

## **Report of the North America Major Groups and Stakeholders Regional Consultations in Preparation for the Fourth Session of the United Nations Environment Assembly (UNEA-4)**

The UN Environment North America Office hosted two **distributed virtual consultations** in preparation for the fourth Session of the United Nations Environment Assembly on the themes of ***Innovations to Address the Challenges of Food Waste and Single-Use Plastics in the Region*** on January 22 and February 5, 2019 respectively.

The goal of this new approach was to enable a broad range of geographically dispersed stakeholders from across the region to participate and provide inputs into the Assembly, while decreasing overall carbon emissions associated with related travel. This consultation model was particularly appropriate for the North American region due to the large land mass of Canada and the United States and its diverse ecosystems and populations. The distributed virtual consultations model increased access to the assembly process and enhanced stakeholder participation.

### **The Distributed Consultations Model**

Each of the two-hour consultations connected 10 to 13 physical and virtual hubs across North America into a single virtual platform, enabling us to connect different hubs. Each hub hosted a group of up to 20 participants, allowing us to connect 187 participants. An additional “virtual” hub of 20 participants was created for each of the consultations and moderated by its own facilitator. These were created to accommodate organizations that were not in close physical proximity to any of the hubs.

All the hubs connected into a virtual “plenary” at the beginning of the consultation for introductions and background presentations. The hubs subsequently split into groups for localized discussions on the topics, moderated by a facilitator and a note taker. All hubs reconnected into a virtual “plenary” both in the middle and at the end of the session to report back key points of discussions and recommendations. The virtual “plenary” was facilitated by the Lead Technical Facilitator, who called upon each hub to report back and moderated conversations between hubs.

The consultations were powered by MIT Solve using WebEx Room, a technology widely accessible to the public and easy to use.

### **Our Partners**

Our partners, MIT Solve, the National Council for Science and the Environment (NCSE), the United Nations Association of Canada (UNA Canada)<sup>1</sup> and ICLEI – Local Governments for Sustainability, played a key role in gathering a wide range of stakeholders, building on their large networks. They were instrumental in identifying and securing host organizations for the hubs and identifying facilitators. The second set of partners were the organizations which hosted the physical hubs (see below).

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<sup>1</sup> NCSE and UNA Canada are the two regional facilitators for North America that will be present at UNEA-4.

## Part 1 - The North America Major Groups and Stakeholders Regional Consultation on Innovations to Address the Challenges of Food Waste in the Region, January 22, 2019

The distributed regional consultation on Innovations to Address Food Waste gathered 80 participants from seven major groups and other stakeholders, spread across nine 'hubs' throughout the US and Canada, and a tenth hub made up entirely of virtual participants:

### US Hubs:

1. Boston, Massachusetts hosted by MIT
2. Des Moines, Iowa hosted by ICLEI
3. Irvine, California hosted by University of California at Irvine
4. Washington, D.C. hosted by World Food Organization (FAO)
5. Fairfax, Virginia hosted by George Mason University

### Canadian Hubs:

1. Calgary, Alberta hosted by Cisco
2. Halifax, Nova Scotia hosted by Cisco
3. Montreal, Quebec hosted by Cisco
4. Vancouver, British Columbia hosted by Cisco

The objective of the consultation was to provide a forum for North American stakeholders to discuss regional innovations to reduce food waste along with barriers to creating or scaling up innovations, as an input into the preparatory process for UNEA-4.

Participants discussed the following four questions:

1. *What have you observed as major trends related to food waste, innovation, and environmental sustainability in the past two years?*
2. *What are the drivers of, and most common barriers to, innovation in food systems and waste streams for North America?*
3. *How do various sets of actors influence these drivers and barriers? How can they most effectively respond to them in order to enhance sustainable food production and mitigate food loss and waste?*
4. *How can successful experiences in food loss and waste management be catalyzed and scaled-up?*

Barbara Hendrie, Director, UN Environment North America Office and Alexander Dale, Senior Officer for Sustainability Community, MIT Solve delivered welcoming remarks, introduced the Assembly, and framed the issue of food waste in a North American context.

### **Key Messages<sup>2</sup>**

The issue of food loss and waste has become more prominent on stakeholders' agendas in recent years. This increased saliency also includes a growing emphasis on reducing food waste rather than recovering it for consumption or re-use. This shift in priorities aligns very well with the US Environment Protection Agency's Food Reduction Hierarchy, which prioritizes source reduction and then moves to feeding people and animals, reprocessing, and finally composting as alternatives to landfilling.

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<sup>2</sup> The main points raised during the conversations among the ten hubs are captured in this section. This summary reflects areas of general consensus that emerged from the consultation. The individuals and organizations present at the meeting do not necessarily endorse every conclusion.

### *Current trends in stakeholders' innovation*

- Participants cited two waves of organizations and innovations in food waste in the last few years. The first wave is predominantly nonprofit organizations that focus on recovery for food insecure people. The second wave is made of social enterprises aiming at helping businesses drive reductions in food waste through new alternative products or business models that utilize or decrease food waste by design. There was a consensus among participants that one approach consists of promoting local innovation that is focused on a specific context, rather than on startup models that can make a billion dollars and scale to hundreds of cities in a short time frame. Participants emphasized scaling the impact or ideas through replicating and re-contextualizing local examples, rather than scaling up specific startup models.
- Non-governmental organizations (NGOs) focused on local food recovery are growing, including “on-farm gleaning” of unharvested food, pre- or post-consumer collection for feeding food-insecure families, or food scrap collection for local composting operations.
- Municipalities are learning from other jurisdictions who adopted early policies on food waste, including more bans on food waste in landfills.
- Consumers, particularly younger generations, are more aware of food waste as an issue and more open to solutions such as buying ‘ugly’ produce. The rise in conscious consumerism and specific diets such as veganism or vegetarianism were seen as correlating well with action on food waste reduction. Younger generations are interested in more information about where their food is grown and the quality of supply chains and what they purchase. Paired with an interest in specific diets, these groups are willing to pay more money, rather than see higher environmental impacts linked with food waste.
- Many groups highlighted specific drivers for change or opportunities that innovators are or could be pursuing:
  - There is an opportunity for better storage/preserving techniques, particularly those methods that do not involve systematic usage of single-use plastic.
  - Food maximization could be a growing industry, particularly in rural areas, based on the concept of “the next best use”. This is also an opportunity for the education system to be a better on-ramp for working in the food supply chain as a more sustainable career. Food loss and waste management is an important opportunity for rural economic development, particularly in Canada.
  - Terrestrial food production dominates the conversation, but there are large amounts of waste in the fishing industry at all levels of its value chain. Managing this waste is of great importance to coastal communities, which are open for innovative approaches.
  - Food waste has value as animal feed, typically for pig farms but also for zoos and, with some processing, as commercial livestock feed or pet feed. More opportunities to use food scraps for animals rather than compost could be pursued.

### *Barriers to innovations*

However, different stakeholders face different barriers that prevent more action on reducing impacts from food waste and loss.

- Consumers in the region generally still lack clear incentives to change behavior. Many participants mentioned the lack of direct costs to throwing away food at the individual consumer level. This is paired with a “culture of abundance” mindset that encourages over purchasing habits.
- Current regulatory structures were cited in equal measure for having created and stabilized markets in some cases (e.g. through landfill organics bans), and prevented them in others (e.g. through preventing processing of food scraps). Strong local level policies are still rare, and regulations were seen as creating a strong incentive, both for new innovations and for existing actors to pursue change. Finally, municipal policies have limited impact on regions or state/provincial-scale food systems, and many hubs highlighted the need for broader policy frameworks to support larger and more stable markets.
- Different actors in the food chain system, such as farmers, markets, and consumers, are well-connected to traditional supply chains. However, the actors often lack the infrastructure – physical assets and/or regulatory permission – to move material between stages that are not traditionally connected, such as residents and nearby farms that could use food scraps as animal feed. Missing infrastructure limits stakeholders’ ability to pilot new approaches without significant capital expenditure. For example, *Save that Stuff*, an urban composting facility in Boston, MA was encouraged by Cambridge, MA, and provides a missing link that has now enabled other surrounding municipalities to pursue residential composting programs.
- Farms are a source of food loss for many reasons, including a lack of labor for harvesting, insufficient market value to pay for harvesting, and insufficient shelf life or processing. Stakeholders recognized the importance of addressing food loss at farms, but also recognized that various subsidies and socioeconomic policies in place to assist farmers also contribute to food loss. These can be hard to change due to inadequate policy frameworks or social norms.
- Data was cited as both a barrier and potential opportunity. Data on food losses or wasted food is often limited, and is not standardized. Data from farms was noted as being particularly limited and more complex to improve. Data would be valuable for many reasons:
  - Consistent data would help demonstrate potential cost savings or environmental impacts to both public and private stakeholders, or compare the potential outcomes of programs across different communities.
  - Businesses are interested in data making the case for? reducing over purchasing, identifying waste and saving money, and de-emphasizing organics bans by enabling earlier action during food preparation or purchasing.
  - Publicly developed data on food waste, even as a baseline, would enable local innovators to utilize it in developing new tools or businesses. Standard metrics or interoperability would help scale-up these innovations.
- Food waste management has been tightly connected to helping people struggling with food insecurity due to a focus on recovery through food banks. Participants highlighted a need to consider the issues of food waste and food insecurity as tightly linked, but requiring different efforts to address root causes. In particular, with a greater focus on reduction of food waste overall, several food recovery organizations have already seen a decline in food available for food insecure people, and a need to tackle root issues like poverty simultaneously.

- Other potential risks linked to the management of food waste include:
  - Continuing the expansion of food recovery organizations risks building a greater set of services rooted in unsustainable donations, causing increased tensions with food insecurity if those donations become unavailable as a result of existing efforts.
  - Aiming to improve shelf life or preservation could lead to a greater use of single-use plastics and a less circular food system, a topic discussed in the other regional consultation.
  - A more efficient food system or better recovery of food waste could lead some consumers to further discount the value of waste and lead to more purchased but uneaten food, a phenomenon observed with energy efficiency.

## Key Recommendations

The recommendations from the consultation build on the key points above, focusing on ways that all stakeholders can catalyze, encourage, and support the scaling up of innovation.

- **Governments or funders** should help develop both good baseline data on the scope and nature of food waste and establish a shared set of metrics that can be useful for multiple sectors and database systems and easily adopted across the region.
- **Funders** (both grants and debt/equity) should encourage replication of innovations from other places, rather than focusing solely on novelty or profit potential.
- **Foundations** should encourage and support cooperative multi-organization applications to decrease competition and drive cross-sector work and success.
- **Governments or foundations** should help build capacity for networks of similar small organizations – whether food recovery, food reuse, composting, regenerative farming, food hubs, etc. – to have a voice in regional planning and policy discussions.
- **Governments** at all levels should consider best practice policies from other jurisdictions, including broader bans on organic materials in landfills or eliminating restrictive regulations that inhibit new approaches to addressing food waste. Simultaneously, future policies should incentivize more comprehensive management of food waste by private sector actors using both fines and restrictions along with incentives.
- **Food retailers** should pressure suppliers for better information on food loss or waste in their processes, by drawing on consumer interest.
- **The private sector** should pursue and embrace solutions that can help monitor and reduce food waste across operations.
- Given the interplay between different parts of the supply chain, **all stakeholders** should work to build trust between different actors in a given geographic area.
- Consumer education will continue to be a key piece of the solution, but **all stakeholders** should recognize that they have a role in educating the general public. Participants cited examples of ‘pick your own lettuce’ restaurants, retailer education on ‘ugly’ produce, farms that also provide educational programs, and municipal information on composting programs.

## Part 2 - The North America Major Groups and Stakeholders Regional Consultation on Innovations to Address the Challenges of Single-Use Plastics in the Region, February 5, 2019

The distributed regional consultation on Innovations to Address the Challenge of Single-Use Plastics gathered 107 participants from eight major groups and other stakeholders, spread across twelve 'hubs' throughout the US and Canada, and a thirteenth hub made up entirely of virtual participants.

### US Hubs:

1. Boston, Massachusetts hosted by MIT
2. Washington DC hosted by National Geographic
3. New York City, New York hosted by the Long Island University – Brooklyn Campus
4. Denver, Colorado hosted by the Municipal Service Center
5. Irvine, California hosted by the University of California at Irvine
6. Monterey, California hosted by Think Beyond Plastic
7. Honolulu, Hawaii hosted by Hawai'i Green Growth
8. Athens, Georgia hosted by the University of Georgia

### Canadian Hubs:

9. Ottawa, Ontario hosted by Cisco
10. Montreal, Quebec hosted by Cisco
11. Toronto, Ontario hosted by Cisco
12. Vancouver, British Columbia hosted by the David Suzuki Foundation

The objective of the consultation was to provide a forum for North American civil society stakeholders to discuss innovations to address the challenge of single-use plastics and provide input into the upcoming United Nations Environmental Assembly.

Using the same format as the previous consultation, participants were invited to discuss the following three main questions:

1. *What are the groundbreaking innovations for a single-use plastics free future?*
2. *What are the drivers and barriers to innovations for alternatives to single-use plastics in the region?*
3. *How can successful experiences be catalyzed and scaled-up?*

Barbara Hendrie, Director, UN Environment North America Office delivered welcoming remarks and presented the process and key themes of the upcoming Assembly and Jenna Jambeck, Professor of Associate Professor, College of Engineering, University of Georgia, delivered a keynote on the challenge of single-use plastics in North America.

### **Key Messages<sup>3</sup>**

#### *A recognized challenge with structural barriers to change*

The overall consensus from all of the hubs is that single-use plastics is a widely-recognized challenge, but one that has seen less substantial progress compared to food waste, partly as a result of several large barriers to effective action at scale. Much of the progress to date has been from voluntary restrictions by interested businesses or consumers. Among the barriers that were identified are the following:

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<sup>3</sup> The main points raised during the conversations among the ten hubs is captured in this section. This reflects areas of general consensus that emerged from the consultation. The individuals and organizations present at the meeting do not necessarily endorse every conclusion.

- The costs and impacts of single-use plastics are highly externalized, including the costs of recycling contamination, ecosystem contamination, or climate change. Internalizing these costs will likely require broad regulation motivated by citizen interests rather than a specific constituency.
- As a result of externalized costs, there are few economic incentives for businesses to switch from single-use plastics to alternative materials or reusable approaches, either for their own purposes or for their customers. Fossil fuel-based plastics are cheap and easier to manufacture, compared to recyclable plastics or other alternatives in the region.
- Participants noted the many different uses of single-use plastics in the agricultural sector, the retail sector, the medical sector, and the manufacturing sector, among others. It was noted that most single-use plastics are used in direct connection with consumers.
- Local health codes from restaurants make accepting customer-provided reusable containers either prohibited or a liability (real or perceived). This practice will persist and will limit action until stakeholders in several sectors can coordinate clarifications or changes to local policy.

#### *Strong Opportunity for Government Action*

Hubs agreed that addressing these barriers will require a broad systemic approach which includes lifecycle analysis of costs and impacts of current and future approaches. As part of that systemic approach, governments have a strong role to play in creating market opportunities.

To date, bans have reduced hard-to-manage plastics such as plastic bags, Styrofoam containers, or straws in municipalities, states, and provinces across the region. Replacing these items either directly with different materials or through different business models represents a policy opportunity.

A key driver for businesses would be robust Extended Producer Responsibility systems that incentivize redesign and responsibility for those single-use plastics that continue to be used. Hubs cited the efforts of both Canadian cities and provinces, in conjunction with a federal EPR policy. However, they noted that EPR policies are currently geared towards fines for unmanaged waste rather than any positive incentive for systemic redesign.

Local governments have a key role in determining what infrastructure is available, including collection processes and composting/recycling facilities. Local regulation also determines whether new approaches can be legally piloted to test effectiveness.

Participants also noted a disjoint between local grassroots efforts and national or international conversations. US participants noted that there is no federal policy on single-use plastics or Extended Producer Responsibility (EPR), and so national conversations are driven by specific NGOs connected to a variety of broad issues, while local action has often started with specific bans in mind. A few examples have scaled from local initiatives to broader action, such as the efforts of the *Surfrider Foundation*, where a local program to reduce single-use plastic availability became a certification program to recognize restaurants that use no Styrofoam, provide reusable utensils, and eliminate plastics bags.

### *Consumer pressure is key to creating market demand*

Consumer education was listed as a major opportunity and a major need for driving large-scale change, either for the adoption of new products or services or policies to incentivize changes and innovation by industry. At the same time, several limitations to broad public education efforts were mentioned, including:

- Traditional campaigns around recycling are seen as having lost effectiveness, leaving consumers confused about what they can recycle. In addition, the numerical classification does not map to recyclability – many facilities will accept any hard-plastic containers but no plastic films, even if both might be labeled as #4 recyclable plastic.
- Labels can be a good opportunity to encourage better consumer choices, but there are no shared definitions on issues such as ‘ocean degradable’. The numerous NGOs working on consumer education might benefit from greater coordination for a shared and effective campaign.
- Helping consumers understand where plastics go after use can help shape the overall conversation around plastic waste management – understanding that exported plastic waste may go to places with poor waste management systems, and unexportable plastic waste may end up in close proximity to economically stressed communities or end up in landfills.
- A new push to focus on zero waste rather than recycling was mentioned as a key opportunity. With rising awareness of the need to reduce carbon emissions, tying action on single-use plastics to national targets to reduce carbon emissions could also help raise awareness and shift behavior.

### *Drivers for Innovation*

With existing consumer pressure and sporadic policy support, a growing number of innovations are appearing throughout the region. Innovations are focused primarily on either business models (e.g. replacing single-use items with refillable versions) or alternative materials which are bio-based and biodegradable (with limitations as noted below). Participants were enthusiastic at the potential of new startups but note that almost all are in their very early-stage of establishment, with little market traction to date.

Several additional innovation needs were mentioned as potential opportunities:

- The development of new plastic dyes or additives which are compatible with repeated recycling without impeding plastic or product quality or human health.
- Improving options for replacing or eliminating plastic packaging, particularly films. Films are rarely recyclable but are increasingly common in e-commerce and other industries
- Identifying new financial and business models that encourage rather than discourage EPR, even in the absence of broad policies.



- One solution mentioned was gasification technology, which can use plastic waste to either create energy or feedstocks for new plastics. While noted for its industry traction and potential benefits in dealing with non-recyclable plastic waste, it was criticized by NGO participants as a potential source of ash and new emissions. Debate on the overall value of this technology to managing single-use plastics and moving towards a circular economy is ongoing.

While several types of alternative materials were discussed, compostable plastics were a particular point of significant disagreement among hubs and participants. Some groups highlighted that these materials are a direct replacement for single-use serviceware, but should decompose rather than persist in the environment. They may also be sourced from biological sources, eliminating demand for fossil fuel. However, other participants noted that they are a contaminant in traditional recycling streams and require specific infrastructure to ensure proper disposal. That infrastructure is still not common, and the similarity in appearances can be confusing to consumers. Finally, compostable plastics do not drive a shift away from single-use items, potentially maintaining a system with high material volume, even if that material is decomposable at end-of-life.

Overall, participants felt that this challenge is important for innovators in North America to tackle, both in developing new materials and shifting the regional culture towards less consumption of single-use items and more of reusables. For this to happen, governments have a strong role to play in creating a level playing field and generating market opportunities, and consumers will need to maintain pressure and demonstrate their desire for change.

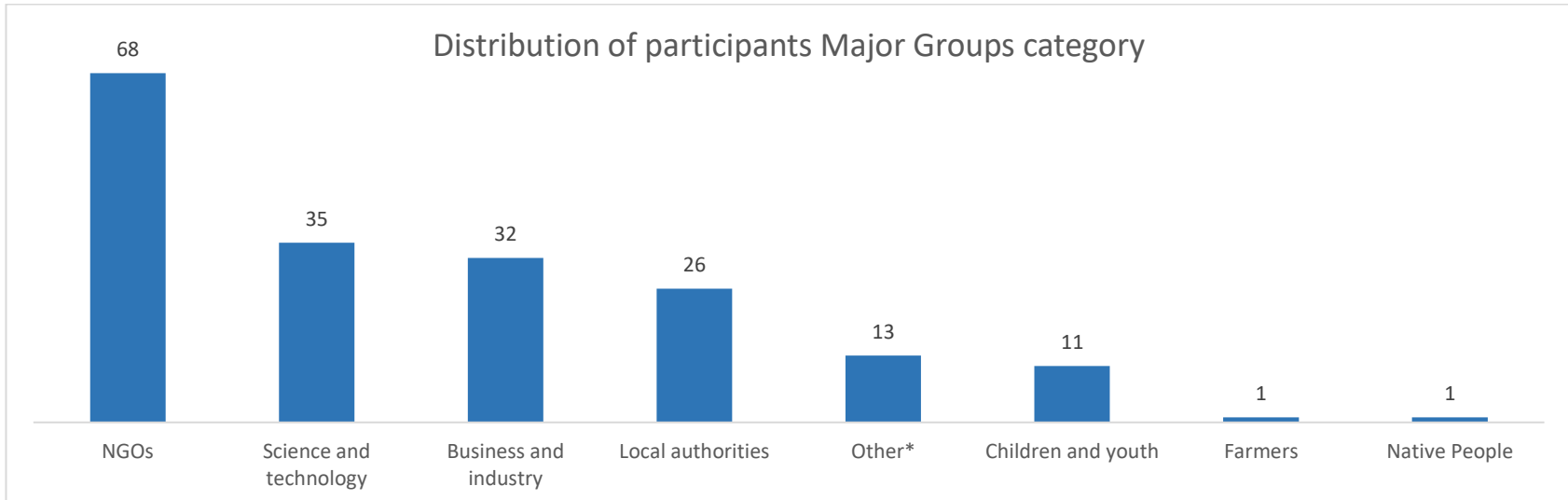
## Recommendations

Hubs identified a variety of actions for all types of stakeholders, focused on reducing current consumption of single-use plastics while setting up innovation for longer-term and larger-scale shifts towards more reusable or biodegradable materials as part of a circular economy.

- **Local governments** should help develop infrastructure to manage new materials such as compostable plastics, including updated collection infrastructure and consumer education.
- **Health departments** should work with local businesses to enable reusable serviceware at restaurants, either through education on current policies or updated policies.
- **Governments** at all levels should target bans on specific materials or products in such a way as to reduce total lifecycle impacts and avoid encouraging replacement with high-impact alternatives.
- **Institutional buyers** such as school districts should eliminate Styrofoam and other unrecyclable materials from procurement processes, using their buying power to drive aggregated change. Environmental offices at these institutions should provide procurement training on alternative materials.
- **Schools and workplaces** should encourage behavior change through education on alternatives and making options like reusable utensils easy.

- **Universities** serve as a strong resource to communities providing current scientific data and research to help inform policies and offer access to the latest technologies aimed at reducing the consumption of single-use plastics. They should be invited to contribute to reinforcing the use of more ecologically friendly, biodegradable and/or reusable materials.
- **Private industry** should consider a coordinated shift in consumer education around product labelling and post-consumer management, as the current numerical system is confusing for consumers and leads to contamination in single-stream recycling systems. New systems of labelling or a focus on zero-waste may be fruitful.
- **Foundations** should support more political advocacy aimed at regulation that internalizes waste management costs to producers, including ecosystem damages. Support for coalitions of NGOs, scientific organizations, and industry actors could be particularly valuable.
- **Governments or foundations** should help build capacity to test new materials or processes at a small scale. This might include access to lab facilities, industrial processing space with access to actual waste streams, or simplified short-term permits.
- **Funders** of all kinds should devote more resources to validating pre-commercial prototypes of materials or business models in real-world conditions, and work with corporate buyers to enable broader scale-up once tested. Where possible, funders should seek innovators with social impact in their model, in contrast to direct private-sector replacement focused only on capital return.

**Annex 1 – Major Groups and Stakeholders Distribution (for both consultations)**



\*The “Other” category includes: government, media, and United Nations representatives.

