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Research Article

Partnerships and knowledge sharing for sustainable school food systems in Saskatchewan

Kaylee Michnik[a*], Hannah Blischak[b], Clara Castro-Zunti[c], Alex McGreavey[d], Ester Kang[e], Chelsea Brown[f], Mark Thomas[g], and Rachel Engler-Stringer[h]

[a] University of Saskatchewan; ORCID: 0009-0007-8811-0923
[b] University of Saskatchewan
[c] University of Saskatchewan
[d] University of Saskatchewan
[e] Saskatchewan Health Authority
[f] Saskatchewan Health Authority
[g] University of Saskatchewan
[h] University of Saskatchewan; ORCID: 0000-0003-1976-1339

Abstract

Introduction: School food program (SFP) delivery that uses a sustainable food systems approach has the potential to provide comprehensive health and nutrition benefits for students and communities. SFPs may be best supported through engagement with multiple sectors and partners, including agriculture, health, and education. This study aims to understand the readiness and priorities of partner organizations from across the food system to work towards sustainable SFP development in Saskatchewan (SK).

Methods: A cross-sectional outreach and engagement survey was conducted across food system sectors and partners in February 2024 to inform the development of a SFP knowledge mobilization and partnership plan in SK. The survey was distributed to 321 pre-identified organizational partners across 10 food system sectors currently involved in, or with the potential to support, SFPs.

Results: The survey had a 31% response rate (n=97/311). Overall, organizations prioritized improving

*Corresponding author: kam538@mail.usask.ca

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childhood/youth nutrition, health and wellness and providing nutrition and food-related education for students and staff. Support for sustainable food systems more broadly, including environmental sustainability and supporting local jobs, food production, cultures, and traditions, were the least selected answers. Funding was also a gap with more than half of organizations (59%) currently supporting SFPs in SK citing lack of funding as a challenge. Moving forward, 60% of organizations want to be informed about SFPs in SK, and 45% want to collaborate and lead towards improvement.

Conclusion: The survey highlights the state of partnership support, priorities, and contributions to SK SFPs and helps build a case for increased SFP knowledge sharing, collaboration, funding, and advocacy. Improving the economic, social, and environmental sustainability of SFPs in SK requires additional funding, political leadership, continued engagement with food system organizations for multi-sector collaboration, and strengthening and harmonizing food systems policies and practices. A province-wide, universal, and sustainable SFP that respects local cultures, geographies, and concerns, and leaves the specific operations of each program within the control of adequately resourced local governing structures, is a desirable step forward.

Keywords: Food system change; partnerships; school food programs; school food system

Résumé

Introduction : La mise en œuvre de programmes alimentaires scolaires (PAS) fondés sur une approche des systèmes alimentaires durables peut avoir des effets bénéfiques d'ensemble sur la santé et la nutrition des élèves et des communautés. Les PAS peuvent être mieux soutenus par un engagement avec de multiples secteurs et partenaires, y compris l'agriculture, la santé et l'éducation. L'objectif de ce projet est de servir d'appui à une approche partenariale pour le développement des PAS en Saskatchewan en évaluant l'état de préparation et les priorités des organisations.

Méthodes : Une enquête transversale de sensibilisation et d'engagement a été menée auprès de divers secteurs et partenaires en février 2024 afin d'élaborer un plan de mobilisation des connaissances et de développement de partenariats en matière de PAS en Saskatchewan. L'enquête a été menée auprès de 321 parties prenantes organisationnelles, identifiées au préalable, issues de 10 secteurs différents.

Résultats : Le taux de réponse à l'enquête a été de 29 % (n=97/321). Dans l'ensemble, les organisations ont accordé la priorité à l'amélioration de la santé et du bien-être des enfants et des jeunes, à l'éducation des élèves et du personnel en matière de nutrition et d'alimentation, et à la mise en valeur des aliments traditionnels et culturels dans les écoles. Parmi les répondants qui soutiennent activement les PAS, 61 % estiment que leur effet dans les écoles est de moyen à très faible. Plus de la moitié des répondants (59 %) ont désigné le manque de financement comme un défi. Pour l'avenir, 60 % des personnes interrogées souhaitent être informées sur les PAS en Saskatchewan, et 45 %

veulent collaborer et contribuer à l'amélioration de la situation.

Conclusion : L'enquête met en évidence l'état du soutien et des contributions des partenariats aux PAS de la Saskatchewan, et aide à établir un argumentaire en faveur du partage des connaissances, de la collaboration, du financement et d'une promotion accrus. Les PAS sont à l'intersection de multiples disciplines et secteurs ; une compréhension multidimensionnelle et un programme commun sont nécessaires pour travailler efficacement à leur développement.

Background

School food programs (SFPs) include, but are not limited to, lunch, breakfast, and/or snacks provided in schools, with or without integration into curriculum, and they have the potential to contribute to child, family, community, and environmental health and well-being (Hernandez et al., 2018). Canada has recently announced a national SFP, which includes a one-billion-dollar investment to work with provinces, territories, and Indigenous partners and Nations towards a long term SFP vision. This vision includes accessible, health-promoting, inclusive, flexible, sustainable, and accountable SFPs and invites "collaborative and complementary action by all levels of government and all sectors to advance work on school food in Canada" (Government of Canada, 2024, para 9). The policy further recognizes the role for SFPs in developing food literacy, providing opportunities for local farmers and economies, promoting environmentally sustainable practices, and encouraging a high return on health, social, and economic investments.

A food system encompasses all activities that bring food from the land to the consumer's plate, including production, processing, packaging, transport, distribution, education, and disposal of food (FAO, 2018). Sustainable food systems offer high-quality and culturally appropriate diets that meet human nutrient requirements while balancing the preservation and regeneration of natural resources such as soil, water, and land to produce food for future generations (Willet et al., 2019). Sustainable food systems are also fiscally viable, improve labour conditions and animal welfare, and ensure social and economic benefits are equitably distributed among food system activities, such as ensuring fair worker wages (FAO, 2018). Overall, sustainable food systems consider and monitor the social, economic, and environmental dimensions of food activities and how they intersect and balance (Purvis et al., 2019; Fanzo et al., 2022).

Sustainable school food programs

SFPs are intertwined with food systems and can address sustainability through school curriculum, gardens, plant-based menus, "farm-to-school" approaches, waste reduction systems like recycling and composting (Black et al., 2015; Gardner et al., 2023; Rojas et al., 2011; Roque et al., 2022), local economic opportunities (Pastorino et al., 2023), valuing local food producers and providers (Gaddis, 2014; Gaddis & Coplen, 2018), and addressing the social determinants of health (Everitt et al., 2020). These strategies contribute towards sustainable food systems while also supporting student food- and nutrition-related learning to enhance personal, as well as community, health and well-being

(Cullen et al., 2015). The Coalition for Healthy School Food, a national advocacy organization and the largest SFP network in Canada, imagines SFP development under eight guiding principles, including universality, health promotion, cost-shared, locally adapted and flexible, Indigenous control, driver of community economic development, promoting food literacy, and supported by guidance and accountability measures, all of which contribute toward sustainable SFPs (Coalition for Healthy School Food, 2024). As SFPs are developing in each province and territory under a new Canadian SFP policy, this study aims to understand the readiness and priorities of partner organizations from across the food system (agriculture, education, health, nutrition, etc.) to work towards sustainable SFP development in the Saskatchewan context.

SFPs in Saskatchewan

Saskatchewan (SK) is a western Canadian province with a population of just over one million. It has one of the lowest population densities in Canada (Statistics Canada, 2021a). Saskatoon is the largest city with a population around 337,000 (Statistics Canada, 2023). SK is a culturally diverse place, with Indigenous Peoples, primarily First Nations peoples (65.5%), comprising 16.3% of the total population. About half of the Indigenous population lives off-reserve (Government of Canada, 2021). The newcomer population in SK represents about 13% of the total population (Statistics Canada, 2021b). In recent years, immigration from the Philippines, Pakistan, India, China, and Bangladesh has been substantial, with most immigrants coming as skilled workers (Hoessler & Herman, 2018). SK has one of the highest overall rates of food insecurity among the provinces. Recently released data show a record increase in food insecurity in SK (from 20% in 2022 to 28% in 2023), leaving over one in four people and one in three children food insecure (PROOF, 2024).

In Canada, food systems are largely profit-driven structures led by "big-ag" that view agriculture in isolation from health or sustainability (Kevany et al., 2024; Lang, 2009; McMicheal, 2009). The operations of this system have altered and diminished community-based, local, and Indigenous food systems in Canada, which tend to focus more on local livelihoods and economies, diverse food cultures, social and community structures, and environmental reciprocity (Wiebe & Wipf, 2011). European settlers to SK in the late 1800s established the central and southern regions of SK into an export-oriented agricultural economy focusing on wheat production (LaForge & McLachlan, 2018). The province now possesses more than 40% of Canada's cultivated farmland and wheat is a primary export (Government of Saskatchewan, n.d.) and cultural symbol (LaForge & McLachlan, 2018). The advances of industrial agriculture in the province have greatly impacted the prairie ecosystem; it is estimated that only 12% to 21% of the original native prairie, one of the most endangered ecosystems in the world, remains intact in SK (Government of Saskatchewan, 2023). The continued loss of prairie habitat negatively affects biodiversity, carbon sequestration, livelihoods, and Indigenous cultures in the province (Saskatchewan Prairie Conservation Action Plan, 2025).

Research examining SFPs in SK is limited. Existing research demonstrates some of the lowest per student funding (Keyes, 2024; Michnik & Engler-Stringer, 2024) and school and student participation rates in the country. Research shows that about half of SK schools offer a SFP, reaching a quarter of students (Ruetz Consulting, 2024; Saskatchewan School Boards Association, 2024). Like other provinces in Canada, programs are largely delivered based on "need" and are made possible by volunteer time, including school staff

members contributing time outside of their regular roles, as well as local donations and grants. Schools struggle to meet food and nutrition provincial policy recommendations and have limited curriculum integration, where meals would be combined with cooking and gardening and food and nutrition would be taught across school subjects (McKenna, Michnik, Ruetz et al., in press). Further, SK government funding cuts, increased enrollment, and higher costs due to inflation have forced school boards to make tough financial decisions (Langager, 2024) affecting food programming. For example, the elimination of grade eight home economics in one of SK's largest school divisions (Young, 2019) and the implementation of lunchtime supervision fees for students who eat lunch at school (Salloum, 2023).

Sustainable school food systems change

At a societal level, sustainable SFP development has been depicted as occurring over three phases, mimicking wider trends (Oostindjer, et al., 2017). The first phase began in the 1850s with the establishment of food welfare programs for the most vulnerable children. SFPs were used as an outlet for surplus food from industrial agriculture production, with little attention to food and nutritional quality. The 1970s saw a shift to higher food and nutrition quality as science emerged demonstrating connections between diet and chronic disease. In the third phase, which is only just emerging, SFPs are increasingly used to address multiple food systems and societal challenges, including sustainability. Bringing diverse partners together towards food system change is a multi-layered process. Drawing from Community Coalition Action Theory, food system change first occurs through engagement, recruitment, and mobilization of food system partners (Butterfoss & Kegler, 2002). Willingness to participate in change efforts generally relates to organizational climate and size, current awareness of the issue and knowledge, degree to which the issue and need for change align with current organizational values and efforts, and the capacity of the organization to implement change, including expertise, connectedness, leadership, funding, and staffing (Castañeda et al., 2012; Rogers, 2003). As food systems are complex, with multiple actors and interacting factors, approaches from a single area, sector, or discipline generally have little lasting effect in sustainable food system development (Juri et al., 2024). Awareness, education, and relationship building among food system partners can play a supportive role (Buchan et al., 2019). Given this complexity, alongside the new national SFP and funding, research to bring together food system partners and examine organizational readiness to support SFP sustainable development in SK is timely.

Methods

Survey design

As part of a University of Saskatchewan internship project for fourth year dietetic students, a cross-sectional survey was designed to assess organizational readiness to participate in sustainable SFP development in SK. The survey drew from organizational change (Castañeda et al., 2012; Rogers, 2003) and partner engagement frameworks (Goodman & Thompson, 2017; Tamarack Institute, 2017). The survey had two streams to gather information from: 1) organizations

who are not involved in SFPs but were identified as having a potential interest based on their organizational mandate; and 2) organizations already involved in SFPs and assessing the challenges and impacts of this work. The survey consisted of fourteen questions and included six questions regarding organizational characteristics, three questions about organizational knowledge/support of SFPs, three questions concerning organizational satisfaction, impact, and challenges with SFPs, and one question regarding future involvement. The survey included multiple-choice and Likert scale questions. With each question, respondents had the ability to choose "other" and provide an open-ended response.
A letter with the definition of SFPs and their impacts was provided to partners in advance of the survey:

> School Food Programs (SFPs) are free or subsidized breakfasts, snacks, or lunches offered during the school day to kindergarten to grade twelve (K-12) students. SFPs can also include land-based learning and teaching students about food and nutrition through activities like cooking and growing and harvesting food. SFPs impact children, youth, and communities in many ways, including improving access to healthy food, improving student wellness, teaching children food skills, providing local employment including supporting local producers, and supporting food cultures and traditions.

Survey pilot

The pilot survey was completed with fourteen professionals from diverse sectors and backgrounds (i.e., agriculture, health, nutrition, education, economics) and four individuals with expertise in SFP research for comprehension, content, design, and cultural appropriateness.

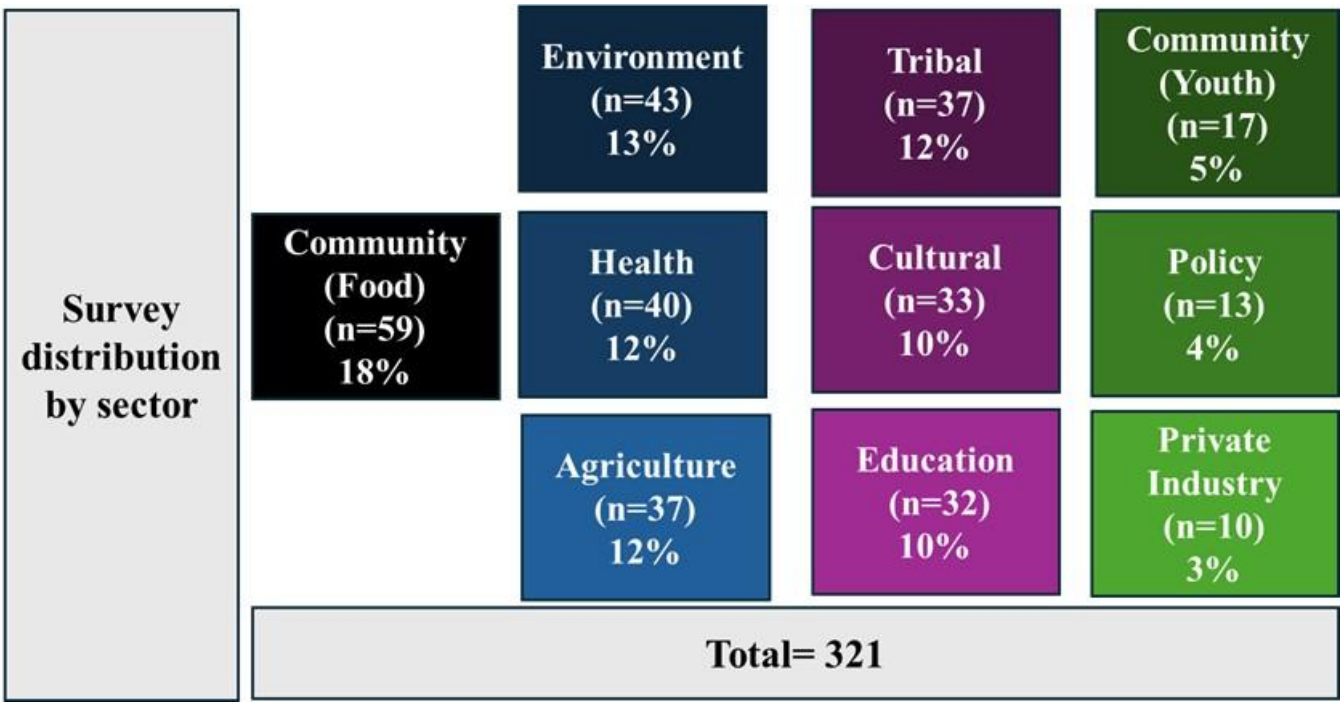
Participant recruitment

Partners were pre-identified by the research team through pre-existing relationships, partnership lists, word of mouth, and by searching organizational listings on 211 (a database of over 6,000 community, social, non-clinical health, and government services in SK) using the search terms "youth," "children/families," and "basic needs/food."
To participate, organizations needed to provide services in SK. Organizations with a mandate that addressed a food system service (i.e., food production, education, waste, policy, and nutrition, etc.) and/or addressed at least one of the eight SFP guiding principles (Coalition for Healthy School Food, 2024; Hernandez et al., 2018) were included. Restaurants, given their sheer number, were excluded. The assessment of organizational alignment was completed by two of the research team members and compared for reliability. Any disagreements were discussed with another member of the research team.

Survey distribution

The survey was distributed via Survey Monkey in February 2024 to 321 pre-identified organizational partners from ten sectors: community-based (youth), community-based (food), education, health, agriculture, private industry, cultural, tribal, environmental, and public administration/policy (Figure 1). Organizations were assigned into sectors based on their primary societal applications, according to the vision/goals of their organization or department as listed on their website or social media platform.

Figure 1: Number of surveys distributed by organizational sector



Surveys were sent to general organizational emails and, when known, to specific individuals. The survey invitation requested an individual in a supervisory, management, or leadership role, and/or someone who supports food- and nutrition-related work at the organization, to fill out the survey. One survey was to be completed per department or organization. The survey was anonymous; however, at the end of the survey, participants could leave their information on a separate page for further follow up toward SFP partnership.

Data analysis

Results of the survey were exported to Microsoft Excel 2021©. Descriptive statistics were used in data analysis (Ali & Bhaskar, 2016). Responses' mean, median, and mode are described where applicable. Data trends and outliers were analyzed. For questions where respondents had the ability to choose "other" and type an open-ended response, responses were categorized into the prescribed survey options. If the respondent's "other" response did not fit in with one of the answers to a question, data were kept separate.

Ethical approval

This research project was approved by the University of Saskatchewan Behavioural Research Ethics Board (BEH- 4396), and operational approval was received from the Saskatchewan Health Authority (SHA).

Results

Response rate

Ten email addresses were unreceivable, leaving a total sample of 311 surveys distributed. There were ninety-seven responses to the survey, providing a response rate of 97/311 (31%). However, seven responses had data missing and were therefore excluded (Kang, 2013), leaving a total number of ninety surveys. The estimated length of survey completion was five to ten minutes.

Organizational type

When asked about what type of organization the respondent worked for, answers included community-based organizations/non-governmental organizations (NGOs) (41%; n=37/90), health care (17%; n=15/90), primary or secondary schools or organizations (14%; n=13/90), tribal or Indigenous organizations (10%; n=9/90), government organizations (8%; n=8/90), university or other post-secondary educational institutions (4%; n=4/90), self-employed or consultants (3%; n=3/90), private business (1%; n=1/90), and "other" (1%; n=1/90).

Organizational position

Regarding the positions of respondents within their organizations, respondents were service providers or staff members (27%; n=24/90), supervisors or managers (24%; n=22/90), directors/presidents/CEOs (24%; n=22/90), senior leaders or superintendents (19%; n=17/90), and board members, analysts, or other (3%; n=3/90).

Organizational size

Regarding the size of the organization, respondents worked in small organizations (five to ninety-nine employees; 43%; n=39/90); large organizations (over 500 employees; 30%; n=27/90); very small organizations (one to four employees; 15%; n=13/90), and medium organizations (100 to 499 employees; 12%; n=11/90).

Organizational work

When asked about what type of work the organization does, 27% (n=24/90) of respondents selected health/wellness, 21% (n=19/90) food/nutrition, 17% (n=15/90) primary and/or secondary education, 10% (n=9/90) environment, 7% (n=6/90) cultural/social development, 7% (n=6/90) public or tribal administration/policy, 3% (n=3/90) post-secondary education, and 3% (n=3/90) agriculture.

Geography

Twenty-nine percent (n=26/90) of respondents' organizations provided their services province-wide. Saskatoon made up the next highest proportion (16%; n=14/90), followed by Regina (13%; n=12/90), with representation from every part of the province except the far north. Full results are presented in Table 1.

Table 1: The geographical distribution of survey respondents in SK

SK Geographical Location		**Organizational Service Area**
Urban	Saskatoon(n=14)	29% (n=26/90)
	Regina (n=12)	
Far North	Central (n=0)	13% (n=12/90)
	Northwest (n=6)	
	Northeast (n=6)	
North	Central (n=9)	34% (n=31/90)
	West (n=11)	
	East (n=11)	
Central	West (n=6)	16% (n=14/90)
	East (n=8)	
South	Central (n=6)	21% (n=19/90)
	West (n=4)	
	East (n=9)	
Province Wide		29% (n=26/90)
Total Responses=128		

Knowledge of SFPs

Regarding respondents' level of knowledge of SFPs and their impacts, 41% (n=35/86) had a medium level of knowledge, 26% (n=22/86) a high level of knowledge, 16% (n=14/86) a low level of knowledge, and 10% (n=9/86) a very high level of knowledge. No one indicated having no knowledge of SFP impacts.

Organizational SFP alignment

Organizations were asked: "what impacts of school food programs are best supported by the work, or potential work, of your organization?" Seventy-three percent of respondents (n=63/86) selected "improving access to nutritious foods for children and youth," 72% (n=62/86) selected "increasing knowledge and opportunities for children and youth to learn about food, nutrition, and food systems," and 71% (n=61/86) selected "improving health and wellbeing of children and youth." The least selected answer was "supporting local jobs and community economic development," with 20% (n=17/86) of responses. The full results are shown in Table 2.

Table 2: Organizational alignment with SFP impacts

SFP Impact	Organizational Agreement
Improving access to nutritious foods for children and youth	73% (n=63/86)
Increasing knowledge and opportunities for children and youth to learn about food, nutrition and food systems	72% (n=62/86)
Improving health & wellbeing of children and youth	71% (n=61/86)
Improving educational attendance and achievement of children and youth	42% (n=36/86)
Supporting environmental sustainability	42% (n=36/86)
Supporting local cultures and traditions	37% (n=32/86)
Supporting local producers and local food supply	34% (n=29/86)
Supporting local jobs and community economic development	20% (n=17/86)
Other	5% (n=4/86)
Total Responses= 340	

Current support for SFPs

When asked, "in what ways, if any, does your organization currently support food and nutrition for children and youth in schools in Saskatchewan?," the top responses were "supporting food and nutrition-related education for students and/or school staff" (43%; n=37/86), "supporting access to traditional and cultural foods and learning" (35%; n=30/86), "supporting or providing food/meals to students" (35%; n=30/86), and "supporting advocacy for SFP improvements" (33%; n=28/86). The least selected answers were "supporting school landscaping/gardening" (30%; n=26/86), "supporting access to local foods in schools" (22%; n=19/86), "providing funding" (21%; n=18/86), "supporting school composting and food waste reduction" (15%; n= 13/86), and "supporting evaluation of school food programs" (13%; n=11/86).

Challenges

The top challenges faced by organizations in supporting SFPs were "requiring additional funding" (59%; n=47/80), "lack of political support/funding from governments" (39%; n=31/80), "lack of alignment with organizational mandate/goals" (28%; n=22/80), and "staff requiring additional training and/or knowledge" (28%; n=22/80). Other challenges included "lack of knowledge related to school food programs in your organization" (18%; n=14/80), "lack of leadership/priority within your organization" (16%; n=13/80), and "requiring same amount of funding, but more stable/sustained over time" (10%; n=8/80). Only 4% (n=3/80) responded with, "we are doing this work but have no challenges." Twenty- three percent (n=19/80) responded with "other," related to cost of food, lack of food infrastructure, staffing, time, community buy in and competing priorities.

Satisfaction and impact

Seventy-four percent (n=67/90) of organizations indicated they were currently supporting SFPs. Of these organizations doing the work, 7% (n=5/67) of respondents were very satisfied, 51% (n=34/67) were satisfied, 40% (n=27/67) were unsatisfied, and 2% (n=1/67) were very unsatisfied with their organization's ability to effectively carry out food- and nutrition-related activities with schools. When asked, "what level of impact do you believe your organization's food and nutrition activities have in positively supporting children and youth in schools?," 12% (n=8/66) reported a very high impact, 27% (n=18/66) a high impact, 33% (n=22/66) a medium impact, 21% (n=14/66) a low impact, and 6% (n=4/66) a very low impact.

Moving forward

Regarding how respondents would like their organization/department to be further engaged in supporting SFPs in Saskatchewan, 60% (n=48/80) responded with "be informed," 46% (n=37/80) responded with "be involved," and 45% (n=36/80) responded with "collaborate and lead." The full results are shown in Figure 4.

Table 3: How organizations would like to be further engaged in supporting SFPs

Area of Engagement	Organizational Agreement
Be informed (i.e. receive school food webinar invitations, e-newsletters, and evidence briefs)	60% (n=48/80)
Be involved (i.e. attend school food meetings and conferences/gatherings)	46% (n=37/80)
Collaborate and lead (i.e. join a multi-partner school food network/working group)	45% (n=36/80)
Be consulted (i.e. provide feedback on school food projects and research)	44% (n=35/80)
None- my organization is interested but does not have the capacity	10% (n=8/80)
Be a funder (i.e. provide money for school food operations or planning)	9% (n=7/80)
None- my organization is not interested	5% (n=4/80)
Other	5% (n=4/80)
Total Responses= 179	

Discussion

The results of the survey provide insight into the overall SFP landscape in SK. Findings from this survey are consistent with Oostindjer et al.'s (2017) three phase framework for sustainable SFP development which situates most countries, including the province of SK, in the second phase of sustainable SFP development. Improving the economic, social, and environmental sustainability of SFPs in SK requires additional funding and political leadership, continued engagement with food system organizations for multi-sector collaboration and strengthening and harmonizing food systems policies and practices.

Financial viability is one key indicator of sustainable SFPs (Coalition for Healthy School Food, 2024; Everitt et al., 2020; Hernandez et al, 2018). In the survey, insufficient funding was selected by more than half of organizations currently doing the work as the largest issue in supporting SFPs. Many organizations were unsatisfied with their ability to effectively carry out food- and nutrition-related activities with schools, and over half cited their perceived impacts in schools to be medium to very low. Operating on shoe-string budgets and without paid staff, SFPs in Canada are generally not able to fully integrate a sustainable SFP approach (McKenna et al., in press). Additional funding through a national SFP will help alleviate SFP funding pressures, but to make up for funding shortfalls, additional investments from other governments and partners are needed (Coalition for Healthy School Food, 2024). With some of the highest rates of food insecurity among the provinces (PROOF, 2024) and lowest funding for SFPs in the country (Michnik & Engler-Stringer, 2024), limited funding has meant only those most "vulnerable" have access to SFPs in SK, and the demand for SFPs continues to outstrip their availability. Even among those who have access, program stigma may prevent uptake (Cohen et al., 2023). However, until household food insecurity is dealt with through economic policy and structural changes (PROOF, 2024) and comprehensive and universal investments into SFPs are made, organizational dissatisfaction and delayed efforts toward sustainable SFPs will continue.

Communication between food system partners is required for balanced change (Fanzo et al., 2022). Overall, organizational agreement with SFPs centered around improving access to nutritious foods and food- and nutrition-related education for school-aged children and youth. This was consistent between those currently active in supporting SFPs as well as for organizations identified as future partners. Support for sustainable food systems more broadly, including environmental sustainability and supporting local jobs, food production, cultures, and traditions, were the least selected answers. This may be unsurprising given that almost half of respondents (48%) came from either health/wellness or food/nutrition organizations, which traditionally have focused on personal responsibility and education through food and nutrition for better health, with limited focus on environmental, social, and economic factors in the food system (Coveney, 2006; Fanzo et al, 2021).

Given the predominance of resources already invested in food- and nutrition-related education, working with food and nutrition educators in the province to incorporate and strengthen a sustainable food systems perspective in their current educational work may be a first and practical step forward (Buchan, 2019; O'Brien, 2018). For example, a food systems pedagogical approach paired with experiential learning opportunities, such as working in a garden or participating in cultural food experiences, has potential for transformative learning as students and educators

examine their own subjective beliefs, values, and worldviews that shape how they understand, interact with, and address food systems (Davila & Dyball, 2015; Rojas et al., 2011; Sumner, 2016).

In general, SFPs have largely been viewed as programs for preventing hunger and poor nutrition, and not for their holistic or food systems potential (Oostindjer et al., 2017). To counter this, part of engagement in this project was to provide a letter of information on SFPs to organizations, including a comprehensive definition of SFPs, to expand the notion of "school food" to a food systems perspective to include organizations who typically may not have seen themselves as connected to the food system, such as those related to environmental conservation. Still, almost a quarter of organizations surveyed did not see the relevance of SFPs to their organizational mandate, and, as the survey showed, this was not due to a lack of "knowledge" about SFPs and their impacts. Preconceived notions of SFPs as responses to hunger and poor nutrition are likely to have limited the depth of responses. Further work in framing and communicating SFPs as a sustainable food systems intervention, followed up with political action and policy harmonization, is needed in SK to move toward programs that are socially, environmentally, and financially sustainable while ensuring health.

The provision of culturally appropriate and Indigenous foods in schools is closely related to health, well-being, and environment (Coalition for Healthy School Food, 2024; Hernandez et al, 2018). SK is a province rich in cultural diversity, including Indigenous and newcomer populations. Importantly, 35% of organizations reported supporting access to traditional and cultural foods and learning through SFPs. Integrating diverse and culturally appropriate foods in SFPs promotes cultural awareness and learning, increases familiarity with and consumption of a wider variety of vegetables, and reduces stigma associated with traditional food consumption (Chen et al., 2014; Zhao et al., 2013). Nutrition and food education based in diverse worldviews, such as storytelling, involvement of family, Elders, and Knowledge Keepers, and land-based learning, have also been shown to increase the acceptability of food served and to improve cultural understanding and sense of identity for Indigenous and ethnic minority students (Gillies et al., 2020; Obeng-Gyasi et al., 2019). Public institutions in SK, such as government, health, and education organizations, have joined calls for equitable, diverse, and inclusive programs, and are working to respond to the Truth and Reconciliation Commission of Canada Calls to Actions (Truth and Reconciliation Commission of Canada, 2015). Continuing to build on this emphasis will require additional funding and commitment to SFPs, as well as education, policy, and action, to strengthen SK's ecosystems, Indigenous knowledge systems, Indigenous food sovereignty, Treaty Rights, biodiversity, and more (Prairie Food Systems Vision Network, n.d.).

Sustainable SFPs can promote economic development and procurement of local and sustainably produced food (FAO et al., 2021). Schools can procure food items in bulk and join with other public institutions to offer stable markets for small- and medium-sized producers, thereby reducing producer risk and providing opportunities for new producers (Mishra et al., 2022; Motta & Sharma, 2016). SK is known as the "breadbasket of Canada;" however, there was a limited response in the survey from agricultural organizations, potentially stemming from limitations of the cold email tactic used or lack of structures to serve local areas. Agriculture in SK has a long history of export that is inextricably linked with the SK economy, with $20.2 billion worth of agricultural exports in 2023 (Government of Saskatchewan, n.d.; Qualman, 2025). Local and sustainable food systems are of interest to

both large and small farm operators in SK (Beingessner & Fletcher, 2019; Bowness et al., 2024; Campbell et al., 2019), but they are challenged by geographical and climatic factors as well as by cost, access to direct markets, lack of local processing facilities, and limited education and mentorship (Campbell et al., 2019). As has been done in other provinces like British Columbia, working across public institutions to drive local food procurement may be a helpful step forward (Government of British Columbia, 2024). Further engagement and research with SFP partners like school boards, local producers and government is needed.

Multi-sector partnerships are common in sustainable SFP development (Ashe & Sonnino, 2013; Atkey et al., 2016; Burkhart et al., 2022; UN Food Systems Coordination Hub, n.d). The survey demonstrated a high desire for active involvement toward building sustainable SFPs. Almost half of respondents (45%) indicated interest in collaborating and leading sustainable SFP development in SK, including joining a multi-partner network or working group. However almost half of respondents were from the health, wellness, and nutrition sectors, possibly given the precedence of a Health Promoting Schools Approach which emphasizes health and education partnerships in schools (Joint Consortium for School Health, 2025). Under a new Canadian SFP policy that supports environmental and financial sustainability, local farmers and economies, food literacy, and more, engaging additional food system partners is needed. However, like the wider food system, there are multiple contested ideas and agendas for how SFPs should operate, for what purpose, and who they should serve (Ashe & Sonnino, 2013; Poppendieck, 2010). Partnership engagement, coordination, and aligning values towards sustainable SFPs in SK will be ongoing work.

In a province as geographically dispersed and culturally diverse as SK, coordinating sustainable SFP development will require working through geographical isolation, cultural differences, diverse infrastructural and economic inequities, and a changing climate. Universal programs have been situated as safety nets for families and through economies of scale, as an economically viable way to operate SFPs (Cohen et al., 2023). Looking to other provinces and territories, regional and provincial organizations commonly share best practices, distribute funding, perform evaluations, train staff, and support food procurement and production (Ruetz, Michnik & Engler-Stringer et al, 2024). A province-wide, universal, and sustainable SFPthat respects local cultures, geographies, and concerns, and leaves the specific operations of each program within the control of adequately resourced local governing structures like school boards, is a desirable step forward. As SFPs grow, evaluation and monitoring are needed to understand SFP impacts and carve new paths towards sustainability (Fanzo, et al., 2022; Hartmann & Linn, 2008; Oostindjer et al., 2017).

Strengths and limitations

It was critical to involve various sectors in the survey, both for resource availability and to support a food systems approach. However, the distribution of the survey was weighted toward food-related, community-based organizations, given their greater involvement in food security work in Canada in general (Martin & Andrée, 2014). This allowed the survey to provide a good picture of current SFP support and challenges in SK, but also likely shaped the dynamics of partnership and engagement more favourably. Smaller organizations, which also made up most of the survey participants, tend to be community-based and more adaptable towards change efforts compared to large,

centralized, and hierarchy-based organizations (Nordin et al., 2022; Rogers, 2003). Positively, survey respondents were primarily in leadership and management positions, a significant finding for potential willingness to commit to SFP development (Rogers, 2003).

Limitations of the study included a limited response from the SK education sector, in part due to teacher job action at the time of the survey. This means that a highly impacted and influential partner was not well-represented in the results. Further, although parents, families, and students are at the center of programming, they were not included in this survey given other ongoing research in the province to understand their perspectives (e.g., Engler-Stringer et al., 2021; Foster et al., 2024; Michnik, et al., 2025). Tribal or Indigenous organizations were included and represented 10% of survey respondents. However, this study did not distinguish whether organizations were operating on or off -reserve. Given the differences in funding, administration, and partnership, understanding SFP challenges, opportunities, and funding specifically for on-reserve communities is an area of needed future research.

Conclusion

The results of this survey provide insight into the state of sustainable SFP development in SK. With the federal government's initiation of a National SFP and policy in Canada, and a one-billion-dollar funding commitment, provinces and territories are working with the federal government to move forward on SFP growth and development. However, achieving the core principles of the National SFP policy will require significant and meaningful partnership along with food systems change. Developing sustainable SFPs in the era of a National SFP policy will require political leadership as well as bringing food system partners together to increase funding, discuss commonalities and multiple possibilities, and center and support the needs of communities and families, particularly those most affected by longstanding food system inequities. Developing sustainable SFPs also involves creating programming that respects local cultures, geographies, and concerns and leaves the specific operations of programming within the control of adequately resourced local governing structures. Overall, the outreach and survey methods of this study may be of interest to other provinces, territories, and Indigenous partners and Nations looking to assess and coordinate sustainable SFP development.

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Kaylee Michnik is a Registered Dietitian and PhD Candidate at the University of Saskatchewan with ten years of experience working in public health. She holds a Masters in Natural Resources Management from the University of Manitoba. Her current work supports the advancement and translation of school food programs and food systems research through evidence-based practice, partnership, knowledge exchange, and advocacy.

Hannah Blischak is a recent graduate of the College of Pharmacy and Nutrition at the University of Saskatchewan. Throughout her Bachelor of Science of Nutrition, Hannah became passionate about accessible, nutritious foods for all populations. Combined with her Bachelor of English, her interests include communicating nutrition research and highlighting key areas for nutrition support.

Clara Castro-Zunti recently earned her Bachelor of Science in Nutrition from the College of Pharmacy and Nutrition at the University of Saskatchewan. During her studies, Clara developed a strong passion for increasing access to food and promoting food literacy. This commitment led her to her current role at a community health centre in Calgary, Alberta, where she shares essential nutrition knowledge and practical food skills with marginalized community members.

Alex McGreavey recently earned a Bachelor of Science in Nutrition degree from the College of Pharmacy and Nutrition at the University of Saskatchewan. He has embarked on a fulfilling career as a clinical dietitian. Currently based in Saskatoon, SK., Alex is dedicated to providing nutritional guidance and support within a hospital setting, contributing significantly to the health and well-being of patients.

Ester Kang completed a BSc in Nutrition at the University of São Paulo in Brazil, and a MSc in Nutrition at the University of Saskatchewan (U of S). Ester worked as a clinical dietitian in the area of neuro-rehabilitation and geriatrics, and was the practicum coordinator for Saskatoon nutrition students at the U of S. Ester has recently transitioned into a Specialist role with the Saskatchewan Health Authority's Primary Health Care Department in Saskatoon, where she manages projects to support system improvements.

Mark Thomas is a former teacher turned Registered Dietitian. Mark brings his passion for student well-being and good food to the work he does. With a Master's in Teaching from University of Toronto and a Bachelor of Science in Nutrition from the University of Saskatchewan, Mark now works in La Ronge, SK for the Saskatchewan Health Authority helping to provide nutritional advice, guidance and support to the people in and around La Ronge.

Chelsea Brown is a Registered Dietitian and Senior Population Health Promotion Practitioner with the Saskatchewan Health Authority for over 10 years. Her work focuses on school age nutrition, healthy built environments, and health equity. Chelsea works collaboratively with various sectors towards creating supportive school food environments.

Dr. Rachel Engler-Stringer is a Professor in the Department of Community Health and Epidemiology in the College of Medicine at the University of Saskatchewan and a researcher with the Saskatchewan Population Health and Evaluation Research Unit.

References

Ali, Z., & Bhaskar, S. B. (2016). Basic statistical tools in research and data analysis. *Indian Journal of Anaesthesia*, *60*(9), 662-669. doi.org/10.4103/0019-5049.190623

Ashe L. M., & Sonnino, R. (2013). Convergence in diversity: New York City school food and the future of the food movement. *International Planning Studies*, *18*(1), 61-77. doi.org/10.1080/13563475.2013.750937

Atkey, K. M., Raine, K. D., Storey, K. E., & Willows, N. D. (2016). A public policy advocacy project to promote food security. *Health Promotion Practice*, *17*(5), 623–630. doi.org/10.1177/1524839916643918

Beingessner, N., & Fletcher, A. J. (2019). "Going local": Farmers' perspectives on local food systems in rural Canada. *Agriculture and Human Values, 37*(1):129-145.

Black, J. L., Velazquez, C. E., Ahmadi, N., Chapman, G. E., Carten, S., Edward, J., Shulhan, S., Stephens, T., & Rojas, A. (2015). Sustainability and public health nutrition at school: Assessing the integration of healthy and environmentally sustainable food initiatives in Vancouver schools. *Public Health Nutrition*, *18*(13), 2379–2391. https://doi.org/10.1017/S1368980015000531

Buchan, R., Cloutier, D. S., & Friedman, A. (2019). Transformative incrementalism: Planning for transformative

change in local food systems. *Progress in Planning,* 134, 100424.

Burkhart, S., Singh, P., Raneri, J. E., Hayman, A., Katz, S., Matairakula, U., Mackay, C., Horsey, B., Underhill, S., Kama, A., Maelaua, J., Demei, B., Mitchell, A., Nyangmi, M. G., Taawetia, T., Tekatu, T., & Hunter, D. (2022). Growing our future: Introducing the Pacific School Food Network to support healthy school food and nutrition environments for better nourished children in the Pacific Islands. *The Lancet Regional Health Western Pacific, 18*, 100338–100338. doi.org/10.1016/j.lanwpc.2021.100338

Butterfoss, F., & Kegler, M. (2002). Toward a comprehensive understanding of community coalitions: Moving from practice to theory. In R. DiClemente, R. Crosby, & M. Kegler (Eds.), *Emerging theories in health promotion practice and research* (pp. 157-193). Jossey-Bass.

Bowness, E., MacInnis, J., Desmarais, A. A. & Oke, S. (2024). Envisioning prairie agroecology: Farmer visual constructions of place-based ecological agriculture in Canada. *Elementa: Science of the Anthropocene*, *12*(1), 00054. doi: https://doi.org/10.1525/elementa.2023.00054

Campbell, H., Sanden, T., Triffo, T. & Fletcher, A. J. (2019). *Local food in Saskatchewan: Barriers and opportunities*. University of Regina. hdl.handle.net/10294/9084

Castañeda, S. F., Holscher, J., Mumman, M. K., Salgado, H., Keir, K. B., Foster-Fishman, P. G., & Talavera, G. A. (2012). Dimensions of community and organizational readiness for change. *Progress in community health partnerships: Research, education, and action*, *6*(2), 219–226. doi.org/10.1353/cpr.2012.0016

Chen, Q., Goto, K., Wolff, C., Bianco-Simeral, S., Gruneisen, K., & Gray, K. (2014). Cooking up diversity. Impact of a multicomponent, multicultural, experiential intervention on food and cooking behaviors among elementary-school students from low-income ethnically diverse families. *Appetite*, *80*, 114–122. https://doi.org/10.1016/j.appet.2014.05.009

Coalition for Healthy School Food. (2024). *Our guiding principles*. Coalition for Healthy School Food. https://www.healthyschoolfood.ca/guiding-principles

Cohen, J. F. W., Verguet, S., Giyose, B. B. & Bundy, D. (2023). Universal free school meals: The future of school meal programmes? *Lancet*, *402*(10405), 831–833. doi: 10.1016/S0140-6736(23)01516-7

Coveney, J. (2006). *Food, morals and meaning: The pleasure and anxiety of eating* (2nd Ed.). Routledge.

Cullen, T., Hatch, J., Martin, W., Higgins, J. W., & Sheppard, R. (2015). Food literacy: Definition and framework for action. *Canadian Journal of Dietetic Practice and Research*, *76*(3), 140-5. doi: 10.3148/cjdpr-2015-010. Epub 2015 May 21. PMID: 26280794.

Davila, F., & Dyball, R. (2015). Transforming food systems through food sovereignty: An Australian urban context. *Australian Journal of Environmental Education*, *31*(1), 34–45. https://doi.org/10.1017/aee.2015.14

Engler-Stringer, R., Black, J., Muhajarine, N., Martin, W., Gilliland, J., McVittie, J., Kirk, S., Wittman, H., Mousavi, A., Elliott, S., Tu, S., Hills, B., Androsoff, G., Field, D., Macdonald, B., Belt, C., & Vatanparast, H. (2021). The good food for learning universal curriculum-integrated healthy school lunch intervention: Protocol for a two-year matched control pre-post and case study. *JMIR Research Protocols, 10*(9), e30899.

Everitt, T., Engler-Stringer, R., & Martin, W. (2020). Determining promising practices for Canadian school food programs: A scoping review. *Journal of Hunger & Environmental Nutrition*, *17*(6), 743–762. https://doi.org/10.1080/19320248.2020.1823925

Fanzo, J., Bellows, A., Spiker, M., Thorne-Lyman, A. L., & Bloem, M. (2021). The importance of food systems and the environment for nutrition. *American Journal of Clinical Nutrition, 113*(1), 7-16. https://doi.org/10.1093/ajcn/nqaa313

Fanzo, J., Rudie, C., Sigman, I., Grinspoon, S., Benton, T. G., Brown, M. E., Covic, N., Fitch, K., Golden, C. D., Grace, D., Hivert, M. F., Huybers, P., Jaacks, L. M., Masters, W. A., Nisbett, N., Richardson, R. A., Singleton, C. R., Webb, P. & Willett, W. C. (2022). Sustainable food systems and nutrition in the 21st century: A report from the 22nd annual Harvard Nutrition Obesity Symposium. *American Journal of Clinical Nutrition, 115*(1), 18-33. doi.org/10.1093/ajcn/nqab315. PMID: 34523669; PMCID: PMC8755053.

FAO (2018). *Sustainable food systems: Concept and framework*. Food and Agriculture Organization of the United Nations. openknowledge.fao.org/server/api/core/bitstreams/b620989c-407b-4caf-a152-f790f55fec71/content

FAO, Alliance of Bioversity International and CIAT and Editora da UFRGS. (2021). *Public food procurement*

forsustainable food systems and healthy diets–Volume 1. Rome. doi.org/10.4060/cb7960en

Foster, S., Shakotko, T., & Quinn, S. (2024). *The school food development project: Lunch lessons learned*. Saskatchewan Population Health Evaluation Research Unit. hdl.handle.net/10388/15710

Gaddis, J. E. (2014). Mobilizing to re-value and re-skill foodservice labor in U.S. school lunchrooms: A pathway to community-level food sovereignty? *Radical Teacher*, *98*, 15–21. doi.org/10.5195/rt.2014.67

Gaddis, J., & Coplen, A. K. (2018). Reorganizing school lunch for a more just and sustainable food system in the U.S. *Feminist Economics*, *24*(3), 89–112. doi.org/10.1080/13545701.2017.1383621

Gardner, G., Burton, W., Sinclair, M., & Bryant, M. (2023). Interventions to strengthen environmental sustainability of school food systems: Narrative scoping review. *International Journal of Environmental Research and Public Health*, *20*(11), 5916. doi.org/10.3390/ijerph20115916. PMID: 37297520; PMCID: PMC10252980.

Gillies, C., Blanchet, R., Gokiert, R., Farmer, A., Thorlakson, J., Hamonic, L., & Willows, N. D. (2020). School-based nutrition interventions for Indigenous children in Canada: A scoping review. *BMC Public Health, 20*(1), 1–12.

Goodman, M. S., & Sanders Thompson, V. L. (2017). The science of stakeholder engagement in research: Classification, implementation, and evaluation. *Translational Behavioral Medicine, 7*(3), 486-491. doi.org/10.1007/s13142-017-0495-z. PMID: 28397159; PMCID: PMC5645283.

Government of British Columbia. (2024). *Feed BC program*. Government of British Columbia. www2.gov.bc.ca/gov/content/industry/agriculture-seafood/growbc-feedbc-buybc/feed-bc-and-the-bc-food-hub-network/feed-bc-program

Government of Canada. (2021). *Indigenous peoples in Saskatchewan*. Government of Canada. https://www.sac-isc.gc.ca/eng/1601920834259/1601920861675

Government of Canada. (2024). *A National School Food Policy*. Government of Canada. www.canada.ca/en/employment-social-development/programs/school-food/reports/national-policy.html

Government of Saskatchewan. (2023). *Agricultural land cover.* Government of Saskatchewan. www.saskatchewan.ca/residents/environment-public-health-and-safety/saskatchewan-state-of-the-environment-2023/agricultural-land-cover

Government of Saskatchewan. (n.d.). *Import export overview*. Government of Saskatchewan. www.saskatchewan.ca/business/agriculture-natural-resources-and-industry/agribusiness-farmers-and-ranchers/saskatchewan-import-and-export-information/import-export-overview.

Hartmann, A., & Linn, J. (2007). *Scaling up: A path to effective development. 2020 Focus Brief on the World's Poor and Hungry People*. IFPRI.

Hernandez, K., Engler-Stringer, R., Kirk, S., Wittman, H., & McNicholl, S. (2018). View of the case for a Canadian national school food program. *Canadian Food Studies, 5*(3), 208–229. canadianfoodstudies.uwaterloo.ca/index.php/cfs/article/view/260/299

Hoessler, B., & Herman, L. (2018). *Community assets and gaps mapping–2018 Sectoral consultation report*. Prepared for Immigration Partnership Saskatoon. ipsk.ca/wp-content/uploads/2018/12/Community-Assets-and-Gaps-Mapping-2018.pdf

Joint Consortium for School Health. (2025). *What is comprehensive school health*. Joint Consortium for School Health. https://www.jcsh-cces.ca/en/concepts/health-promoting-schools/

Juri, S., Terry, N., & Pereira, M. (2024). Demystifying food systems transformation: A review of the state of the field. *Ecology and Society, 29*(2). 10.5751/ES-14525-290205.

Kang, H. (2013). The prevention and handling of the missing data. *Korean Journal of Anesthesiology, 64*(5), 402-406. https://doi.org/10.4097/kjae.2013.64.5.402

Kevany, K., Nye, H., Mullinix, M., & Iscan, T. (2024). *Canada's agricultural policies are falling short of health and sustainability goals.* The Conversation. theconversation.com/canadas-agricultural-policies-are-falling-short-of-health-and-sustainability-goals-239560

Keyes, S. (2024). *Provinces, territories, municipalities invest $280M+ annually in school food*. The Coalition for Healthy School Food. www.healthyschoolfood.ca/post/provinces-territories-municipalities-invest-280m-annually-in-school-food

Laforge, J. M. L., & McLachlan, S. M. (2018). Environmentality on the Canadian prairies: Settler-farmer subjectivities and agri-environmental objects. *Antipode, 50*(2), 359–383. doi.org/10.1111/anti.12362.

Lang, T. (2009). Reshaping the food system for ecological public health. *Journal of Hunger and Environmental Nutrition*, *4*(3–4), 315–335. doi.org/10.1080/19320240903321227.

Langager, B. (2024, April 24). Saskatoon school board highlights budget constraints despite funding bump. *Global News.* globalnews.ca/news/10452902/saskatoon-school-board-budget-constraints-funding-bump

Martin, S., & Andrée, P. (2014). From food security to food sovereignty in Canada: Resistance and empowerment in the context of neoliberalism. *Globalization and Food Sovereignty: Global and Local Change in the New Politics of Food*, 173–198.

McMichael, P. (2009). A food regime genealogy. *Journal of Peasant Studies*, *36*(1), 139–169. doi.org/10.1080/03066150902820354.

McKenna, M., Michnik, K., Ruetz, A., Engler-Stringer, & R. Martin, A. (In press). Setting the table: Principles to support a comprehensive national school food program. In A. Ruetz & R. Engler-Stringer, School Food Programs in Canada: Models, Practices, and Lessons for the Future. *UBC Press.*

Michnik, K. & Engler-Stringer, R. (2024, June 5). Opinion: Saskatchewan should invest in feeding children at school. *Saskatoon Star Pheonix*. thestarphoenix.com/opinion/columnists/opinion-saskatchewan-should-invest-in-feeding-children-at-school

Michnik, K., McAuley, R., Cooke, C., Lummerding, D., Basilan, P. Alaniz-Salinas, N., Nasser, R., Kang, E. & Engler-Stringer, R. Parent/Caregiver Perceptions of the Good Food for Learning Universal School Lunch Program. (2025). Journal of Canadian Dietetic Practise and Research. https://doi.org/10.3148/cjdpr-2024-029

Mishra, S. K., Khanal, A. R., & Collins, W. J. (2022). Farm-to-school programmes, benefits, health outcomes and barriers: A structured literature review. *Health Education Journal*, *81*(7), 781-792. doi.org/10.1177/00178969221119290.

Motta, V., & Sharma, A. (2016). Benefits and transaction costs of purchasing local foods in school districts. *International Journal of Hospitality Management, 55*, 81–87. doi.org/10.1016/j.ijhm.2016.02.011

Nordin, N., Khatibi, A., & Azam, S. M. F. (2022). Nonprofit capacity and social performance: Mapping the field and future directions. *Management Review Quarterly, 74*(1), 1–55. doi: doi.org/10.1007/s11301-022-00297-2.

Obeng-Gyasi, E., Antwi, G., & Obeng, C. (2019). "Food is environmentally and culturally specific!": A preliminary qualitative study on U.S. immigrant parents' perceptions of school lunch. *European Journal of Investigation in Health, Psychology and Education, 10*(1), 240–249. doi.org/10.3390/ejihpe10010019.

O'Brien, K. (2018). Is the 1.5 C target possible? Exploring the three spheres of transformation. *Current Opinion in Environmental Sustainability, 31,*153–160. doi.org/10.1016/j.cosust.2018.04.010.

Oostindjer, M., Aschemann-Witzel, J., Wang, Q., Skuland, S. E., Egelandsdal, B., Amdam, G. V., & Van Kleef, E. (2017). Are school meals a viable and sustainable tool to improve the healthiness and sustainability of children′s diet and food consumption? A cross-national comparative perspective. *Critical Reviews in Food Science and Nutrition*, *57*(18), 3942–3958. doi.org/10.1080/10408398.2016.1197180.

Pastorino, S., Springmann, M., Backlund,U., Kaljonen, M., Singh, S., Hunter, D., Vargas, M., Milani,P., Bellanca, R., Eustachio Colombo, P., Makowicz Bastos, D., Manjella, A., Wasilwa, L., Wasike, V., Bundy, D. A. P., & the Research Consortium White Paper writing team. (2023). *School meals and food systems: Rethinking the consequences for climate, environment, biodiversity, and food sovereignty*. Discussion Paper. London School of Hygiene & Tropical Medicine. doi.org/10.17037/PUBS.04671492

Poppendieck, J. (2010). *Free for all: Fixing school food in America*. University of California Press.

Prairie Food Systems Vision Network. (n.d.). *Six actions to achieve our vision*. Prairie Food System Vision. www.prairiefoodsystemvision.org/six-actions.

PROOF. (2024). *New data on household food insecurity in 2023.* PROOF. proof.utoronto.ca/2024/new-data-on-household-food-insecurity-in-2023

Purvis, B., Mao, Y., & Robinson, D. (2019). Three pillars of sustainability: In search of conceptual origins. *Sustainability Science, 14*, 681–695 doi.org/10.1007/s11625-018-0627-5

Qualman, D. (2025). *Breadbasket no more? The future of food could be grim*. Canadian Center for Policy Alternatives. www.policyalternatives.ca/news-research/breadbasket-no-more-the-future-of-food-could-be-grim/?mc_cid=5062e6485c&mc_eid=cc6e267997

Rogers, E. M. (2003). *Diffusion of innovations*. Free Press.

Rojas, A., Valley, W., Mansfield, B., Orrego, E., Chapman, G. E., & Harlap, Y. (2011). Toward food system sustainability through school food system change: Think&EatGreen@School and the making of a community-university research alliance. *Sustainability*, *3*(5), 763-788. doi.org/10.3390/su3050763

Roque, L., Graça, J., Truninger, M., Guedes, D., Campos, L., Vinnari, M., & Godinho, C. (2022). Plant-based school meals as levers of sustainable food transitions: A narrative review and conceptual framework. *Journal of Agriculture and Food Research*, *10*, 100429. doi.org/10.1016/j.jafr.2022.100429.

Ruetz, A.T., Michnik, K., Engler-Stringer, R., Alaniz-Salinas, N., Doyle, E., Kirk, S., Korten, D., Tasala, K., Levkoe, C., Martin, A., Mercille, G., Heckelman, A., Smith, C., Renwick, K., Sallans, A., Ostertag, S., Skinner, K., Trask, N., Weber, N., Hoyer, G., & McKenna, M. (2024). *School food programs in Canada: 15 promising cases*. University of Saskatchewan Harvest. harvest.usask.ca/items/eeab1aed-37d9-4bf3-bd42-bb2916dd1f03

Ruetz Consulting. (2024). *The Canadian school food program survey*. School food programs in 2023/2024. amberleyruetz.ca/assets/uploads/canada-school_food_map_2023-24_ruetz-consulting-en.pdf

Salloum, A. (2023, September 6). Upped lunch hour supervision fees for Sask. parents as school resumes. *Regina Leader-Post*. leaderpost.com/news/saskatchewan/upped-lunch-hour-supervision-fees-for-sask-parents-as-school-resumes#:~:text=That%20means%20fees%20for%20kindergarten,up%20to%20%24110%20from%20%24100.

Saskatchewan Prairie Conservation Action Plan. (2025). *Working together for prairie conservation...* Saskatchewan Prairie Conservation Action Plan. www.pcap-sk.org

Saskatchewan School Boards Association. (2024). *National school food program*. Saskatchewan School Boards Association. saskschoolboards.ca/wp-content/uploads/008-1000-SSBA_One-Pager_National-Food-School-Program_Web-Version_FA.pdf

Statistics Canada. (2021a). *Population and dwelling count highlight tables, 2011 census*. Statistics Canada. [Data table]. www12.statcan.gc.ca/census-recensement/2011/dp-pd/hlt-fst/pd-pl/Table-Tableau.cfm

Statistics Canada. (2021b). *2021 Focus on Geography Series, 2021 Census of Population [Saskatchewan, Province]*. Statistics Canada. www12.statcan.gc.ca/census-recensement/2021/as-sa/fogs-spg/page.cfm?lang=E&topic=9&dguid=2021A000247

Statistics Canada. (2023). *2021 census of population*. Statistics Canada catalogue no. 98-316-X2021001 census profile. [Data table]. www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/details/page.cfm?Lang=E&GENDERlist=1&STATISTIClist=1&HEADERlist=0&DGUIDlist=2021A00054711066&SearchText=saskatoon

Sumner, J. (2016). *Learning, food, and sustainability: Sites for resistance and change*. Springer. doi.org/10.1057/978-1-137-53904-5

Tamarack Institute. (2017). *Wheel of engagement*. Tamarach Institute. www.tamarackcommunity.ca/hubfs/Collective%20Impact/Tools/Stakeholder%20Engagement%20Wheel%20Tool%20May%202017.pdf?hsLang=en-us

Truth and Reconciliation Commission of Canada. (2015). *Truth and Reconciliation Commission of Canada: Calls to Action.* Government of Canada. publications.gc.ca/collections/collection_2015/trc/IR4-8-2015-eng.pdf

UN Food Systems Coordination Hub. (n.d.) *School meals coalition (SMC).* United Nations Food Systems Coordination Hub. www.unfoodsystemshub.org/food-systems-coalitions/school-meals-coalition-(smc)/en

Wiebe, N., & Wipf, K. (2011). Nurturing food sovereignty in Canada. In A. Desmarais, N. Wiebe, & H. Wittman (Eds.), *Food sovereignty in Canada* (pp. 1-19). Fernwood Publishing.

Willett, W., Rockstrom, J., Loken, B., Springmann, M., Lang, T., Vermeulen, S., Garnett, T., Tilman, D., DeClerck, F., Wood, A., Jonell, M., Clark, M., Gordon, L. J., Fanzo, J., Hawkes, C., Zurayk, R., Rivera, J. A., De Vries, W., Sibanda, L. M., Afshin, A., Chaudhary, A., Herrero, M., Agustina, R., Branca, F., Lartey, A., Fan, S., Crona, B., Fox, E., Bignet, V., Troell, M., Lindahl, T., Singh, S., Cornell, S. E., Reddy, K. S., Narain, S., Nishtar, S., & Murray, C. J. L. (2019). Food in the anthropocene: The EAT-Lancet commission on healthy diets

from sustainable food systems. *Lancet, 393*(10170), 447-492. doi: 10.1016/S0140- 6736(18)31788-4

Young, M. (2019, June 19). Grade 8 home economics, industrial arts programs cut in Saskatoon Public Schools budget. *CTV News.* saskatoon.ctvnews.ca/grade-8-home-economics-industrial-arts-programs-cut-in-saskatoon-public-schools-budget-1.4472830

Zhao, Y., Goto, K., Wolff, C., Bianco-Simeral, S., & Song, C. (2013). Relationships between children's food consumption and social and cultural capital levels among Latino, Hmong, and non-Hispanic white parents of K-2 children. *Journal of Hunger and Environmental Nutrition, 8*(4), 472–489. doi.org/10.1080/19320248.2013.816996