



April 2025

School Food Programs in Canada

School Food Operation Models: Program Typologies

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Communal Dining (BC)

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Suggested Citation: Ruetz, Amberley T., Foster, Stef & Engler-Stringer, Rachel., 2025. School Food Operation Models: Program Typologies. Saskatoon: University of Saskatchewan.

Purpose

Internationally, school food programs (SFPs) are one of the most successful drivers of improved health, education, and economic growth (World Food Programme, 2016). School food programs (SFPs) are (1) school-based breakfasts, mid-morning meals, snacks, and/or lunches offered; (2) at no- or minimal cost; (3) to JK -12 students; (4) during or just prior to the school day; (5) consistently over the majority of the school year. SFPs do not include full cost cafeteria programs; stand-alone food literacy programs (e.g., cooking or gardening programs); school fundraisers (e.g., pizza days; bake sales); after school food programs; or food programs serving pre-primary/preschool children (e.g., daycares and early years centres) (definition expanded from Ruetz and McKenna, 2021).

In April 2024, the Government of Canada announced the establishment of a National School Food Program with a funding commitment of one billion dollars over five years. Then, in June 2024, they released a National School Food Policy that will frame the development of the program as it is established.

To date, there has been little research examining how programs operate. To develop a nationally-harmonised program consistent with the new National School Food Policy, there is a need for an in-depth understanding of how school food models operate. The purpose of this project was to adapt, detail, and validate preliminary SFP operation models – food procurement, production and service - developed from case studies of promising programs across Canada, see the [School Food Programs in Canada – 15 Promising Cases](#) report for more information. The school food operation models – which we collectively refer to as [school food typologies](#) - can help inform Canada's National School Food Program, a comprehensive national research framework for Canada, as well as other country's programs.

This includes a **Glossary** of key terms in bold text throughout the report with definitions (see **Appendix A** on page 25).



Grab and Go Lunch (PEI)

Methods

Preliminary Canadian school food typologies were informed by kitchen types/production models in California (Vincent, 2020) and case studies of promising programs across Canada (Ruetz et al., 2024). These preliminary Canadian school food typologies were used to conduct interviews with key informants in every province and territory in community-based organizations and relevant government departments to determine if and how our preliminary school food typologies fit current practice and programming. We used purposeful sampling with a focus on maximum variation (Patton, 2002) to identify programs in every province and territory to reflect the diversity of program characteristics and geographies with the support of the Coalition for Healthy School Food and its 320+ member organizations in every province and territory. The informants were asked to participate in short interviews where they were guided through the typologies and asked for their reflections on how well the typologies represent their organization's programming and any changes that were needed to reflect their organization's school food work. Once we ensured we had at least one interview with a key informant in every province and territory, we then kept collecting data with new informants to reflect the diversity of geographies and populations that exist until it became clear that saturation had been reached.

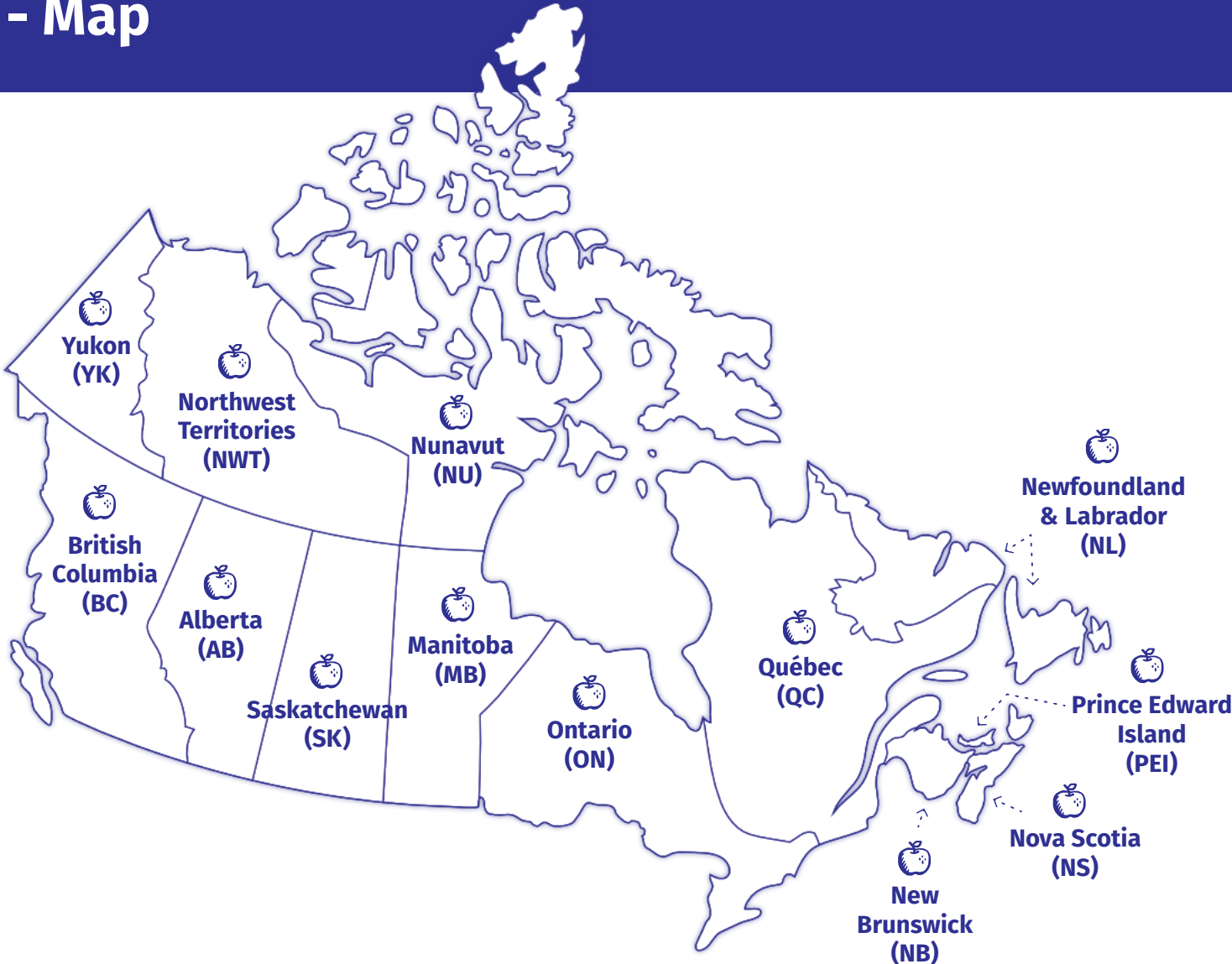
Interviews were audio-recorded and auto-transcribed using Zoom's transcription service and analyzed in Excel using a code list derived from the draft typologies. Additional inductive coding was used to allow for emerging programming characteristics. Debriefing with the research team and CHSF partners supported the refinement of concepts.



Hybrid Lunch Service model in a hallway (SK)

Figure 1 - Map

PROV/ TERR	# OF PROGRAMS REVIEWED
AB	9
BC	5
MB	4
NB	1
NL	1
NS	3
NU	1
NWT	1
ON	2
PEI	1
QC	1
SK	4
YK	2
NAT'L	3
TOTAL	38



Program Demographics

To validate the school food **procurement**, production and service typology created by Dr. Amberley Ruetz, our research team completed **33 interviews regarding 35 separate programs and reviewed an additional 3 programs using previously collected data for a total of 38 programs (N=38).**

29 (29/38, 76%) of the programs described by interviewees are directly involved with school food production and service (n=29). The remaining **nine (9/38, 24%) are responsible for funding and/or play roles in food procurement** and have limited insights to offer around in-school operations (n=9).

The nine agencies offering only funding or procurement related supports serve a total of 5255 schools from every province and territory. Of the nine, one (11%) operates nationally, four (44%) operate provincially/territorially, one (11%) offers support regionally, two (22%) are municipal, and one (11%) is supporting an individual school.

Of the 29 “on-the-ground” programs directly engaged in school food procurement, production and service:

- 66% (19/29) serve grades K-12, 17% (5/29) serve grades K-6, 7% (2/29) are offered at traditional high schools (grades 9-12) and 7% (2/29) of programs have a unique grade spread (K-11, 8-12)

- 3% (1/29) also includes service to an adult education program, 34% (10/29) also offer service to PreK/Headstart/K4/Junior Kindergarten or daycares
- 14% (4/29) of these programs operate at a provincial level, 10% (3/29) are regional, 28% (8/29) serve entire municipalities, 28% (8/29) operate out of specific school divisions/districts and 21% (6/29) serve individual schools.
- 45% (13/29) serve urban students, 21% (6/29) serve rural students, 3% (1/29) serves students living in a remote region, 31% (9/29) serve areas that include a mix of rural, remote and/or urban students
- 21% (6/29) primarily serve Indigenous communities with an additional 34% (10/29) reporting that a significant proportion of students served are First Nations, Inuit or Métis

Using a conservative estimate, generated given data provided by each agency, these 29 programs served upwards of 10,908,961 breakfasts or lunches in the 2023/24 school year¹ at approximately 1587 schools in ten provinces and two territories.

¹Because each agency calculates statistics differently, we have extrapolated the provided data assuming an average school year consisting of 190 days OR 40 weeks of school. Schools which provided only 2022/23 data were considered to serve the same number of meals in 2023/24 (though most programs noted an increase year over year¹). For schools that provided a range, the low end of the range was used. Note: some programs were unable to provide statistics regarding number of meals served – they have been omitted from this count.

Funding

All the on-the-ground programs interviewed report utilizing multiple streams of funding for their programs, and even within the same school district/division individual schools may rely upon various combinations of funding to cover program costs. Of the 29 programs:

- 31% (9/29) are funded primarily (or entirely) through grants, donations and other forms of fundraising
- 34% (10/29) report government as their primary funding source (this might include direct provincial/ territorial grants, government funding that is allocated by a school district or NGO, or Jordan's Principle).
- The remaining 34% (10/29) programs report heavily mixed funding models that might include grants, donors, fundraising, the government, direct NGO support and/or parent payments.



Centralized Procurement Warehouse (AB)

Payment Models

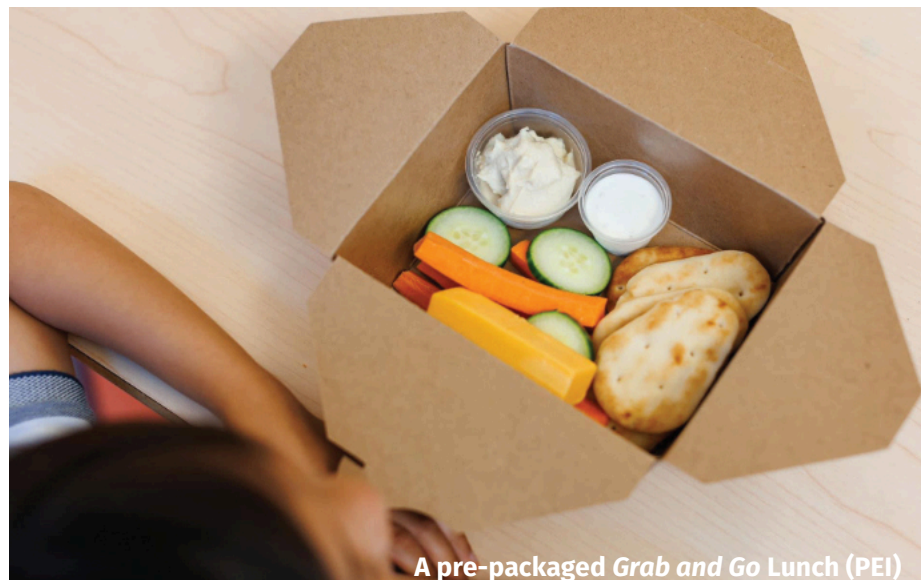
For most Canadian families covered by these programs, school meals are offered at no cost. 69% (20/29) of those reviewed are provided free of charge, though most of those do engage in fundraising endeavours that require parent/caregiver support and participation. This equates to at least 9,858,111 free breakfasts and lunches in 2023/24.

10% (3/29) are pre-paid by families either per meal, or as part of school registration fees – one of these (3%, 1/29) is a for-profit company. Each of the pre-paid programs offer some sort of subsidized or free option for identified students/families – usually requiring parent/caregiver pre-registration.

Pay-What-You-Can (PWYC) models, where parents can pay the full cost of meals or a portion (usually a sliding scale such as 100%, 50%, 25% or 0% of the cost of the meal) depending on their ability to pay are being utilized by 11% (3/29) of programs currently, with an additional 4% (1/29) piloting a PWYC program in 2023/24, and 7% (2/29) using PWYC as an option at only a few of their participating schools. 10% (3/29) reported having used PWYC previously but have discontinued the practice. Three programs were able to provide information regarding the “recovery rate” of their PWYC programs – one is collecting back 20% of overall costs (PEI); one is collecting back 40-50% of the cost per meal (NS, suggested price per meal is \$4.50); and one discontinued program recovered 41% of costs through PWYC (NB).

Of the 14% (4/29) of programs that described using a variety of different payment models across different [sites](#) or regions there is a mix of pay-at-point-of-service, pre-paid, PWYC and free models depending on the school or region. High schools are more likely to have pay-at-point-of-service programs.

Generally, pre-payment and PWYC payments are collected through an online portal. Two interviewees note that offering an anonymous way to pay significantly reduces the stigma that can be attached to accessing subsidized or free meals.



A pre-packaged Grab and Go Lunch (PEI)

Staffing

Various staffing models are used to keep SFPs running. Of the ground-level programs we interviewed:

- 69% (20/29) have dedicated **paid SFP staff**. Four of these (14%, 4/29) also have large numbers of volunteers that support their work (anywhere from 15-600 volunteers per week) and one (4%, 1/29) also has a volunteer Board of Directors
- 7% (2/29) are entirely volunteer-led
- 14% (4/29) use considerable student participation. 7% (2/29) are largely student-led, with student chefs and servers earning class credits for their work supported by a Red Seal Chef/Culinary Instructor; 7% (2/29) are staff-led, but also have students earn credits for Foods courses by supporting food prep and service; an additional 3% (1/29) has one school within their program that has a student-led offering, while most use other models.
- One (3%, 1/29) is staffed entirely with teachers and EAs who already work in the school with two EAs having 30 minutes written into their contract each day to support food prep and cleanup
- 14% (4/29) report utilizing a mix of staffing models across their participating school sites but say the majority of those are also **school staff** led mixed with some PTA/parent run, volunteer-run and dedicated food staff-run kitchens



A Salad Bar Unit Being Filled for Lunch Service (AB)

Procurement Models

Most schools rely on an assortment of different sources for their program groceries, with wholesale vendors being the most frequently mentioned. Schools and programs operating in remote or rural areas (particularly in northern Canada) are more likely to have staff make individual shopping trips to local grocery stores or direct-to-customer-wholesaler clubs such as Costco. Bakeries and egg producers are the most common local food providers to be engaged in school food programs, but many schools and agencies also have relationships with local farmers, wild harvesters, restaurants and food manufacturers.

- 86% (24/29) regularly use wholesale vendors (GFS, Sysco, Fresh Choice, Pratt's, etc.), and an additional 4% (1/29) piloted a wholesale vendor program in the 2023/24 school year
- 69% (20/29) have connections with local producers, businesses and farmers
- 36% (10/29) have school or food staff do individual shopping trips to grocery stores/wholesale clubs
- 25% (7/29) frequently utilize large scale donations (though most programs do accept food donations at least occasionally, especially direct, in-kind donations from grocery stores or producers)

- 14% (4/29) use food grown in school or community gardens to supplement their programs
- 3% (1/29) manages its own procurement and supply chain. They maintain their own fleet of trucks and warehouse space and deliver direct from producers/growers to their schools.

In addition to outside procurement relationships, of the total agencies reviewed (N=38), 29% (11/38) engage directly in food distribution to more than 1986 schools in 7 provinces/territories. These agency-led procurement programs are designed to save schools money through bulk buying and to consolidate and distribute large scale industry donations. One of these (3%, 1/38) is a local food bank that works entirely in distribution offering a grocery store type shopping experience to schools using donated or gleaned food. 18% (7/38) offer meal programs as well as low-cost, subsidized or free food for schools – some deliver directly to school food kitchens, others require schools to pick up. 8% (3/38) are focused on providing low-cost fresh produce (fruits, vegetables, dairy and bread) directly to schools. 16% (6/38) of these agencies maintain their own central warehouse for distribution, and 13% (5/38) support vendor deliveries direct to schools including three (8%, 3/38) which subsidize delivery costs to remote communities that may be fly-in or barge-in. 8% (3/38) are agencies that engage in both funding and food distribution/procurement but do not participate directly at the school level.

Production Models

While most Canadian schools are not equipped with large, professional kitchens, some do have commercial-grade teaching kitchens or cafeteria spaces, and many have canteen-style kitchenettes or small multi-use kitchens stocked with mostly residential appliances. Schools without adequate kitchen space often rely on community or government spaces or may partner with 3rd party agencies and NGOs to prepare school food entirely off-site. The food safety requirements for school kitchens vary widely from province/territory to province/territory - some jurisdictions require school food to be prepared in kitchen spaces that adhere to the same strict standards as commercial ventures such as restaurants, others have less strict requirements (largely to account for non-commercial kitchen spaces that are generally found in school buildings, but these spaces are still held to basic food safe standards).

Of the 29 on-the ground programs interviewed:

- 52% (15/29) exclusively utilize school-based kitchen spaces at the schools they serve
- 28% (8/29) utilize one or more NGO or community spaces either as in-kind donations or for a fee
- One (3%, 1/29) is a for-profit company that maintains their own network of commercial kitchen spaces

- 17% (5/29) use a mix of spaces to meet the demands of their programs including commercial, school, government and community spaces
- 7% (2/29) also have for-profit vendor contracts with local restaurants to provide some school meals as part of their regionalized service models

Of the 29 on the ground programs, 38% (11/29) operate primarily with central kitchen spaces where one main kitchen prepares and delivers food for multiple schools in a single area. An additional 17% (5/29) report using a patchwork of models across different schools including some centralized kitchens. These kitchens may be located in a school or at an off-site facility. Of the 16 programs with at least some level of centralized food production (n=16):

- 31% (5/16) are considered small hub and spoke model (serving 14 or fewer schools)
- 50% (8/16) are considered large hub and spoke model (serving 15 or more schools)
- 19% (3/16) have not reported the number of schools served by their centralized kitchen(s)

Table 1 - Centralized Kitchens

PROV.	CATEGORY	SERVICE AREA	DESCRIPTION
AB	Centralized - Large H&S	Urban/Rural	1CK: 22schools - CK located in a church
AB	Patchwork; Hub Size Unknown	Urban	Patchwork; multiple hubs; hub-sizes unknown - main CK is a fully commercial kitchen
AB	Centralized - Small H&S	Urban	1CK: 14 schools - CK is a fully commercial space operated by the NGO
AB	Centralized - Large H&S	Urban	1CK: 45 schools - CK is a fully commercial space operated the NGO
AB	Patchwork - Small H&S	Rural	2 CKs: # of schools unknown, but less than 14 - CKs are in fully commercial kitchen spaces in schools
BC	Centralized - Large H&S	Urban/Rural/Remote	1 CK:20 schools - CK located in an NGO space with a fully commercial kitchen
BC	Centralized - Large H&S	Urban	1 CK: 23 schools - CK located in a school kitchen with a fully commercial kitchen
MB	Centralized - Small H&S	Urban/Rural	1CK: 7 schools - CK located in the community Friendship Centre
NB	Centralized - Large H&S	Urban	1CK: 24 schools - CK is a mobile kitchen
ON	Centralized - Large H&S	Urban	1CK: 25+ schools - CK is a fully commercial kitchen operated by the NGO
PEI	Patchwork - Unknown Hub Size	Urban/Rural	5 CKs: # of schools unknown - CKs are fully commercial kitchens located in schools
QC	Patchwork - Small H&S	Rural	1 major CK: unknown # of schools, but less than 14 - main CK is a fully commercial kitchen
SK	Centralized - Large H&S	Urban	1 CK: 30 schools - CK located in a school
SK	Centralized - Large H&S	Urban	1CK: 18 schools - CK located in a Civic Centre (provided in kind by the municipality)
YK	Patchwork - Small H&S	Urban	2+ CKs: # of schools unknown, but less than 14 - CKs are in rented, fully commercial kitchen spaces
Nat'l	Centralized - Size Unknown	Urban	# of CKs unknown: # of schools unknown - CKs are fully commercial for-profit kitchens

Alberta (AB)

British Columbia (BC)

Manitoba (MB)

New Brunswick (NB)

Ontario (ON)

Prince Edward Island (PEI)

Québec (QC)

Saskatchewan (SK)

Yukon (YK)

National (Nat'l)

Service Models

School food service models include both how and where food is served and eaten. Many Canadian schools are not equipped with a traditional school cafeteria, so they utilize alternate areas of the school for this. Generally, if a communal dining area is not available in the building students dine in classrooms in their desks, but food service is much more varied with students being served their lunch in the hallways, gym, library, foyer and even the principal's office. Additionally, many programs utilize multiple service models – younger grades may follow different procedures from older students; breakfast, lunch and snack may all be served differently; or the program may have many sites each of which uses the service model that best suites them. Of the 29 on-the-ground programs interviewed:

- Only 14% (4/29) utilize a single service model (rather than a mix of different models)
- 48% (14/29) utilize communal dining spaces (such as a cafeteria or multi-purpose room with tables and chairs) at at-least one of their sites; 21% (6/29) report that communal dining is their primary style of dining
- 86% (25/29) have students eating in their classrooms at at-least one of their sites; 31% (9/29) report classrooms as their primary dining location
- 62% (18/29) allow students to serve themselves either at a salad bar or from a bin of pre-prepared foods

- 34% (10/29) report that students regularly help at snack or mealtime serving other students

School Food Typologies

These school food typologies classify school food **PROCUREMENT** (i.e. food sourcing), **PRODUCTION** (i.e. food prep and cooking) and **SERVICE** (i.e. meal distribution and dining) models. Programs may fall into multiple categories. Find complete versions of the procurement, production and service typologies starting on page 14.

Food procurement models fall into two distinct categories:

- 1. Third Party Procurement** – bulk food storage and delivery is done by businesses or non-profit agencies that are not directly affiliated with the schools or school divisions they serve
 - a. For-Profit** – food and supplies are purchased from a for-profit company, usually a wholesale grocery vendor that also provides delivery
 - b. Non-Profit, Intermediated** – food and supplies are purchased from or provided by an intermediary non-profit organization. This organization may purchase, glean or collect donated food. It has its own warehouse/food storage space and delivery vehicles. The non-profit may offer discounts or donate product direct to SFPs.

Service Models

- c. **Third Party Mixed** - a non-profit organization acts as an intermediary. It generally has its own warehouse/storage space and may also have delivery vehicles but relies heavily on for-profit businesses to handle food transport/delivery.
- 2. **Independent Procurement** - food storage and procurement are handled at the school or division level
 - a. **Independent School** – school staff and volunteers use personal vehicles (and often personal time) to go to individual grocery stores to purchase food and supplies for SFPs. They may or may not be reimbursed for their time and travel costs. This model is common in rural and remote communities.
 - d. **Centralized Independent** – the school division, NGO or agency that runs the SFP also maintains its own warehouse/storage space and delivery fleet. Grocery is ordered in bulk wholesale and divided up for delivery to schools or kitchens.
 - e. **Gardens** – produce is grown in and harvested from school or community gardens, greenhouses, hydroponic units or orchards and given to SFPs for inclusion in school meal programs. Students, staff and/or volunteers maintain these spaces.

Food production models fall into four specific categories:

- 1. **Independent Production** – food is prepared on-site at each school
- 2. **Centralized Production** – food is prepared at a central location (school or third-party kitchen) and delivered to schools by volunteers, school division, NGO staff or for-profit delivery companies. There are two main types:
 - a. **Large Hub and Spoke** – a central kitchen serving 15 or more sites*
 - f. **Small Hub and Spoke** – a central kitchen serving 14 or less sites
- 3. **Patchwork** – one or more sites/schools in a program may be served by independent production while others are centralized
- 4. **Regionalized** – a highly interconnected system where some kitchens serve other kitchens and schools may be served by multiple different programs each week (ex. one program offers meals Tuesday/Thursday, another offers Mon/Wed, a third delivers meals for Friday).

**The Large Hub & Spoke model was originally set at 15+ sites based on recommendations from US researchers (Vincent, et al., 2020). Our interviews confirm that after a Centralized program reaches beyond 14 sites, it begins to utilize a more complex variety of procurement models to accommodate the increasing variable infrastructure and locations of sites. Additionally, Small Hubs are more likely to be part of a Patchwork that also includes Independent production.*

Service Models

Food service models are divided into two main categories, and includes details related to where and how food is served:

1. **Decentralized Service** – where food is delivered to individual classrooms in the school

a. **Classroom Bin Model** – where pre-packaged snacks or meals are dropped at the classroom door for distribution in the classroom

g. **Door-to Door Service Model** – where meals (often hot food in hotel pans or soup pots) are taken on a cart to each classroom and students are served individual portions at the classroom door

h. **Take Home Model** – where pre-packaged meals or sometimes general groceries are provided to students/families to take home after school or on the weekend

2. **Centralized Service** – where food is served in a central location. Centralized programs may offer hot food/pan service where students are served by staff, a salad bar model where students serve themselves and/or pre-packaged/pre-assembled meals.

a. **Centralized Food Access Point** – where food is distributed at a central location in the school (ex. a cafeteria line, canteen window, a table in the school foyer, etc.).

i. **Grab and Go Model** – where students grab pre-assembled meals (ex. brown bag lunches or pre-portioned plates) or individually-portioned snacks in a centralized location. Students may eat in a common area or return to classrooms.



Grab & Go Breakfast Cart (hubert.com)

ii. **Hybrid Service** – where students are served hot food/pan service at a central location in the school then return to their classrooms to eat

b. **Communal Eating Model** – a completely centralized model where a school cafeteria, or multi-purpose school area like the gym or entrance foyer is used to serve sit down meals

c. **Salad Bar Model** – students serve themselves from a buffet line or cold table providing them the opportunity to decide what and how much they want to eat. Salad bars focus on offering fresh fruit and vegetables and cold proteins along with dressings/sauces and other salad toppers. Salad bars are easily paired with other service models.

See the Typology Category Summary chart on page 23-24.

Typology Validation

The goal of this school food program review was to validate the preliminary SFP typologies developed by Dr. Amberley Ruetz and ensure a comprehensive understanding of the myriad operational models currently represented in the Canadian school food landscape.

Interviews for this project took place May-June 2024 (**see interview questions in Appendix B**). During the interview and review process, changes or additions were made to the typologies to keep them in-line with provided information. All edits were carefully documented. These adjustments were generally made to ensure clarity between categories or add specificity. Changes include:

- A. The “grab and go” breakfast/snack model and “grab and go” lunch model were combined into one single “grab and go” category. Because the service method and location change little across different types of meals there is no need for two distinct categories here.
- B. An additional Decentralized Service model, “Door-to-Door” was added where meals are taken on a cart to each classroom and students are served at the classroom door then sit to eat in their desks. It differs from the Classroom Bin model because meals are not pre-assembled/pre-portioned. This model was a popular option during COVID-19 for limiting student interactions.
- C. A clarifying general description was added to the Central Food Access Point category

D. Due to a high number of urban schools utilizing the Independent Production model, the applicability of the category was changed to include urban schools.

E. A “Hybrid” service model was added to account for programs where students are served plated meals at a Central Food Access Point, but there is no Communal Eating Space. In schools lacking a traditional cafeteria, hot meals are served from tables in a hallway or foyer and taken back to class by students to eat in their desks.

F. The definition of Central Kitchen was updated to note that some CKs may allow schools to pick-up their own meals rather than have them delivered.

G. After a final consultation with the Coalition for Healthy School food and some additional

H. Salad bars were added to service models typology.

I. After much deliberation, a third category was added. In addition to Production and Service Models the typology now categorizes Procurement models as well.

With the above changes the typology effectively captures the diverse approaches employed in SFPs, providing a comprehensive environmental scan for future research and application.

Table 2 – School Food PROCUREMENT Models in Canada

INDEPENDENT PROCUREMENT		THIRD-PARTY PROCUREMENT	
<p>1. INDEPENDENT SCHOOL PROCUREMENT: School staff (or volunteers) use personal vehicles to buy food at retail grocers. They may or may not be reimbursed for their time and travel costs. This model is common in remote communities where grocery stores can be hours away from the school. It may include wholesale purchases direct from local producers.</p>	<p>2. CENTRALIZED PROCUREMENT: The school division/NGO/ agency that operates the school food program also manages its own warehouse and transportation fleet, operating independently. Food is often purchased direct from producers/growers. Example: An AB-based First Nation that manages their own SFP purchasing, warehouse and fleet.</p>	<p>4. FOR-PROFIT VENDOR PROCUREMENT: Commercial food vendors deliver food on a regular schedule directly to school sites. Examples include Sysco, Gordon (GFS), for-profit companies may or may not offer discounts or donations to school food programs. In terms of school food, vendors are wholesalers and commercial producers and grocery providers that sell food and supplies</p>	<p>5. NON-PROFIT, INTERMEDIATED PROCUREMENT: An intermediary non-profit agency is responsible for sourcing food for school food program and storing it in a central warehouse. Food may be donated, gleaned or purchased from other vendors/producers. They may deliver directly to schools or schools may be required to pick up from their location. Example: A Saskatoon-based NGO that sells and delivers produce to schools at a discounted rate</p>
<p>3. SCHOOL GARDEN OR FARM The school or non-profit maintains a garden, greenhouse or indoor growing operation that provides produce to their school meal programs. They may also engage in other farming practices (livestock, orchards, apiary). Example: A school division in AB that has indoor growing programs at multiple schools which contribute fresh greens to school food programs.</p>	<p>6. THIRD-PARTY MIXED PROCUREMENT Utilizes for-profit delivery or a mix of non-profit and for-profit delivery options. Delivery options may include the non-profit's own fleet, volunteer drivers, for-profit delivery companies, and/or producers/ vendors delivering direct to school sites. Examples of this include a program in BC that uses a wide network of producers, delivery companies and vendors to deliver fresh produce to schools across the province.</p>		

Figure 2 - School Food PROCUREMENT Models in Canada

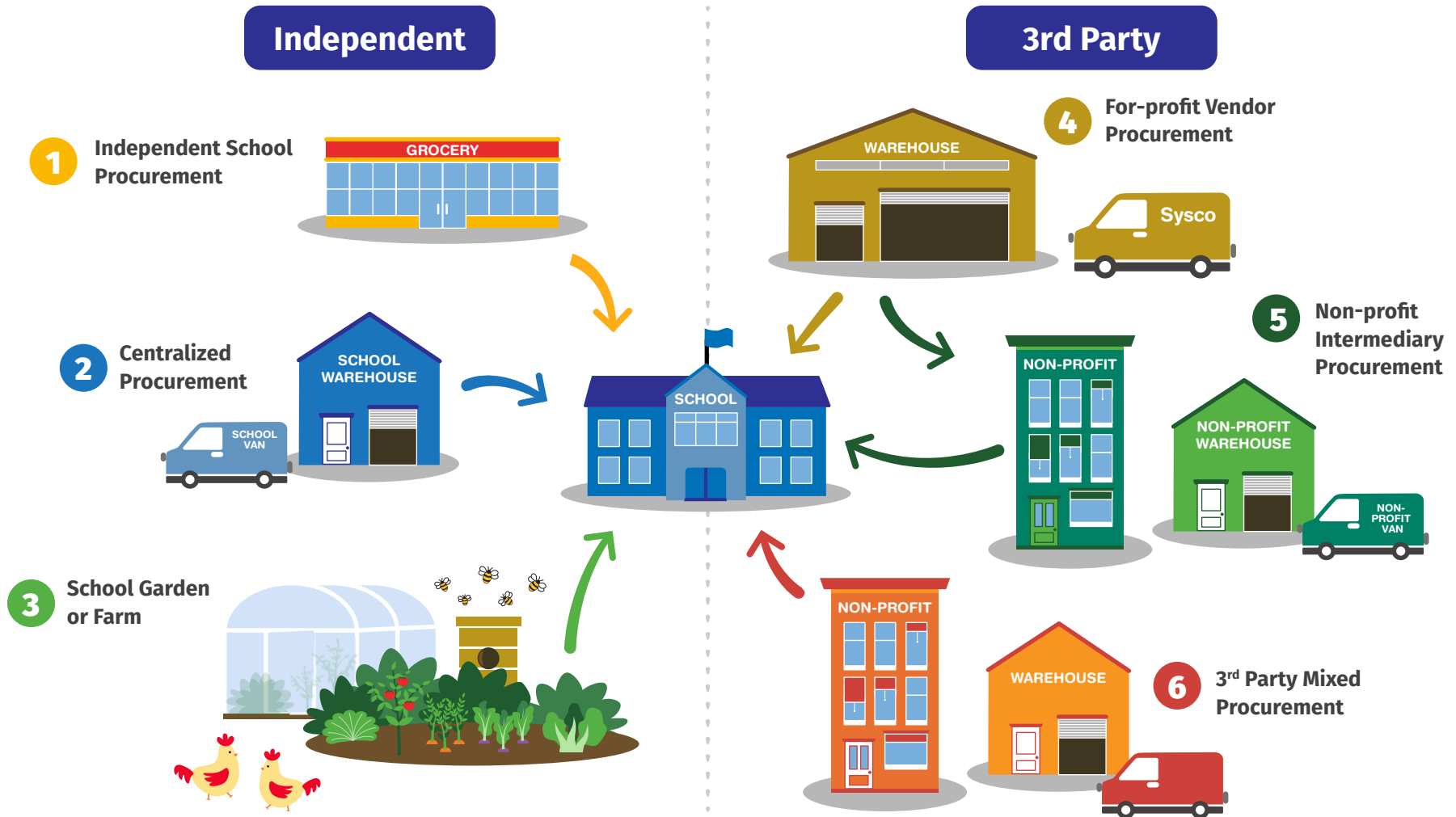


Table 3 – School Food PRODUCTION Models in Canada

INDEPENDENT PRODUCTION MODELS	CONSOLIDATED PRODUCTION MODELS	
<p>Food Production Staffing: (a) Self-catered or ‘in-house’: run by people who are members of the school community where the program operates, which can be paid SFP staff; school staff and/or volunteers. Students may participate as volunteers or for course credit.</p> <p>(b) Contract Catering: outside caterer operating in the school</p> <p>1. INDEPENDENT PROCUREMENT & PRODUCTION</p> <p>Individual schools procure and prepare their own food and generally do not receive partially or fully cooked food from another site.</p> <p>Staffing models: staff-led, student-led, volunteer-led, or a combination.</p> <p>Location: outside caterer (both for-profit and non-profit), school,</p> <hr/> <p>Applicability: Rural and remote contexts where centralizing is not feasible due to large distances between communities. Urban schools with adequate kitchen facilities may also utilize this model.</p>	<p>2. CENTRALIZED</p> <p>Central Kitchen: A production kitchen where food is prepared for surrounding schools. Food is prepared at least partially from basic ingredients and may be distributed as partially processed ingredients or as finished meals. This central kitchen may utilize a commissary. This model also includes a pick-up option for schools where delivery is not possible.</p> <p>Small Hub & Spoke: One central kitchen (sometimes with a central warehouse) serves all other school sites (1 - 14 sites). The central kitchen may be a commissary (Staffing models: staff-led, student-led, volunteer-led, or a combination.</p> <p>Location: school, NGO, government-owned facility, etc.</p> <hr/> <p>Applicability: Medium and large cities.</p> <p>Snack only programs in a number of sizes of communities, but especially areas of high population density.</p>	<p>3. REGIONALIZED</p> <p>Regional Kitchens: A few cooking kitchens serve a few other kitchens (rather than one single central kitchen, a more diffuse but still highly interconnected configuration). This model may utilize a commissary.</p> <p>4. PATCHWORK CONFIGURATION</p> <p>One or a few cooking kitchens may serve a few other sites, while some sites are independent.</p> <hr/> <p>Applicability: Small, medium and large cities.</p> <p>Some rural areas where communities are relatively close together.</p>

Figure 3 - School Food PRODUCTION Models in Canada

1. Independent Procurement & Production



Legend



School



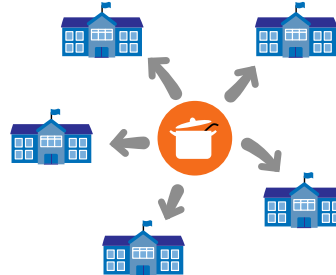
Kitchen



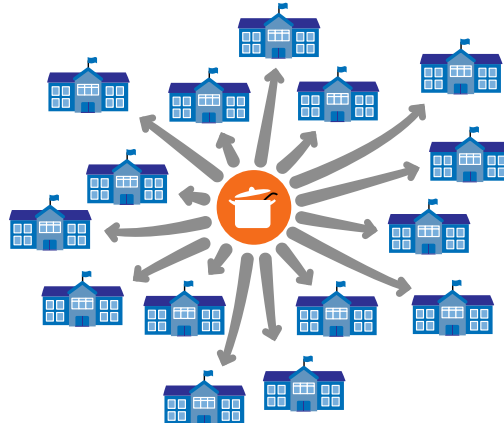
Independent School Kitchen

2. Centralized

Small Hub & Spoke
(serves 2-14 sites)

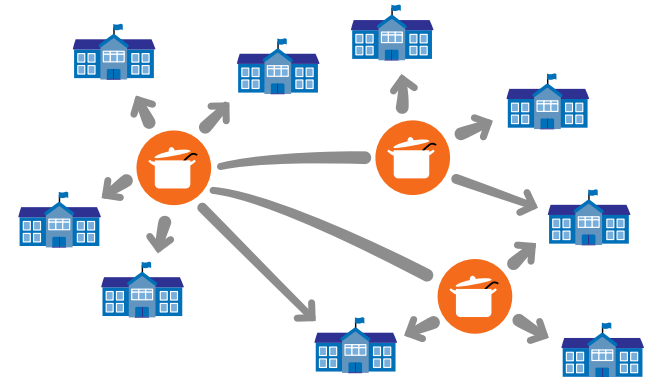


Large Hub & Spoke
(serves 15+ sites)



3. Regionalized

Regionalized Kitchens



4. Patchwork

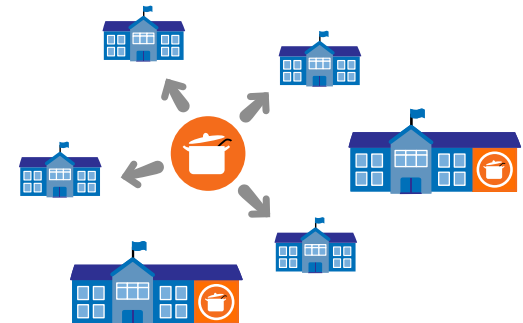


Table 4 - School Food SERVICE Models in Canada

1. DISPERSED/DECENTRALIZED FOOD SERVICE MODELS	2. CENTRALIZED FOOD SERVICE MODELS	
<p>a. Classroom Bin Model: Breakfast and/or snack bins for each classroom prepared in advance, often in single serve containers of some kind (e.g., plastic Ziplock baggies, reusable cups and muffins wrappers, etc.)</p> <p>Examples: programs in Ontario and Manitoba (delivered on trays to each classroom to eat during class time).</p> <p>b. Door-to-Door Service model: hot food is served from a cart at each classroom. Students eat at their desks.</p> <p>Ex. A program in MB where hot food is delivered from the central kitchen to the school and then severed door to door to all the classrooms.</p> <p>c. Take-home meal model: This could include meals for after school sent home in children’s backpacks. These meals may be leftovers from school meals prepared during the day or prepared specifically for students to take home.</p>	CENTRAL FOOD ACCESS POINT	CENTRAL EATING SPACE
	<p>Meals are served/distributed from a central location in the school – cafeteria/canteen; foyer, classroom, school library, principal’s office (not ideal due to stigma).</p> <p>d. ‘Grab-and-Go’ Model: breakfast and/or snack bin set up in a central location in the school. Students serve themselves. Can also include bagged lunch programs.</p> <p>e. Hybrid Service Model: area(s) of the school is used for food service. Students are served a plated meal and return to the classroom (with reusable or disposable tableware) to eat.</p> <p>Example: A program in Saskatchewan where in one school the food is served in two hallways and students eat in their classrooms. Can include pre-plated meals, buffet service/pan service.</p>	<p>f. Communal Dining School cafeteria, or multi-purpose school areas like the gym or entrance foyer is used to serve sit down meals</p> <p>Example: A program in Alberta sets up tables and the salad bar in the school ‘gathering area’ near the entrance of the school where some tables are available, but not enough for everyone.</p> <p>Food service staffing:</p> <ul style="list-style-type: none"> • Adults serve (lunch staff, teachers, volunteers, etc.) • Students serve themselves • Students serve students
	<p>g. Salad Bar Model: students serve themselves in a buffet-line style with a focus on fresh veggies and cold proteins. Can be easily combined with other service models.</p>	

Figure 4 - School Food SERVICE Models in Canada

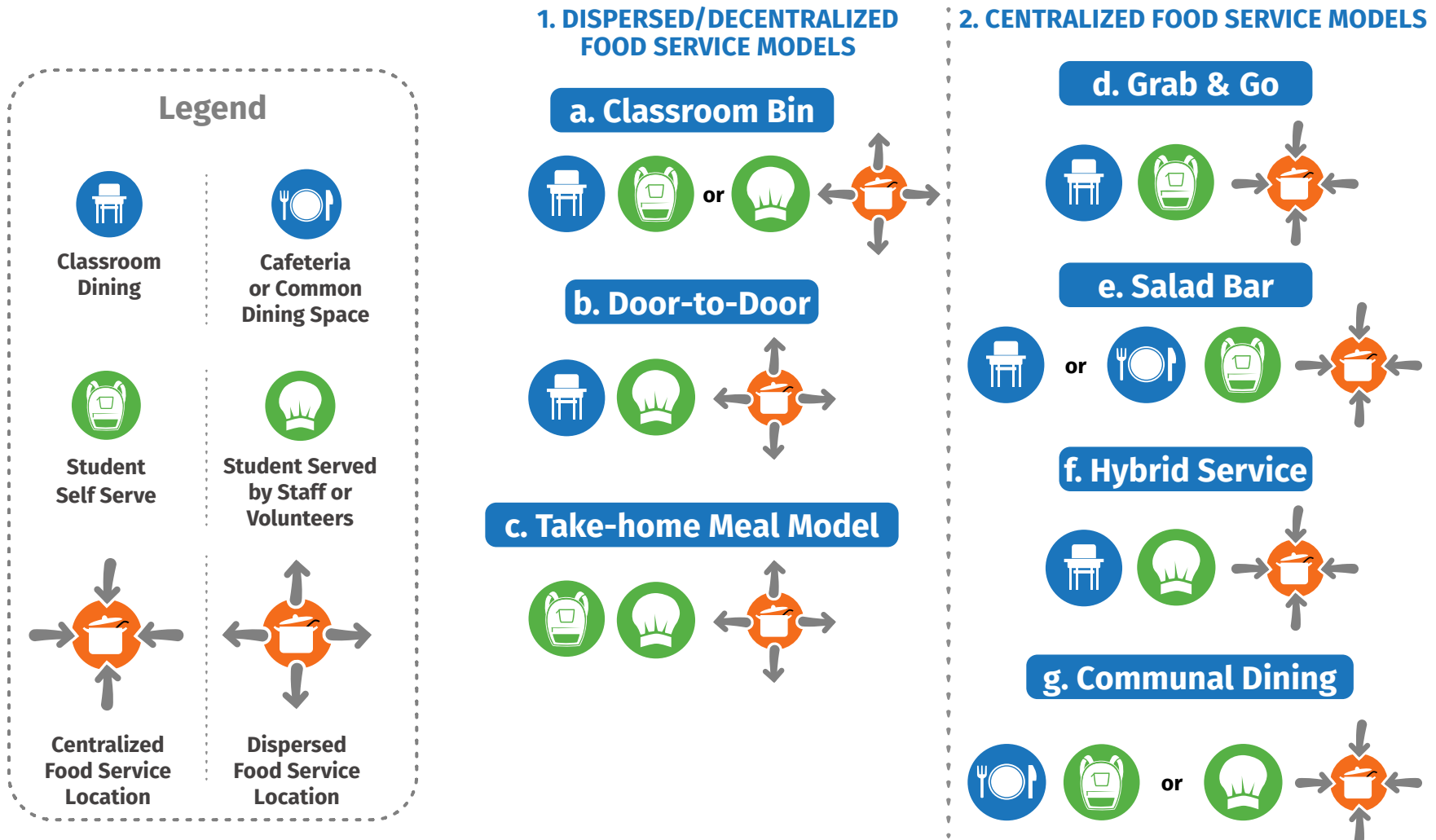


Table 5 - Typology Category Summary

			PROCUREMENT MODELS							FOOD PRODUCTION MODELS					FOOD SERVICE MODELS							
Province/Territory	Urban/Rural/Remote	# of Schools	Independent Procurement	Centralized	Third-party, NGO, intermediated	Third party for-profit	Third party Mixed	Garden Production	Independent	Centralized - Large H&S	Centralized - Small H&S	Centralized - Size unknown	Patchwork	Regionalized System	Classroom Bin	Door to Door	TakeHome	Communal Dining	Salad Bar	Grab and Go	Hybrid	
NS	Ru	1	x					x	x										x			
NS	Ru	1	x			x			x							PKO		x				
NS	U	1				x			x					x	x		x		x	x		
MB	Ru	1							x						x					x		
SK	Re	1	x						x								SUM				x	
NU	U/Re	1				x			x								x	x		x		
BC	U	3				x		x	x									x	x			
AB	Ru	6				x		x	x							x					x	
MB	RuU	7				x					x					x	x				x	
SK	U	8			x				No Food Production						No Food Service							
Nat'l	RuR	8			x	x			No Food Production						No Food Service							
AB	Ru	10		x					x		x		x						x			
AB	U	14				x					x			x								
QC	Ru	14				x			x		x		x			x					x	
SK	U	18	x			x				x					x			x		x	x	
BC	URR	20	x			x				x								x		x		
AB	Ru/U	22				x				x				x								
BC	U	23						x		x							x	x	x		x	

Legend: * though this specific program is run by a national agency, it operates in QC only

SUM – during summer only

PKO – PreK to Gr. 1 classrooms only

 – No information available

Table 5 - Typology Category Summary, contd.

			PROCUREMENT MODELS						FOOD PRODUCTION MODELS						FOOD SERVICE MODELS							
Province/Territory	Urban/Rural/Remote	# of Schools	Independent Procurement	Centralized	Third-party, NGO, intermediated	Third party for-profit	Third party Mixed	Garden Production	Independent	Centralized - Large H&S	Centralized - Small H&S	Centralized - Size unknown	Patchwork	Regionalized System	Classroom Bin	Door to Door	TakeHome	Communal Dining	Salad Bar	Grab and Go	Hybrid	
AB	URu	24			x	x			x						x			x		x	x	
NB	U	24			x	x				x							x			x		
ON	U	25+	x			x				x				x		x					x	
YK	URR	29	x			x			x		x		x		x			x		x		
SK	U	30+								x					x					x		
AB	U	42				x			x					x	x			x		x	x	
AB	U	45				x								x				x			x	
BC	URR	60					x		x									x				
PEI	URu	62				x			x			x	x							x		
MB	U	79	x						x									x		x		
AB	U	94			x				No Food Production						No Food Service							
NL	URR	256	x			x			x						x			x		x		
AB	U	268	x			x			x			x	x	x	x			x		x	x	
Nat'l*	U	300+					x		No Food Production						No Food Service							
Nat'l	U	500				x						x		x							x	
BC	URR	1480					x		No Food Production						No Food Service							
ON	U				x	x			No Food Production						No Food Service							

Legend: * though this specific program is run by a national agency, it operates in QC only

SUM – during summer only

PKO – PreK to Gr. 1 classrooms only

 – No information available

Appendix A - Glossary

Central Kitchen: A production kitchen where food is prepared for surrounding schools. Food is prepared at least partially from basic ingredients and may be distributed as partially processed ingredients or as finished meals. This central kitchen may utilize a commissary.

Central Warehouse: this site receives the bulk of food deliveries, and the food for each school is distributed from this warehouse. Very little to no food preparation takes place at a central warehouse.

Commissary: a commercial kitchen rented by third parties to prepare and/or store food.

Cooking Kitchen: meals served are prepared primarily on site in that kitchen. Vendor deliveries are made to this school site, and the food served is not exclusively heat and serve. If a school district has a central kitchen or warehouse, this cooking kitchen site may receive minimal support.

Food Production: the methods and environment in which food is prepped and cooked for SFP meals.

Food Service: the method and environment in which students are served and consume meals in an SFP.

Independent: in terms of school food typologies, independent refers to SFP processes/operations run by people who are members of the school community where the SFP operates (school staff, paid SFP staff, volunteers, students, parents, etc.), rather than outside third parties.

Local Food: food grown, produced or caught within the province, territory, or region unless otherwise specified.

Paid SFP Staff: Employees specifically hired and paid for duties related to the school food program.

Pay-What-You-Can (PWYC): a SFP model where students/parents can choose the amount they pay but families are encouraged to pay if they are able to help those who are not. Some programs require a minimum payment (e.g., \$1).

Procurement: Operations, environments and vendors which support the purchasing and delivery of food and supplies to school food sites.

Producers: individuals, businesses and organizations that grow, create or manufacture goods or services. In terms of school food, producers are generally the farmers and food manufacturers that grow, harvest, raise, butcher and otherwise make the food products used in SFPs.

School food programs (SFPs): (1) school-based breakfasts, mid-morning meals, snacks, and/or lunches offered; (2) at no- or minimal cost; (3) to JK -12 students; (4) during or just prior to the school day; (5) consistently over the majority of the school year. SFPs do not include full cost cafeteria programs; stand-alone food literacy programs (e.g., cooking or gardening programs); school fundraisers (e.g., pizza days; bake sales); after school food programs; or food programs serving pre-primary/preschool children (e.g., daycares and early years centres) (definition expanded from Ruetz and McKenna, 2021).

School Food Typologies: frameworks for categorizing and labelling school food procurement, production and service models.

School Staff: School-paid employees such as teachers or educational assistants who volunteer their time towards SFP operations

Sites: In terms of school food, a site is a place where food is served to students as part of an SFP. This might be a school, community centre or any other location where students eat SFP meals. Food may or may not be prepared “on-site.”

Appendix B - School Food Environmental Scan Questions

To collect the data required to validate Dr. Ruetz's school food typologies a total of 33 agencies/school divisions/schools from nine provinces and two territories were asked the following 11 questions in either English or French. Clarifying follow-up questions may also have been asked during the interviews.

1. What is/are the name(s) of the IN-SCHOOL MEAL Program(s) your organization offers?
2. a) What geographical area is served by this/these programs?
b) Is the program national/provincial/regional/municipal/division/school level?
c) Does it cover rural, urban or remote areas?
3. a) What is the total student population involved?
b) How many individual meals are served?
c) Which grades Pre-K – Gr. 12 participate?
d) How many schools are involved?
4. Does the program serve primarily First Nations, Métis or Inuit students? (Yes or No)
5. Can you tell us how the program is funded (generally speaking)?
– NGOs/charities (provincial/territorial/ national or other);
government (federal/provincial/municipal); private sector; family
payments; school/division operating budgets; other
6. Describe the program payment model (if any) – PWYC, Paid, Free, etc.
7. Describe the staffing model – Volunteer Run, External For-Profit or NGO; Internal Paid Staff, etc.
8. How is the food sourced? – wholesale vendor deliveries to the kitchen/warehouse; local producers; staff shopping at individual grocery stores; donations; other
9. Where and how is the food prepared? What kind of kitchen equipment do cooks have access to? Can you comment on its suitability for your current programming?
10. Please describe where and how food is served to and eaten by students?
11. Is there anything else we should know about food service procurement, production or service as it relates to your program?

Appendix C - Other Common Themes

While our interviews were focussed on school food program operations – i.e., production, procurement and service - many of our conversations brought up other themes and topics that were common across agencies around the country and which may offer insights into the strengths and challenges of existing school food models. These include topics such as:

- **Volunteers** - Many programs are reliant on volunteer labour to operate even when they have some paid staff. Some programs have reliable, long-term volunteer supports and individual volunteers who play central roles in their production and service, while others struggle to find even one-off volunteers for special events. Volunteer coordination can be time consuming. Often programs partner with businesses or NGOs who supply them with volunteers. Parent and school staff volunteers are also crucial – most programs report participation from school staff volunteers (teachers, EAs, administrators, etc.), especially with serving and supervision.
- **Infrastructure and Equipment** - School infrastructure and equipment are a major limiting factor. In some jurisdictions schools have not been built with full kitchen spaces or dining facilities; and many schools are limited to residential grade appliances due to budgets, electrical/plumbing/ventilation constraints, space, etc. Several interviewees mentioned that school food grant programs often do not support capital purchases or renovation costs. Programs often use off-site kitchens or centralized models to overcome infrastructure challenges.
- **Reducing Stigma** - Ensuring that students and families who require access to free meal programs or must access subsidies are not faced with judgment for doing so is of major concern all over the country.
- **Halal and Vegetarian Options** - Many urban programs are careful to ensure that students with halal diets are provided tasty, culturally-appropriate food alongside their non-halal eating peers, and that Muslim parents/caregivers have trust in their school's meal program. Often rather than purchasing expensive halal meats, a vegetarian option is provided. Two interviewees shared stories of testing vegetarian menu items that were growing very popular with students of all dietary types.
- **Child Diets and Nutrition** - Multiple programs acknowledge that they play an important role in exposing children to new foods and encouraging healthy eating. Programs that include lots of fresh fruit and vegetables and offer foods with novel (to children) flavours and textures tend to believe, anecdotally, that their students are more open-minded about food (i.e., less picky) and have more varied and healthy diets overall.
- **Local Purchasing** - Working with local producers is of interest to programs in every province and territory. Several schools which are currently reliant almost entirely on corporate wholesale vendors expressed an interest in finding more local connections in their communities. Two interviewees noted that there are underlying concerns that local producers may be unable to meet their ongoing, large-scale requirements.

Appendix C - Other Common Themes

- **Increased Demand** - In all jurisdictions, interviewees noted a growing demand for school food access. Common reasons cited for this include rising school enrolment and rising food prices/ inflation negatively impacting at-home finances and creating more need in their communities. Two programs noted that they had to cap school food program registrations this school year due to overdemand.
- **Food Safety** - Several programs noted a commitment to ensuring that all staff and volunteers have up to date food safety certifications, even casual volunteers. In multiple jurisdictions off-site kitchens are utilized when on-site spaces have been declared unsafe for food preparation by Public Health authorities. Some programs forgo hot food service entirely (sticking instead to sandwiches, salads, fruits and raw veggies, pre-packaged snack items, etc.) to limit food safety issues related to hot holding food.

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