

Joint OECD/UNECE Seminar on the Implementation of SEEA

Measuring the circular economy and plastic waste

March 2021

Delivering insight through data, for a better Canada



Statistics
Canada

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Canada

Outline

- Background
- Policy context in Canada
- What is Circular Economy (CE)?
- Plastics and CE at Statistics Canada
 - Project to develop a plastics account
 - Project to Improve Waste Statistics

Policy context for Circular Economy (CE) and plastics reduction in Canada

- First area of focus on the CE work will be to support Environment and Climate Change Canada to measure progress towards achieving the goals set out in the **Canada-Wide Action Plan on Zero Plastic Waste (CCME, ECCC)**
- *Interdepartmental meetings on CE occur across various federal departments in Canada in order to help meet various socio-economic goals*

Canada-wide Strategy on Zero Plastic Waste

- Environment and Climate Change Canada has funded Statistics Canada to develop methods for measuring progress, conduct surveys, and explore other sources of data

Ocean Plastics Charter

- Assessing current plastics consumption and undertaking prospective analysis on the level of plastic consumption by major sector use

What is the Circular Economy (CE)?

- The CE is a movement away from a linear “take-make-waste” model, where we extract resources in order to make, use then dispose products when they stop being useful
- The CE is about extracting as much value as possible from our resources:
 - Reuse – Repair – Repurpose – Refurbish – Recycle
- Movement towards a more circular economy would help to reduce resource extraction, waste and GHG emissions
- World Circular Economy Forum 2021
 - Statistics Canada will support Environment and Climate Change Canada as they prepare to co-host the World Circular Economy Forum from September 13-15 2021 in Toronto. This is the first time the forum will be held in North America.

Plastics and CE at Statistics Canada Project to Improve Waste Statistics

- Three-year project that will deliver:
 - A robust and replicable approach to estimate quantities of plastics throughout various stages of their lifecycles
 - Better data on plastic resin production and use through modified surveys
 - Qualitative indicators of consumer behaviours on the use of plastic products in the home
 - A plastics Physical Flow Account

Plastics and CE at Statistics Canada Project to Improve Waste Statistics

- Changes to surveys

- Enhanced questions on diverted materials on the *Waste Management Survey (WMS)* to capture better detail, particularly with respect to plastics.
- Expanded scope of WMS to include processors of post-consumer plastic wastes as well as materials managed through stewardship arrangements.
- Introduced content to the *Industrial Chemicals and Synthetic Resins Survey*
- Introduced content to *Households and the Environment Survey* regarding behaviours related to dealing with plastic waste in the household, what programs are offered by municipalities, uptake, etc.
- Added additional content and expanded sample for the *Annual Survey of Manufacturing and Logging Industries* targeting the production and use of plastics by manufacturers.
- Existing and new data sources will be used as inputs to the Physical Flow Account on Plastics

Plastics and CE at Statistics Canada Project to Improve Waste Statistics

- Plastics Physical Flow Account
 - We plan to use the SEEA as the framework to develop useful plastics statistics, including production and use, through a Physical Flow Account.
 - To produce the account, we are working with experts from the national economic accounts team as well as experts from the input/output modelling team to develop a pilot physical flow account for plastics.
 - We plan to use what we learn through our accounts work on plastics to other materials in the CE (i.e. other resources).
- Other data collection approaches
 - Use of administrative data sources where possible
 - Establish partnerships with stewardship organizations

Early challenges and concerns for plastics PFA and expected key variables and indicators

- Challenges

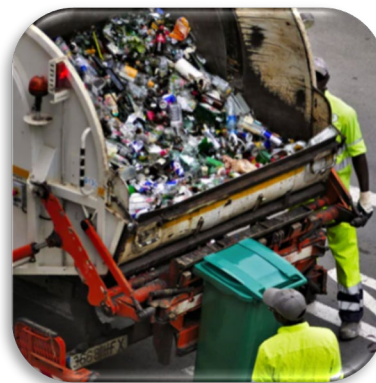
- Choosing the most appropriate methodology (e.g., input-output modelling, System of National Accounts, etc.)
- Developing coefficients to convert financial estimates into physical quantities
- Figuring out how many years certain plastic goods stay in the economy (e.g., those that are not disposable or capital goods)
- Survey data not yet granular enough to get at all the different types of plastics required and/or regional data

- Key variables

- Quantities of plastics produced in the economy
- Uses of plastic materials at various stages of the production and use processes
- Amount of plastics being re-integrated into production processes

Plastics Material Flow Account

- How much plastic is produced
- What is the fate of that plastic:
 - What amount is discarded?
 - What amount is leaked into the environment?
 - How much is collected?
 - How much is diverted from the waste stream?
 - How much of that is baled/recycled?
- By physical units (tonnes)
- Data provided by industry and resin type



Example of plastics material flow account

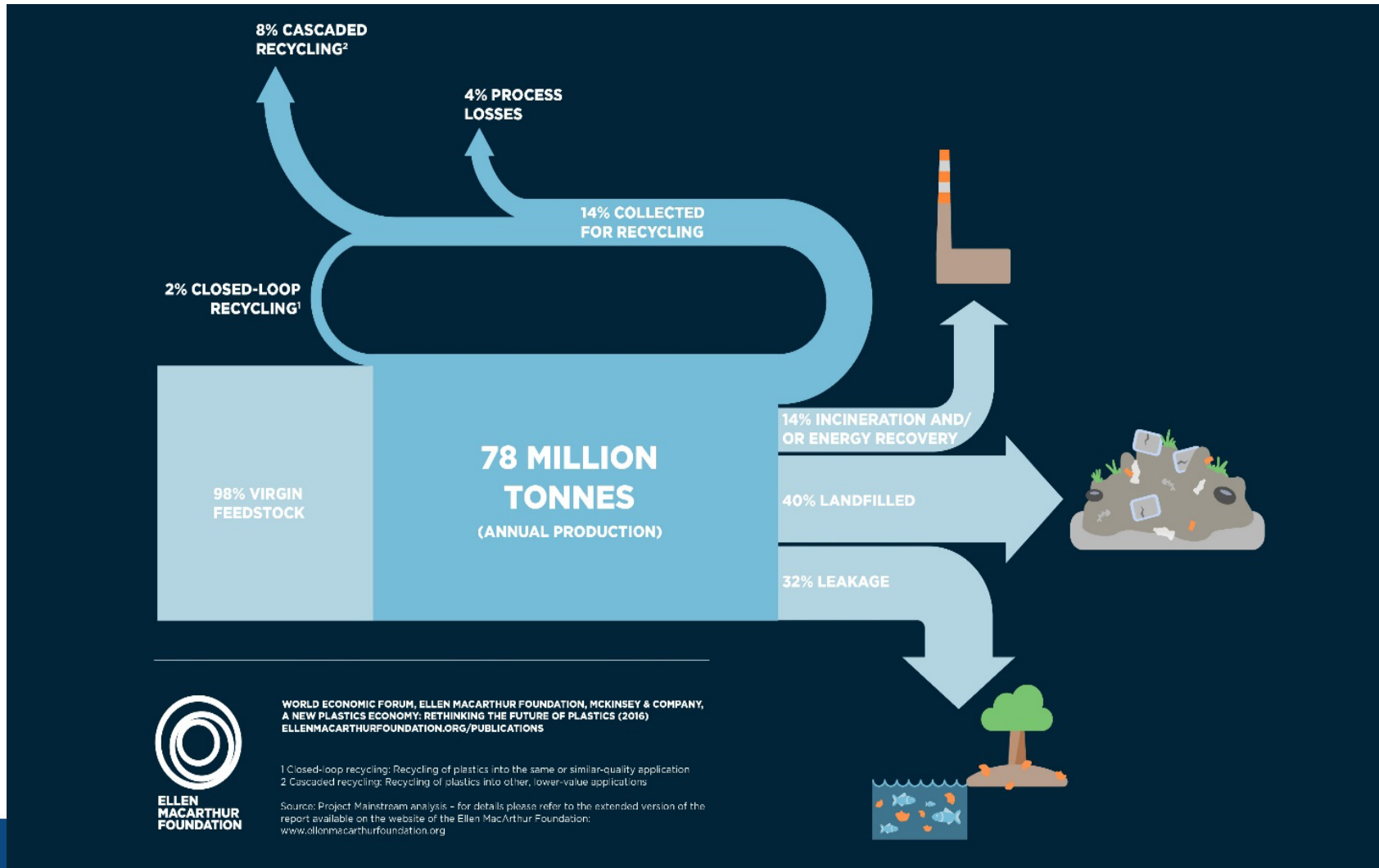
PRODUCTION OF PLASTIC WASTE

| | |
|-------|--|
| GEN | Quantity of plastics in products generated for the Canadian market (accounting for imports & exports). |
| DELT | Share (%) of product category that is in use (before reuse). |
| QUANT | Quantity of plastics discarded. |
| LEAK | Quantity of plastic waste lost to the environment (litter on land or water.) |
| COLL | Quantity of plastics in waste collected for recycling or disposal. |

FATE OF PLASTIC WASTE

| | |
|---------|--|
| R1 | Quantity of plastics in waste diverted and sent to domestic MRFs. |
| D1 | Quantity of plastics in waste sent to disposal. |
| R2 | Quantity of plastics in bales and sorted waste sent to domestic recyclers (sorting yield) |
| D2 | Quantity of plastics in waste sent to disposal by MRFs. (Amount rejected at sorting facilities.) |
| R3-MECH | Quantity of mechanically recycled plastic from diverted waste. |
| R3-CHEM | Quantity of chemically recycled plastic from diverted waste. |
| D3 | Quantity of plastics in recycling waste sent to disposal. Represents the fraction rejected by the recyclers. |
| D | Quantity of total plastics in waste sent to disposal. |
| D-CHEM | Quantity of chemically recycled plastic from disposed waste. |
| D-EFW | Quantity of plastics in disposed waste incinerated with energy recovery. |
| D-LANDF | Quantity of plastics in disposed waste sent to landfill. |

Plastics and CE at Statistics Canada Project to Improve Waste Statistics





Thank you!

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