

REPORT



**GOVERNMENT-SUPPORTED EMERGENCY FOOD ASSISTANCE
FOR ASIAN MIGRANTS IN OKANAGAN:
INSIGHTS FROM THE 2023 MCDOUGALL CREEK WILDFIRE**

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Disclaimer

This report was produced as part of the UBC Sustainability Scholars Program, a partnership between the University of British Columbia and various local governments and organizations in support of providing graduate students with opportunities to do applied research on projects that advance sustainability across the region.

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In the development of this project and the writing of the report, the author utilized ChatGPT to assist in finding applicable resources, correcting grammar, flagging errors, and enhancing the writing style, while ensuring that original ideas were retained. Importantly, no identifiable information about participants or contributors to the study was shared with ChatGPT during the report refinement process. To maintain originality, the author carefully reviewed all suggestions provided by the platform and made final decisions on their inclusion. This approach ensured that the report remained true to the author's original insights and intentions.

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Executive Summary

Background and Objectives

The increasing frequency and intensity of emergencies, exacerbated by climate change, have highlighted the need for robust emergency management strategies. The **McDougall Creek Wildfire in 2023** is one of the most destructive incidents in the province, significantly impacting food access for Asian migrant communities in the Okanagan region, underscoring the need for culturally appropriate food options (Government of British Columbia, 2024a). As stipulated by the Emergency and Disaster Management Act (EDMA) (SBC 2023) Chapter 37, local authorities are required to 'include a plan for the evacuation and care of individuals and animals in the area within the jurisdiction of the local authority' under section 52 (3) (a), which include four phases of emergency management, including mitigation, preparation, response, and recovery (Emergency and Disaster Management Act, 2023). Thus, the **Emergency Support Services (ESS)** program in British Columbia is a vital initiative aimed at providing immediate, short-term assistance to individuals and families affected by disasters such as wildfires and floods. This program is funded by the B.C. Provincial government and is managed by Indigenous governing bodies and local authorities and is based on a volunteer model in which many ESS responders are mainly volunteers. The program ensures that the basic needs of evacuees, including food, clothing, lodging, and transportation, are met in a compassionate manner (BC EMCR, 2023). However, the delivery of the emergency assistance program faces several challenges (BC Ombudsperson, 2023), particularly in ensuring food resiliency and security for diverse migrant communities, as highlighted by the McDougall Creek Wildfire in 2023. In addition, the literature regarding newcomers' and migrant communities' access to emergency responses is deficient, especially in the Okanagan region.

Therefore, this study **aims** to **(1)** gain insights into government-enabled food assistance programs (e.g., grocery and meal vouchers) based on the McDougall Creek Wildfire in 2023, **(2)** explore ethnic food availability and accessibility in grocery stores used by Asian migrants¹ in Kelowna during emergencies, and **(3)** describe challenges and opportunities faced by Asian migrants in obtaining culturally appropriate food during wildfires.

The significance of this study lies in its implications for the academic community, policy-making processes, and practical applications, particularly for the BC Emergency Management and Climate Readiness (EMCR) and BC Ministry of Agriculture and Food (BCAF). By examining the challenges and opportunities in delivering culturally appropriate food assistance, this study provides valuable insights for improving emergency planning, mitigation, preparedness, and response efforts. Enhanced collaboration among these institutions can lead to more effective strategies for supporting diverse communities during emergencies, ultimately strengthening the resilience of the ESS program and the communities it serves.

Research Approach

This research employs a **qualitative approach**. The data collection process began with an extensive **literature review**, utilizing publicly available resources such as articles, government reports, websites, and news sources to understand the ESS program's structure and delivery mechanisms. **Semi-structured interviews** were conducted from June to July 2024 with 12 participants from **three groups**. The first group included **BC government-affiliated personnel**, including representatives from the provincial government (BC EMCR), regional government (PREOC in Central Okanagan, EOC in the City of Oliver), and municipal governments (ESS in the City of Kelowna, RDCO, Columbia-Shuswap Regional District, and the City of Kamloops, aiming to

¹ A migrant is defined as a person who relocates from their regular place of residence, either permanently or temporarily, and for a variety of reasons, whether inside a nation or across an international border. The term 'migrant' encompasses a variety of clearly defined legal categories of individuals, including migrant laborers; people whose specific forms of movement are legally defined, like illegal immigrants; and people whose status or mode of transportation is not expressly defined by international law, like foreign students (International Organization for Migration (IOM), 2019).

understand the ESS program's structure, mechanism, and delivery. The second group involved **private businesses**, specifically Safeway in Kelowna, to explore supply chain management during emergencies and the availability of diverse food options. The third group comprised **community associations**, such as **the Okanagan Chinese Canadian Association (OCCA)**, **Kelowna Hindu Cultural Society (KHCS)**, and **BC Muslim Association (BCMA)** in Kelowna, to identify unique challenges faced by diverse populations during crises. Additionally, a **jurisdictional review** was conducted by evaluating emergency food provisioning in Hubei Province, China.

Summary of Key Findings

The findings indicate that the delivery of emergency food assistance programs through the Emergency Support Services (ESS) faces distinct challenges and strengths, affecting both migrant communities and the food supply chain. A primary **challenge** is the limited access to culturally appropriate food, particularly in reception centers. This is due to stringent food safety standards affecting food donations and the scarcity of local food outlets offering diverse cuisines. Besides, evacuees in hotels or group lodgings encounter limited food storage and cooking facilities. In some areas of West Kelowna, those staying in private accommodations reported temporary challenges accessing drinking water, especially during times of increased demand for emergency responders. Additionally, delayed government reimbursement poses a bottleneck for small-scale food vendors, affecting their participation as key suppliers.

Despite these challenges, the government-enabled effort demonstrates significant **strengths and opportunities**. The program effectively addresses diverse needs, providing urgent food relief, clothing, medical support, and mental health services during crises. Although not formally integrated into the program, NGOs and local community organizations actively support evacuees with various forms of assistance, such as food and shelter, while private businesses help maintain the ethnic food supply during crises. Additionally, the transition to more direct, technology-enabled assistance and strong coordination across government levels enhances the program's adaptability to diverse needs.

Conclusions

This study is significant for the academic community, policy-making processes, and practical applications, especially for the BC Ministries of Emergency Management and Climate Readiness (EMCR) and Agriculture and Food (AF). By examining the challenges and opportunities in delivering culturally appropriate food assistance, the study provides valuable insights for improving emergency planning, mitigation, preparedness, and response efforts. While the ESS program is known for its generous and diverse support, BC EMCR and ESS teams could consider enhancing collaboration among institutions, governmental organizations, and community partners to support diverse communities' needs during emergencies. This will help strengthen the resilience of the food assistance program through the ESS program and the communities it serves in preparing for future crises.

Abbreviation List

- BC : (the province of) British Columbia
- EMCR : (British Columbia Ministry of) Emergency Management and Climate Readiness
- AF : (British Columbia Ministry of) Agriculture and Food
- HLTH : (British Columbia Ministry of) Health
- RDCO : Regional District of Central Okanagan
- ESS : Emergency Support Services
- PREOC : Provincial Regional Emergency Operations Centre
- EOC : Emergency Operations Centre
- ERA : Evacuee Registration and Assistance
- NGOs : Non-Government Organizations
- NPOs : Non-Profit Organizations
- RC : Reception Centre

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SECTION 1

INTRODUCTION

The Emergency Support Services (ESS) program in British Columbia is a vital initiative aimed at providing immediate, short-term assistance to individuals and families affected by disasters such as wildfires and floods. The program operates under the Emergency Program Act and Local Authority Emergency Management Regulation, ensuring that the basic needs of evacuees, including food, clothing, lodging, and transportation, are met in a compassionate manner (BC EMCR, 2023). However, the delivery of the ESS program faces several challenges, particularly in ensuring food resiliency and security for diverse migrant communities, as highlighted by the McDougall Creek Wildfire in 2023. This wildfire, one of the most destructive incidents in the province, significantly impacted food access for Asian migrant communities in the Okanagan region, underscoring the need for culturally appropriate food options (Government of British Columbia, 2024a).

The increasing frequency and intensity of emergencies, exacerbated by climate change, have highlighted the need for robust emergency management strategies. The BC Ministry of Agriculture and Food has been actively working on emergency management for agriculture, aiming to increase resilience in emergency situations. This includes initiatives such as the flood recovery program and the Disaster Financial Assistance (DFA) program, which provide support to farms, small businesses, and communities affected by emergencies (BC Ministry of Agriculture and Food, 2024). The provincial government has also launched a task force to build partnerships with local communities, incorporate traditional and Indigenous knowledge, and simplify funding management during emergencies (Government of B.C., 2023).

Despite these efforts, the delivery of the ESS program faces challenges related to food accessibility. The program must address the diverse needs of migrant communities in the Okanagan region. Significantly, there is a gap in studies specifically examining the delivery of food assistance programs and their impact on migrant communities in Okanagan, particularly regarding culturally appropriate food options. Thus, this region, characterized by its diverse population of migrants from countries like India, China, and the Philippines, highlights the importance of addressing these gaps to ensure effective emergency response (Government of Canada, 2022). Besides, addressing challenges related to diverse needs of food support in the crisis is also crucial because food insecurity is not merely about hunger; it is intricately linked to overall health and well-being. Inadequate nutrition can lead to a range of health issues, including malnutrition, obesity, and other diet-related diseases. Moreover, the stress and uncertainty associated with food insecurity can have profound psychological effects, exacerbating existing health and social problems.

The significance of this study lies in its implications for the academic community, policy-making processes, and practical applications, especially for the BC Ministries of Emergency Management and Climate Readiness (EMCR) and Agriculture and Food (AF). By examining the challenges and opportunities in delivering culturally appropriate food assistance, this study provides valuable insights for more enhanced collaboration among these institutions to improve emergency planning, mitigation, preparedness, and response efforts, ultimately strengthening the resilience of the ESS program and the communities it serves.

SECTION 2

OBJECTIVES

To summarize, the goals of this project are as follows:

1. Learn insights on food assistance programs (i.e., grocery and meal vouchers) facilitated by provincial (British Columbia Province), regional (Regional District of Central Okanagan), and municipal governments (City of Kelowna) based on wildfire events in 2023.
2. Explore food availability in major and ethnic grocery stores used by Asian migrants² in Kelowna during emergency events.
3. Describe challenges and opportunities faced by Asian migrants experiencing wildfires in obtaining culturally appropriate food.

² A migrant is defined as a person who relocates from their regular place of residence, either permanently or temporarily, and for a variety of reasons, whether inside a nation or across an international border. The term 'migrant' encompasses a variety of clearly defined legal categories of individuals, including migrant laborers; people whose specific forms of movement are legally defined, like illegal immigrants; and people whose status or mode of transportation is not expressly defined by international law, like foreign students (International Organization for Migration (IOM), 2019).

SECTION 3

LITERATURE REVIEW

McDougall Creek Wildfire in 2023

The McDougall Creek Wildfire in 2023 was one of the most devastating events during the wildfire season, particularly affecting British Columbia (B.C.). According to the Government of British Columbia (2024), the province experienced 2,245 wildfires from April 1 to October 31, 2023, which burned 2.84 million hectares of forest and land. This destruction included homes, infrastructure, and ecological areas, impacting agriculture, tourism, and public health. The 2023 wildfires burned more land than those in 2017 (over 1.2 million ha), 2018 (over 1.35 million ha), and 2021 (under 0.9 ha) and were ten times the 20-year average annual burned area (just over 284 thousand ha (Government of British Columbia, 2024a). The incidents were primarily caused by natural causes (72%), followed by human-inflicted (25%) and unknown causes (3%) (Government of British Columbia, 2024a).

Among these wildfires, the McDougall Creek Wildfire was notably destructive in B.C. It was discovered on August 15, 2023, and burned 13,900 hectares of land (Government of British Columbia, 2024a). The fire started 10 kilometers north of West Kelowna, prompting the Mayor to declare a Local State of Emergency the following day, in line with Provincial and Federal orders. The Grouse Complex³, managed by the Kamloops Fire Centre, also oversaw incidents in Walroy Lake, Clarke Lake, and Glen Lake (Government of British Columbia, 2024a). Although the specific cause of the McDougall Creek Wildfire was undetermined, conditions such as hot, dry weather and strong winds contributed to its spread (Government of British Columbia, 2024a).

Migrant and Diverse Communities in Okanagan

The Okanagan region in British Columbia is characterized by a rapidly growing and diverse population, largely composed of migrants. Many individuals are drawn to Canada for its high quality of life, employment opportunities, education, and family reunification, as well as the chance to join established ethnic communities. At the provincial level, Asian immigrants comprised the largest share at 63.5% (905,585 out of 1,425,715 people), followed by immigrants from the Americas (8.8%), Europe (21.6%), Africa (3.7%), and Oceania and others (2.3%) (Government of Canada, 2022). In the Central Okanagan region, the migrant population, including immigrants and non-permanent residents, totaled 35,865 people, representing 16.41% of the total population of 218,525, according to the 2021 Census of Population⁴ (Statistics Canada, 2023a). Among these, Asian immigrants were the largest ethnic population, which made up 53.3% of the recent immigrant population⁵ in 2021, equating to 2,290 out of 4,295 people (Government of Canada, 2022). Besides, the 2021 census data highlights Greater Kelowna as the fastest-growing metropolitan area in British Columbia, with a growth rate of 14% from 2016 to 2021, followed by Chilliwack, Kamloops, and Nanaimo (Szeto, 2022). Additionally, in Central

³ Wildfire complex refers to a number of wildfire incidents that are managed by a single response team called Incident Management Team in which resources and equipment deployed for the events are shared. In 2023, the Grouse Complex, Kamloops Wildfire Centre was responsible for managing wildfires that happened in McDougall Creek (K52767), Walroy Lake (K52808), Clarke Lake (K42815), and Glen Lake (K53294) (Government of British Columbia, 2024a).

⁴ This figure is derived from the immigration status and period of immigration data for individuals living in private households, representing about 25% of the sampled data (Statistics Canada, 2023a).

⁵ This figure is based on a 25% sample of the recent immigrant population (landed immigrants or permanent residents) who arrived between January 1, 2016, and May 11, 2021 (Statistics Canada, 2023a). 'Place of birth' refers to the geographic location where the individual was born, as recorded at the national level in Canada during data collection (Statistics Canada, 2023a).

Okanagan, the racialized population⁶ is predominantly South Asian (30.39%), followed by Chinese (13.67%) and Filipino (12.22%) out of 24,435 people based on the 2021 Census of Population (Statistics Canada, 2023a).

Impact of Wildfire and Other Emergency Events on Food Security and Food Systems

Food security in B.C. is defined as equitable access to affordable, culturally preferable, nutritious, and safe food, alongside the ability to participate in and influence food systems that are resilient, ecologically sustainable, socially just, and honor Indigenous food sovereignty (BC Centre for Disease Control, 2022). The six dimensions of food security include availability (quantity, quality, and cultural relevance of food), access (physical, social, and economic), agency (capacity to make food-related choices and participate in food systems), stability (resilience to shocks), utilization (nutritional well-being and psychological needs through a balanced diet, clean water, sanitation, and healthcare), and sustainability (long-term regeneration of resources for future generations) (FAO, 2006). Conversely, food insecurity occurs when factors outside an individual's control negatively impact their access to sufficient food for well-being (BC Centre for Disease Control, 2022). Food insecurity has reached alarming levels, with Statistics Canada reporting an increase from 16% in 2021 to 18% in 2022 (Uppal, 2023). Among those affected, 8.2% experienced moderate food insecurity, 5.1% faced marginal insecurity, and 4.6% endured severe food insecurity (Uppal, 2023). Racialized families, particularly Black Canadians (38%), Filipino Canadians (28%), Southeast Asian (23%), Arab (22%), and South Asian (19%) Canadians, experience higher rates of food insecurity, while immigrant households above poverty threshold also had a higher tendency to experience food insecurity (Uppal, 2023).

Newcomers and migrants in Canada face challenges with food insecurity and preferences. Immigrant families generally experience higher food insecurity than Canadian-born families. Recent migrants (2013-2022) had the highest food insecurity rate (26%), compared to established immigrants (before 2013) at 20%, and Canadian-born individuals at 17% (Uppal, 2023). Other vulnerable groups include newcomers, working families, pensioners, university students, and people with disabilities (Rideout & Kosatsky, 2014). Temporary migrant workers and their families under Temporary Foreign Workers (TFWs) programs in Canada and the U.S. also experience food insecurity⁷, ranging from 28% to 87%, requiring public assistance (Al-Bazz et al., 2022). Obtaining culturally appropriate food is challenging for migrants due to limited availability, low quality, high prices, and unfamiliarity with the new food environment during their transition (Lane et al., 2019; Moffat et al., 2017).

Food insecurity is also illustrated by increased access to food assistance programs. In Canada, food bank visits exceeded 1.9 million in 2023, a 32% increase from March 2022 to March 2023 (Myhal, 2018). In British Columbia, 195,925 food bank visits were recorded, a 20% rise over the same period (Myhal, 2018). The Central Okanagan-Similkameen-Nicola Federal Electoral District (FED) exhibits greater vulnerabilities contributing to food insecurity and poverty compared to the rest of B.C. (Food Banks Canada, 2024).

⁶ This data is drawn from the 25% sample of the visible minority population in private households, as recorded in the 2021 Census. The term 'visible minority' has increasingly been replaced by 'racialized population' or 'racialized groups' in public discourse, reflecting broader shifts in language usage (Statistics Canada, 2023a).

⁷ While Uppal (2023) and Al-Bazz et al. (2022) used different frameworks to assess household food security—the Canadian Household Food Security Survey Module (HFSSM) for Uppal (2023) and the USDA Household Food Security Survey Module (HFSSM) for Al-Bazz et al. (2022)—the indicators in both frameworks are fundamentally similar. Both frameworks assess the quantity, quality, and variety of food, consider financial constraints, and classify households into categories of food security (i.e., food secure, marginally food insecure, moderately food insecure, and severely food insecure). Additionally, both use a 12-month recall period for their assessments. More detailed information can be found at <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-u-s/> and <https://www160.statcan.gc.ca/prosperity-prosperite/food-security-secureite-alimentaire-eng.htm>.

Climate crisis events, including flooding, heatwaves, storms, drought, and wildfires, along with the COVID-19 pandemic, supply chain disruptions, and industrial activities, contribute to food insecurity (Alderhill Planning, 2022). Challenges include increased food costs, especially in remote locations, high efforts in accessing food, limited availability and quality of preferred and local food, lack of access to food storage and equipment, and food loss (Sovdi et al., 2024). Climate change affects food availability due to crop damage and access to socio-cultural food preferences (Harper et al., 2022).

Government Effort in Emergency Preparedness

The B.C. government is committed to increasing food resiliency and security during emergencies and climate change. In response to recent climate crises, a task force was launched in September 2023 to build partnerships with local communities, integrate traditional and Indigenous knowledge, provide emergency assistance, and simplify funding management (Government of B.C., 2023). The B.C. Ministry of Agriculture and Food offers programs to assist farms, small businesses, and communities during emergencies, including a flood recovery program and Disaster Financial Assistance (DFA) (BC Ministry of Agriculture and Food, 2024). In September 2023, the B.C. government announced a \$20 million fund to support farmers, local governments, First Nations, and industry associations in preparing for and responding to emergencies like drought, wildfires, and floods (B.C. Government, 2023).

Emergency Support Services (ESS): An Overview

As stipulated by the Emergency and Disaster Management Act (EDMA) (SBC 2023) Chapter 37, local authorities are required to 'include a plan for the evacuation and care of individuals and animals in the area within the jurisdiction of the local authority' under section 52 (3) (a), which include four phases of emergency management, including mitigation, preparation, response, and recovery (Emergency and Disaster Management Act, 2023). The BC Provincial Government has established Emergency Support Services (ESS) as part of its efforts, operating within the British Columbia Emergency Management System (BCEMS) framework and employing an incident command system (ICS) approach for response (BC EMCR, 2023). The ESS program functions within a coordinated structure that includes provincial, regional, and municipal governments, as well as Indigenous governing bodies (BC EMCR, 2023). The program also relies on responders to carry out its core functions, with many communities relying on volunteers for this critical role (BC EMCR, 2023). It provides short-term support to individuals and families affected by disasters like wildfires and floods. In addition, it also emphasizes cultural safety and humility, particularly in interactions with Indigenous communities, to ensure inclusive and culturally appropriate services (BC EMCR, 2023).

The ESS program follows a well-defined response process, beginning with the registration of evacuees and determining their eligibility for support. The program is structured to operate under the British Columbia Emergency Management System (BCEMS), utilizing an incident command system approach. This involves coordination between various levels of government and the Emergency Operations Centre (EOC) to manage resources and deliver services effectively. The ESS program also emphasizes cultural safety and humility, particularly in its interactions with Indigenous communities, to ensure that services are inclusive and culturally appropriate (BC EMCR, 2023).

The ESS program is a collaborative effort involving multiple levels of government. At the provincial level, the Ministry of Emergency Management and Climate Readiness (EMCR) provides policy direction, training, and financial support. Regional offices play a crucial role in coordinating resources and supporting local authorities. Municipal governments are responsible for activating their ESS plans and managing the immediate response to emergencies within their jurisdictions. The integration of these various levels ensures a cohesive and efficient response to emergencies, with each level playing a specific role in the delivery of services (BC EMCR, 2023).

The program offers a range of support, including food, clothing, lodging, and transportation, which are delivered through partnerships with local suppliers and community organizations, as well as paper referrals and e-transfer forms to evacuees. These supports are typically provided for up to 72 hours with justified extension, allowing evacuees to begin planning their recovery. In cases where the emergency is ongoing, extensions may be granted with appropriate justification. The ESS program also facilitates access to additional services such as family reunification, social-emotional support, and cultural and spiritual care, ensuring a comprehensive approach to meeting the diverse needs of evacuees (BC EMCR, 2023).

Activation of Emergency Responses: Case of McDougall Wildfire

On August 16, 2023, the Central Okanagan Emergency Operations Centre (EOC) was activated due to the McDougall Creek Wildfire. Fires started 10 kilometers northwest of West Kelowna, leading to evacuation alerts⁸ and orders (City of West Kelowna, 2023b). Over 10,000 residents of West Kelowna were evacuated, including neighboring communities and Westbank First Nation (City of West Kelowna, 2024b). The ESS team established reception centers at Royal LePage Place in West Kelowna, Kal Tire Place in Vernon, and Princess Margaret Secondary School in Penticton (City of West Kelowna, 2023c). On September 20, the BC Wildfire Service declared the fire "held"⁹ (City of West Kelowna, 2024b), indicating that the wildfire was expected to stay within its established perimeter based on current weather, fuel, and resource availability (Government of British Columbia, 2024b). Subsequently, the Local State of Emergency was lifted on October 10 (City of West Kelowna, 2024b).

⁸ Evacuation Alerts suggest people in the area to be prepared to leave their place with the people they are staying with and belonging in a moment's notice (City of West Kelowna, 2023b). Evacuation Order means people in the area must evacuate immediately (City of West Kelowna, 2023b).

⁹ The BC Wildfire Service categorizes the progress of a wildfire into different stages of control, each providing an overview of the current goals and strategies being employed. These stages include "out of control," "being held," "under control," and "out." For more details, visit the BC Government's website (<https://www2.gov.bc.ca/gov/content/safety/wildfire-status/wildfire-response/management-strategies/stages-of-control>).

SECTION 4

METHODOLOGY

Scope of the Project, Location of Study, Study Population and Participants

The project scope generally focuses on the government-led food support program for Asian migrants in Okanagan, B.C., who experienced wildfire events in 2023. Okanagan Region is selected for the case study location, as it is home to the fastest-growing metropolitan area (Greater Kelowna) in B.C. and one of the biggest and most diverse municipalities¹⁰ by population outside of the Metro Vancouver region (Szeto, 2022). The study focuses on the impacts of the McDougall Creek wildfire in Okanagan in 2023 on the community in the region, the food supply chain, and the need for food assistance in the crisis that the wildfire caused. This wildfire has become the most destructive in BC¹¹ and Canada. For the case study, the Asian migrant community was chosen due to the growing Asian migrant (including landed immigrant, non-immigrant, and non-permanent resident status) communities in Central Okanagan (Government of Canada, 2022).

For the purpose of this study, the focus and study participants include migrant communities. The term ‘migrants’ refers to the official definition from the UN International Organization for Migration and the Department of Economic and Social Affairs (UN DESA). Migrants¹² are an umbrella term that encompasses people who move away from their original residence, either across a border or within their own country, for short-term, long-term, or other reasons (UN DESA, 2012). However, this study does not limit the classification structure of immigration status to be eligible in this study, whether they are recent or established immigrants (Statistics Canada, 2023b). To determine their eligibility, participants must have lived experience during the McDougall wildfire in 2023 and have been part of community organizations during the McDougall wildfire in 2023, regardless of their position (i.e., leaders, board members, full-time or temporary staff, volunteers, or members) in the respective communities. This approach was used to select participants to ensure that data obtained from participants reflect the community organizations they are part of, not their individual experiences as evacuees of the McDougall Creek wildfire in 2023.

Data Collection Methods

The data collection process began with an extensive literature review, utilizing publicly available references such as articles, government reports, websites, and news sources. This review provided a foundational understanding of the ESS program, its structure, and its delivery mechanisms. It also offered insights into the broader context of emergency food assistance and the challenges faced in diverse communities.

As a second step, semi-structured interviews were conducted with three distinct groups to gather in-depth insights. The first group consisted of BC government-affiliated personnel, including representatives from the provincial government (BC EMCR), regional government (PREOC in Central Okanagan, EOC in the City of Oliver), and municipal governments (ESS in the City of Kelowna, RDCO, Columbia-Shuswap Regional District, and the City of Kamloops). These interviews aimed to understand the structure, mechanism, and delivery of the ESS program. The second group included private businesses, specifically Safeway in Kelowna, to explore supply

¹⁰ In 2023, Kelowna was the seventh biggest municipality in British Columbia with 160,693 residents, preceded by Vancouver (725,778 people), Surrey (662,561 people), Burnaby (279,948 people), Richmond (229,781 people), Abbotsford (175,589 people), and Coquitlam (168,250 people) (Government of British Columbia, 2024a). Combined with the Kelowna, West Kelowna, Lake Country, and Peachland municipalities, the Kelowna Metropolitan area had a population increase from 194,892 people in 2016 to 222,162 residents (Government of Canada, 2022).

¹¹ In BC, the wildfire in 2023 caused more than 2.84 million hectares of forest and land burned, and it burned 13,970 ha based on wildfire in McDougall Creek on August 15, 2023 (Government of British Columbia, 2023)

¹² This term includes legally justified short-term immigrants and long-term immigrants (or immigrants), migrant workers, and unspecified categories (i.e., international students) (Douglas et al., 2019; UN IOM, 2024).

chain management during emergencies and the availability of diverse food options. The third group comprised community associations, such as the Okanagan Chinese Canadian Association (OCCA), Kelowna Hindu Cultural Society (KHCS), and BC Muslim Association in Kelowna. The Okanagan Chinese Canadian Association (OCCA), Kelowna Hindu Cultural Society (KHCS), and BC Muslim Association (BCMA) in Kelowna play significant roles in representing the diverse cultural and religious communities within the region, such as Asian, Hindu, and Muslim communities in Okanagan. These organizations are instrumental in providing support and advocating for their members, particularly during emergencies, by addressing specific cultural and dietary needs. Engaging with these associations offered valuable insights into the unique challenges and requirements faced by diverse populations during crises. These interviews provided insights into the perspectives and needs of diverse communities during emergencies. A total of 12 interviews were conducted between June and July 2024, primarily through virtual platforms like MS Teams and Zoom, as well as phone calls and email correspondence.

Finally, a jurisdictional review was conducted to examine policies, programs, and guidelines surrounding emergency food assistance in Hubei Province, China. Data were sourced from publicly available government documents, articles, official websites, and news reports. This review offered a comparative perspective on emergency food assistance strategies and highlighted potential areas for improvement in BC's approach. The selection of Hubei Province in this review is relevant due to several reasons. Hubei Province in China and British Columbia, Canada, share several similarities that make the comparison of emergency food assistance strategies relevant. Both regions have diverse populations, with BC having a significantly diverse Asian population. Some major ethnic populations in BC include South Asians, Chinese, and Filipinos (Statistics Canada, 2023a). Second, the nature of emergencies faced by these regions, such as the COVID-19 pandemic in Hubei and wildfires in BC, highlight the need for robust and adaptable emergency response systems. These similarities provide a meaningful context for examining and potentially adopting best practices in emergency food assistance. The following table summarizes the participants involved in the semi-structured interviews (See Table 1).

Table 1. Summary of Study Participants

Group of Participants	Levels	n	Abbreviation
Government	Provincial	1	Gov
	Regional	2	Gov
	Municipal	3	Gov
Private Business	N/A	1	Buss
Community Associations	N/A	5	Comm
Total (N)		12	

This comprehensive approach to data collection provided a nuanced understanding of the ESS program's challenges and opportunities for improvement, informed by diverse perspectives across government, business, and community sectors.

SECTION 5

RESULTS AND DISCUSSIONS

This section summarizes the key challenges and opportunities related to both food and non-food issues in the context of delivering emergency assistance through the ESS program, based on the McDougall wildfire in 2023. The insights presented here are compiled from interviews with B.C. provincial, regional, and municipal government representatives involved in emergency planning, mitigation, and response, as well as leaders of private businesses and members of cultural and faith-based communities who have lived through the crisis.

Key Challenges

Food-Related Constraints

Limited Access to Culturally Appropriate Food

During emergency events, participants expressed diverse food preferences. One participant emphasized the importance of culturally appropriate food and noted that physical barriers limited their access to such foods. A participant who emigrated from China shared that they typically consume Chinese food items like spices and herbs for soup (e.g., ginger and dried black fungus), fruits (e.g., longan), tea, and ethnic snacks. However, accessing these items was challenging during the wildfire due to active fires and evacuation orders, as stores were closed.

Additionally, at the reception center (RC) in West Kelowna, a participant expressed concern about the lack of culturally preferred food available at the RC or nearby stores. The food provided or donated by various organizations at the RC mostly consisted of typical Western items, such as pizza and canned food.

“...the problem is they [evacuees] need food, and they cannot always eat pizza. Even though most restaurants are open, people cannot eat pizza all the time. Canned food does not help them. So, we bring hot food, rice, butter chicken, naan bread, and other Indian food. They already have fruit [at the RC].” – Comm #4

Participants were also concerned about the availability of food in the event of emergencies. One participant even recalled the past disaster prior to the wildfire, such as the flooding.

“During the flood, at that time, the airport was closed, because of the fire, we [our community] were worried the food was not available at the grocery stores, like essential food, essentials, that we might not have enough of them. They were like empty shelves, so we did not get there.” –Comm #3

Meeting diverse food preferences and dietary requirements can be challenging, particularly when providing large-scale food assistance. Organizations donating food to reception centers often provide mass-produced meals, which may lack options such as vegan, gluten-free, or halal. Additionally, not all Emergency Support Services (ESS) responders are familiar with specific dietary needs, such as the requirements for halal food, complicating efforts to accommodate everyone effectively.

“Now, that's not always going to meet everyone's dietary requirements, either, because they're, you know, they're serving food on a mass scale. there's pastas, there's salads. So it's not necessarily there's a vegan option, or if there's a gluten free option, for example, or a halal option. Some [ESS responders] might not even understand what halal is, what vegan is for, to be honest with you.” –Gov #6

Moreover, there is a lack of ethnic restaurants where evacuees are located. This is partially relevant in an area that does not have a big population or more diverse demographics.

“There’s no Filipino restaurant here in Kamloops. There are only two Thai restaurants in town. There’s not a lot [of ethnic restaurants] here.” –Gov #2

This need for culturally appropriate food is important to be fulfilled to ensure the well-being of people from cultural backgrounds, especially in emergency situations. Accommodating the diverse dietary needs of evacuees will also address food insecurity issue related to availability, access, and stability dimensions.

Barriers to Food Donation Due to High Standards of Food Safety

Another barrier to effective food assistance is the rejection of food donations from community members due to stringent safety standards. Food must come from a certified food-safe kitchen, meaning homemade meals from neighbors cannot be accepted. This requirement also challenges diverse community associations in meeting the needs of varied populations. Such restrictions significantly limit the opportunity to leverage community resources and serve ethnic foods to a broader audience.

“When we look at the food that’s being provided, so unless it comes from a food-safe kitchen, we can’t accept food that you know your neighbors cooked at home. And even the Buddhist Society, I think it was called from here in Kelowna, cooks their meals specific to the demographics that require them. Like they cooked a lot of vegan foods for us.” –Gov #6

Limited Food Storage and Cooking Equipment

Food insecurity is a significant challenge for evacuees, especially those staying in temporary accommodations like hotels or group lodgings. Participants in interviews emphasized the lack of access to food storage and cooking facilities in these settings. This limitation severely impacts their ability to maintain a nutritious diet, as many hotel rooms are equipped with only basic amenities such as a sink, kettle, and microwave. The problem is exacerbated when individuals are expected to store a week’s worth of groceries in a small fridge, making it difficult to preserve perishable foods for extended periods.

“So, the other option is we can send you a grocery store to get specific food for you. Now again, as I said, that may work for some, but it may not because a lot of our hotel rooms, you know, they might have a sink and a kettle or a microwave or the other big issue we had was a lot of our supports [grocery voucher redemption] go for one week. Now, if they’re in a hotel room with a tiny little fridge, they can’t fit seven day’s worth of groceries in that tiny little fridge.” –Gov #6

Barriers to Fulfilling Basic Needs

A notable challenge was the temporary alteration in access to safe drinking water for residents in West Kelowna, particularly in certain localized areas. While access was maintained, residents had to rely on alternative sources for a period of time. This highlights the importance of non-food inputs in food security" (FAO, 2006). One participant elaborated:

“the government gave [us] notice that the water is not safe to drink. They put a sign, and there is a traffic light in the area [neighborhood] like a poster or something. I think it lasted two weeks before they took away.” –Comm #3

On August 20, 2023, the City of West Kelowna issued a public notice that a 'Do Not Consume' order was in effect for residents in the Rose Water System Area, while a Boil Water Notice was issued for those in the Sunnyside/Pritchard system. This Stage 4¹³ water restriction was partly due to prioritizing water needs for firefighters during the emergency, although the water treatment plants were not damaged by the wildfire. Later on August 26, 2023, the local government also issued a Boil Water Notice¹⁴ for the Rose Valley-Lakeview Service Area and a 'Do Not Consume'¹⁵ order for the West Kelowna Estates Water System (City of West Kelowna, 2023c). To address this issue, the City of West Kelowna provided an alternative drinking water source by setting up a water-filling station at Shannon Lake and Asquith Roads (City of West Kelowna, 2023a). However, the city advised residents to limit water consumption to protect the available supply during the crisis. Hence, ensuring the safety of drinking water should remain a priority during future emergency events, given the potential uncertainties that can arise (Kendall, 2015), such as destructive wildfires (Li, 2019).

Delayed Reimbursements for Food Suppliers

Small ethnic restaurants often hesitate to participate as food suppliers in government food assistance programs due to financial concerns. One major issue is the delayed reimbursement from the government, which can strain their financial resources and affect their ability to operate effectively. Some of the participants in this study elaborated:

“South Asian grocery store that we have in town, and I don't believe that they are a food supplier [at the moment]. They used to be a supplier, but they found the reimbursement just takes time.” –Gov #2

In a separate interview, another participant explained:

“Like small stores or small restaurants, they don't really accept, for example, referrals because, like, in order to get reimbursement from the BC government, it takes them, for example, 30 to 60 days or maybe longer.” –Gov #3

These delays can be particularly challenging for small businesses that rely on steady cash flow to manage expenses. As a result, many of these restaurants are reluctant to engage in programs that could otherwise benefit the community, highlighting a need for more timely and reliable payment processes.

Other Non-Food-Related Challenges

ESS Responders: Challenges in Recruitment, High Workloads, and Less Appreciation

Volunteerism is on the decline, posing a significant challenge for local governments that rely heavily on volunteers to deliver their programs effectively. As the pool of available volunteers shrinks, the ability of these programs to function efficiently is compromised, highlighting the urgent need for sustainable solutions to support these essential services.

¹³ Water restriction Stage 4 means that water cannot be used for any outdoor purposes (City of West Kelowna, 2024a)

¹⁴ According to the Interior Health Authority, a Boil Water Notice (BWN) is typically used when a water supply system intended for drinking, cooking, brushing teeth, washing dishes, and washing fruits and vegetables to be eaten raw poses a health hazard (Office of the Medical Health Officer, 2017).

¹⁵ The more severe notice is a Do Not Consume notice since drinking water has a potential negative impact and cannot be mitigated by boiling it due to contamination or other damages to the reservoir (Office of the Medical Health Officer, 2017).

“The volunteerism is definitely declining, so local governments are struggling because their program is really only as good as the people they have to deliver it. They put them on a rotation 24/7, or someone used volunteers because they’re just too small of a community to pay staff to do that.” –Gov #1

In addition, the preparation and effort required to respond to emergencies are substantial, involving year-long planning and readiness activities. To address sustainability concerns in emergency management, local governments and communities should prioritize recruiting and enhancing the capacity of ESS responders through training and mentorship opportunities. This approach will help maintain the effectiveness of emergency response efforts and better prepare for future emergencies.

Although cultural and spiritual community organizations are not formally part of the ESS program, their roles are significant in assisting people in need of food. However, their ability to provide support is often hindered by limited financial resources, which restricts their capacity to supply food for evacuees. One cultural-based community organization highlighted:

“Currently, we face a financial challenge, and the rest are not a problem because people will support them [evacuees]. We start from \$500 [to help people with food], some people [in our community] came and helped by bringing something like water and juice. [And] We need to help people in our community. This [McDougall wildfire] is [another big wildfire] after 25 years. If you spend one week just to help the community, it is nothing. However, [We received] no funding from the government. If we have to go with the government, we need to follow the applications, etc., because we are a charity organization. The time is short [to apply for the grant and provide help to people].” –Comm #4

Another community group also emphasized this issue, indicating that there is no formal or informal collaboration with the ESS team.

“There was no collaboration with ESS [team], and [we need] better communication.” –Comm #5

While the ESS program does not require or expect collaboration with cultural or spiritual-based organizations, these diverse communities play a vital role in supporting the program's delivery. Their close connection to their communities allows them to bridge gaps in emergency assistance, such as supplying ethnic foods and other preferred items. Additionally, they can offer related support within their limited capacities, including providing temporary shelter to evacuees.

A Challenge to Accessing Emergency-Related Information from Government

Members of community associations reported experiencing unfamiliarity, unawareness, and a lack of information regarding evacuation alerts and orders sent to mobile phones, as well as updates related to emergencies from the local government. To address the need for updated information, participants in this study acknowledged the important role of the community associations they belong to. They rely on this information source to help navigate emergencies, such as understanding evacuation alerts and orders, the status of fires, impacted areas, and when it is safe to return home. A dedicated volunteer from the OCCA Communities Associations mentioned that they connected with other evacuees through social media channels used by the organization, such as a Facebook group.

“I don’t get any [alerts or evacuation]. No updates [from the local government]. I think it’s great to receive notices or alerts through cellphones, and it’s needed at that time.....In the [OCCA Community Associations] group, Facebook group, there is a link shared by a member, and you could see the map [of wildfire]. The map has an area [where you] can click it and zoom in on the area. [if it shows] Read means you need to leave.” –Comm #3

Another participant expressed:

“There are Facebook community groups (Glenmore and Wilden neighborhoods). So fellow community members and I followed them in real time. And then I noticed they said, Oh, there’s a there’s fire on our side already. And then they said, it is spreading really fast.” – Comm #2.

Another participant who is part of another community group in the City of Kelowna had a different experience with accessing information. Some people are also dependable and have access to information provided by the local government.

“Everyone [in the City of Kelowna] was relying on local government and social media communication platforms for instructions and updates on the wildfire.” –Comm #5

From August 21-25, 2023, the RDCO and the Central Okanagan EOC held daily news conferences to keep the public informed about emergency updates (City of West Kelowna, 2023c). These updates included information on the wildfire's impact on city services, as well as the return and recovery plan. However, it remains unclear whether this information was accessible to evacuees or if they relied on close community groups for more responsive and trusted information.

The Need for Accommodating Diverse Languages

While English and French are the primary languages in Canada, due to diverse populations, it is also vital to consider other language accommodations, especially for evacuees. One participant shared their stories regarding the lack of language assistance in the reception center.

“...I think language assistance is a reasonable suggestion. I know that people can use their smartphones to translate them, but I think it is a good way if any signage can be translated into other languages so people [like us] could understand, and it’s good for our diverse population here. In our neighborhood, we have many people coming from Vietnam, India, Malaysia, and quite a few, the Philippines.” –Comm #3

Opportunities (Strengths)

A Responsive Support from Community Associations and NGOs

With diverse cultural ethnicities in Okanagan, not-for-profit cultural and faith-based organizations leveraged their main roles to not only promote cultural awareness but also support community members in need. For instance, KHCS partnered with local ethnic restaurants to provide and facilitate food donations to the RC.

“We came to the place [reception center in West Kelowna]. We provided [Indian] food for 500 people from morning to evening for five days during the wildfire last season. There were lots of UBC (Okanagan Campus) students. [And] There was one student from Vancouver who came with their parent, but the airport shut, and there was no bus at that time. So, they got

stranded. We ordered them [food] from nearby restaurants [serving ethnic food] such as Made in India, Pagano Pizza, and a samosa place. It's the time to give back to the community, and people appreciate our help." –Comm #4

"As we are located in the middle of the city, Kelowna Islamic Centre was not impacted by the 2023 wildfire. About five individuals were evacuated from their homes and ended up staying at the masjid [mosque] for about four days. Some food [hot meals and such as fruit] was donated by the local Muslim community to the evacuees who were staying at the Masjid. Halal ingredients were used [since they are Muslim], and we assisted students from the Middle East and Africa." –Comm #5

Other prominent NPOs involved in the delivery of food assistance include Central Okanagan Food Bank and The Salvation Army British Columbia Division (City of West Kelowna, 2023d). Organizations that contributed to providing assistance in wildfire relief include West Kelowna Professional Firefighter Charitable Society, Central Okanagan Foundation, Animals Lifeline Emergency Response Team (ALERT), United Way British Columbia, Canadian Red Cross, and YMCA of Southern Interior BC (City of West Kelowna, 2023d). Additionally, local organizations, such as the Food Action Society, play a crucial role in supporting evacuees by providing fresh, locally-grown produce, which is vital for maintaining health and well-being during challenging times.

"We had actually Food Action Society that was also helping with ensuring that evacuees were given local produce such as apples, oranges, apples and umm, cucumbers and tomatoes. Anything that was grown locally. They provided local vegetables, fruits, and vegetables as well." –Gov #4

Cultural and spiritual-based organizations, along with charitable groups, play a vital role in supporting evacuees during crises by providing essential resources such as food and hygiene kits. These organizations, including the Salvation Army and the Red Cross, step in to offer immediate assistance, helping to meet the basic needs of those affected. Their involvement is crucial in ensuring that evacuees receive timely support, which can alleviate some of the stress and uncertainty during emergencies. By collaborating with these organizations, emergency response efforts can become more comprehensive and culturally sensitive, ultimately enhancing the well-being of diverse communities during difficult times.

Private Businesses Help Maintaining Ethnic Food Supply

Private enterprises play a crucial role in ensuring the availability of diverse food items and mitigating the food delivery challenge particularly during crises and amidst a growing population of diverse migrants. By having a dedicated section of international food items, businesses help meet the dietary needs of migrants from various ethnic backgrounds. Their ability to maintain a steady supply chain, even during disruptions like wildfires, underscores their importance in supporting food diversity and accessibility.

"Yeah, we've got Indian and South Asian [food items]. I would say there're some more Ukrainian products available now. But our warehouse is really trying to get more Filipino, East Asian, and Indian Foods now available directly from our warehouse. [In terms of maintaining food supply] We have warehouses in Alberta already, so it wasn't that much of an issue [due to wildfire]. It just changed the date and time of delivery slightly, but overall, you're still able to receive all goods from [our warehouse in] Alberta." –Buss #1

Generous Emergency Assistance and Strong Coordination with Other Levels of Government

One strength of the ESS program is that it offers a wide range of assistance to support individuals and families during challenging times, ensuring that various needs are met. This assistance includes daily allowances for restaurant meals and groceries, as well as lodging options that accommodate different family sizes. Additionally, financial support is available for clothing, with extra provisions for extreme weather conditions, and transportation needs are addressed through city bus passes and fuel approvals for special requests. These diverse forms of aid are designed to provide comprehensive support and alleviate the burdens faced by those affected by crises.

“Restaurant meals are up to \$53 per day per person. Groceries are 22.50 per day per person. Uh, lodging is basically whatever the provincial government hotel rates are at the time. So, if a family is large, then they may need multiple hotel rooms, billeting, or the shelter allowance, which is \$30 per night for one person and then \$10.00 for each additional adult and \$5 for each child. Clothing is up to a maximum of \$150.00, and then if it's super cold out, we can provide another \$50.00 for extreme weather. So, to be able to purchase a winter coat or something like that, we can provide [transportation] within the city of Kamloops, and we can provide bus passes if people need them. If they need transportation, if we get approval and it is a special request to get fuel approval from MCR, that only ever gets approved.” –Gov #2

Furthermore, the Emergency Social Services (ESS) team is committed to accommodating the diverse needs of evacuees, including addressing specific food requirements that may arise, particularly among migrant populations. To achieve this, the ESS team collaborates closely with various levels of government and a network of government and non-government organizations to identify and secure the necessary resources.

“We knew the reception center had a lot of migrants, which this has come up before and they say, hey, we have a need for this kind of food because, you know, the food options here are just not meeting the need, so we would put that forward to the Integrated Disaster Council of BC [IDCBC] and say, hey, is there anyone on this call that has access to acquire this kind of food that's been requested and then we would see what organizations are able to come forward and they would support the local government directly.” –Gov #1

By engaging with the other governmental organization, they can quickly communicate specific needs and seek assistance from organizations capable of providing the requested support. This strong coordination ensures that local governments receive the backing they need to effectively address the unique challenges faced by evacuees.

Transition to Using More Effective Form of Assistance Delivery

The transition from paper referrals to electronic transfers for delivering food assistance represents a significant advancement in supporting evacuees. This shift addresses a critical challenge highlighted by participants: the lack of choice and flexibility associated with traditional referral forms. With paper referrals, evacuees are often limited to specific vendors or predefined food options, which can restrict their ability to meet their individual dietary needs and preferences. By contrast, e-transfers grant recipients greater autonomy, allowing them to spend their funds at any restaurant or grocery store they choose. This increased flexibility is not only about convenience but also about promoting equity and dignity among evacuees. Electronic transfers provide individuals with the freedom to make decisions that best suit their circumstances, whether that means purchasing culturally appropriate foods, adhering to dietary restrictions, or simply having the option to eat out at a restaurant. This autonomy is crucial in maintaining a sense of normalcy and control during the often-disruptive experience of evacuation.

“And the challenge is that there's not a lot of choice when it comes to the referral forms, which is why e-transfer is providing more of an equitable choice because they [evacuees] can choose to go spend their funds wherever they want and how they want in terms of eating and food.” –Gov #1

Moreover, the use of e-transfers can streamline the distribution process, reducing administrative burdens and potential delays associated with paper-based systems. This efficiency is particularly important during emergencies when timely access to food is critical. By leveraging technology, aid organizations can ensure that assistance reaches those in need more quickly and with fewer logistical hurdles.

SECTION 6

JURISDICTIONAL REVIEW

The Case of Hubei Province, China, in Managing Emergency Food Assistance

Emergency Events and Their Impacts on Food Resiliency

Hubei Province has faced significant crises, notably the Coronavirus disease 2019 (COVID-19) and wildfires. The "twin pandemic," which includes the COVID-19 pandemic and issues of food and nutrition insecurity, has worsened food resilience in Hubei, especially during emergencies (Clapp & Moseley, 2020). COVID-19 was first detected in Wuhan, Hubei's capital, on November 17, 2019, and within four months, it affected over one million people across 192 countries (Fawzi et al., 2020). Wuhan's lockdown lasted approximately 76 days, from January 23, 2020, to April 8, 2020 (Almond, 2020). This emergency impacted food consumption, particularly food availability and accessibility, as decreased food stocks and rising prices resulted from panic buying and lockdown measures (Fawzi et al., 2020). Measures such as public transport closures, stay-at-home orders, and physical distancing impacted food production and trade (Falkendal et al., 2021), affecting food price stability and accessibility (Amare et al., 2021; Mahajan & Tomar, 2021). In China, COVID-19 significantly impacted foods, making them physically and economically inaccessible due to travel restrictions, stay-at-home orders, food outlet closures, and increased prices (i.e., cabbage, pork, flour, and rice) (Almond, 2020). A study on food policy during the emergency in China found that COVID-19 affected food prices. In Hubei, this condition was exacerbated by the insufficient short-term food supply, increased consumer demand, and soaring food prices during the COVID-19 outbreak (Zhong et al., 2022).

Additionally, Hubei had 4.33 million hectares of natural forests in 2010 but lost over 6.73 thousand hectares of tree cover from 2001 to 2023 due to forest-related fires (Global Forest Watch, 2024). In 2024, 34 fire alerts (VIIRS) were issued between June 25 and July 2, with Huanggang experiencing the most tree cover loss, averaging 68 hectares annually (Hai et al., 2024). Areas in the province at risk of forest fires include Huangshi (March–August and December–February) and Xianning (March–May), due to factors such as dry atmosphere, burning agricultural crop residues, increased tourism, misuse of outdoor fires, low precipitation, droughts, and dry vegetation (Hai et al., 2024).

Emergency Food Assistance Program during COVID-19

China's institutional framework for emergency food supply is based on a food contingency plan developed in response to the severe acute respiratory syndrome (SARS) outbreak in 2003 (Zhong et al., 2022). This framework applies at all government levels—country, province, prefecture, and county—with the central government regulating the food contingency plan for grain and non-grain commodities. For non-grain commodities, the Ministry of Commerce issued the Contingency Management of Daily Necessities (CMDN) regulations in 2003, amended in 2011 to include meat, vegetables, eggs, and dairy products. In 2005, the State Council initiated the State Grain Contingent Plan for regulating grain and cooking oil, and in 2006, the Ministry of Commerce released the Central Regulation of Frozen Meat Reserve Policy.

Emergency food management in China comprises four plans: food reserve management, contingency plan formulation, food price and sales monitoring, and contingency plan activation (Zhong et al., 2022). First, as part of the contingency plan formulation, the food reserve manages the supply of seven key commodities: grain, cooking oil, meat, vegetables, eggs, sugar, and tea, held in reserve by various levels of government (See Table 2). Second, there are three contingency plans for grain, meat, and daily necessities, released in response to shocks such as disasters (earthquakes, wildfires, landslides, floods), public health emergencies (e.g., COVID-19), war, or other emergencies (Ministry of Commerce of China, 2020). Third, food price control and monitoring focus on

food supply and price stabilization, encouraging private businesses in food procurement, inter-region food transfer, food reserve release, food importation, food sales regulation, and public distribution. Fourth, food contingency activation may involve releasing food reserves. During the COVID-19 lockdown in Wuhan on January 23, 2020, the central government contingency plan facilitated the flow of food supply from other regions to Wuhan and distribution within the city.

Table 2. Food Reserve in China

Food Item	Department in Charge	Level of Government			
		Central	Provincial	Prefectural	County-level
Grain	Grain Administration	X	X	X	X
Cooking Oil	Grain Administration	X	X	X	X
Meat	Commerce Administration	X	X	X	
Vegetable	Commerce Administration			X	X
Eggs	Commerce Administration			X	X
Sugar	Commerce Administration			X	X
Border-sale tea	Commerce Administration	X	X	X	X

Note: X indicates that the food reserve is established and managed at the corresponding government level.

Source: Author's compilation

During the COVID-19 outbreak, the Chinese central government and the Ministry of Commerce collaborated on a food emergency plan. The central government managed the food supply in Wuhan, while the Ministry of Commerce created a task force to coordinate food supplies from nearby provinces to Wuhan. On February 3, the central government held 10,000 tons of frozen pork and 60,000 tons of vegetables, supplying about 8,000 tons to the Wuhan market daily, preserved in nearby provinces (Xiaotong, 2020). On February 18, the Joint Mechanism for Ensuring Food Supply Among Nine Provinces (Hubei, Anhui, Jiangxi, Shandong, Henan, Hunan, Yunnan, Guangxi, and Chongqing) was announced, covering vegetables, meat, eggs, milk, cooking oil, rice, wheat, flour, and instant food (Ministry of Commerce of China, 2020).

Emergency Food Policy and Impacts of COVID-19 on Food Resilience

The lockdown order in Wuhan had significant implications for emergency food policy. During the movement restriction policy from January 23 to February 29, 2020, the local government closed all public transportation, limited the use of private vehicles to those with specific permits, and partially or completely closed urban neighborhoods (Zhong et al., 2022). During the partial residential closure on February 11, 2020, only one household member was allowed to leave their residence to buy food once every three days, with restrictions escalating fully after a week (Zhong et al., 2022).

To ensure food accessibility for over 8 million Wuhan residents (Statista, 2023), the Chinese government implemented four types of food provision policies from February 17 to March 19, 2020 (Zhong et al., 2022). First, online food buying allowed household members to source their food needs from online retailers and pick up their orders from designated locations near their residences. Second, community group buying involved residential committees acting as food purchasing agents, collecting residents' orders, purchasing food from suppliers, and using government-supported delivery services. Third, residents could buy food directly from producers. Lastly,

the government provided food donations, particularly to lower-income groups registered in the Minimum Livelihood Guarantee (Dibao)¹⁶ Program (Kakwani et al., 2019).

Lessons Learned

Two notable emergency food policies during the COVID-19 pandemic in Wuhan were community group buying and government donations. The community group buying initiative, launched by the Chinese government, involved the central government procuring food outside Wuhan while the local government managed distribution within the city. This program was made possible through collaborations with food suppliers (e.g., supermarkets), community committees, property management, and food delivery volunteers (Zhong et al., 2022). Originating around 2014-2015 and facilitated by WeChat, this retail model was considered efficient, low-cost, and effective in serving consumers in less urbanized cities (Chin, 2022). However, it faced bottlenecks due to labor shortages and limited capacity to deliver food from supermarkets to neighborhoods (Zhong et al., 2022). To address these challenges, the Wuhan Municipal Bureau of Commerce deployed cadres, community workers, and paid and unpaid volunteers, partnering with the Municipal Public Transport Group to requisition over 800 buses and additional vehicles from postal express and social services. These efforts increased the capacity, delivery efficiency, and reach of community food-buying from supermarkets to residential communities (Ming, 2020). Despite these efforts, the community food buying initiative did not fully serve communities as it did pre-pandemic. It continued until March 19, 2020, following the reopening of public markets and food outlets and the lifting of restrictions in communities without epidemic risk, where there were no suspected or close-contact cases for at least 14 days (Zhong et al., 2022).

Another policy implemented by the Chinese government during the COVID-19 response in Wuhan aimed to improve food affordability. The Wuhan Municipal Government supplemented 130,000 urban and rural low-income residents registered under the Minimum Livelihood Guarantee (Dibao) Program with CNY 330 (approximately CAD 63) per capita per month in living supplies for four consecutive months to help subsidize food prices (Meihui, 2020). Additionally, Wuhan City increased the allowance for disabled people by CNY 50 (approximately CAD 9.5) per month (Meihui, 2020).

¹⁶ Becoming China's largest social safety-net program, the Minimum Living Standard Guarantee (Dibao) program was originally implemented in urban areas in the 1990s with the aim of reducing urban poverty (Kakwani et al., 2019). In the 2000s, the Chinese government extended the program to cover rural areas as well (Kakwani et al., 2019)

SECTION 7

CONCLUSIONS

Summary

The Emergency Social Services (ESS) program serves as a crucial safety net, providing essential support to evacuees during emergencies. However, several challenges hinder its effectiveness, particularly in delivering culturally diverse food options. Limited access to culturally appropriate food, inadequate food storage and cooking equipment, and the lack of participation from small-scale food suppliers are significant barriers. Additionally, the absence of formal engagement between the government and NGOs further complicates the delivery of services. Addressing these gaps is crucial to developing more effective strategies for supporting diverse communities during emergencies. This will help strengthen the resilience of the food assistance program through the ESS program and the communities it serves in preparing for future emergencies.

Study Limitations

This study's qualitative nature presents limitations in terms of generalizability, particularly when attempting to scale findings to larger communities or regions. Emergency events vary widely, and while this study focuses on food assistance during wildfires, different emergencies may present unique challenges and needs. Furthermore, the lack of data from small-scale ethnic food outlets may have impacted the comprehensiveness of the analysis, as their perspectives as potential food suppliers could provide valuable insights into improving emergency assistance.

Future Research Directions

While this study sheds light on food assistance during emergencies by examining food availability, accessibility in the supply chain, and the perspectives of diverse community associations, it also acknowledges the need for further exploration. Other demographic groups were not analyzed due to time constraints, and their inclusion may offer additional insights into food assistance needs. Quantitative methods, such as surveys, allow for the generalizability of the findings and will enable the study to be scaled up to larger demographic areas. Additionally, examining the ESS program's effectiveness in different types of emergencies beyond wildfires could provide a broader understanding of its capabilities and areas for improvement.

SECTION 8

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