

Workshop 1c Summary

About Workshop 1

On November 4, 2020 the Lab team convened the last of three sessions in the “Seeing the System” Bioplastics Workshop, bringing together 18 participants. The goal of this session was to explore focus areas for the winter 2021 solutions-seeking phase. The third phase will be solution prototyping, to be held in spring 2021.

What is your vision?

For our first activity, participants were divided into small groups and asked to draw a sketch that represented their vision for an ideal bioplastic packaging system. Participants were then asked to compare their vision to the themes and messages of a media article about bioplastics that they identified prior to the session.

Leverage Blobs

In this session, the Lab team introduced the concept of leverage points and “leverage blobs”. Leverage points are places within a complex system where a small shift in one thing can produce big changes in everything (Meadows, 1999). Based on the findings from the two previous sessions, the Lab team identified five general areas within the bioplastics system (“leverage blobs”) that could contain potential leverage points:

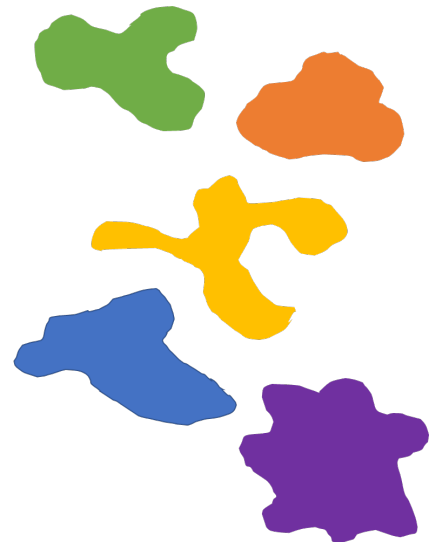
1. Differentiating bioplastic products from each other
2. Materials used to make bioplastics
3. Role of bioplastics in packaging food
4. Handling bioplastics from one stage to the next in the supply chain
5. Product design and the innovation process/pipeline

Participants were divided into two groups to discuss and provide feedback on the “leverage blobs”. Participants were asked to consider their experiences and influence within the realm of bioplastic packaging, discuss what would need to happen in the system to move towards their ideal vision, and to identify potential leverage points.

Participant Knowledge, Experience and Influence

Workshop participants identified a wide range of knowledge, experience and influence in the system, including:

- Being a part of various professional networks, which can connect and engage different stakeholders including senior levels of government, small businesses, large-scale producers, composters, researchers and funders.
- Detailed knowledge of various materials and feedstocks that could be used for bioplastic packaging, including agricultural residues, wood pulp, and additives.
- Understanding of the bioplastic product innovation process and emerging research.
- Provision of research and data about bioplastic products, their sustainability and biodegradability.
- Practical experience with bioplastic products throughout its life cycle, including current performance requirements and capacities, how they are managed in current collection and processing systems, sustainability of specific products, and material options.



- Knowledge of consumer base and customer perspectives related to wanting sustainable options for bioplastics in the context of a waste prevention hierarchy framework, including when to use bioplastics versus other options.
- Policy and government experience, including intergovernmental relations, multi-level policy development, and municipal policy and by-law development.
- Education, communications, and outreach experience with municipal residents, businesses, schools and bioplastic product designers.

Conditions to Change the System

Participants considered the conditions and changes that would need to happen to move towards their ideal system related to bioplastic innovation and use. The following key themes were identified. In addition, the need to support an ethical social foundation, biological boundaries, and environmental sustainability across the entire system was emphasized by some participants throughout the discussion as an underlying value, which can be conceptualized as a "donut economy" (Figure 1).

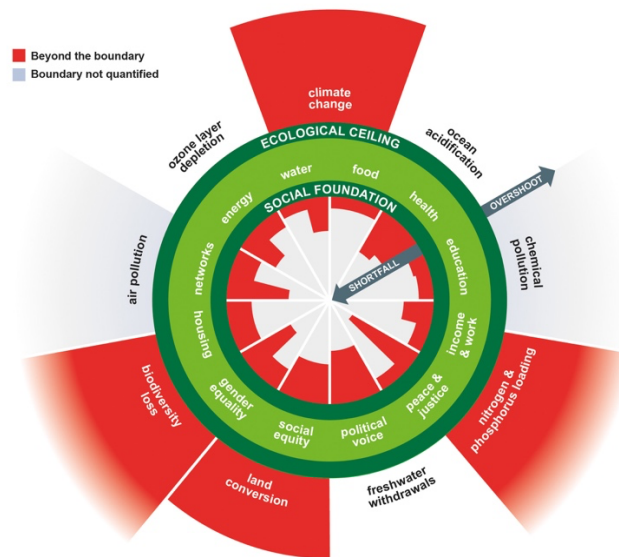


Figure 1: A conceptual representation of the donut economy (World Economic Forum, 2017)

Accepted, clear, and consistent standards

- Need to have standardized and regulated definitions for products (bioplastic, biodegradable, compostable, etc.).
- Products need to be labelled in a way that is effective throughout the life cycle so they can be distinguished, not just for users, but for processing facilities.
- Compostability and recyclability requirements need to be reflective of real-world end of life processing conditions.
- There should be a common framework for product acceptance in recycling and composting facilities.
- Methods for measuring lifecycle and environmental impacts need to be transparent and consistent.

Accessible, transparent and credible information throughout the product life cycle

- Materials: Material types and properties; tracking and transparency around residue types and quantities produced by feedstock industries.
- Bioplastic production: Materials used; length of time to break down; testing conditions; standards used and adhered to; producer's certifications.
- Bioplastic products: Materials used; sustainability and environmental impact; standards used; producer's certifications; end of life options.
- End-of-life: Available end of life pathways for different products; what products are accepted at waste management facilities; how products may gain acceptance at waste management facilities; what

compostability, recyclability, or reusability standards should products be designed to, based on available end-of-life pathways.

Compatibility between bioplastic products and end-of-life processing options

- Designing products for end of life options.
- Clear end of life pathways.
- End of life management infrastructure with the capacity and willingness to process bioplastics.

Ethical and sustainable bioplastic material sources

- Respecting biological boundaries (e.g. not removing residues that provide regenerative services in their environments).
- Using ethically sourced residues and waste as a material source for bioplastics.
- Not displacing current industries and feedstock uses.

Supports and certainty for industry and business

- Investment in bioplastic innovation that is not hindered by the current limitations of end-of-life pathways.
- Lower barrier to entry and greater information and financial support for bioplastic innovators and producers (i.e. a level playing field with conventional plastic research and innovation).
- Information and financial support for food service businesses to transition away from conventional plastics to more sustainable alternatives (which may include bioplastics).

Leverage Points

Throughout the exercise, participants discussed potential leverage points and approaches that could contribute to systems change. Some of these potential leverage points included:

- Influencing purchasing and disposal behaviour through norm-setting in school environments and municipal/regional district guidance to residences and businesses
- Resources (not just money) to incentivize and support small businesses working on developing alternative bioplastic products that use more ethical and sustainably sourced materials and are designed with considerations for whole life-cycle impacts (i.e. market diversification)
- Shifting testing and labelling of bioplastic packaging from voluntary measures to regulated standards to level the playing field
- Increasing the value of compostable and recyclable packaging (including bioplastics) to increase its collection (e.g. changes to EPR to include more products, deposits)

What's Next?

This concludes our first Bioplastics three session workshop. Thank you for contributing your time and expertise to the Food Systems Lab and SIMBIO Project! Workshop 2 "Designing Potential Solutions" will take place in January 2021, dates still to be announced. We hope to see you there!

References

Meadows, D. (1999). Leverage Points: Places to Intervene in a System. Retrieved from: http://www.donellameadows.org/wp-content/userfiles/Leverage_Points.pdf

World Economic Forum. (2017). 15-hour weeks, basic income and doughnuts. Are these the big ideas that could end inequality? Retrieved from: <https://www.weforum.org/agenda/2017/04/15-hour-weeks-basic-income-and-other-big-ideas-for-a-new-economy>