Sustainable Campus Food for Canadian Colleges and Institutes

A Handbook

COLLEGES & INSTITUTES CANADA

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About Colleges and Institutes

Canada CICan is the national and international voice of Canada's largest post-secondary education network. It advocates, builds capacity, and drives knowledge to strengthen Canada's publicly supported colleges, institutes, CEGEPs, and polytechnics to meet Canada's biggest challenges. With more than 95% of Canadians living within 50 km of a member institution, and thanks to its extensive reach around the globe, CICan works to future-proof communities in Canada and abroad.

We respectfully acknowledge that CICan's offices in Ottawa are located on the traditional and unceded territory of the Algonquin Anishinaabe Nation.

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Why Food Matters

The way we produce, package, serve, and eat food plays a big role in our health and the health of our planet. While estimates about the environmental impact vary, there is broad consensus that making food systems more sustainable is essential to mitigating climate change.

In fact, one study has shown that even if all fossil fuel emissions were eliminated immediately, emissions from the global food system alone would make it impossible to limit warming to **1.5°C**—and staying within the **2°C** target would be extremely difficult.[1]

To build a more sustainable and resilient future for our planet, we must adapt the ways we produce and consume food.

It is estimated that our food systems account for between **20** and **40%** of total global greenhouse gas (GHG) emissions[2].

Food production is the leading cause of methane emissions[3], deforestation[4], and biodiversity loss[5].

As the global population is expected to reach nearly **10 billion** people around **2050**, these challenges will only escalate without urgent action.

The Good News?

Unlike the long timelines associated with capital-intensive projects such as building construction or retrofits, food-related changes can be implemented immediately and have an immediate impact.

Even better, food offers an exciting and creative way to combat climate change—after all, in no other sector can making a difference be so delicious!

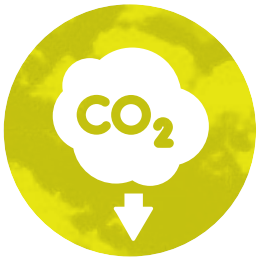
A World of Difference

Not all foods have the same environmental impact when it comes to greenhouse gas emissions, use of land and water, pollution, and other factors. In fact, the production of animal-based foods (meat, dairy, eggs, and fish) accounts for nearly **60%** of food-related GHG emissions and uses more than **80%** of all farmland, yet accounts for only **18%** of the world's calories and **37%** of its protein.[6]

The relative inefficiency of producing animal-based proteins is mostly to blame for this large environmental footprint. Most of the protein fed to animals (in the form of crops) is lost before it reaches the intended final consumer – humans.

Plant-based foods, by contrast, are much more efficient. They account for **82%** of the world's calories and **63%** of its protein – but generate less than **30%** of food-related emissions and use only a fraction of total farmland.[7]

A shift to plant-based diets could:

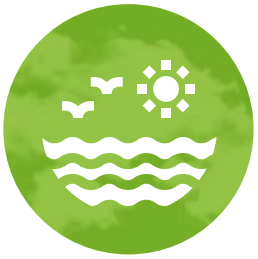


Cut food-related greenhouse gas emissions by between **49–75%**[8]

Reduce land use by about **75%**[9]

Decrease water use by about **54%**[10] (and blue water by 14%[11])

Prevent biodiversity loss by about **66%**[12]



Lower eutrophication of water bodies by about **73%**[13]

Opting for plant-based foods is one of the most impactful opportunities for improving food sustainability.

Beyond Diets

While shifting toward plant-based foods is one of the most impactful ways to reduce food-related emissions, there are other things we can do both collectively and individually.

- **Reducing Food Waste** – Food waste accounts for roughly **6%** of all global emissions.[14] If it were a country, it would be the world's third largest emitter after China (21%) and the United States (13%).[15]
- **Sourcing Locally** – Food transportation represents an estimated **10–19%** of food-related emissions,[16,17]. Buying locally can reduce this impact, decrease waste during transport, and support local farmers.
- **Growing Food Onsite** – Campuses can lower the carbon footprint of the vegetables, fruits and herbs they use[18], while sequestering carbon and fostering environmental awareness among students.
- **Vertical Farming** – According to a **2023** life cycle analysis, vertical farms generate fewer GHG emissions than conventionally sourced produce.[19] Vertical farming systems also "have great potential for improving crop productivity".[20]
- **Partnering with Social Impact Suppliers** – Working with suppliers that measure their environmental impact and set robust targets can enhance sustainability throughout the entire supply chain. This is especially important in the food sector, where supply chain emissions (scope 3 emissions) are reported to be **5.5–11.4** times higher than a company's operational emissions (scope 1 and 2 emissions).[21]
- **Using Sustainable Packaging** – In the packaging industry, food packaging accounts for **50%** of fossil fuel-based plastics[22] and represents approximately one-third of all plastic packaging in Canada, much of which is single use.[23]

Leading the Way

As leaders in research, collaboration, and progress, Canada's public colleges and institutes have an incredible opportunity to reduce their environmental impact by making innovative changes in their cafeterias and classrooms.

They also play a crucial role in preparing students for the future—shaping their worldviews, encouraging beneficial behaviours, and equipping them to be forward-thinking leaders.

- As one study observed, "Postsecondary campuses offer a naturalistic setting to trial interventions to improve the health of students and provide insight into interventions that could be scaled up in other settings."[24]

Moreover, as younger generations become more environmentally aware, prospective students increasingly expect sustainability to be embedded in their institution's operations. As this trend continues, sustainability will likely become an even more significant factor in where students choose to pursue their studies.

A Financial Win

Beyond meeting net-zero commitments and attracting students, campuses can also see benefits to their bottom line.

- A UK-based study of university catering (i.e., food service) found that institutions can reduce their costs by focusing on lower-emission foods. Plant-based meals are, on average, **30%** cheaper than meat-based meals and **21%** cheaper than vegetarian options. Researchers concluded that switching to an entirely vegan-friendly food service could save a medium-sized institution over **£500,000** (nearly $900,000 CAD) annually.

The Sustainability Tracking, Assessment & Rating System (STARS)

STARS is a transparent, self-reporting framework for postsecondary institutions to measure their sustainability performance. Developed by the Association for the Advancement of Sustainability in Higher Education (AASHE), STARS is open to any college or university in the world.

The STARS framework can help institutions:

- Understand sustainability in all areas of higher education.
- Enable meaningful comparisons over time and across institutions using a common set of measurements developed with broad participation from the campus sustainability community.
- Create incentives for continual improvement toward sustainability.
- Facilitate information sharing about higher education sustainability practices and performance.
- Build a stronger, more diverse campus sustainability community.[25]

Learn more about STARS at stars.aashe.org/.

How to Use this Handbook

This handbook provides colleges and institutes with practical steps for more sustainable operations in six key areas related to food:

1. Food Planning

2. Food Procurement

3. Food Preparation

4. Food Presentation and Promotion

5. Food Partnerships

6. Food Education

Each strategy area briefly explores several actionable tips, highlighting research and real-world examples from public colleges and institutes, universities, and other organizations wherever possible.

This handbook is intended to be a helpful starting point for food-focused initiatives rather than an exhaustive guide.

- Review the strategies and think about how to implement or adapt them to meet the needs of your institution.
- Explore the real-world success stories and get inspired to take action.

A legend for the symbols in the handbook:

Focus Area

Climate-friendly food

Food waste

Food procurement*

Food packaging

Impact, Difficulty, and Cost of Implementation**

Low

Medium

High

* Includes local food, food produced on campus, and social impact suppliers.

** Note that these are estimates that will change based on the specifics of how a project is implemented.

Planning

Food Strategies

Given the impact of our global food system on the environment, it is crucial that food be included in campus sustainability plans and targets.

Strategy 1: Develop a Sustainability Strategy and Set Targets

Post-secondary institutions can either integrate food into broader sustainability strategies on campus or create dedicated food sustainability strategies. In either case, a strong strategy should:

- Identify food as a priority area;
- Consider changes the campus can make, focusing on those that will be most impactful;
- Set targets around climate-friendly foods, food waste, food purchasing, and food packaging; and
- Involve the necessary stakeholders in developing or socializing the plan, such as the food services department, the sustainability office, and student advisors.

Snapshot:

Selkirk College is one example of an institution with an overarching sustainability plan that includes food-related targets, including a commitment to "increase the percentage of total annual food and beverage expenditures on products that are sustainably or ethically produced and/or plant-based by **10%** each year".

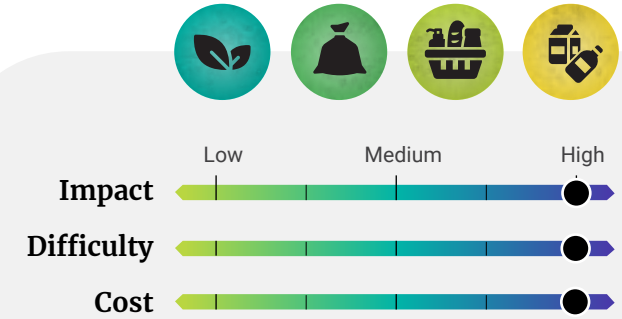
In recent years, Selkirk has launched a reusable container program, added more vegan options, and does composting on campus.

Deep Dive:

Humber Polytechnic, which contracts its food services out to Chartwells / Compass Group, has a dedicated "Food Strategy and Vision", developed through extensive consultations with thousands of students, staff and faculty, community members, and more.

The strategy and vision are informed by six guiding principles – sustainability, health and well-being, availability and accessibility, food equity and affordability, quality, and inclusion and belonging – and include dozens of planned initiatives, some of which are noted as immediate priorities.

Strategy 2: Evaluate Institutional GHG Emissions and Set Targets



Inventorying emissions is not only important in assessing progress towards net-zero operations but also helps to identify specific opportunity areas for reductions and to better enable offsetting.

If possible, create a plan to analyse your emissions on a recurring basis, including scope **3** emissions, and use the data to create a plan of action for reducing GHGs wherever possible.

Tip: Be sure to include indirect emissions like Scope **3** emissions in your inventory as they are usually several times higher than Scope **1** and **2** emissions.

Snapshot:

Institutions like Canadore College have conducted assessments of their GHGs, covering existing Scope 1 and 2 emissions and some Scope 3 emissions, with a goal to "utilize data to create opportunities or implement initiatives that will see our operational emissions reduced or mitigated."

Deep Dive:

Municipalities are effectively using this strategy, too.

In 2024, the City of Toronto published a report developed with Close the Loop that analyzed the city's Food-Related GHG Emissions from 2022 and Q1 to Q3 2023. It found that in 2022, while ruminant meat made up just 3% of the city's purchases by weight, it was responsible for 48% of the city's food-related emissions that year. In comparison, plant-based foods made up 57% of purchases by weight, yet were responsible for only 15% of the city's food-related emissions in 2022.

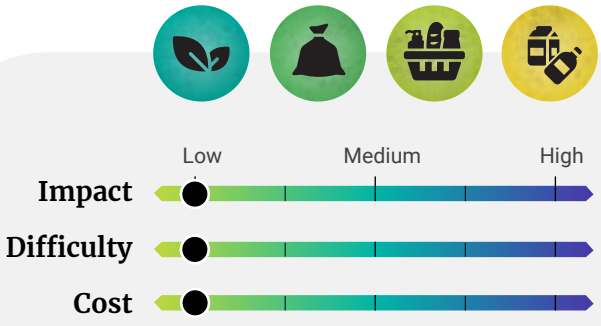
Altogether, animal-based foods made up 85% of the City's GHG emissions but only 43% of purchases by weight.[26]

Strategy 3: Invite Students to Provide Input

Did you know? Most Canadians aged 12–18 are concerned about climate change[27] and this is likely to affect their choices, including which postsecondary institution to attend.

By giving students the chance to provide feedback on the sustainability of a campus's operations, institutions can gain valuable insights into ways to reduce emissions that also align with student demand.

This can take many forms, such as an annual survey, a student food advisory council, or a feedback mechanism permanently stationed in the dining hall. **It's also a great educational opportunity!**



Tip: Since survey results often reveal that stakeholders are unaware about the most impactful sustainability opportunities, such as switching to more plant-based foods, surveys can also be used for education!

Procurement

Food Strategies

Institutions have a meaningful opportunity to adjust their purchasing within food and dining, and procurement policies can go a long way towards improving sustainability.

Strategy 1: Set and Monitor Purchasing Targets

Analyzing current food services spending is the first step in setting targets for more sustainable procurement. Here are some initial guiding questions that can help:

- What proportion of spending is going towards plant-based foods? What is an ambitious yet achievable target for the next 2–5 years?
- What proportion of spending is going toward local foods? Is there room to increase this within the next 2–5 years?
- How much of our own food is being grown on campus? Is there an opportunity to launch an on-campus system or to increase yields?
- What proportion of purchasing is from social impact suppliers, such as those with sustainability accreditations, DEI programs or animal welfare certifications? Can this be increased within the next 2–5 years?

- What proportion of food packaging procurement is reusable, biodegradable, or single use? Can we set a target for launching reusable packaging at all dining locations, then eliminating single-use packaging entirely?

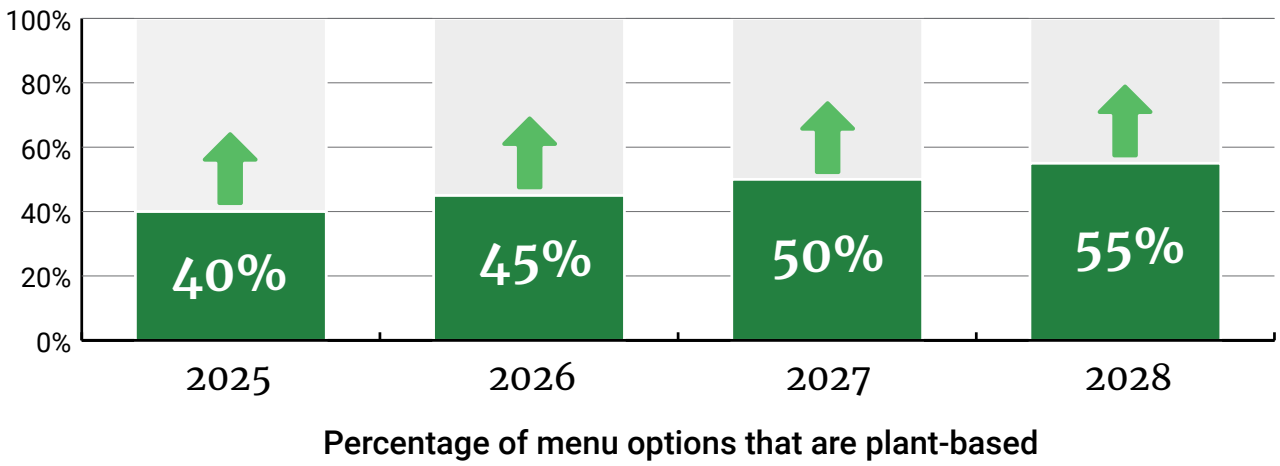
Tip: Yearly targets can help make big goals more manageable. For example, if **10%** of your spending is currently going to plant-based proteins or local foods, aim to increase this by **5–10%** per year.

Snapshot:

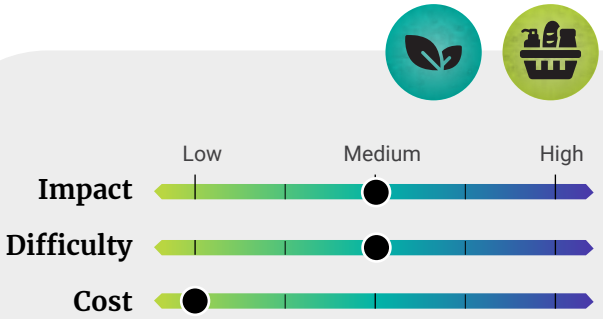
As part of their sustainability efforts, Camosun College is part of Feed BC, a provincial government partnership initiative to increase local food (produced in the province) in public institutions.

Tip: Roadmaps or "glidepaths" are a tool for organizations to manage and track progress towards ambitious goals. In the United States, several food service management companies have created year-over-year goals on food sustainability, especially for increasing the plant-based options they offer.

Sample glidepath for increasing plant-based offerings:



Strategy 2: Join an Existing Program or Initiative



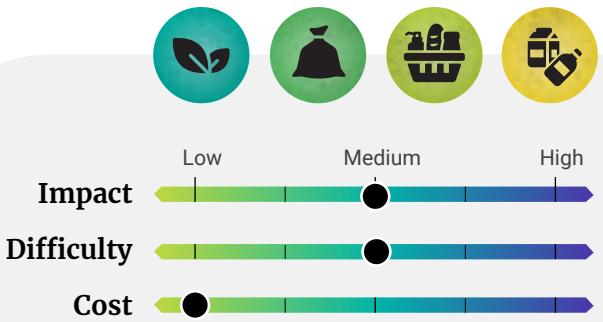
Rather than tackling food and climate issues alone, institutions can work through an existing program or collaboration to help meet their goals. Examples include:

- The free Forward Food pledge and program from Humane World for Animals Canada
- The Coolfood Pledge from the World Resources Institute
- Menus of Change from The Culinary Institute of America and Harvard T.H. Chan School of Public Health

Deep Dive:

In June **2021**, Sodexo Canada signed onto the Forward Food Pledge, committing to transition **20%** of its protein purchases across Canada to plant-based. To achieve this goal, they launched a national collaboration with Humane World for Animals Canada (formerly Humane Society International/ Canada) to be able to offer culinary trainings, recipes, and menu development support to Sodexo's culinary teams across Canada.

Strategy 3: Be Specific About Your Targets in Proposals and Contracts



For institutions working with third-party food service management companies, including sustainable procurement language in requests for proposals can help to ensure that expectations are clear and that suppliers can provide the services (e.g. data monitoring, more planet-friendly recipes) necessary to achieve the institution's goals.

Any final decisions parties agree to can be included in the resulting contract.

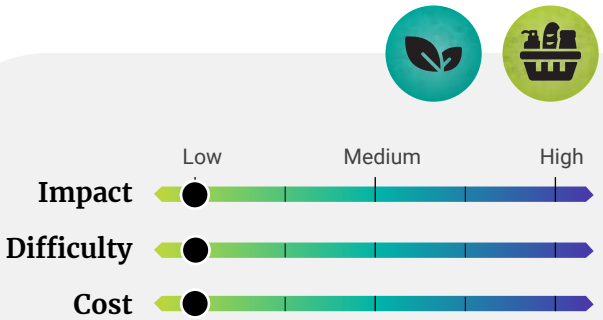
Tip: Consider the questions you ask potential suppliers. The authors of ***Sowing Sustainable Food Systems and Procurement through Contract Language*** note:

- "With the responses provided in the solicitation process, the terms and conditions of contracts can be developed and negotiated based on supplier demographics and goods and services offered. These processes can provide insight into a supplier's operations, willingness to implement sustainable methods and practices, and the externalities the university might incur should they award them a contract. Considering this, a comprehensive set of solicitation questions should be asked to increase transparency and better align investments with others moving the needle forward on sustainability."[28]

Snapshot:

In John Abbott College's latest AASHE STARS report, they noted that "As part of the service contract, vegan options must be offered every day at the College". That's just one example of how contracts with food service providers can be a tool to help achieve sustainability goals.

Strategy 4: Grow Fresh Food on Campus



Growing food on campus has many benefits: it may reduce the emissions related with food production; it eliminates the emissions associated with transport; it makes nutritious food more accessible; and it helps to increase greenspace on campus, aiding carbon sequestration and air quality while supporting pollinators.

The overall impact on emissions is relatively small, but the educational component – of involving students in food production to develop skills and foster a sense of environmental stewardship – can be impactful.

Deep Dive:

In **2022**, as part of CICan's Campus Living Labs project, Canadore College collaborated with the Moose Cree First Nation to launch solar-powered grow pods, with the goal of supporting climate-resilient food sovereignty for northern Indigenous communities.

A permanent fixture on campus, grow pods now produce **2,400** plants and has become a viable source of locally-grown veggies for the college and nearby communities.

If you can't introduce a grow pod, try a living wall instead! Under the same Campus Living Labs initiative, the College of the Rockies introduced a living wall by replacing tropical indoor plants with hydroponically grown vegetables.

Preparation

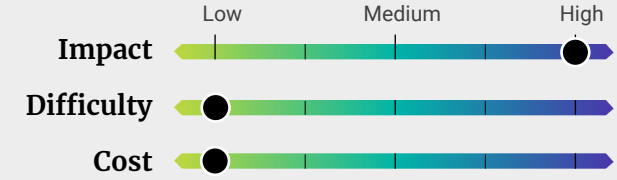
Food Strategies

Since taste and convenience (along with price) are key factors in food choices, campus food service departments can nudge students towards lower impact food choices by ensuring that plant-powered meals are delicious, complete, and readily available.

Strategy 1: Focus on Flavour for Climate-friendly Foods

Taste is generally the most important factor in choosing a meal, so it is critical that the most sustainable food options – plant-based and plant-rich dishes – look and taste delicious.

Rather than simply offering veg-friendly fare for vegetarian and vegan students, rethink the role of plants on your menu. The goal should be to encourage ***everyone*** to eat more vegetables, fruits, whole grains, and plant-based proteins by creating dishes that will have a broad appeal.



Focus on flavour (and taste testing) to ensure that the items on your menu will wow your guests.

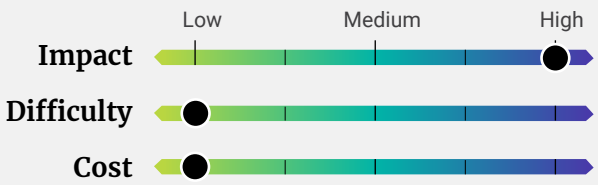
Tip: Enhance the flavour of dishes with fresh or dried herbs, spices, acids (e.g. citrus and vinegars) and garlic, ginger, or chilies.

Deep Dive:

In **2023**, Forward Food began working with the charitable food sector. In collaboration with the Toronto Vegetarian Food Bank, Forward Food delivered a culinary training to city-run shelters in Toronto, where clients are often very fond of "meat and potatoes" type dishes.

During the training, staff from several shelters learned how to make several delicious, fully plant-based dishes. These were then served to clients, many of whom went back for seconds and one of whom said, "it tastes like heaven".

Strategy 2: Offer a Variety of Balanced, Plant-rich, and Culturally Diverse Dishes



To increase the likelihood diners will choose sustainable options, menus should include a variety of nutritionally complete and culturally diverse plant-based or plant-rich dishes.

It is not enough to rotate a few vegetarian or vegan options; offer dishes with plant-based proteins and flavours from various cuisines to keep menus interesting and satisfying.

Snapshot:

In **2024**, York University, which contracts its food services out to Chartwells / Compass Group, made a commitment to diversify its menu for sustainability and health reasons.

They set a goal of at least **60%** vegetarian menus with at least **50%** of those being vegan options, and achieved their goal in about a year.

Sample menu from York University

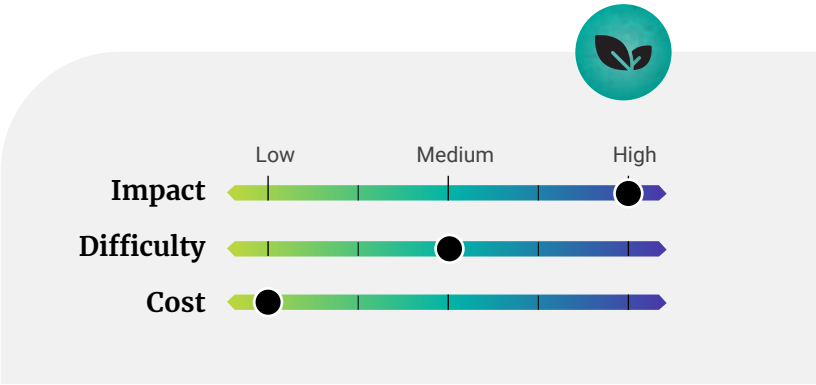
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Korean Sweet & Spicy Chili Tofu	Curry Spiced Vegetable Biryani	Lentil Shepherd's Pie with Sweet Potato	Vegetable Vindaloo	Chili Lime Tofu Bowl	Tunisian Yam & Red Bean Stew	"Meatball" Marinara

York University's Chef's Table winter menus feature a plant-based dish at every meal, drawing on many different cultural foods and alternating between beans, lentils, tofu and plant-based meats. Menu provided by YU Eats.

Strategy 3: Establish a Meaningful Protein Ratio for Menus

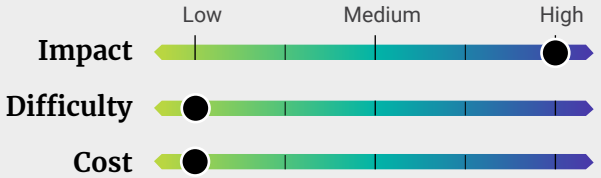
Convenience is another big factor in food choices. People tend to eat what is available, if it looks and tastes good, is affordable, and meets their dietary needs or preferences. The more low-impact foods appear on menus or buffets, the more they become normalized, and the more students will be likely to try them.

A good starting goal is that at least **50%** of meal options should be plant-based, meaning that plant-based and animal-based proteins should be at a **1:1** ratio or higher.



Tip: Research shows that increasing the availability of meat-free meal options is far more effective in decreasing meat consumption than warning diners about the adverse effects of meat-rich diets.

Strategy 4: Introduce Blended Dishes



Blended dishes (containing a mix of plant-based and animal-based proteins) are a fantastic opportunity to reduce the environmental impact of menus. This strategy is simple and cost-effective, and very impactful because it does not rely on diner decisions.

By modifying familiar and well-loved dishes, you can cut emissions (and usually food costs) by swapping in plant-based proteins for some of the meat in soups, stews, casseroles, and more.

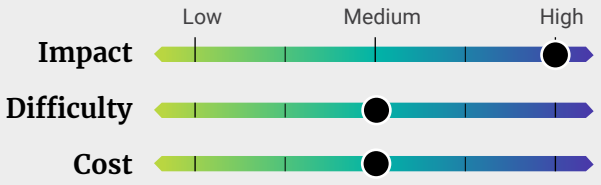
For example:

- In a beef chili, replace **50%** of the meat with a plant-based ground meat or kidney beans.
- In a Shepherd's Pie or baked pasta dish, replace **50%** of the meat with plant-based meat, lentils or crumbled tempeh.
- In a creamy meat-based curry, replace the cream with coconut milk and a portion of the meat with veggies.
- In a stir fry, replace some of the meat pieces with seared tofu cubes or edamame.

Snapshot:

Capilano University implemented a ***plant-based protein only*** offering at one of the main canteen dining stations, from Monday to Thursday during regular term times and hours.

Strategy 5: Train Back-of-house Staff on Climate-friendly Cooking



Most chefs and cooks have never been trained on how to make plants a central part of their menus – in culinary school, vegetables are often treated more as a side than the main event.

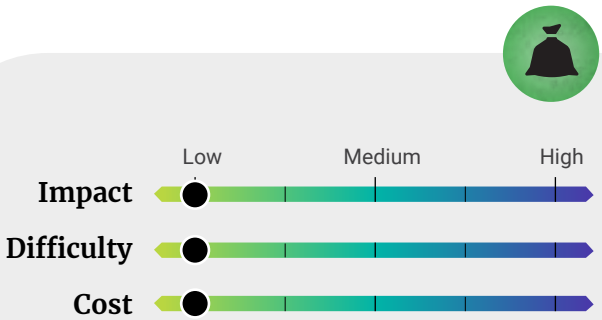
Training kitchen staff on how to work with plant-based ingredients, build flavour in plant-forward dishes, and present climate-friendly foods in an appealing way is the biggest opportunity for enhancing sustainability education in the kitchen.

Snapshot:

Forward Food has trained nearly **500** food service professionals in Canada since launching in **2017**, largely at post-secondary institutions such as Sheridan College.

In **2019**, campus chefs and cooks participated in plant-based culinary training co-hosted by Sheridan and Forward Food. They prepared an incredible buffet of delicious dishes that were then served to guests at a special event.

Strategy 6: Reduce Food Waste in the Kitchen



Finding ways to eliminate food waste in the kitchen (“pre-consumer” waste) is both sustainable and economical. One excellent rule of thumb is to freeze, dry or ferment an ingredient before it goes bad.

With some creativity in the kitchen, staff can reduce wasting food.

Use the Entire Plant!

- Use broccoli stems to make coleslaw, carrot tops to make pesto, or aquafaba to make mousse. (***see Appendix (page 49) for a recipe!***)
- Repurpose vegetable scraps to make homemade vegetable stock, or dehydrating scraps into a shelf stable vegetable seasoning or stock powder.
- Incorporate imperfect or ugly fruits and vegetables into ingredient rotations.
- Save and freeze citrus zest in resealable containers and add to cakes, cookies, sauces, or smoothies.
- Transform citrus peels into simple syrup, cleaning agents, and candied peels.
- Pickle vegetables or fruits, or make a compote or jam, to extend their shelf life and make a delicious new product – such as sauerkraut, kimchi, pickled red onions, or red onion and apple marmalade.
- Freeze garlic and ginger whole and use as needed (the knobs grate quite easily).
- Regrow vegetables from scraps like green onions and lettuce.

Deep Dive:

Bow Valley College has taken extra steps to reduce food waste generated at events by collecting information through waste audits and introducing changes to catering services.

By examining food waste, they identified commonly wasted foods and practices that could be changed. Staff can reduce how much food is ordered for events, encourage sustainable attendee behaviours, and introduce more reusable plateware.

With this strategy, the college was able to reduce food waste by up to **61%!** Sometimes food waste begins before the kitchen.

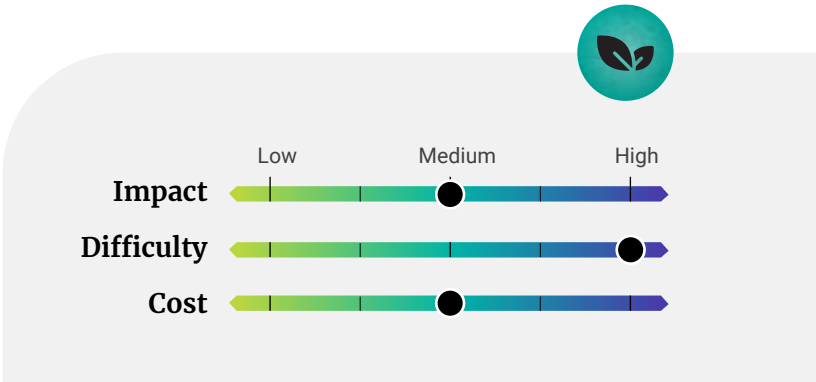
Presentation and Promotion

Food Strategies

Consumers usually make food choices based on appearance and taste, so the sustainable choice must also look appealing. Ensuring that diners understand the positive impact of certain food choices can go a long way, too.

The following strategies can be useful in both on-campus eateries and catering.

Strategy 1: Communicate Environmental Impact



Helping students and faculty to understand the climate-related consequences of their choices in the dining hall can be very impactful, especially among those concerned about the environment.

As one study observed, "Carbon labels that provide information about products' GHG emissions have the potential to reduce the carbon footprint of consumer choices."[29] Campuses can introduce signs, short explanations or symbols that explain the environmental footprint of various dishes or each unit of food waste.

Snapshot:

In **2022**, the World Resources Institute published research indicating that "displaying thoughtfully framed environmental messages on restaurant menus can significantly increase customers' uptake of lower carbon, plant-rich dishes."

The most effective messages had a theme of "small changes can make a big difference" and "join a movement of people choosing foods with less impact on the climate."

Deep Dive:

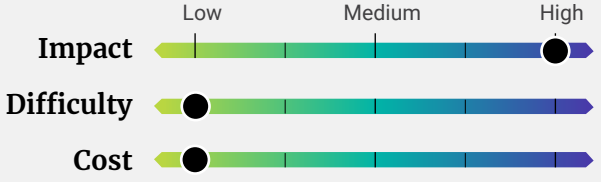
Bloom Restaurant, a student-run restaurant at Conestoga College was the first restaurant in Canada to include GHG emission icons on their menus starting in Winter **2023**. Later, the college made the option available for catering as well (using Klimato software for calculating the greenhouse gas emissions data)!

This is an outcome of Conestoga's Bloom Net-Zero Living Lab project, which was supported by CICan.

Strategy 2: Place Low-impact Foods in Prime Positions

Research shows that placing plant-rich options first on menus or prominently on buffets easily boosts uptake.

The authors of a **2019** study on this topic noted: "Rearranging the menu in favor of vegetarian food has a large and significant effect on the willingness to order a vegetarian dish instead of meat. Our results demonstrate that small, inexpensive interventions can be used toward decreasing carbon emissions from food consumption."[30]



Snapshot:

At Vancouver Community College, low-impact foods (for example, vegan options) are always presented first wherever food is served.

Deep Dive:

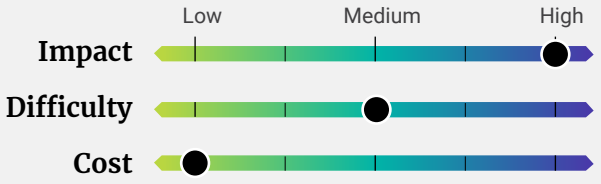
In **2023**, researchers published a study to test the impact of menu item placement. They ran their project in "a grab-and-go eatery at a large United States public university" over **10** weeks:

- First, for five weeks they listed menu items from the most to the least impactful in terms of carbon footprint. Then, for another five weeks the order was reversed.

Their findings? Overall, despite no change in the actual choice of menu items, students were more likely to choose low-carbon options when these were placed at the top of the menu.[31]

Strategy 3: Default to Plant-based Foods

Numerous studies and pilots demonstrate the power of defaulting to plant-based choices. That means: "dishes that feature variable components (e.g., a burger with a beef or vegetable patty) usually have one of these components set as the ***default*** option."[32] Studies suggest that defaults are more likely to be chosen than the other options.



In fact, default switches have been found to be more impactful than carbon labels. A major benefit of plant-based defaults is that they preserve student choice, since animal proteins are still available upon request.

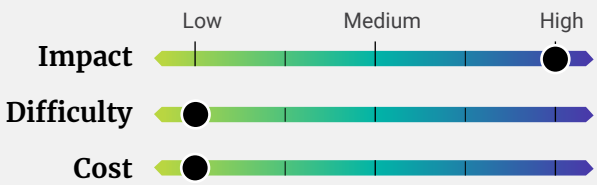
Tip: Defaults also work well in campus catering and cafes – try making lattes and other drinks with plant milk by default, unless someone requests cow's milk.

Deep Dive:

In a first-of-its-kind study, Sodexo, Food for Climate League and the Better Food Foundation revealed significant results from their pilot at all-you-care-to-eat dining halls at three American universities[33]:

- The research team assessed one dining hall station containing eight pairs of dishes (one meat-based and one plant-based).
- **On Plant-default Day**, the plant-based dish was presented as the only option, though a sign informed students that they could request the meat version if desired.
- **On the Control Day**, both meat and plant-based dishes were presented side-by-side.
- What they found? Switching from a meat-default to a plant-default led up to **81.5%** of students choosing plant-based meals – an increase of over **50%**.[34]

Strategy 4: Give Low-impact Foods Appealing Names



Another impactful yet simple, low-cost intervention is to ensure all climate-friendly, plant-rich dishes have appealing and descriptive names. The importance of naming has been underscored repeatedly, in research and real-world examples.

- **The takeaway:** avoid the words "meat-free", "meatless", "vegan" and "vegetarian", or labels that make a dish sound so healthy that it will be unappetizing.
- **Instead,** focus on naming dishes to highlight their provenance, flavour, look and feel.

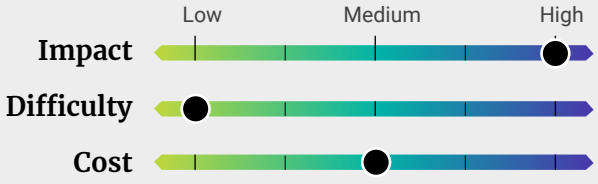
For example, rather than "vegan burrito", a more appetizing name would be "Smokey seven-layer black bean and sweet potato burrito". Or, rather than "vegetarian risotto", entice diners with "risotto primavera with oyster mushrooms".

Tip: Make use of symbols such as a "V" or "VE" or leaf to denote that an option is suitable for vegetarians for vegans. These are useful for the small subset of your diners that have special dietary needs, meanwhile meat-eating guests tend to gloss over these, so they are unlikely to discourage plant-based choices.

Strategy 5: Ensure Low-impact Food Choices are the Most Affordable

While some plant-based options – such as plant-based meats – are generally still more expensive than animal-based ingredients, whole plant-based foods, such as beans, lentils, whole grains, nuts, seeds, and fruits and vegetables, are very cost-effective.

Food service departments can pass those savings along to their guests and incentivize climate-friendly choices, by ensuring those dishes are the most economical option – or at least given price parity with higher-impact items.



Tip: Make the more sustainable option the affordable one at campus cafes: eliminate the surcharge for plant-based milk!

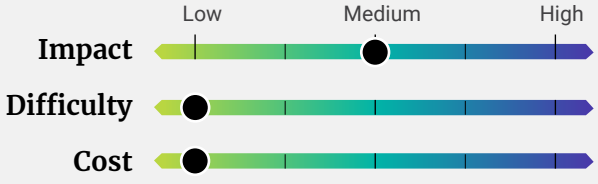
Snapshot:

In **2022**, Ingka Group, the largest IKEA retailer, announced they would offer more plant-based options "at the same or lower price than the meat-based alternatives in effort to make them more affordable and accessible to the many." The retailer also announced that it would reduce or remove dairy from its stores by **2030** and has a target of **50%** of plant-based meals offered in restaurants by **2025**.

Strategy 6: Integrate Plant-based Options in Your Regular Menu

In an often-cited study from the London School of Economics, meat-eaters were **56%** less likely to order a dish if it was in a separate "vegetarian" section of the menu. This is likely because people who do not identify as vegetarians will dismiss that section as irrelevant.

Incorporating all dishes into the regular menu means that climate-friendly foods are much more likely to be chosen by diners, because they are presented as normal and enjoyable by all.

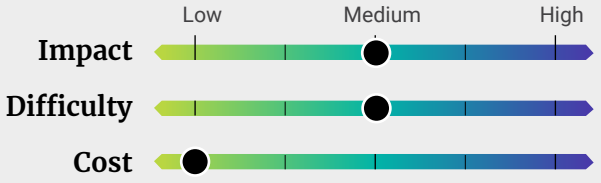


Tip: You can still make it easy for vegan, vegetarian, pescatarian or flexitarian diners to find the dishes that meet their needs by using symbols, or by also including plant-based options in a separate plant-based menu.

Strategy 7: Introduce a Sustainability-themed Station

While integrating planet-friendly foods into regular offerings is undoubtedly the way to go, campuses can complement this strategy by also introducing a sustainability-themed station.

In addition to promoting foods that are low in their environmental impact, sourced locally, made from repurposed ingredients, or purchased from suppliers that prioritize sustainability, sustainability-themed outlets can also be an educational tool, sharing information and sparking conversation about the benefits of certain food choices.



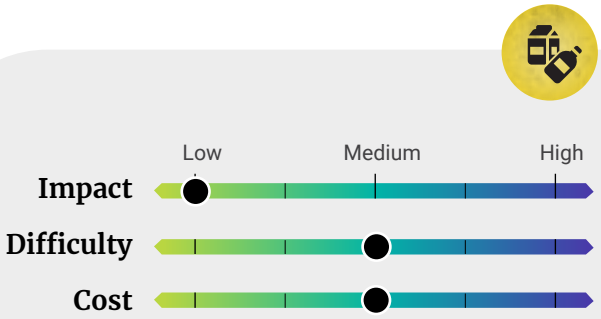
Snapshot:

The School of Hospitality, Tourism and Culinary Arts at Centennial College features a sustainability-themed restaurant on campus called The Local, which runs a zero-waste culinary menu.

Strategy 8: Switch to Reusable Packaging

While packaging is not the dominant environmental impact source for food, single-use packaging remains an enormous issue. Reusable takeaway containers present an eco-friendly alternative.

A life cycle analysis published in **2023** estimates that some reusable alternatives can break-even for global warming potential at **4–6** uses. After **20** uses, the global warming potential of reusable containers decreases by **71–80%** compared to single-use containers. Widespread use of reusable containers would reduce solid waste by **81%**.[35]



Snapshot:

In the spring of **2023**, Capilano University introduced a **$0.25** charge on paper "to go" containers to "reduce the quantity of used paper containers going to garbage. The initiative saw an increase in **40%** dine in and reduce garbage quantities."

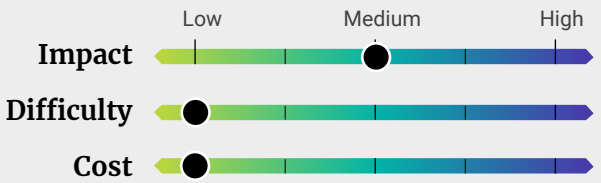
Deep Dive:

Durham College is one of several post-secondary institutions that have adopted a reusable container program (in partnership with Friendlier) to replace all single-use plastics.

At their Weston Centre, there is also no bottled water and any single-use packaging still in place is biodegradable.

The college complements these waste reduction efforts with a compost biodigester at the Weston Centre, which has diverted over **3,200 kg** of culinary lab food compost. Over **1,200 kg** of food waste was diverted from the biodigester and repurposed into innovative menu items or preserved for future use, adding value to both business and academic operations.

Strategy 9: Reduce Portion Sizes



Reducing portion sizes is an easy way to reduce food waste, and it saves in food costs and preparation. Campuses that have capacity can conduct a food waste audit to see which items typically lead to the most food waste, identifying the biggest opportunity areas for change.

In all-you-care-to-eat settings, consider either slightly reducing portion sizes across the board, inviting diners to come back for seconds if they are still hungry, or offering students the option of a **¼, ½, ¾** or full-size serving. In declining balance or retail settings, consider offering smaller portions (e.g., a **½** entrée or snack portion) for a lower price.

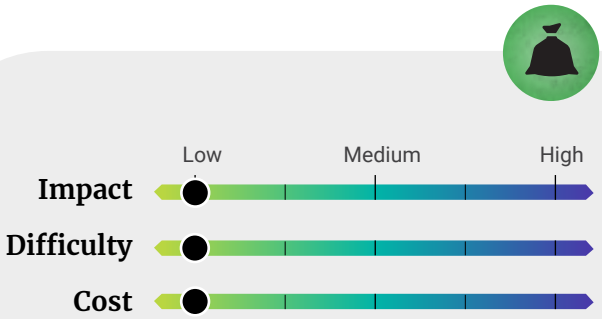
Tip: To ensure that smaller portions still appear satisfying, serve them on slightly smaller dishes – most people will not notice the difference.

Snapshot:

Humber Polytechnic reduces food waste by offering smaller portions to diners. Additionally, any food not served is turned into student meals in the kitchen labs or stocks for soups.

Strategy 10: Transition to No-Tray Dining

Many all-you-care-to-eat cafeterias have switched to no-tray dining to reduce food waste. While some studies have found that going trayless does not significantly reduce the amount of food diners leave on their plates[36], others have reported savings.[37]



Snapshot:

The Northern Alberta Institute of Technology (NAIT) uses no-tray dining as a strategy to reduce food waste. They also clearly label each waste bin with signs and descriptions so that any waste is sorted correctly.

Strategy 11: Train Front-of-house Staff

For plant-forward menu items to be well-received by diners, they will ideally be delicious, balanced, convenient, and affordable, as noted above, and presented as normal and desirable.

Front of house staff have a key role to play in nudging guests to try new offerings. If front-of-house team members are excited about serving climate-friendly food options, their enthusiasm and positivity will shine through to students.

Tip: Need support in helping your front of house staff? Download Forward Food's free resource!

Deep Dive:

At Vancouver Community College, front-of-house and back-of-the-house students and staff receive training on how to encourage diners to choose sustainable food options and to reduce food and packaging waste.

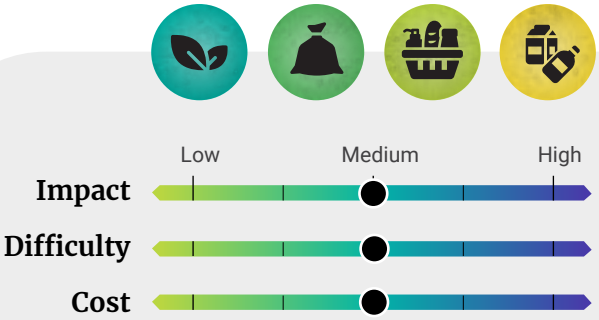
Training focuses on educating staff on the environmental and health benefits of sustainable foods, reducing portion sizes, using reusable containers, and responsible waste practices, as well as training on how to effectively communicate the benefits of sustainable choices to diners (e.g., using positive language, sharing interesting facts, encouraging questions, and fostering a generally positive dining experience).

Partnerships

Food Strategies

Getting to net-zero at post-secondary institutions is going to take a coordinated and collaborative approach, involving stakeholders both on and off campus.

Strategy 1: Collaborate Across Departments and Institutions



To have the biggest possible positive impact, food service leaders at colleges and institutes need to collaborate across departments, sharing information and best practices, setting goals and roadmaps, and working together on implementation.

For example, many of the ideas outlined in this handbook may require input and support from key decision-makers on campus, the sustainability office, the marketing and communications team, student advisors, and others. Collaboration between institutions can be similarly valuable.

Snapshot:

At Vancouver Community College the Culinary Arts Program and the Sustainability Team work closely with the faculty association, Partnership Development Office (PDO), student services and more to develop and implement sustainable food practices.

Strategy 2: Leverage External Partnerships

There are plenty of organizations that colleges and institutes work with – from those focused on plant-based foods, like the Forward Food program, to food rescue organizations such as Second Harvest.

The work involved varies, as does the expected impact, but partnerships with off-campus groups can be instrumental in reducing the environmental impact of campus food.

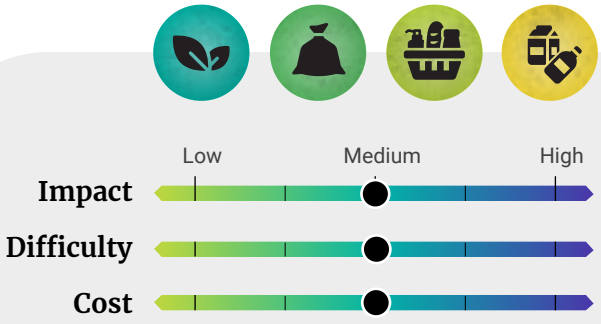
Snapshot:

Many CICan members have external collaborations to advance food sustainability:

- At Humber Polytechnic, the culinary programs collaborate with World Chefs and Feed the Planet to generate new ideas on sustainable practices within food service and course curriculum. Culinary students also volunteer annually at the Daily Bread Food Bank, Second Harvest, and other local food banks.
- At Durham College, partnerships exist with Second Harvest, Community Care Durham, St Paul's Food Bank, Durham Food Strategy Committee, and Too Good to Go. They have donated over **4,000 lbs** of food to local partners, diverting nearly **8,000 lbs** of GHGs.

Strategy 3: Engage the On-campus and Broader Community

Bring students, staff, faculty, and the broader community along on your sustainability journey; after all, their support will be an important factor in how successful you are in any changes you make on campus.



- **Considering an overhaul to a program or initiative?** You could survey affected groups to get ahead of possible concerns.
- **Trying something bold and innovative?** Reach out to the local media to see if they will help get the word out.

Snapshot:

In May **2018**, the Northern Alberta Institute of Technology (NAIT) and Forward Food hosted a three-day event brought together NAIT food services chefs, culinary students and representatives from other Alberta post-secondary institutions interested in expanding their knowledge of plant-based cooking.

On days **1** and **2**, Forward Food trained participating chefs in preparing delicious and sustainable plant-based dishes, and on day **3**, members of the public joined to learn about the impacts of our food system and how to succeed with more low-impact, plant-based options on menus!

Keep Your Community Informed

Events are a great way to bring people together, educate audiences about the changes happening on campus, sample new menu items, and generate excitement for the positive impact they will have.

Coordinated marketing campaigns are also a great way to keep your campus community informed about upcoming changes.

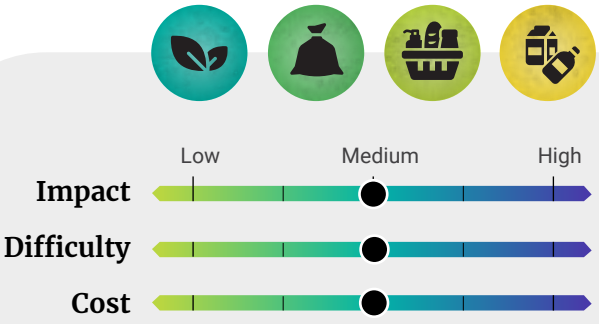
Education

Food Strategies

Educating students about the challenges and opportunities within our food system is an enormous opportunity to empower tomorrow's leaders with the knowledge and ideas they will need to combat climate change.

Strategy 1: Include Food Sustainability in Courses and Programs

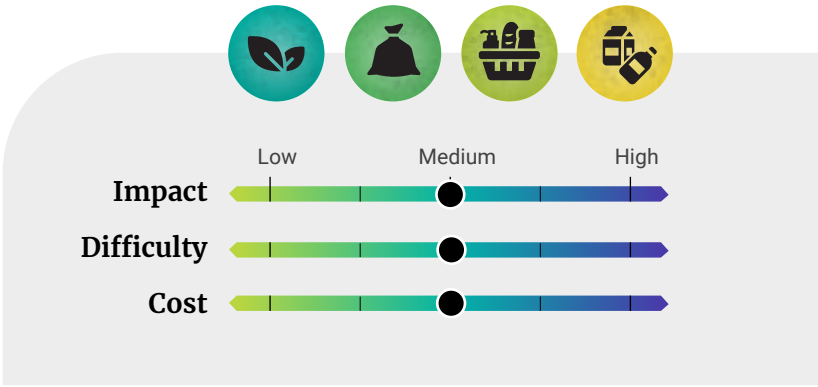
Classroom-based courses that focus on sustainability, the environment, food processing, agriculture, aquaculture, hospitality, dietetics, animal health and welfare, and more can include a discussion of the environmental impact of our food system and the biggest ways to make a difference. Even if touched on briefly, it can make a lasting impact on the way that students think about food for the rest of their lives.



Snapshot:

At Vancouver Community College, HOSP 1360 introduces students to the food and beverage industry and includes discussion of sustainable practices – such as how to prepare food efficiently and cost-effectively, and how to run a sustainable, casual dining room.

Strategy 2: Include Food Sustainability in Culinary Education



Food service professionals – chefs, cooks, managers, front of house staff, and more – have a pivotal role to play in spearheading important sustainability initiatives. Instilling this awareness and the tools to green food service start with education.

Where culinary arts programs are offered, it would be a missed opportunity to not ensure that curricula include a robust discussion of food system sustainability – including the urgent need to shift diets toward plant-based foods, to reduce food and packaging waste, and to source from local and sustainable suppliers wherever possible.

If every future leader in the food service industry graduates from college knowing how to put sustainability at the heart of their menus and operations, we will see an increase in sustainable dietary patterns.

Snapshot:

At Humber Polytechnic, culinary students have a compulsory seven-week theory and lab class, "Farm to Fork", that focuses on these pillars of food service sustainability: energy, water, food waste, plant-based, full food item usage, cooking methods, and sustainable menu writing.

Deep Dive:

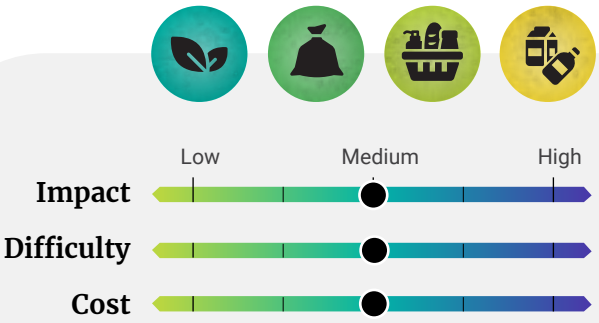
At George Brown College, students in the Honours Bachelor of Food Studies – a first-of-its-kind program in Canada that combines culinary arts with a comprehensive interdisciplinary food studies curriculum – deeply engage with all aspects of food system sustainability, weaving plant-based cuisine throughout their degree.

The program builds student awareness of how societal issues can be analyzed through the lens of food, including courses on Indigenous food systems, food origins, sustainable consumption, and food services, cities and food equity, the future of food, and food movements.

Strategy 3: Include Sustainability in Agriculture Education

Vertical farming is one of the most efficient forms of agriculture in terms of water, soil, and land use. It significantly reduces the need for pesticides and fungicides, it reduces the need for arable land, as well as the need for heavy farming equipment.

It also reduces transportation of food, giving locally grown produce a longer shelf life than foods imported from thousands of kilometres away.



- When done with LEDs and hydroponic systems, vertical farming provides a climate resilient and locally sourced affordable source for food.[38]

Deep Dive:

The University of the Fraser Valley (UFV) is conducting applied research and experiential learning – including courses on vertical farming – through its Food and Agricultural Institute. The institute's research and program design aim to bridge the gap between industry, academia, and local government to support socially and environmentally responsible agri-tech development in British Columbia and beyond.

Recipes from Forward Food

Devilled Tofu Egg Salad Sandwiches

Recipe: Chef Amy Symington

Photo: Makayla Dewit/Humane World for Animals Canada

Servings: 12

Prep time: 15 minutes

Ingredients:

- 500g (1 pound) medium-firm tofu
- 1/2 cup (120ml) egg-free mayonnaise
- 1/4 cup and 1 1/4 tablespoons (80ml) dijon mustard
- 1 teaspoon (3.5g) celery seed
- 1/2 teaspoon (2g) garlic powder
- 1 teaspoon (4g) turmeric
- 1/2 teaspoon (4g) black pepper
- 1 cup (50g) scallions, chopped
- 3 tablespoons (86g) nutritional yeast
- 1 3/4 tablespoons (30ml) apple cider vinegar
- 1/8 teaspoon (0.5g) black salt
- 1/4 teaspoon (1g) paprika
- 1 3/4 tablespoons (6g) chives, sliced
- 2 tablespoons (3g) dill, chopped
- 24 slices of your choice of bread (e.g., sourdough, whole grain, etc.)
- Your choice of toppings/garnish:
  - 2 large tomatoes, sliced
  - 12 dill pickles, sliced
  - 1/2 head iceberg lettuce
  - 1 red onion, thinly sliced
  - Sprouts (optional)

Directions:

1. In a large bowl add all ingredients except bread and thoroughly incorporate.
2. Depending upon the size of your bread, scoop ¼ cup of tofu mixture on to 1 slice of bread. Sprinkle with additional paprika and top with your choice of toppings and the second bread slice. Repeat with remaining bread.

About tofu:

- Originated in China
- Protein-rich and creamy
- Available in many varieties, including silken, soft, medium, firm, extra firm
- Made from soy milk
- Low cost, incredibly versatile and a blank canvas
- **Uses:** smoothies, sauces, mousses, soups, stir fries, scrambles and more

Yam and Coconut Curry Soup with Red Lentils

Recipe: Chef Amy Symington

Photo: Darren Kemper

Servings: 12

Prep time: 15 minutes

Cook time: 1 hour, 10 minutes

Ingredients:

- 2 cans (540ml/19 ounces) chickpeas, drained, rinsed
- 4 tablespoons (60ml) olive oil
- 3 teaspoons (14ml) sea salt
- 1 teaspoon (4ml) freshly ground pepper
- 1 1/3 cups (300ml) chopped onions
- 1 clove garlic, minced
- 4 tablespoons (60ml) fresh, minced ginger root
- 2 tablespoons (30ml) curry powder
- 1 1/2 teaspoons (8ml) cayenne
- 8 cups (2 litres) peeled, chopped yams or sweet potatoes (4 to 6 medium)
- 4 cups (1 litre) low-sodium vegetable stock
- 4 cans (13.5 ounces/400ml each) light coconut milk
- 2 cups (500ml) dry red lentils

Directions:

1. Preheat oven to 400 degrees F (200 C). Line a baking sheet with parchment paper.
2. Using a clean kitchen towel, pat chickpeas dry. In a large bowl, toss chickpeas with half each of the oil, salt and pepper.
3. Spread chickpeas evenly on the prepared baking sheet(s). Bake for 40 minutes, stirring halfway through the baking time. Bake until chickpeas are crispy on the outside and slightly soft on the inside. Remove and set aside to cool slightly.
4. Heat a large pot over medium heat then add remaining oil. Once heated, add onions and cook until translucent, about 2 to 3 minutes. Add garlic, ginger, curry powder and cayenne and sauté until fragrant.
5. Add the yams and vegetable stock and bring to a simmer. Allow to cook until yams are tender, about 10 to 12 minutes. Stir occasionally.
6. Add coconut milk and lentils. Stir once and allow to simmer for 25 minutes, covered.

7. Once lentils are soft, remove the soup from heat and carefully use a hand-held blender to purée soup until completely smooth. (If using a regular blender, work in batches as needed and make sure to take breaks to release the heat from the blender.)
8. Stir in remaining salt and pepper.
9. Top with roasted chickpeas and serve!

Notes: Soup may be cooled and refrigerated, covered, for up to two days, then reheated.

About lentils:

- Loaded with important nutrients including protein, iron and fibre
- Add creaminess and bulk to dishes
- Very low cost with many varieties and possible applications
- **Uses:** chilis, soups, burgers, fritters, flatbreads, tacos and more

Tempeh Bolognese

Recipe and photo: Chef Amy Symington

Servings: 12

Prep time: 15 minutes

Cook time: 30 minutes

Ingredients:

- 1/4 cup (45ml) olive oil
- 3 each (1.6kg) onion, diced
- 3 each (267g) cremini mushrooms, diced
- 10 each (160g) garlic cloves, minced
- 3 (1.12kg) yellow pepper, diced
- 1 pound (667g) tempeh, crumbled
- 3 tablespoons (53g) cumin, ground
- 3 tablespoons (53g) paprika
- 3 tablespoons (32g) oregano, dried
- 1 teaspoon (5.3g) black pepper, ground
- 2 tablespoons (80ml) tamari
- 7 cups (1.67 litres) tomato purée
- 500g whole wheat pasta (uncooked)
- 2/3 cup (160ml) pasta water, reserved

Directions:

1. While prepping ingredients, boil a large pot of water and cook pasta according to directions. Reserve 1 cup of pasta liquid for tomato sauce.
2. In a large saucepan over medium heat add oil. Once heated add onions. Sauté until translucent, about 4 minutes.
3. Next add mushrooms and garlic. Sauté until mushrooms have released their water and garlic is fragrant, about 4 minutes.
4. Next add diced peppers and sauté until slightly soft, about 4 minutes.
5. Add tempeh, herbs and spices. Sauté until herbs and spices are fragrant and tempeh is cooked through, about 5 minutes.
6. Next incorporate tamari. Once incorporated, stir in tomato puree and pasta liquid. Bring to a simmer, about 3 minutes. Allow to simmer for 5 minutes.
7. Meanwhile, divide your pasta into portions and plate.
8. Ladle sauce on to pasta and optionally top with fresh basil, chili flakes and dairy-free parmesan.

About tempeh:

- Originated in Indonesia
- Protein-rich and fermented, so good for the gut
- Can be sliced, crumbled or cubed
- Made from fermented soybeans
- Nutrient-dense and absorbs flavours well
- **Uses:** meat replacement in bowls, pastas, BBQ, as bacon and more

White Bean Béchamel

Recipe: Chef Amy Symington

Photo: Joel Barnes

Servings: 12

Prep time: 10 minutes

Cook time: 10 minutes

Ingredients:

- **Sauce:**
  - 700g soft/silken tofu
  - 1 1/2 cups white cannellini beans
  - 2-3 cups vegetable stock (or water)
  - 1 cup nutritional yeast
  - 1/2 teaspoon salt
  - 6-8 cloves garlic
  - 4 tablespoons olive oil
  - 2 tablespoons whole wheat flour
- **Pasta:**
  - 700g whole grain/spelt pasta of choice, dry (or 8 cups cooked)
- **Garnishes (optional):**
  - 1/2 bunch fresh dill
  - 1/2 lemon, zested
  - 1 cup sundried tomatoes, thinly sliced
  - 1 cup artichoke hearts, sliced
  - 1 cup olives, black

Directions:

1. In a food processor or blender, add tofu, white cannellini beans, nutritional yeast, salt, vegetable stock (or water) and garlic. Process until smooth. Set aside.
2. In the meantime, cook and strain your pasta.
3. Over medium heat in a large sauté pan, add oil and flour (roux). Whisk together until smooth.
4. Whisk tofu mixture into roux. Adjust with additional vegetable stock (or water) if necessary.
5. Add sauce to cooked pasta. Toss until noodles are coated. Serve immediately.

About nutritional yeast:

- A form of deactivated yeast
- Rich in vitamins and minerals and antioxidants
- Has a cheesy umami flavour and thickens dishes
- **Uses:** soups, dressings, dips, cheese sauces, cheese toppings (parmesan/popcorn etc.)

Notes: Alternatively, use an equal amount of sunflower seeds in place of the beans.

Aquafaba Chocolate Mousse

Recipe and photo: Chef Amy Symington

Servings: 12

Prep time: 3 hours, 20 minutes (25 minutes active time)

Cook time: 10 minutes

Ingredients:

- 3 cups (720ml) aquafaba (liquid from canned chickpeas)
- 15 ounces (420g) dark chocolate, 70%, vegan
- 9 tablespoons (135ml) soy milk or other plant-based milk
- 4 1/2 tablespoons (60g) caster sugar
- 3 teaspoons (15ml) lemon juice

Directions:

1. Crumble the chocolate into a bowl with the soy/plant milk. Place the bowl over a water bath (double boiler) and let the chocolate and milk heat slowly. Once melted, stir gently until smooth. Remove from heat and allow it to cool slightly.
2. Open can(s) of chickpeas and drain aquafaba into a large glass bowl. Measure out required amount. Add lemon juice.
3. Using an electric mixer, whip the aquafaba with the lemon juice until stiff peaks form, about 10-15 minutes. Gradually add caster sugar while whipping. (Aquafaba can't be overwhipped, unlike egg whites.)
4. Gently fold the melted chocolate into the whipped aquafaba using a spatula, being careful not to deflate the mixture.
5. Divide the mixture evenly into desired number of glasses. Chill in the fridge for at least 3 hours until set.

About aquafaba:

- Is the viscous water in which beans, like chickpeas, have been soaked or cooked – it would ordinarily be poured down the drain
- A healthy alternative (virtually fat free) to eggs that whips, moistens and binds beautifully
- Contains small amounts of nutrients as well
- Can take it from cans or home cooking: use three tablespoons of chickpea water for one large egg, or two tablespoons of chickpea water for one large egg white
- Aquafaba cannot be overwhipped, unlike egg whites. Do not add fat or else the peaks will collapse
- It will separate if stored, but can just be rewhipped. It takes some time to form stiff peaks, so be patient. Cream of tartar and sugar will help to stabilize it
- Can use the liquid from any neutral colour/ tasting bean, but chickpeas are most popular

Additional Resources

- **Forward Food:** Download recipes, toolkits, sample menus, an ingredient replacement guide and more; sign the Forward Food pledge; and register for on-demand training.
- **The World Resources Institute:** Access resources, guidebooks, language recommendations, to enable sustainable and plant-rich food choices.
- **Greener By Default:** Strategies to empower institutions to serve≈sustainable, inclusive food — by default.
- **Canada's Food Guide:** Healthy eating recommendations, dietary guidelines and more.
- **AASHE STARS:** Institutional sustainability guidelines.
- **Colleges and Institutes Canada:** Sustainability resources and more at impactclimate.ca.

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