

## Workshop 1a Summary

### About Workshop 1a

On October 21 the Lab team convened the first of three sessions in the “Seeing the System” Bioplastics Workshop. We brought together 22 participants who have varying roles and experiences with bioplastic packaging to start unpacking key issues related to the environmental and social impacts of bioplastics. The Lab team provided an overview of the SIMBIO project, discussed bioplastics as an emerging wicked problem and reviewed the horns of the dilemma, pairs of attractors which are in tension and define the innovation space. We introduced the convening question that we will be exploring across our workshops:

*What role can bioplastics have as a competitive alternative to fossil-fuel based plastics in a truly circular and equitable food system?*

The goal of this session was to explore the range of knowledge and experience, both personal and professional that the participants bring to the Lab to help contextualize the realities and challenges of the existing system.

### Describing Bioplastic Packaging

Our first workshop activity an introduction with a short game inspired by Taboo, where participants were asked to introduce themselves and say two words that came to mind when thinking of bioplastics, excluding the taboo words “bioplastic”, “compostable”, and “packaging”. Participants offered a wide range of words, and multiple people emphasized words like “complex” and “confusing”. The words from this activity are represented in a word cloud .



### How Did We Get Here?

We carried out a Group Timeline exercise where participants were asked about their own experiences and views about bioplastic packaging, juxtaposed with different societal milestones and events. Participants were asked to consider the following questions:

- When did you first notice how packaging was used for food?
- What sparked your awareness of bioplastics?
- How did you get involved in bioplastics?
- What keeps you engaged in this topic?

Themes that emerged from the discussion on the timelines are highlighted in this summary.

## Reflections on Plastic Packaging

When reflecting on early memories of food packaging, some participants associated single-use packaging with fun childhood snacks, like Dunkaroos and Lunchables, as well as microwave meals and TV Dinners.

Participants also described experiences where they became aware of the plastic waste problem. For some people, this happened by observing the waste created in their jobs (e.g. retail and the airline industry) and on university campuses. One participant shared their experience living abroad and witnessing the single-use habits of many households. Another reflected on the first time that they visited a landfill. Finally, some participants discussed current events in the news such as the introduction of single-use item bans and the announcement that China is no longer importing plastic waste.

## Awareness and Involvement with Bioplastics

Participants each shared how they first learned about bioplastics or became more involved in the bioplastic lifecycle. These experiences included:

- Being excited and hopeful when seeing bioplastics for the first time, then realizing the many complexities and challenges associated with them.
- Watching advertisements from large corporations about new (and short-lived) bioplastic products (e.g. Sun Chips compostable chip bag and Coca-Cola 2010 Olympics bioplastic bottle).
- Seeking alternatives to conventional single use plastics or working on zero waste initiatives within various environments, including businesses, large events, governments.
- Carrying out research and testing for new bioplastic products and feedstocks that could be used for bioplastics (sometimes by accident).
- Seeing bioplastics enter composting facilities more and more, visiting composting facilities and/or talking with people in the composting industry.
- Encountering complexities in how bioplastics are handled in the waste system, such as user interpretation (e.g. park users discarding 'biodegradable' dog bags behind trees).

## Issues Identified

In the Group Timeline exercise, the following key themes and issues emerged across the discussions.



Bioplastic end-of-life management: Participants discussed the realities of bioplastics end-of-life compared with the public perception and product standards. While many bioplastic products are marketed as biodegradable and certified compostable, the majority of composting facilities in B.C. do not accept bioplastic products and the products are instead disposed in landfills. The throughput of composting facilities is much faster than timelines set out in compostable plastic standards (e.g. 20-day throughput in new composting facilities vs. 180 days to break down in the ASTM standard). As a result, many bioplastics don't decompose as expected and remain as post-process residual. The current state of composting infrastructure was another reason that was discussed. Participants talked about how waste management infrastructure has not caught up to the innovation on the front end of bioplastic development and that the development of these products were developed without enough consideration for the end-of-life management. One participant also raised the potential costs of adapting composting infrastructure to properly manage bioplastics.

**Confusion about bioplastics:** Many participants expressed that there is significant confusion among businesses and the public about bioplastics. Consumers expect that bioplastics are an environmentally friendly option that will be composted successfully and are surprised and disappointed to find out that this is not always the case. There is also confusion about where to dispose of bioplastics (garbage? plastic recycling? green bin? in nature?). This confusion is exacerbated by the fact that there



are different waste management rules and systems across municipalities. Furthermore, regarding the types of bioplastics being considered in this lab, it was originally focused on biodegradable and bio-based plastics, however expansion to include those that are non-biodegradable and non-biobased is necessary due to how those products are adding to the confusion.

**Regulation:** The issue of regulation was discussed in varying capacities throughout the session. One topic that arose was challenges with current bioplastics composability standards, as well as the lack of regulation for what products are on the market and what labels are being used. Participants also discussed how bioplastics are being treated by current government regulation and single-use-item bans. For example, governments are considering whether to allow bioplastics in composting programs, as well as whether to include or exclude bioplastics from single-use-item bans. Extended Producer Responsibility (EPR) programs were also discussed and participants talked about how EPR could be used to better manage bioplastics, such as the potential for small businesses to launch their own EPR initiatives.

**Single-Use Items:** Some participants raised the larger issue of single use items. This led to considerations of whether bioplastic food packaging and service ware is desirable given that it perpetuates single-use over reusable alternatives.

**Feedstocks:** As bioplastics are derived primarily from renewable plant resources, there is concern about the potential impact of bioplastics on food security. For example, what if the resources used to produce bioplastics divert crops from food production? One point brought up is the differentiation between edible food and inedible parts of food (e.g. crop and animal residues). If bioplastics were made from agricultural "wastes" that currently have little value, this could be an additional revenue stream for farmers and lower feedstock cost for manufacturers.

**Opportunities and hopes:** Despite the many challenges associated with bioplastics, participants expressed hope about a fossil-fuel free future utilizing bioplastics. Some participants highlighted the potential opportunity of bioplastics to shift businesses towards becoming more environmentally friendly. Other sentiments included a sense that even though this is a hard challenge, it doesn't mean we shouldn't work on it despite the current challenges with implementation.

## What's Next?

Session 1b on Wednesday October 28th, 9:30am-11:30am PDT. In this session, we are going to do a systems-mapping exercise to dive deeper into the underlying events and causes that contribute to the issues identified so far. The goal of this exercise is to start identifying potential leverage points in the system. See you there!

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