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Exploring Reusable Packaging in Maine's Restaurant Industry to Reduce Waste and Save Businesses Money

Workshop Report

Summary:

In light of the increasing burden on US municipal waste streams due to foreign borders closing to US exports of waste (Wang et al. 2020), uptrends in the amount of packaging used (Vann 2021; Argawal et al. 2020), and disturbances to normal operation due to the COVID-19 pandemic and related economic shut downs (Zimmerman et al. 2020), a larger focus has been paid to how to reduce the amount of waste our economies produce. According to the US hierarchy of waste management practices, which Maine has adopted, there are seven strategies to handle waste material which are listed in descending order of preference: Reduce, reuse, recycle, compost, process with beneficial use (ie, turn into fuel), waste-to-energy, and landfill (Solid Waste Management Hierarchy, 2007). The current municipal waste system in the US relies on landfilling, but this process is often inefficient and plastics end up in the environment where they can be detrimental to the health of people and wildlife (Ng et al. 2018). Nearly 78% of single use plastic in the US municipal waste stream can be attributed to the restaurant industry and food service applications (EPA 2015) and represent a large portion of the overall municipal waste stream.

The Senator George J. Mitchell Center for Sustainability Solutions recently hosted a workshop to explore various reusable packaging systems and their potential to save businesses money and reduce waste. The workshop, which took place on September 13th, 2021 from 2 to 3:30 PM, aimed to engage stakeholders in this exploration by: a) presenting current findings of a literature review on the environmental benefits of reusable packaging; b) presenting the most commonly implemented reuse systems; and c) asking our partners to think about the practicality of these systems in a state like Maine. Among the 26 stakeholders who attended the workshop, there were representatives from waste management industries, restaurants and food service organizations, and municipal and regional planning organizations. The workshop was structured in five parts: Introductions, project overview and goals, literature review findings, and two segments for discussion. The first discussion block focused on what reuse strategies and systems might work in Maine while the second discussion section focused on the barriers. In the remainder of this report, we draw upon our analysis of workshop recordings[1] to highlight some of the major themes to emerge from those discussions.

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[1] The workshop was recorded and transcribed. Due to technical difficulties, two of the six break-out rooms were not recorded. Information from those sessions was provided through researcher notes and summaries recorded during the group discussion.

During introductions participants were asked to state three words they thought of when thinking of reusable food packaging. Positive associations tended to focus on moral and psychological aspects of reusability, including "responsible", "equity", "sustainable", "hard but important", "use only necessary", "stopping plastic pollution" and "extremely worth it". A smaller subset of positive responses focused on cost features, with one response indicating reusables were "economical". Negative associations tended to focus on practical issues of convenience or the logistics of implementing reuse solutions with descriptors such as "complex", "logistics for returning", "inconvenience", "time consuming", "potential logistical issues", and "movement of restaurant food service ware". Additional negative connotations focused on health and affordability aspects with descriptors such as "pathogens", "affordability" and "manufacturing costs". Initial perceptions of how reuse systems would work were mixed both from person to person, but also within individual answers. While several participants appeared to be interested in reuse systems from a moral or philosophical standpoint, they were often accompanied by a negative association related to economic and logistical factors. Throughout the discussion sessions, these viewpoints remained consistent and led to the identification of both opportunities and costs associated with implementing reusable packaging programs. In the sections that follow, we will report the major themes that arose during these discussions

Logistics:

One major concern of participants was logistics. There are two major aspects to logistics; back-end (e.g. restaurant and supplier side) and consumer facing (e.g. how the consumer interacts with the system). Among back-end logistics, the need for storage and washing capacity appeared to be a large logistical hurdle. One participant mentioned that the decision to "use Single-Use is because they don't have kitchen facilities for the sanitation or the work, and storage" while others noted that "twenty-five percent of the food serving industry in Maine is somebody that doesn't have the capability to process those reusable containers." This alludes to an underlying issue among Maine facilities that was not directly talked about – operations vary considerably from one restaurant to another - which points to the need for offsite handling and storage of reusable containers in order for Maine businesses to participate. Others noted that limited operational space has financial considerations with one participant noting:

> *"it's going to create(d) extra room for storage and then obviously if you rent it at a high*
> *rental area, so it's like 30 feet, $30 per square feet, will the restaurant [be] willing to pay*
> *those costs to keep those extra, like, reusable containers?"*

Adding additional processes and material to current restaurant operations appears to be a perceived barrier for participants, particularly when considering that the recent pandemic has placed a particularly high burden on restaurant operations. Participants noted that a smaller than average workforce has limited their ability to keep up with demand. While it was not part of this workshop, the authors did note that a large portion of the restaurant representatives who were invited ended up pulling out citing staffing shortages. Other logistical concerns focused on the consumer convenience factor of returning the material. For these reasons, a third-party collection and redistribution service appears to be the most favorable logistics method when compared to individual restaurants running their own reusable packaging service. Several respondents noted that central collection locations would allow consumers an avenue to easily dispose of soiled packaging. A third-party service would also alleviate the burden of storage space and staffing for participating restaurants.

Incentives and finances:

Several participants noted the need for good incentive programs in order to increase participation and return rates, but the group expressed uncertainty about which incentives might work best. We note this may be a question that needs additional research. Some participants did not believe deposit systems would work due to the high buy-in cost, as evidenced by the following quotes:

> *"like a deposit system or something like that, I don't think it's going to really be, you know, I don't see that working in our restaurant very well, something like that. It would have to be something easier for the customer than a membership or an app or a, you know, deposit."*

> *"an upfront cost to the consumer is a barrier to entry, even if they end up making money on the discounts each time you use [your] coffee mug."*

> *"Five dollars seems nominal and, but it still is a psychological thing, that is a barrier for folks"*

Others mentioned that deposits may suffer from a sunk cost fallacy, in which consumers perceive that deposit as having already been spent and the money is not recoverable, minimizing the value of the packaging product:

> *"OK, five-dollar deposit, bring back the pie plate. But in a short amount of time, we end up without any pie plates. I'd have to buy more because people like - they just kept them."*

On the opposite side of the spectrum, participants felt that systems that tracked containers were likely to have technological and privacy barriers. While these systems can lower the barrier to entry by charging customer only if they fail to return the container, the barrier to entry becomes one of a personal nature. One participant noted that they felt the idea of having their purchases tracked invaded their privacy. Others felt that the age of Maine's population would provide a barrier to using newer technologies to track the containers:

> *"one thing I think about here and, Maine particularly, is the older population. In the last year we converted all our reservation system over to using a reservation app and online reservations and we don't take reservations anymore. And people just cannot figure it out."*

While systems that only charge for missing containers can theoretically levy higher prices for missing packaging, the tourist population may not consider the incentives to return packaging worth the effort:

> *"I think for where I'm set up in Northeast Harbor, honestly, money isn't going to be an issue, charging people would[n't] work. They would just say 'sure, put it on my house account, whatever you say.' But I think for the tourists, money isn't as great of a solution."*

Because of Maine's diverse customer base, participants noted it is unlikely that there is a one-size-fits-all approach to incentives. For instance, many customers in the summer come from out of state. Compared to year-round customers, tourists are likely to need more convenient drop off locations and higher incentives to return the packaging. Maine will therefore will likely require a mix of strategies to increase participation in large part because the customers in Maine vary greatly depending on the place, season, and socio-economic status. Because of this, several participants advocated for mixed modal systems to allow for different modes of participation:

"…that mixed modal approach of a grocery store, paper or plastic, now becomes reusable, single-use, that might be able to satisfy some of those restaurants and more touristy areas that are concerned that they won't get the return rate of, if the third-party provider was also like the distributor of the single-use stuff. I know it's not ideally where we want to … But it is a step in the right direction to build better awareness and a model where people can do better. And I think we'd be surprised how many people opt into the reusable."

"I think it would be…I think there would need to be a combination of things like, let's say, subscriptions in some places where people could bring things back and then maybe services in other areas where people would have the ability to drop it off because they're not coming back."

While multiple options and incentive structures may increase participation, it is likely to increase logistical complexity. Care will need to be taken to create systems that allows for flexibility in customer interaction while maintaining a system that can be employed across a variety of restaurant operations without creating undue burden on the operators.

Safety and Liability:

Safety and liability also emerged as secondary themes. With regards to safety, the major concern appeared to stem from awareness related to the COVID-19 pandemic with one respondent stating, in reference to safety and liability concerns, that:

"We have the central repositories collecting and cleaning and then the restaurants redistribute…then you avoid this whole...the whole health and safety part of it."

Another participant argued that the additional inspections by health officials that would allow restaurants to accept reusable packages would create a barrier for implementation:

"you know, most people [restaurateurs] are hoping that the health inspector doesn't come, you know. And again that's not necessarily the right thing. But if I perceive it to be a barrier, I mean, I understand all of the other parts of what needs to be done, but I just question the need for somebody to have to come in and look at it"

Both of these quotes speak to the nature of safety and liability concerns within the restaurant industry. Industry professionals present at the workshop tended to think of reusable packaging as similar to any other plate or bowl that would be washed, both in workload and in safety. Hence, some questioned the necessity of additional health inspection. Others noted that shifting the responsibility from restaurants onto the third-party vendors would be important from a liability standpoint, as they viewed the introduction of additional soiled material as a potential source of health and safety issues. It is clear that additional research is needed in order to make informed conclusions about the safety of accepting soiled packaging in restaurants.

Another issue of safety centered around the tracking of packaging assets, with some participants being concerned that tracking the packages could threaten the privacy of consumers. If packages are tracked by an app, participants reasoned, then the movements of those people are also tracked. While this is a valid concern, it is important to contextualize these concerns within modern society, as most phone apps and card transactions already create a record of individual behaviors. This concern does highlight the need for

transparency and effective communication to inform the user. It also highlights another potential benefit of multi-modal reuse systems; allowing consumers to opt into a system which does not track packages, such as a deposit system.

The Role of Municipalities:

The final major theme that emerged from this workshop was the role municipalities could play in reuse systems. Participants overwhelmingly agreed that government intervention would be necessary in order to start these systems in a way that would not be cost prohibitive:

> *"I think we have to face the fact that it's going to cost more than doing it the disposable way, but it has to be done because the long-term consequences of not doing it, well, cost a lot more, you know? So I think that's where our municipalities and possibly the state could come in by putting in some money to make it happen. And then once it.. once it's roll… once the systems rolling, we can then focus on minimizing costs as much as possible."*

Another participant questioned what might motivate municipalities to get involved:

> *".. what might motivate a municipality to want to engage on this topic generally, because in my experience, if there's not a stick that's aggressively forcing you, or a financial incentive that's going to cause you to save money - there's no reason for any action at all. Everything else is a political risk. So, we're not able to make any money off of recycling right now. If there's some way that the municipality can make up some of that loss by being the transportation mechanism for collecting up containers and then either providing them to that third party, washing and distribution facility, and that's a way of securing some of those revenue lines that help to secure our whole resource process. To a certain degree, that's a different revenue source that would cause us to be like, oh, now the problem being every municipality has a different relationship with how they collect garbage [and how they] monitor it."*

Other's envisioned multiple municipal entities working together on collection, in recognition that much of the state's tourism traffic and population is concentrated in coastal communities:

> *"And I wonder if in [the] Acadia area, the Park Service - or other parks in general, and a lot of municipalities would be a good partner because people are often eating in those public spaces for receptacles"*

At the heart of these conversations is the recognition that municipalities and the state will likely play a large role in the success or failure of these systems. While many participants recognized that entrepreneurs would need to initiate these processes, it was apparent that starting these programs without support for government agencies would not be likely. For municipalities, the issue will likely revolve around what benefit can these programs provide. While municipality facilitated campaigns to increase adoption of reusable food ware in a community has the potential to significantly reduce waste management costs, it is not clear to what extent municipalities will experience this benefit. For third party reusable packaging startups, it will likely be necessary to draw the connection between increased reusable packaging and decreased municipal waste as municipalities are acutely aware that they're "not

able to make any money off recycling right now." The question remains, however, where do these systems reside? Are they private? Public? Quasi-municipal? In a state like Maine, with such a varied customer base, these questions will need to be answered in order to make successful reusable packaging systems.

Conclusions:

While participant opinions were generally favorable, there are many factors that present barriers to successful reuse systems. Logistical concerns related to the upfront financing and operational efficiency pose a barrier to starting these programs. While the state of Maine now allows for third-party businesses to handle the logistics of reusable packaging, care will need to be taken to make such systems work in the state, with special attention paid to the diverse range of customers that will be using these systems. A large influx of tourism in the summer months is spread over a large area, making collection and redistribution issues particularly difficult. Likewise, large influxes of visitors in the summer will pose problems with educating tourists how to participate in reuse systems. As one respondent noted:

> *"I think it's also a case of training. You know, all of us, none of us recycled 20 years ago. And we've all been trained to recycle."*

Effective communication about how to interact with reuse systems and the incentives to participate will likely be key in successful reuse systems as they represent an inherent shift from the status quo. Likewise, reusable packaging systems will need to avoid major inconveniences to their consumer base in order to boost participation rates. This may mean that collaboration between restaurants, to create a network that works together, could result in stronger participation and thus waste reduction and cost savings.

Altogether, there appeared to be a healthy mix of enthusiasm and skepticism among workshop participants. It is clear that there are also many uncertainties that need more research. While this study attempted to recruit a heavy restaurant base, it ultimately had a low turnout of restaurateurs. Based on responses from attendees and potential attendees, labor shortages likely played a large role in preventing interested restaurants from participating. Safety in food service ware has been an ongoing issue, especially considering the pandemic. Because the United States Center for Disease Control (CDC) does not specifically state whether or not dishes are safe to be reused during the pandemic and there is little consensus about the safety of reusable packaging, more research is needed to understand and contextualize safety concerns. Participants tended to believe that municipalities will need to be a major part of forming effective reusable packaging systems, but were unclear as to what specific role they would play. Further research should focus on the specific capabilities and roles municipalities could play in starting these systems. While further research is needed to answer some of these questions, this workshop does show that strategies to reduce the reliance on single-use packaging has the interest of market actors in Maine. Moving forward our research team plans to continue to work with community partners to produce a resource guide for reusable packaging and to work with partners to design and implement pilot programs.

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