

# Backgrounder: Reusable Materials in Food Systems

## Overview

- Number of reports<sup>1</sup> on food systems since the 2014 ZWAP, as of June 28th, 2024: 62.
- The topic of food systems includes sub-topics related to food materials, managing food waste, sustainable procurement and sustainable consumer food choices.



## Food Materials: Reusable Materials

Number of reports on reusable food materials as of June 28th, 2024: 27.

### Key findings

#### Summary

- From 2017 to 2020, reusable mug/container use was low, there was a lack of awareness of reusable container initiatives, and a lack of awareness of eco-taxes on disposable items; up-to-date estimates do not currently exist in the SEEDS library
- Based on student feedback, the ideal container would feature adjustable compartments, and be large enough to accommodate an entrée plus a side
- The ideal mug would be made of stainless steel, would be visually appealing, functional (e.g., insulated, spill-proof), portable, non-cumbersome, easily cleanable, and convenient to access and drop off
- Most campus-goers care about behaving sustainably and may be influenced to participate in reuse by social pressure, financial incentives, frequent reminders, and perks like faster check-out lines
- Most campus-goers prefer lower deposits (<\$5), larger eco-taxes on disposables (\$0.50+ per purchase), and loyalty rewards for participating in reuse programs
- There is a preference for expansion of mug sharing to Tim Hortons / Starbucks, the nest, and UBC residences, and a preference for drop-off locations in social spaces (e.g., the nest, LIFE building), libraries (e.g., IKB, Koerner, Woodward), and residential cafeterias
- There is a need for greater awareness, more advertising, and improved tracking systems for container/mug reuse programs

<sup>1</sup> Method: filtering in "list of reports" excel spreadsheet. 58 reports classified as relating to "food systems" + 4 unpublished papers from 2024.

## Consumer habits and awareness

Three reports (Smith, 2015; Hatmi et. al, 2016; Heo et al., 2020) have explored consumer habits around coffee consumption, use of reusable mugs, and engagement with container reuse programs like the UBC Mugshare program<sup>2</sup> and the Eco-2-Go program<sup>3</sup>. In terms of coffee consumption, **a majority of campus-goers regularly buy coffee/tea on campus**. In 2014-2015, 79% of respondents bought coffee/tea on campus 1+ times a week (n = 252)(Smith, 2015), while in 2016-2017, 55% of respondents bought coffee 2+ times a week (n=80)(Hatmi et al., 2016). In 2019-2020, 79% of respondents bought 2+ cups of coffee a week (n=150)(Heo et al., 2020). In terms of reusable mug use, **a majority of campus-goers rarely or never use reusable mugs**. In 2014-2015, 73% of respondents used a reusable mug less than ¼ of the time, never, or simply didn't own a reusable mug (Smith, 2015). In 2016-2017, 60% of respondents did not bring their own mugs to campus (Hatmi et al., 2016). In 2019-2020, respondents used disposable cups more than reusable cups, and ordered "to go" more frequently than "for here" (Heo et al., 2020). In terms of awareness and engagement with reusable container programs, **a majority of campus-goers are unaware and/or unsubscribed to programs like UBC Mugshare and Eco-2-Go**. In 2014-2015, 70% of students were unaware of the Eco-2-Go program (Smith, 2015). In 2016-2017, 80-96% were unaware of the Mugshare program in the AMS nest (Hatmi et al., 2016). Two other reports from 2015-2016 have noted low awareness of the Mugshare program (Ruskey et al., 2016; Kaczkowski et al., 2016). In 2020, 83% of respondents had never used Mugshare (Heo et al., 2020). However, **first-year students living in campus residences are highly aware of the Green-2-Go<sup>4</sup>** reusable container program (92%; n = 66), thanks to Jumpstart/orientation programming and word of mouth (Brown et al., 2021).

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<sup>2</sup> Mugshare is an initiative started in 2016 by a team of students at UBC sustainability organization Common Energy that offers reusable cups with a \$5 deposit onsite at partner cafes. Partner cafes on campus: Blue Chip Café, The Boulevard Coffee Roasting Co., Doughgirls, Great Dane Coffee, Harvest, Hero Coffee + Market, Ike's Café, JJ Bean Coffee Roasters, Mercante, Perugia Italian Caffé.

<sup>3</sup> Eco-to-go was a container sharing program in which participants paid a \$5 deposit to receive a card token, the card was then exchanged for clean containers. Eco-to-go was offered at AMS food/beverage and UBC food services locations. It is not clear if Eco-to-go currently exists.

<sup>4</sup> Green-2-Go is a reusable container program in first-year residences (e.g., Orchard Commons), where students pay a \$2 deposit and receive a container which they can return to receive their deposit back. Students receive a \$0.20 discount when using Green-2-Go.

## Ideal container/mug types

A number of reports have investigated the ideal kind of reusable containers for both beverages and food. These reports have focused on economic, environmental, and social considerations (i.e., “triple bottom-line assessment”).

In terms of reusable food containers, the **ideal container would feature adjustable compartments, and be large enough to accommodate an entrée plus a side**. In 2020–2021, 67% of participants preferred a medium sized container, described as fitting ‘one entree’, while 30% of participants preferred a large container, described as fitting ‘one entree and a side dish’ (Baskett et al., 2021). Another 2020–2021 report found that participants preferred single space or compartmentalized food containers with adjustable compartments over stacked containers (Lillywhite et al., 2021).

In terms of reusable mugs, **the ideal mug would be made of stainless steel, would be visually appealing, spill proof and easy to clean**. Three reports from 2015–2016 identified stainless steel as a good material because of its capacity for insulation and its durability, making it cheaper and more environmentally sustainable over time (Karna et al., 2016; Ruskey et al., 2016; Kaczowski et al., 2016). Other potential mugs include borosilicate glass mugs due to their aesthetic appeal (customizable sleeves) and durability, and ceramic mugs due to their low ecological footprint (negligible emissions after disposal), ease of cleaning, and aesthetic appeal (anti-chip paint coating) (Evans et al., 2016; Garcia-Alonso et al., 2016).

## Campus-goer perspectives: general reasons for participating

A number of reports have looked at campus-goer perspectives on reusable container programs and have ranked factors related to participation and non-participation.

Over the years, campus-goers have expressed their main reasons for not using reusable mugs. In 2014–2015, these were: “I don’t like carrying it around”, “I forgot to bring it”, “I only get coffee/tea occasionally”, “it is what the shops offer and I have not considered the alternative”, “they are cleaner than reusable mugs”, and “I don’t own a reusable mug” (Smith, 2015); in 2019–2020: “inconvenience” (specifically volume and weight of cup, difficulty of cleaning and difficulty remembering to bring them), “not buying enough hot beverages”, “not interested in environmental issues”, “forgetfulness”, and “not knowing which cafes accept them” (Heo et al., 2020); in 2023–2024: “inconvenience of carrying” (83%), “forgetting to bring reusable” (82%), “disposable cup is habit” (55%) (Duwel et al., 2024), and “forgetfulness”, “needing to wash them”, “baristas not asking about them”, “lacking space to bring them” (See et al., 2024), and “forgetting” (78%), “not wanting to carry around a reusable cup” (69%), “reusable cup not clean” (27%), “difficult to find facilities to clean reusable cups” (24%) (Berthiaume et al.,

2024). These findings highlight **the importance of mugs being convenient, portable, non-cumbersome, and easily cleanable**. The main reasons for using a reusable mug were, in 2014–2015: “I want to be sustainable”, “the insulation keeps my coffee/tea warm”, “spill proof”, “I like the look of my mug”, and “I get a discount on coffee/tea” (Smith, 2015); in 2023–2024: “environmental concern” (76%), “saving money” (74%) (Duwel et al., 2024) and “reducing environmental impacts” (59%), “avoiding paying \$0.25 single-use cup fees” (58%), “because I like my own cup” (36%), “because it keeps temperature warm” (29%) (Berthiaume et al., 2024). These findings **highlight the importance of behaving sustainably, mug practicality/functionality (e.g., well-insulated, non-spill), mug aesthetics, and financial incentives**. Also, respondents identified what it would take for them to switch to reusable mugs, in 2014–2015: “I get a bigger discount when bringing my own mug” (60%), “A regular reminder or prompt” (41%), and “an extra charge for using a paper cup” (26%) (Smith, 2015); in 2019–2020: “environmental reasons”, “economic incentives”, and “safety and cleanliness” (Heo et al., 2020); in 2023–2024: “incentives such as discounts or rewards” (71%), “easy cleaning and maintenance of reusables” (56%), “lower cost options for reusables” (45%) (Duwel et al., 2024), again **highlighting the importance of financial incentives and reminders for increasing participation**.

In 2016–2017, the following factors, in order, affected reusable cup usage: lightweight mugs, easy to clean mugs, convenient purchase location, attractive aesthetics, and affordable price (Hatmi et al., 2016). Further, respondents were influenced to participate in reuse programs by friends, discounts, faster check-outs, and social pressure, **highlighting the importance of sustainability social culture, financial incentives, additional perks like faster check-outs, and convenience** (Hatmi et al., 2016).

In 2020–2021, **hygiene and transparency (public knowledge of container cleaning actions) were the highest-rated factors contributing to participation in container sharing** (Baskett et al., 2021). Heightened concern around hygiene was likely a result of COVID-19. Other factors that may be more relevant in today’s context (June 2024) include **convenience, portability/design, and discounts/benefits** (Baskett et al., 2021).

### Campus-goer perspectives: financial incentives

Some reports have explored perspectives on financial incentives in the form of eco-taxes on disposable cup use or rewards/discounts for participating in reusable container programs. In 2016–2017, most respondents (60–76%) were **unaware of the eco-tax on disposable cups** (\$0.10 at the time) and 67% expressed that the tax was not enough to motivate a switch to reusables. Instead, **31% of respondents agreed that \$0.50 per purchase would be enough to motivate a switch** (Hatmi et al., 2016). Regarding mug price or deposits, a 2015 report found that 70% of respondents preferred a **price of \$5.00 or less for a reusable mug** if it were made available at UBC cafés (Smith, 2015). In 2016–2017, 25% of respondents suggested that the **deposit to join the Mugshare program**

**should be less than \$3.** Another 22% of participants said the **deposit should be \$5** (Hatmi et al., 2016). In 2020–2021, respondents expressed a **preference for rewards instead of a discount or points system for the reusable container program** (e.g., \$2 off every 5th, and \$5 off every 10th purchase) (Chiu et al., 2021). In 2023–2024, most respondents (57%) preferred a points-based reward system akin to stamp cards, where points are accumulated and redeemed at a later point (Duwel et al., 2024). In 2024, two reports found that **advertising and implementing probabilistic reward systems** for customers who brought reusable mugs (e.g., spin-the-wheel to win an AMS gift card, or lottery-style with a 1-in-10 chance of winning a free coffee) led to significant increases in reusable mug use at participating cafes (Desvaux et al., 2024; Argentopolous et al., 2024).

In 2018, an increase in the eco-tax to \$0.25 coincided with a 29% average reduction in disposable cup usage in 4 outlets from 2017 to 2018 (Ike's, Mercante, Totem Residence Dining Hall, Stir It Up), suggesting that an **eco-tax of \$0.25 per purchase can reduce disposable cup use without significantly impacting sales** (Sidhu et al., 2018).

### Campus-goer perspectives: locations for pick-up/drop-off

Location-wise, a 2015–2016 report found that people wanted to see UBC Mugshare expanded to **Tim Hortons / Starbucks, the nest, and UBC residences** (Karna et al., 2016). In 2020–2021, people preferred **container drop-off locations in social spaces** (e.g., the nest, LIFE building), **libraries** (e.g., IKB, Koerner, Woodward), and **residential cafeterias** (Baskett et al., 2021).

### Campus-goer perspectives: “for-here” vs “to-go” culture

A 2019–2020 report explored facilitators and barriers for ordering coffee “for here” instead of “to go”. The main reasons for ordering coffee “for here” were: “studying” (23%), “meeting someone at the cafe” (20%), “I want to stay and enjoy the drink” (14%), “environmental reasons” (10%), “enjoying the cafe atmosphere” (10%), “wanted access to power outlets” (7%), and “forgot my to go cup” (6%) (Heo et al., 2020), highlighting the importance of **cafes providing a good atmosphere, study spaces and access to power outlets**. Barrier to getting drinks “for here” included: “not having enough time” (33%), “lack of seating” (23%), “no reason to stay” (15%), “lack of power outlets” (9%), “too noisy” (8%), and “no for here mug option” (6%) (Heo et al., 2020), highlighting the **importance of providing enough seating and having for here mug options for customers**.

### Effects of “framing” on behaviour

A few reports have looked at motivating reusable cup behaviour through marketing and “framing” strategies. In 2024, **posters that were image-based and presented financial, convenience, social desirability or**

**environmental arguments** for using reusable cups significantly increased motivations to use reusable cups above text-based posters or “control” posters (Goble et al., 2024). **Another strategy is “loss framing”** or emphasizing the personal financial cost of using disposable cups (i.e., eco-taxes on disposables); this was found to increase intentions to use reusable cups more than “gain framing”, which emphasizes personal savings accrued from using reusable cups (Battu et al., 2024). Loss framing was found to be especially impactful when the cumulative “\$0.25 losses” were framed as a yearly loss (e.g., a “\$100 yearly cost” rather than a “\$0.25 per cup cost”)(Battu et al., 2024).

### Problems with UBC Mugshare and other programs

A couple reports have identified **lack of awareness** and a **need for more advertising** for the UBC Mugshare program specifically (Hatmi et al., 2016; Kaczkowski et al., 2016; Smith, 2015). Another **problem is the tracking system, which is tedious and unreliable**, leading to high rates of loss or theft of mugs (Karna et al., 2016; Lam et al., 2017; Evans et al., 2016; Ruskey et al., 2016; Kaczkowski et al., 2016). Currently, the Mugshare program requires a \$5 deposit to acquire a membership card and a mug from any participating location, after which the mug can be returned and the deposit refunded (i.e., a “deposit-drink-return system”). Each vendor tracks mug use on paper and this information is entered into a global spreadsheet daily (Karna et al., 2016). Another reusable container program in Vancouver (Reusables.com) has achieved a 99% return rate by charging deposits after use if a container is not returned on time. This is similar to the model currently employed by the UBC UmbraCity umbrella exchange, which charges a fee of \$2 each day after 48 hours of free access, up to 20\$ total (Evans et al., 2016).

The Green-2-Go program is fairly well-known among first years but has **logistical problems including not enough containers, no places to wash containers, inadequate return procedures, and containers running out at busy times and right after breaks** (Brown et al., 2021). Additionally, a large proportion of users (42% of first years surveyed) have taken containers out of the system by either recycling, throwing away, or repurposing them (Brown et al., 2021).

One report looked at common concerns associated with a hypothetical container-sharing program. Concerns included **hygiene concerns** (e.g., cleanliness of reusable cups, including ease of maintenance, exposure to germs, and adequacy of washing facilities), concerns about implementation and practicality including **cup design concerns** (e.g., usability, aesthetics and functionality), **drop-off accessibility, environmental impact** (e.g., concerns about the ecological impact of cup production), **incentive to return** (e.g., concerns about theft or removal of cups from the reuse system). A number of respondents emphasized personal responsibility for reusable cup use and suggested **increasing the tax on single-use containers** (Berthiaume et al., 2024).

## Event waste

A 2018–2019 report explored plastic cup waste at Engineering Student Centre events (Stoicheff et al., 2019). They found that roughly 1675 plastic cups were used per event, with about 90% (1507) ending up in the landfill. Proposed solutions include, from cheapest to most expensive: 1) the Engineering Undergraduate Society (EUS) switches its stock of cups to biodegradable cups, so that event organizers may purchase these cups from the EUS when putting on events, 2) the EUS switches its stock of cups to biodegradable cups and includes a damage deposit in the event contract to incentivize event organizers to bring their own biodegradable cups, and 3) the EUS fully stocks their bar with re-usable cups as well as a commercial bar washer for events, so event organizers don't have to bring cups.

## Recommendations


● Recommendation not met   ● Partially met   ● Well met

### Ideal container/mug type





- **Use stainless-steel mugs for the UBC Mugshare** program due to their durability (Ruskey et al., 2016; Karna et al., 2016; Kaczkowski et al., 2016). [Status: Steel and ceramic mugs have not been used, instead Mugshare has opted for plastic mugs] ●
- Alternative recommended mug materials are **borosilicate glass** (e.g., Joco 16 Oz. mug) or **ceramic** (Evans et al., 2016; Garcia-Alonso et al., 2016). [Status: Mugshare has opted for plastic mugs] ●
- **Use large leak-proof containers** that can fit entrees or entrees + a side, **with adjustable compartments**, for a container-sharing program on campus (Baskett et al., 2021; Lillywhite et al., 2021). [Status: Containers used in the Green-2-Go program are large enough for an entrée and a side, but they do not have adjustable dividers. A campus-wide container-sharing program does not currently exist. The Zero-Waste Food Ware Strategy does allow patrons to bring their own containers, but it is unknown how frequently this occurs.] ●

## Effective financial incentives


### Eco-tax

- **Raise the eco-tax on disposable cups** from \$0.10 to at least \$0.15 per purchase (Hatmi et al., 2016). [Status: The eco-tax on disposable cups (for hot and cold beverages) was raised to \$0.25 per purchase in 2020, as part of the UBC Zero Waste Food Ware Strategy. The fee for food containers is \$0.50.] 

### Initial deposit

- **Investigate financial cost-benefit of discounts** for incentivizing reusable mug use (Smith, 2015). [Status: Research has assessed student preferences on discounts vs. rewards, but a financial cost-benefit analysis on discounts has not been conducted] 
- If the mug-tracking system for Mugshare program continues to be a manual pen-and-paper system, **increase the deposit cost up to \$10** due to the high cost of stainless-steel mugs, or alternatively, **seek cheaper mugs** (Kaczowski et al., 2016). [Status: Mugshare did not increase the deposit to \$10, but transitioned from stainless-steel mugs in its early stages to cheaper plastic mugs] 
- **Raise Mugshare deposit to \$5** to prevent customer loss of mugs (Heo et al., 2020). [Status: Mugshare currently uses a deposit of \$5 to prevent customer loss of mugs] 
- **Consider providing reusable mugs for free**; research has demonstrated that free reusable mugs lead to substantial increases in user rates on university campuses (Barwick et al., 2024). [Status: reusable mugs through Mugshare currently require a temporary deposit] 

### Discounts/rewards/points system

- **Implement loyalty/reward-based incentives** for reusable mug/container programs on campus (Chiu et al., 2021; Duwel et al., 2024; Hatmi et al., 2016; Smith, 2015; Li et al., 2024). Examples include: 1) 2\$ off of every 5th purchase, and \$5 off of every 10th purchase (Chiu et al., 2021), 2) punch-stamp cards, with 1 punch for bringing your own mug, 2 punches for Mugshare members, and 10 punches redeemable for coffee or a cookie up to \$2 in value (Hatmi et al., 2016). [Status: Loyalty rewards for reusables have been implemented in patchwork fashion, at the discretion of the vendor (e.g., Food Hub provides stamps for coffee purchased with reusable mugs, every 10th coffee is free. Loafe also has a punch-card program). Mugshare itself does not use rewards; Green-2-Go does not use rewards] 



- **Increase discount** associated with using reusable mugs to \$0.25 per purchase (Smith, 2015).  
[Status: Not clear if reusable discounts have been increased at any or all UBC Food Services]
- **Implement probabilistic rewards** for reusable mug use on campus cafes (Argentopolous et al., 2024; Desvaux et al., 2024). Examples include: a 1-in-10 chance of winning a free coffee for personal mug users (Argentopolous et al., 2024); spin-the-wheel for a chance to win an AMS gift card or other rewards (Desvaux et al., 2024). Both strategies should be implemented together with aggressive marketing (e.g., boards displayed in store with the weekly or daily number of free coffee winners, along with social media advertising). Further, raffle tracking should be incorporated into the electronic point-of-sale system (Argentopolous et al., 2024)  
[Status: Rewards for reusables have been implemented in patchwork fashion, at the discretion of the vendor. Most rewards programs are loyalty-based, not probabilistic]
- **Consider implementing a points system in tandem with probabilistic rewards**, so that customers may compete to accumulate points and win rewards (Argentopolous et al., 2024)  
[Status: Rewards for reusables have been implemented in patchwork fashion, at the discretion of the vendor. Most rewards programs are loyalty-based, not point-based or competitive]

### Improving tracking of mugs

- **Improve Mugshare's mug-tracking system** by digitizing and automating data collection processes (Evans et al., 2016; Kaczkowski et al., 2016; Karna et al., 2016; Ruskey et al., 2016; Heo et al., 2020). Ideas for how to do this include: 1) implement a **digital tracking system in 3 phases**, where phase 1 consists of a website and online database to store member and mug information, phase 2 consists of adding a UBC card scanner for ease of access, and phase 3 consists of a phone application to further increase access and ease of use (Karna et al., 2016), 2) **introduce mug-dispensing machines** with a mechanism for safe dispensing, a web application and a database to keep track of mugs (Lam et al., 2017), 3) **create a tracking system that mirrors the system used by UmbraCity Umbrella Exchange<sup>5</sup>**, with free or near-free initial access, automated data entry and **late fees to incentivize returns** (Evans et al., 2016; Kaczkowski et al., 2016). [Status: Mugshare's tracking system remains manual, with no incentive for returning mugs other than reclaiming your deposit]

<sup>5</sup> UmbraCity is a company which supplies an umbrella-sharing program on campus since 2015. Umbrella kiosks are set up around campus; people can register for an account, select a subscription plan or pay-as-you-go, enter their login details to borrow an umbrella, and return the umbrella to another kiosk when done. If umbrellas are not returned within 24 hours, a fee will be charged daily up to a maximum established in your subscription plan or until the umbrella is returned (<https://umbracity.com/borrow/>).

- **Recruit local UBC talent**, specifically either computer science majors in 3rd or 4th year or engineering students as part of a capstone project **to develop the software/hardware needed** to create a digital tracking system (Karna et al., 2016; Kaczkowski et al., 2016). [Status: UBC students have developed plans and designs for potential mug-dispensing machines (Lam et al., 2017), but Mugshare has not announced any plans to develop its tracking system]

## Improving awareness/marketing

### Awareness of container sharing

- **Encourage cafes to supply in-store cups**, instead of offering coffee in disposable cups for in-store consumption (Zhang et al., 2020). Relatedly, **implement reminders** (Barwick et al., 2024), i.e., encourage cashiers/vendors to ask whether the order is for here or to go and remind customers to use their reusable mugs if they have one, or use posters in high-traffic areas to remind customers to use their mugs. [Status: The Zero Waste Food Ware Strategy (1) requires that vendors ask customers if they want to use a single-use cup, however the rate of adherence is not known, and (2) recommends that vendors provide “for here” cups to encourage in-house consumption, rate of adherence again is not known]
- **Encourage cafes to implement a “script change”**, where Mugshare mugs or reusable mugs are the default option when customers order coffee (Barwick et al., 2024). [Status: disposable cups are still the default option at all campus cafes]
- **Encourage cafes to offer attractive reusable mugs for purchase** at the point-of-sale (Smith, 2015; Sidhu et al., 2018)[Status: The Zero Waste Food Ware Strategy recommends that vendors provide reusable mugs for sale, rate of adherence to this is not known]
- **Use marketing strategies to increase awareness of Mugshare on campus** (Evans et al., 2016; Hatmi et al., 2016; Kaczkowski et al., 2016; Smith, 2015; Heo et al., 2020). Ideas for strategies include: “Love Your Mug Hour”, video series, posters on sort-it-out bins, “Maggie the Mug” mascot, advertising on social media through partnerships with key influencers (e.g., then-president Santa Ono)(Hatmi et al., 2016); “Paint your own mug” and “Join the challenge” competitions (Evans et al., 2016); posters in high traffic areas, events displayed prominently on campus, cashiers recommending the program to customers, and advertising (logos) on checked out cups (Kaczkowski et al., 2016; Heo et al., 2020); campus-based games or competitions on social media like the “Kill the cup” campaign, in which individuals as well as university teams are invited to share photos of themselves, via social media, drinking out of a reusable cup and are entered into a prize draw (Smith, 2015); introduce “happy coffee hour”, where campus-goers can bring reusable cups to a vendor and get free coffee (Smith, 2015). [Status: The Mugshare Instagram page produces marketing materials and organizes

competitions for gift cards on occasion, their page is followed by 6216 people; awareness in Mugshare remains fairly low as of 2019–2020 estimates, up-to-date estimates are unavailable]

- **Use imagery in posters rather than text.** Focus messaging around financial (Battu et al., 2024) and convenience advantages of reusable mugs (Goble et al., 2024). [Status: Difficult to assess]
- **Target motivational/positive marketing strategies specifically to coffee-focused outlets** on campus (Sidhu et al., 2018; Barwick et al., 2024). [Status: Difficult to assess]
- **Train staff to remind or prompt customers to use reusables or consider Mugshare**, e.g., “do you need a single-use or reusable cup today?” (Heo et al., 2020). [Status: The Zero Waste Food Ware Strategy requires that staff always ask if the customer wants a single-use cup; whether this has been incorporated into training is not known]



#### Awareness of eco-taxes

- **Encourage vendors to redesign price tags** to display the menu item’s price and the disposable cup’s price (i.e., eco-tax) separately, along with the price of CO2 in production (Smith, 2015). [Status: The Zero Waste Food Ware Strategy requires that vendors clearly indicate disposable cup fees to customers through signage and staff communication. The compliance rate is unknown]



#### Awareness of discounts/rewards/points

- **Place small signs in visible areas** (e.g., the till of a coffee shop or on the mixing station where milk and sugar are kept) or **print information on coffee cups** reminding people of discounts associated with reusables (Smith, 2015). [Status: The Zero Waste Food Ware Strategy recommends that vendors supplement the disposable cup fee with discounts on reusables, there is no requirement or recommendation to communicate this discount through signage or other means. Unclear if businesses are applying a discount or communicating it]
- **Inform students of incentives** (Ward-Griffin et al., 2017). [Status: The Zero Waste Food Ware Strategy has requirements for vendors to communicate fees via signage and staff. The degree of compliance is unknown]



#### Awareness of impacts of disposables

- **Use signage and posters in high-traffic areas** to inform and remind people of the impact that single-use items have on the environment (Baskett et al., 2021; Smith, 2015; Zhang et al., 2020; Heo et al., 2020, Battu et al., 2024). More specific recommendations include: more “environmental imagery” and information about the consequences of disposable items (Zhang et al., 2020); visual depictions of waste reduction or the impact that one student could have by participating in container reuse (Baskett et al., 2021); small signs in visible areas (e.g., till of a coffee shop or on the mixing station where milk and sugar are kept) or printed on coffee cups



reminding people of impacts of disposables (Smith, 2015; Ward-Griffin et al., 2017); a “dynamic norms approach”, where an action is presented as part of a growing movement or culture, e.g., “a growing number of people are choosing reusable mugs” (Heo et al., 2020; Ward-Griffin et al., 2017). [Status: Difficult to assess, no known initiatives around signage]

### Transparency around mug hygiene

- **Implement a thorough and efficient cleaning process for containers** used in sharing programs and ensure that **students are informed/aware of the container cleaning policy** (Baskett et al., 2021). [Status: A campus-wide container sharing program does not currently exist; Green-2-Go and Mugshare clean their containers but the extent of communication and transparency around the cleaning process is unclear]

### “Framing” strategies for increasing reusable cup use

- **Use “loss framing” in posters advocating for reusable cup use**; place posters in high visibility areas, especially where people make decisions about beverages (e.g., tills, entrance, etc.) and consider advertising the cumulative effects of the \$0.25 fee (e.g., \$100 per year on average) (Battu et al., 2024) [Status: Difficult to assess]
- **Frame the \$0.25 fee in terms of money saved** using a reusable cup (e.g., getting baristas to as: “Would you like to save 25 cents by using a reusable cup?”) (Arbelaez et al., 2024). [Status: Difficult to assess]



### Locations for pick-up/drop-off

- **Introduce drop-off bins in high foot-traffic areas across campus**; bins should be designed to allow for drop-off only (i.e., no easy retrieval of mugs from bins) and prevent bashing of mugs upon return (Evans et al., 2016). [Status: Mugshare currently operates through vendor locations only, without additional drop-off bins on campus]







### Expansion

- **Coordinate with UBC food outlets to expand the Mugshare program** across campus (Kaczkowski et al., 2016). [Status: The Mugshare program has expanded to 10 UBC participating locations, and has expanded outside of UBC, but is not yet campus-wide]
- **Partner with Reusables.com** as the default option for campus-wide reusable cups. This would help mitigate common barriers including forgetting to bring a mug, challenges with cleaning


mugs, and lacking space to bring mugs (See et al., 2024). [Status: Reusables.com is not currently a partner for campus container-sharing]

- **Explore partnerships with service providers** for alternatives to single-use cups (Battu et al., 2024) [Status: UBC has initiated a process of identifying future partners for container/mug-sharing on campus] 
- **UBC should conduct a pilot study for a reusable mug program** featuring the following: increased pick-up and drop-off locations, transparent cleaning process, avoiding terms such as “shared” that carry connotations of contamination, financial incentives to return mugs such as deposits (Berthiaume et al., 2024). [Status: Mugshare currently uses a deposit system; a program that builds on Mugshare in terms of pick-up and drop-off locations, financial incentives, or incorporates new ideas like transparency around cleaning processes does not currently exist] 

### Recommendations for Green-2-Go

- **Inform dining hall staff and container distributors of container return process**, frequently **share this information with students** to encourage returns (Brown et al., 2021). [Status: Difficult to assess] 
- **Remind students 8 weeks prior to the end of term to return containers**, issue frequent reminders (Brown et al., 2021). [Status: Difficult to assess] 
- **Increase number of return locations** for Green-2-Go containers (Brown et al., 2021). [Status: Difficult to assess, no Ubyssy publications indicate that this has been done] 
- **Introduce loyalty stamp cards** for Green-2-Go, with free items every 10 meals (Brown et al., 2021). [Status: No indication that this has been done] 
- **Increase communication around “accountability model”**, i.e., increase awareness about 8-dollar refunds for container return to avoid containers being repurposed or thrown away (Brown et al., 2021). [Status: Difficult to assess, no reports have investigated this] 
- **Up-scale Green-2-Go to all UBC food services outlets**, initiate collaboration between the Zero Waste Action Plan committee, creators of the Zero Waste Food Service Ware Strategy, and the UBC AMS (Brown et al., 2021). [Status: No campus-wide container-sharing program currently exists] 

### Reducing event waste

- The **Engineering Undergraduate Society (EUS)** should **switch their stock supply of cups to biodegradable cups** and include a \$200 damage deposit incentive in rental event contracts to 

encourage event organizers to bring biodegradable or reusable cups (Stoicheff et al., 2019).

[Status: Not clear if this has been done]

- The **EUS should seriously investigate the possibility of purchasing reusable cups and washers** to align with UBC's zero waste food ware strategy (Stoicheff et al., 2019). [Status: Not clear if this has been done]



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