...] because it is not about wanting to help, but you need to have the right knowledge, and you have to be flexible and prepare for different scenarios.”

In the early months of the full-scale war, Ukraine faced several challenges related to drinking water supply. These are mostly related to power blackouts and shortages of water disinfectants. Some water

utilities (vodokanals) struggled to disinfect drinking water due to interruptions in the supply of liquid chlorine. Power outages further complicated operations, forcing water utilities to rely on backup generators.

Despite these challenges, the overall water supply and quality remained comparable to pre-war levels, due to crisis planning and preparedness. The use of water treatment chemicals as well as the daily routines to monitor drinking water quality remained after the invasion. Power generators, water storage tanks, water trucks for emergency water distribution, and backup water reservoirs contributed to maintaining production and distribution at pre-war levels.

The two cities in western Ukraine that were studied largely relied on locally available resources, such as wells located near aid points, with community efforts playing a key role in managing these needs. In contrast, the Polish cities that were studied had pre-existing water reserves and made extensive use of bottled water prepared for cases of flooding, ensuring a steady supply despite the high demand.

Identified challenges

Lessons learned:

- Ensuring the distribution of food and bottled water was a significant challenge, due to issues related to transportation and storage logistics.
- Sourcing nutritious, easy-to-cook food that required minimal energy to prepare proved difficult.
- Reducing reliance on plastic tableware and managing the increased plastic waste posed serious challenges.

Logistics and storage challenges

Both Ukraine and Poland experienced issues with warehouses. This concern was shared by both governmental and non-governmental actors in both countries. For example, there was a lack of warehouses for storing food, unnecessary items like clothing took up space, and financial means were needed to extend the rent of warehouses. Additionally, sometimes warehouses were destroyed or damaged by bombings and sabotage.

Although businesses, food producers, and ordinary citizens contributed with food and sought to help in both countries, the lack of coordination and clear mandates led to disorganisation, inefficiencies, and waste, including food spoilage and surplus items in both countries. Logistical challenges, such as fuel shortages and inadequate warehouse storage, further complicated the delivery of food and water to IDPs and refugees.

In Ukraine, a major issue concerned logistics for the delivery of food and water bottles. Fuel was scarce at the beginning of the full-scale invasion, and the supply of some food was restricted. A representative of a bread company in Lviv shared:

“There were situations when we could not refuel the trucks that delivered bread. So I called OKKO² and asked them to find fuel for at least two cars. I was told that ambulances and military vehicles were given priority. But as soon as there were some signs of petrol, and OKKO worked 200%, they were the first to bring petrol to the market, we were the first in priority as a critical infrastructure company.”

The importance of food suitable for the situation

Although the overall food supply was consistent and sufficient, much of it was inappropriate for the conditions. Both Ukraine and Poland encountered challenges regarding the availability of easy-to-cook meals like canned meat and fish, which were ideal for preparing hot dishes, required minimal energy for cooking, and had a long shelf life. Foods that require long cooking times, such as rice, were often unsuitable because cooking facilities in IDP/refugee shelters were either inadequate or very basic.

Fresh vegetables and fruits had a limited shelf life, and many reception centres lacked proper storage equipment. As a result, food that needed longer cooking times or special storage conditions was often wasted.

Poland had pre-stocked food and water in warehouses, allowing for a swift response when refugees arrived. However, Poland faced challenges with food spoilage due to mismatches between supply and demand, as many refugees moved on quickly. In contrast, Ukraine initially encountered shortages because of logistical disruptions and panic buying.

Much food was brought by volunteers and regular citizens, but not all food was equally needed or useful in a given situation. Products that required long cooking time were unfit. A representative of the Lviv military administration recalled:

“There was so much of it [food] that we sometimes had to refuse those who offered it to us, as there were no specially adapted storage facilities [...]. For example, we were brought raw vegetables, beetroot, carrots, potatoes but we did not take them because we had no place to store them and no place to cook them.”

In reception centres, hot meals and drinks were essential for those arriving in colder weather. Preparing these meals and drinks required a steady power supply, often provided by petrol-powered generators, though petrol was frequently scarce.

Savoury snacks proved more practical than sticky sugary ones, as the latter caused dental issues, particularly among children, and generated additional waste, such as wet wipes, especially when washing facilities were unavailable.

The supply of specialised food, such as baby food or special food for people with disabilities, was critical in Poland and Ukraine. Baby fruit purees were particularly useful not only for children but also for bedridden patients, the elderly, and adults, as they provided an easy way to maintain access to essential vitamins.

² OKKO is a joint-stock gas station company in Ukraine. It was among the first Ukrainian businesses to respond to Russia's full-scale invasion. For more, see: <https://www.okko.ua/en/galnaftogas>

In Ukraine, during the early stages of the full-scale invasion, irregular food supplies to supermarkets posed significant challenges. Therefore, dehydrated food became essential, particularly in shelters and at border crossings, where preparing full meals was difficult. This type of food, which only required hot water to become a proper meal, provided a practical and efficient solution, ensuring that displaced persons received hot meals.

Management of plastic waste

Another significant challenge was both the shortage of plastic tableware as well as the increase in plastic waste. Using reusable tableware was unfeasible: food and water were distributed at the border checkpoints and train stations, and most shelters were not equipped with dishwashers. As a result, there was a substantial reliance on plastic single-use tableware and plastic bottles. The usage of plastic tableware and plastic bottles, in turn, created a plastic waste challenge. In Ukraine, there was also a shortage of plastic tableware due to increased demand and disruption in production, as many factories had stopped operating. Importing supplies from abroad also took time. However, despite the need for more plastic items, waste management capacity was limited. Some initiatives promoted the use of reusable tableware. However, these efforts also faced significant challenges due to insufficient supply, lack of dishwashing machines in newly arranged shelters and insufficient financial investment.

Both countries faced difficulties managing waste, particularly with the increased use of single-use plastic tableware and plastic water bottles. Inappropriate donations and uncertain refugee numbers led to food waste, often due to over-provisioning and inadequate storage. Surplus donations frequently exceeded needs or did not match requirements, resulting in discarded food.

The role of different actors

Lessons learned:

- Businesses, volunteers, and NGOs proved essential in distributing food and water, highlighting the need to further integrate these actors into formal crisis response frameworks.
- Businesses significantly contributed to crisis management by utilising their transportation networks and logistics capabilities. This underscores the importance of engaging the private sector's resources in emergency preparedness and response planning.
- Donated aid must be carefully vetted to ensure safety and effectiveness, pointing to the need for sufficient quality control measures in crisis situations.
- The initial response from international humanitarian organisations was hindered by internal routines and bureaucratic delays, demonstrating the importance of streamlining procedures to enhance rapid response capabilities in future crises.

Municipalities and regional authorities supported efforts

In both Ukraine and Poland, municipalities and regional authorities played supportive roles, helping manage logistics, shelters, and coordination efforts for food and water, rather than taking a central role. In Ukraine, volunteers often took the initiative, while in Poland, municipalities partnered with established NGOs to handle logistics. A representative of a Polish NGO recalled:

“[...] we had good cooperation with government administration, self-governments, and thanks to this we created the ‘crisis committee’. According to those agreements, we shared our logistic reserves, the warehouse, equipment and people. Thanks to this we could together work out an example of a good cooperation, so these tasks were coordinated on a local level here in Rzeszow, voivode level, but also on a central, country level [...]”

Both countries faced logistical challenges early on, with municipalities needing to organise shelters, store supplies, and distribute food and water efficiently. In both Ukraine and Poland, municipal employees often joined volunteer efforts to support the massive influx of displaced people, coordinating shelters and providing targeted assistance.

In Ukraine, municipalities (which were rearranged into military administrations) played a more reactive role. They set up coordination hubs but often relied on volunteers and private sector initiatives for food and water distribution. Communication between municipalities and local volunteers was informal, and the local authorities primarily facilitated existing efforts rather than leading them. Ukraine’s regional administrations were also slower to respond, initially relying on NGOs and businesses. Their role became more significant once the security situation stabilised and coordination formalised.

In contrast, Polish authorities had a more engaged approach. The Polish municipalities that we interviewed established crisis committees and implemented top-down communication structures to manage food and water distribution efficiently. These municipalities were integrated into a hierarchical system, with coordinators at each level of government to streamline efforts. Kraków and Rzeszów had structured systems in place, benefiting from established relationships with NGOs, formal logistical planning, and government-provided shelters and warehouses. In Rzeszów, crisis committees collaborated closely with local, regional, and national governments to coordinate logistics and manpower. Poland’s regional governments, particularly in the Lesser Poland Province (Voivodeship), operated within a structured, top-down system, working proactively with NGOs like the Red Cross and food banks. This hierarchical coordination differed from the more flexible, volunteer-driven responses seen in Ukraine, where local governments relied on informal networks and ad-hoc initiatives.

Volunteers and NGOs were central

In Ukraine and Poland, volunteers and NGOs were pivotal in distributing food and bottled water in the first weeks of Russia’s full-scale invasion. In Ukraine, volunteers managed logistics and coordinated donations, while in Poland, they played an essential role in refugee reception points and at the border.

Both countries heavily relied on local communities, forming partnerships with businesses, particularly restaurants, and utilising public and private infrastructure (including sports halls in schools, office spaces, etc.) to provide shelter.

A key distinction between Poland and Ukraine was the level of coordination between NGOs and local authorities in their humanitarian responses. In Poland, NGOs worked closely with local and regional governments, supported by local volunteers who managed food supply and logistics at critical locations. Although initially challenged by inefficiencies at border crossings and aid points, Poland's response had a more top-down and structured approach, which benefited from an organised

governmental framework. In contrast, Ukraine's early response predominantly relied on NGOs and volunteers with a lesser engagement of local and regional authorities. Furthermore, Ukraine's response was hindered by delays in international aid from organisations like the Red Cross and UN bodies. This gap was filled by private businesses, volunteers and local NGOs stepping in to provide critical support, reflecting a more grassroots, adaptive approach.

Ukrainian NGOs were involved in setting up shelters and providing immediate aid directly at key locations. They leveraged their existing networks and partnerships for a swift response. Polish NGOs focused on managing large-scale donations and coordinating with other actors.

The role of local communities

In both Ukraine and Poland, local populations responded swiftly to the urgent needs of displaced persons before governmental and international humanitarian organisations were fully operational. Residents in both countries provided food, water, shelter, and transportation to those in need. They also donated clothing, household items, and other essential supplies. Individuals volunteered their time and resources in both countries, helping with cooking, distribution, and logistical support. As expressed by an official of the Uzhhorod City Council:

“The main expenses during the first two months of full-scale war were borne by our citizens. The budget was hardly utilized. There was no food shortage, nor were there urgent needs for food products, as everyone helped: entrepreneurs and ordinary residents of Uzhhorod were later joined by our partner cities, with which we signed relevant cooperation agreements. We had everything we required. Everyone who reached out to us received assistance.”

In both Ukraine and Poland, community members and local organisations worked together to address immediate needs. In both cases, communal institutions like cafeterias, schools and bakeries participated in aid efforts. In Poland, citizens brought aid directly to reception points instead of donating to NGOs.

At the same time, multiple interviewees raised the issue of the quality of aid provided. On multiple instances, expired food and unsuitable clothes (dirty or unfit for the season) were donated. This raised concerns of the safety and health standards of donations.

In Ukraine there were established community networks that helped manage food and water supply to IDPs. Crisis response by local actors was facilitated by the networks initially arranged during the Maidan protests (2013-2014) and the 2014 Russian invasion of the east of Ukraine, as well as Crimea. For example, voluntary carpooling emerged from the onset of the full-scale invasion as a vital component of logistics management. Ordinary residents offered their vehicles to transport food and supplies, significantly reducing logistics costs.

In Poland, rural women's groups formed in the early stages of the full-scale invasion, preparing food items like soups, tea, and coffee for refugees arriving at border points. This grassroots initiative helped alleviate immediate food shortages and ensured the safety of donations. Other initiatives, such as church-related organisations and interest clubs, also self-organised to prepare and distribute hot food and drinks.

The role of international organisations

International actors, including international organisations, international humanitarian organisations and INGOs played an important role. INGOs like WCK played a significant role in both countries.

In Ukraine, WCK partnered with local restaurants and cafes, while in Poland, they set up food distribution points and collaborated with local authorities. Initially, in Ukraine, WCK assisted restaurants with products from four large warehouses based in Lviv, then began financially supporting restaurants on a per-serving basis. Since the full-scale invasion, WCK has managed to provide over 5 million hot meals in the Lviv region alone. By April 2024, the organization had provided over 260 million hot meals across Ukraine, making it one of the most significant contributors to feeding displaced people. Up until April 2024, the WCK had partnered with over 300 local restaurants in Poland and Ukraine, showcasing the importance of the organisation for both connecting and facilitating the operations of small-scale and large-scale local restaurants and food suppliers during the invasion.

International humanitarian organisations like the European National Societies of the Red Cross played an essential role in the deployment of aid points and the distribution of food and water. Given their extensive network, they were well-positioned to set up aid points in strategic locations, such as railway stations and border crossings, where large groups of displaced persons gathered. When the flow of refugees decreased, the Ukrainian and Polish National Societies of the Red Cross focused on assisting in setting up shelters and providing food and essential supplies to refugees and IDPs, including food kits, drinking water, hot beverages, and snacks. Moreover, the Ukrainian Red Cross Society managed and redistributed humanitarian aid, while also providing financial and voucher support to ensure that those in need could access necessary resources.

International humanitarian organisations, like the Red Cross, leveraged their established networks to distribute aid, while INGOs like CARE International relied on local NGOs for efficient aid delivery. European Food Banks played a crucial role, especially in the early stages of Russia's full-scale invasion, by sending food transports to Poland from across Europe.

Through their efforts, international organisations did not only provide essential provisions but also contribute to the overall humanitarian response by offering direct cash-based assistance. For example, the Ukrainian National Red Cross Society collaborated with the Ministry of Social Policy of Ukraine to provide financial assistance.³ Likewise, international organisations such as the International Organisation for Migration (IOM)⁴ and the UN Refugee Agency (UNHCR),⁵ as well as INGOs such as CARE International cooperated with municipalities to provide financial assistance through multipurpose cash programs.

One systemic issue highlighted in the interviews was that international humanitarian organisations, despite having substantial funding, had to adhere to bureaucratic procedures before deploying aid.

³ For more, see: <https://ukrainefinancialassistance.ifrc.org/ukrainian-red-cross>

⁴ For the full IOM strategy, see: <https://publications.iom.int/system/files/pdf/IOM-CBI-Strategy-2022-2026.pdf>

⁵ For more, see <https://www.unrefugees.org/news/unhcr-scales-up-for-those-displaced-by-war-in-ukraine-deploys-cash-assistance/>

Consequently, large-scale humanitarian assistance arrived several weeks late, with limited staff on the ground.

International humanitarian organisations and INGOs initially struggled to adapt to Poland's rigid legislative and administrative framework, which created coordination challenges with other actors. Respondents reported that these issues stemmed from INGOs being more accustomed to working in countries with less strict administrative structures and regulations.

The role of businesses

In both Ukraine and Poland, businesses played a vital role in managing the supply of food and water, often stepping in to provide immediate support through donations, logistical assistance, and volunteer efforts. Businesses in both countries collaborated closely with NGOs and local organisations to deliver essential supplies. In Ukraine, this included partnerships with INGOs like WCK, while in Poland, businesses provided substantial food donations to NGOs. Across various sectors in both Ukraine and Poland businesses stepped in to provide critical support, with both small and large companies playing diverse and essential roles. As an owner of an IT business in Lviv mentioned:

“These were people [business owners] from entirely different industries, backgrounds, and scales. Someone had a 20 square metre office, someone had a 400 square metre business space. We were all united by the fact that there was a need, and everyone thought that it was impossible not to help.”

There were three key groups of private-sector actors emerged as important during the interviews:

- 1) restaurants and food suppliers (foreign and domestic);
- 2) water services and waste management (domestic);
- 3) delivery and logistics (domestic).

Restaurants and food distributors

Businesses from the food and restaurant sector helped ensure food security during times of the most intense upheaval. Their ability to respond quickly and sustain operations during challenging conditions demonstrated their key role in resilience in Ukraine, especially during the early months of the war.

In those cases, local restaurants played a crucial role in preparing hot meals for people passing through Lviv and Uzhhorod, as well as for those temporarily staying there. These establishments had the necessary cooking equipment and maintained strong connections with food producers and businesses, ensuring a steady supply of ingredients to meet the demand. As a representative of an INGO who worked in Lviv noted:

“[...] in the first month, the shops were empty, the factories were shut down, no one was doing anything. That is why it was very convenient to start working with restaurants, because they had a certain stock of food. So, they could hold out on their products for a few days, and then retail chains, primarily “Metro”, resumed operations.”

Initially, local restaurants and food suppliers in both Ukraine and Poland relied on their own resources to support humanitarian efforts, utilising their logistics networks to deliver aid. Local restaurants and cafes in Ukraine often repurposed their spaces, turning them into shelters and kitchens for providing meals directly to IDPs. In Lviv, during the first days of the full-scale invasion, local restaurants and businesses supplied hot meals, set up kitchens to provide for IDPs and offered shelter in their office spaces. For instance, the restaurant “Dolphin” was transformed into one of the centralised food preparation hubs by local enterprises. Representatives of small businesses in Lviv shared:

“Together with [other] business owners, we collected food from nearly all the restaurants in the city [...] We gathered everything from our restaurants and brought it together in one room. It [Dolphin] could accommodate many people. We took tables from the terraces, brought everything together, and in just one day, we organised this initiative.

We set up a small shelter in the office where people spent the night. The logic was the same: people would come, stay for a day or two at most, and then take buses to Poland and beyond.”

Similarly, local cafes in Uzhhorod operated. For example, small cafes like “Mriya” in Uzhhorod, originally a small production facility of canned goods such as sauces and drinks, provided thousands of meals in the first months of the invasion. Many of these local restaurants and cafes later transitioned to a voucher-based reimbursement system to sustain operations. As shared by governmental representatives in Uzhhorod:

“[...] All the restaurants and cafes wanted to help people [IDPs]. They provided food and cooked without asking us, and they did it for free.

Later, we organised the provision of hot meals for IDPs on the basis of restaurants [using vouchers].”

Due to the pre-existing networks and experience of working in the same sector, local businesses demonstrated the ability to cooperate and coordinate. Joint efforts to feed IDPs like the “Gastronomic Battalion of Zakarpattia” is a good example of a coordinated response. It was a joint initiative of local restaurant owners, which combined local resources to distribute large quantities of food, with some days seeing up to 10 tons of prepared meals given out. Initially, they relied on their own resources and donations. It was only later that the WCK began cooperating with them and provided the Gastronomic Battalion of Zakarpattia with funds.

The other example in Uzhhorod is “Syla Uzhhoroda,” now a charitable foundation, which began with four entrepreneurs who self-organised to create an assistance point for receiving displaced persons at the Uzhhorod railway station. In similarity to the Gastronomic Battalion of Zakarpattia, they relied on their own resources and donations. Only in the second month of the full-scale invasion did larger donors start to cooperate with them:

“We had no funding. Initially, we invested our own money, but later we realised that we would not last long. We involved our friends, entrepreneurs in the city. [...] Neither the local nor the regional budget provided financial support to the organisation. We applied to the City Council for help but received nothing.”

Larger restaurant networks such as Lviv's "FEST" collaborated with international non-profit organizations like WCK to prepare meals. The "FEST" restaurant chain worked closely with WCK to prepare meals for IDPs at locations like the Lviv railway station. Other large enterprises in the food industry, such as producers of pet food in Ukraine (Kormotech LLC), also contributed with donations.

In Poland, international food chains and food producers contributed with large-scale donations of food products. Several international food companies provided large-scale donations to Polish food banks by sending trucks of food to central warehouses for distribution to refugees. Previously established relationships with foreign companies like Nestlé enabled NGOs to contribute with baby food from their own stock. Following the invasion, these companies also redirected their donations specifically to refugees. Shared by a food bank (NGO) in Poland:

"We had some of those products available [baby food] because we partner daily with companies that offer that sort of assortment, such as Nestlé. We keenly passed those products where they were needed.

Occasionally, food donations were redirected. Nestlé, which has supported us for years, provided food with a short shelf life to our daily mission. Suddenly, they began supplying food specifically for refugees."

In Ukraine, the existing stock in restaurants and small-scale donations were utilised at first. However, larger companies and foreign businesses were also significant contributors. As stated by a restaurant chain in Lviv, Ukraine:

"At first, we cooked leftover food from restaurants. Then, we started taking food from humanitarian aid. Food was also brought by ordinary people and various organisations, including from abroad. For example, once, a whole minibus of jamon for sandwiches was sent from Spain. McDonald's restaurants in Lviv donated buns and sauce that they had in their warehouses. Then, with funding from the World Central Kitchen Foundation, we began to buy the products."

Supermarkets and smaller shops also continued to support food banks and local efforts in Poland by increasing the amount of donations, such as tinned food and bread. As mentioned by a representative of a food bank (NGO) in Poland:

"We have cooperated with supermarkets in the past, a practice we have maintained for many years, as well as with smaller shops that donate food. However, during the crisis, the generosity of those shops and supermarkets increased significantly. Much of the food we received also came from abroad. Typically, it consisted of quality canned food, well-packaged, with a longer shelf life. This was immensely helpful."

At the same time, both countries faced issues with the volumes of donations from businesses that wanted to contribute, sometimes leading to waste. A representative of the Union of Ukrainians in Poland recalled instances where companies offered impractical donations, such as 100,000 frozen pizzas, which required specific storage and heating that was unavailable at the time. Interviewees also reported that in Poland businesses also sometimes prioritised media visibility over the need of refugees, offering donations that were more likely to generate media coverage:

“We received an offer from a food truck [...] that proposed to provide 15000 meals per day. [...] We agreed to find them a location, but they insisted they already knew where they wanted to be based [...]. We argued that this location did not make sense since we were fine in terms of food provision here. However, there was a problem at the Korczowa-Krakowiec border crossing, as people on the Ukrainian side were queuing for 20 to 30 hours in low temperatures. They refused because there were no cameras present there.”

Food businesses had to be proactive in managing production and staff. A bread producing company in Lviv mentioned that they mobilized their personnel in regions where production processes were suspended due to the full-scale invasion. The company continued to pay their wages and helped arrange relocation to Lviv.

However, several businesses suggested that their staff worked without receiving any payment during the initial months. Read more about financing of businesses during the invasion under the heading “Funding through volunteers, aid and voucher systems”.

Water utilities and waste management providers delivered both services and personnel

Other sectors were important for efforts beyond immediate food relief, including water services and waste management. Different entities handling water and waste management played a critical role in this aspect. Their involvement highlighted the interconnected nature of basic services with other areas of urgency during emergencies.

In Poland, municipal water companies actively participated in refugee aid efforts by transporting essential supplies and providing bottled water. Their logistical capabilities enabled the effective distribution of donations to warehouses. Companies like the Rzeszów Municipal Water Facilities used their infrastructure to provide water in plastic bags, bottled water and transport other supplies when the need emerged. Initially, they delivered water in plastic bags, with a capacity of 0.5 and 1 litre, that were prepared pre-war for emergency situations like floods. The company soon realized that it was more practical to provide bottled water to refugees on the move.

Several of these businesses went beyond donations, with employees volunteering to aid. For example, workers from the Rzeszów Municipal Water Facilities helped transport donations like food, blankets, and hygiene products. Using company vehicles, they ensured that supplies reached centralised warehouses for further distribution to refugees:

“Employees engaged on a voluntary basis to transfer the donations, as people were donating at community centres [...]. Our employees used our car fleet to transport it all to one place, to a sporting venue that was converted into a warehouse. They were transferring those items from 27 donation centres in the city and there it was all divided and sorted on pallets and transported to Ukraine on lorries.”

In Uzhhorod, Ukraine, private enterprises contributed by maintaining access to water for IDPs. For example, bottled water producers supplied drinking water to shelters. As shared by a representative from the city council in Uzhhorod:

“In Uzhhorod, the tap water is suitable for drinking. But we have a bottled water producer, Kraina. They also offered their services. For example, they provided water containers and periodically filled them with water themselves and left disposable cups for people to drink.”

Domestic private companies continued to manage and maintain sewage systems in Ukraine and Poland, despite the increased flows caused by population influx. In Lviv, private waste collection companies managed to adapt to the increased demands caused by waste generation, requiring more frequent waste collection trips. However, several of these companies faced logistical obstacles, such as fuel shortages. Despite this, they managed to maintain waste collection services in areas hosting a large number of IDPs.

The existing sewage infrastructure also coped with the increased pressure, but mobile toilets were required, especially in emergency shelters and crowded city centers.

The importance of businesses for logistics and transport

In both countries, all types of businesses, both large and small, leveraged their infrastructure, logistical capabilities and networks to ensure provision of aid. Many businesses transformed into volunteer organisations and became an integral part of civil society by leveraging their resources to address displacement-related challenges. These efforts included providing premises, employing staff, and using business connections to support humanitarian initiatives. Many different businesses in Ukraine and Poland repurposed their spaces into shelters and social hubs for IDPs and refugees, using their resources to meet essential needs.

Other large and small enterprises concerned with logistics played a direct role in the logistics across Poland and Ukraine. Larger Ukrainian businesses, such as Nova Poshta (a postal business) and OKKO (a chain of gas stations) were instrumental in ensuring logistics across the country. In Poland, smaller local bus companies donated vehicles to support transportation needs.

The use of Nova Poshta was instrumental in maintaining a steady flow of supplies across Ukraine. Nova Poshta’s extensive network ensured that volunteers and aid organisations could reach those in need quickly and efficiently. Nova Poshta also introduced a system for free delivery for NGOs involved in humanitarian assistance, allowing them to send various items free of charge across the country. As shared by a Ukrainian NGO working with waste management:

“The issue of delivery [of goods from manufacturers/suppliers] was mainly covered by Nova Poshta, which delivered within Ukraine. They gave us volunteer promotional codes that allowed us to save money on shipping.”

Funding through volunteers, aid and voucher systems

Lessons learned:

- In the early weeks of the invasion, the question of funding for food and water supply was not urgent; businesses and private people donated food, cafes and restaurants fed people on a volunteering basis.
- The use of voucher systems, regulated by authorities, proved to be an effective way to secure long-term financing.

Much of the food relief activities, especially in the early weeks, did not require substantial additional funding. Respondents from both countries and various businesses reported that they funded staff and activities out of pocket in the first months until formal processes were in place. Ordinary residents alleviated logistical costs by offering their vehicles to transport food and supplies. Pre-existing networks between food producers and NGOs enabled faster mobilisation, with many businesses leveraging their connections to secure resources. For instance, Ukrainian restaurants reached out to known suppliers who often provided items without invoicing initially, transitioning later to paid orders funded through fundraising.

Many cafes and restaurants fed IDPs/refugees for free; producers delivered food to restaurants, which fed IDPs/refugees without charge. In the initial weeks, restaurant staff who cooked for IDPs/refugees tended not to be paid until charity funds, reimbursements from the WCK, and voucher systems were set in place. Shared by a café owner in Lviv:

“I did not feel the need to spend money at that time, except for a taxi to get somewhere. Our team also did not receive any money during this period. For several weeks, the issue of money did not arise at all. It was only when March ended that everyone realised that we had to pay rent and utilities.”

There were a few funding sources in both countries. Volunteering initiatives and NGOs opened fundraising campaigns and companies created charity funds. Local governments in both countries introduced voucher systems compensating for the restaurant's expenses. As shared by a restaurant initiative in Uzhhorod, Ukraine:

“We started a charity fund. Our friends advised us to do so. We started receiving donations. Later, an American organisation [World Central Kitchen] joined in and also acted as a sponsor.

We functioned according to the mechanism proposed by the city council [using vouchers]. Of course, they could not provide us with everything, but we did not refuse any help. There was state registration for IDPs, and they issued vouchers to those who registered. We were refunded for the vouchers we collected from people. Despite this, we continued to feed those who did not have vouchers, though it was no longer at the state's expense.”

In Poland, businesses and NGOs initially received emergency funds from the government, which were distributed to support refugee shelters and welfare centres. INGOs like CARE implemented

multipurpose cash assistance before the regional administration switched to voucher systems to prevent the risk of misuse. These vouchers allowed refugees to access essential goods and services while ensuring businesses were reimbursed for their contributions. However, implementation in Poland was slower than in Ukraine, with voucher systems only operational in a later stage.

Voucher systems were a shared solution to the funding issues after the first month. The implementation of voucher systems meant that businesses, who had initially participated without payment in assisting IDPs/refugees, could be reimbursed for their activities moving forward.

Lack of structures for coordination and joint decisions

Lessons learned:

- With multiple actors involved, coordinating efforts and making joint decisions were significant challenges.
- Both Poland and Ukraine struggled with uncoordinated humanitarian responses in the initial stages, leading to inefficiencies.
- The lack of coordination made actors involved in early crisis response more susceptible to mis- and disinformation, complicating aid efforts.

Both Ukraine and Poland faced challenges in coordinating their humanitarian responses. In both countries, initial efforts were uncoordinated, with independent actions leading to problems in aid distribution. Volunteers and private businesses played crucial roles in managing logistics, distributing aid, and providing essential services. However, coordination between various levels of government and NGOs proved difficult, as many organisations had little experience with large-scale humanitarian aid.

In Poland some NGOs expressed, during the interviews, frustration over regional governments making decisions - such as relocating food distribution centres - without fully consulting them, which caused tension. Both countries faced challenges with resource distribution - some areas saw oversupply while others experienced shortages due to coordination difficulties and the novelty of large-scale humanitarian aid. As an NGO representative from Rzeszów stated:

“The most difficult was to coordinate tasks, everyone wanted to help but we did not know who, what, how, and what to do with it because it wasn’t a big deal to donate a bag of food or else, but all this had to be sorted, packed and transport but to coordinate it all was a challenge.”

The lack of coordination created parallel systems, leading to inefficiencies. In Poland, with time, regional authorities started to play an increasing role in the coordination of different actors involved. Likewise, in Ukraine, coordination improved over time through informal, horizontal networks that connected (I)NGOs, volunteers, businesses, and local authorities. Effective coordination between actors was essential to prevent logistical overload and ensure efficient resource distribution.

Lack of coordination made the organisations involved in crisis response more susceptible to unverified information and sometimes disinformation. For example, interviews revealed that several different

channels for information sharing appeared, without coordination between them. This caused activities to sometimes be duplicated or items being sent to locations that were not most in need. According to a representative of an NGO in Lviv:

“In the beginning, there was no coordination. So, someone would say that food was needed in a certain place, and everyone would bring it there, and as a result, there was a surplus of food.”

The National Polish Red Cross society in the Subcarpathian region admitted that both the government and NGOs were unprepared for the refugee crisis, and both were reluctant to acknowledge their shortcomings. They emphasised the need for clearer coordination and defined roles between organisations and government agencies to improve future efforts. A representative of an NGO in Rzeszów recalled:

“We had few people ready for this [a large influx of people] because the coordination of this should be dealt with by someone who knows how to do it. But the number of refugees crossing the border was so big that no organisation was ready for it. We had some idea that it could happen, but what happened was not proportional to predictions.”

Summary of results

The significant displacement of people due to the full-scale invasion of Ukraine exposed vulnerabilities and a general lack of preparedness in both Ukraine and Poland. Although the war did not significantly impact central water supply and sewage services in the cities and regions studied, substantial challenges arose concerning the delivery of food and bottled water to IDPs and refugees. Initial response efforts heavily relied on local businesses, NGOs, and citizen self-mobilization, particularly before international humanitarian organizations became operational.

However, poor coordination among stakeholders led to logistical inefficiencies, food waste, and challenges in resource management. Businesses, both large and small, played essential roles by repurposing existing facilities, providing logistical support, and leveraging established supplier networks. Pre-existing and personal networks between actors significantly facilitated rapid mobilization, resource allocation, and logistical responses, enabling quicker adaptation to the urgent needs of IDPs and refugees.

Funding and financial management emerged as significant challenges in both countries, with businesses and NGOs initially financing operations out of pocket or relying on local and international donations until formal processes were established. In Ukraine, local fundraising and international organizations such as the WCK facilitated continued operations during funding shortages. Voucher systems were implemented in both countries after initial delays, which happened faster in Ukraine than in Poland, providing businesses with financial stability and reimbursing their contributions. Additionally, Poland initially faced legislative gaps complicating coordination with international organisations. Effective crisis management was achieved by improving coordination among stakeholders and systematically addressing funding and logistical challenges.

Initially, the study did not systematically focus on funding sources, nor did it explicitly collect comprehensive data regarding funding mechanisms. Consequently, the analysis presented in this report did not originate from structured inquiries into financial aspects during the data collection phase. However, given the significance attributed to funding by respondents themselves, we integrated insights related to funding based on interviewees spontaneous mentions. This has allowed the report to highlight important experiences and reflections regarding resource mobilization, funding challenges, and financial support mechanisms that emerged organically during the interviews.

Policy recommendations

Please note that the Swedish Food Agency has not taken a position on the content of the report, including the recommendations. The authors are solely responsible for the content and conclusions of the report.

Preparedness and contingency planning

Develop contingency planning: Sweden should develop scenario-based contingency plans for food and water supply that account for various crisis scenarios, including highly unlikely but potentially catastrophic events, including full-scale invasion.

Integrate neighbouring countries: Stakeholders in Sweden whose mandates include response to crises and their counterparts in neighbouring countries should coordinate their contingency planning to respond collectively in case of regional instability.

Legislative and regulatory frameworks

Streamline crisis legislation: The Swedish government must develop legislation to enable a rapid response in the event of a war, removing bureaucratic barriers that could delay essential actions such as mobilising resources.

Engage the private sector: Enact laws to clearly define the roles of businesses, NGOs, and volunteers in crisis response frameworks, ensuring rapid mobilisation and coordination during emergencies.

Crisis management networks and expertise

Utilise crisis management knowledge and existing networks: Establish a central repository or network that captures lessons learned, best practices, and expertise from previous crises in Sweden and beyond. Ensure that key actors can share experiences and collaborate on future preparedness efforts.

Logistics

Invest in emergency food storage and logistics infrastructure: The government should partner with private businesses to build resilient logistics networks capable of maintaining food and water supplies during crises.

Prioritise nutritious and energy-efficient food supplies: Develop and stockpile a reserve of nutritious, easy-to-prepare foods that require minimal energy for preparation. This ensures food security during power outages or energy shortages.

Role of volunteers and NGOs

Formalise NGO and volunteer roles: Create legal frameworks that recognise and integrate volunteers and NGOs into official crisis response plans. Ensure they are well-coordinated with state actors.

Develop donation quality control systems: Implement vetting processes for times of crises and war to ensure donated food, water, and other supplies are safe and effective, mitigating risks associated with unregulated donations.

Improving coordination mechanisms

Establish central coordination bodies: In future crises, governments should set up dedicated crisis coordination units that involve all key stakeholders (government, businesses, NGOs, and volunteers). These units should be empowered to make joint decisions swiftly. These could be, for example, digital platforms for real-time coordination between different actors involved in crisis response.

Improve intergovernmental coordination: Governments should collaborate with international humanitarian organisations to establish pre-agreed protocols for coordination in humanitarian crises, ensuring smoother and more unified responses across borders.

Funding

Secure funding mechanisms: Develop an approach to sustained funding for businesses, NGOs and other related actors who will be expected to contribute to crisis management. For example, voucher systems can be developed prior to crises.

Strengthen international cooperation: Develop early partnerships with international organizations to reduce financial burdens on local budgets to allow authorities to reallocate funds more strategically.

Plan for operational contingencies: Ensure that emergency funds take into consideration operational contingencies, such as extension of rental contracts with storage facilities.

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Appendix 1. Complete list of interviews

Country	City/Region	Interview was conducted with a representative of	Expertise	Date of interview	Duration of interview
Ukraine	Lviv	Local business	Food	14/02/2024	60 min
Ukraine	Lviv	Local business	Food	17/02/2024	40 min
Ukraine	Lviv	Local business	Food	22/03/2024	40 min
Ukraine	Lviv	NGO	Waste	22/03/2024	90 min
Ukraine	Lviv	Municipal enterprise	Water	21/06/2024	Written response
Ukraine	Lviv Region	Military administration	Food, water and shelter	02/04/2024	30 min
Ukraine	Lviv Region	Regional government/ military administration	Communal issues and coordination of accommodation	30/05/2024	22 min
Ukraine	Lviv	INGO	Food and water	27/03/2024	40 min
Ukraine	Lviv	International humanitarian organisation	Food and water	19/04/2024	50 min
Ukraine	Lviv	International humanitarian organisation	Water and sanitation	08/05/2024	45 min
Ukraine	Uzhhorod	Local business	Food and water	17/04/2024	37 min
Ukraine	Uzhhorod	NGO	Food, water and shelter	16/04/2024	45 min
Ukraine	Uzhhorod	NGO	Humanitarian aid	26/03/2024	40 min
Ukraine	Uzhhorod	NGO	Humanitarian aid	11/04/2024	40 min
Ukraine	Uzhhorod	Municipal enterprise	Water	15/05/2024	26 min
Ukraine	Uzhhorod	City council	Food, water and shelter	11/04/2024	45 min
Ukraine	Uzhhorod	International humanitarian organisation	Water and sanitation	19/04/2024	45 min
Ukraine	Zakarpattia Region	Military administration	Food and water	12/03/2024	35 min
Poland	Kraków	INGO	Food and water	19/03/2024	50 min
Poland	Kraków	Municipality	Food, water, shelter, information and financial aid	19/03/2024	54 min

Country	City/Region	Interview was conducted with a representative of	Expertise	Date of interview	Duration of interview
Poland	Kraków	Kraków county administration	Food, water and shelter	13/03/2024	90 min
Poland	Lesser Poland Region	Regional government	Administration	04/04/2024	51 min
Poland	Przemysl	NGO	Food, water and shelter	19/04/2024	80 min
Poland	Rzeszów	Municipal water and sewerage company	Water and sewerage	18/03/2024	30 min
Poland	Rzeszów	International humanitarian organisation	Food, water and information	15/03/2024	80 min
Poland	Rzeszów	INGO	Food and water	15/03/2024	40 min
Poland	Subcarpathian Region	Regional government	Administration	23/04/2024	60 min
Poland	Warsaw	INGO	Financial support, shelters, aid points, food and water	06/03/2024	60 min

Appendix 2. Map



Appendix 3. Acknowledgements

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