

Understanding the environmental footprint linking our production and consumption

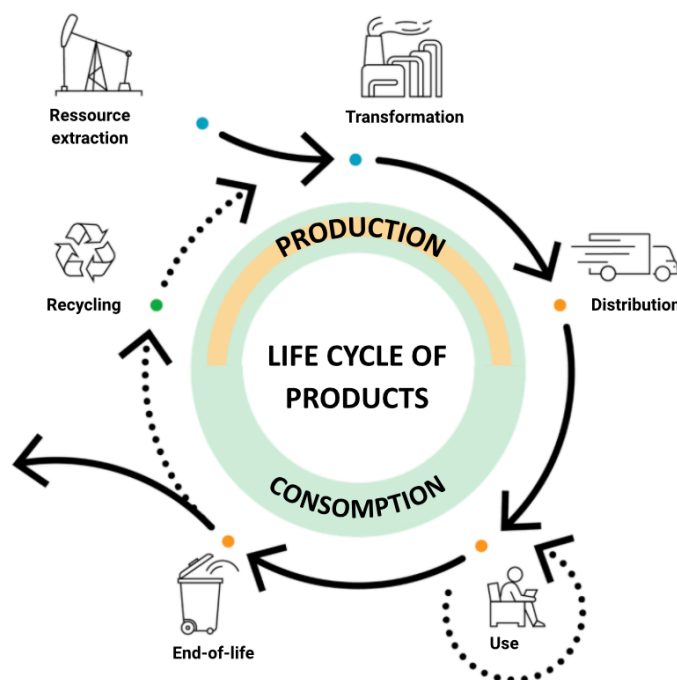
POLARIIS+ (People-Oriented Life-cycle Assessment Results & Inventories for Informing Sustainability) is a project developing a collaborative and scalable life cycle assessment (LCA) infrastructure that aims to:

- Structure, estimate, and share life cycle inventory and environmental footprint data on consumption and production in Quebec and Canada
- Better understand the environmental impacts associated with lifestyles and production systems
- Support more informed decision-making among citizens, organizations, and governments toward more sustainable ways of living

POLARIIS+ is led by the CIRAIG, an internationally recognized research group and center of expertise on the development and implementation of life cycle and sustainability metrics. For over 25 years, the CIRAIG has helped industries, governments, organizations, and consumers in their transition toward a more sustainable society, grounded in a rigorous scientific approach.

What is life cycle assessment (LCA)?

- A standardized method for assessing the environmental impacts of a product or service across its entire life cycle
- A perspective covering every life cycle stage, from raw material extraction to end-of-life, including transformation, transport, use, and recycling
- An approach that goes beyond carbon footprint to also include impacts on biodiversity, resources, water, and human health
- A tool for comparing the impacts of different products and services



POLARIIS+ covers the highest-impact consumption sectors in Canada and its provinces, along with their corresponding production sectors

1 infrastructure

5 sectors under development

3 forthcoming



food



transportation



housing



digital



hygiene



textiles



energy



materials

Current limitations

- The data are rarely linked to consumption patterns
- There is a lack of specific and regionalized data for Canada and its provinces.
- The data and analyses are often developed for one-off uses and are difficult to reuse
- The available data lack both granularity and methodological transparency



POLARIIS+'s innovation

- A systemic approach linking production and consumption
- Specific and regionalized data for Canada and its provinces
- Structured, well-documented, up-to-date data, regularly updated
- Data based on a transparent methodology, compatible with confidentiality requirements
- Data that is more representative of the diversity of actors, practices and value chains



What POLARIIS+ can do for you

- Allow governments to calculate and track the environmental footprint of products and value chains
- Build parameterized models tailored to Canada's context, specifics, and provincial realities
- Access robust, specific, and regionalized reference data for Quebec and Canada
- Identify actionable reduction levers, monitor their impact over time, and support carbon neutrality pathways
- Integrate additional environmental indicators, such as damage to human health and ecosystems, into decision-making
- Benchmark the environmental performance of sectors, value chains, or scenarios using comparative data
- Support more transparent, credible, science-based environmental communication
- Be part of an innovative academic research project by contributing to the development of a Canadian database

How to get involved

- Financial support for the development and long-term viability of the infrastructure
- Contribution to the development of reliable sector-specific data
- Scientific partnership to improve methods, assumptions, and model quality
- Use of POLARIIS+ in your projects, with sharing of the resulting data and findings

For more informations

CIRAIG - POLARIIS+ Project

mail: polariis@ciraig.org