

GHG Inventory: São Leopoldo and Unisinos Partnership

BACKGROUND

In alignment with the necessity of implementing a policy to address climate change, the Municipality of São Leopoldo has initiated a series of actions, with the preparation of the first inventory of greenhouse gas emissions in the municipality being one of them. The development of these documents relies on the collaborative efforts of the local university (UNISINOS) through its Postgraduate Program in Civil Engineering (PPGEC).

Project description

The partnership between the local government and Vale do Rio dos Sinos University commenced in 2022 and is expected to extend until 2026. The interconnectedness among various municipal government agencies, collaboration with academia, engagement of civil society, and the involvement of public service providers were pivotal elements in the development of the local Greenhouse Gas (GHG) inventory.

The initiative aims to assist the government of São Leopoldo in the process of preparing four greenhouse gas inventories. It is anticipated that the data collected for this document will facilitate the development of strategies that can lead to GHG emission reduction and the generation of carbon credits. These strategies will be instrumental in shaping the local Climate Action Plan, which will delineate the municipality's actions for the next few decades in the context of climate change mitigation.

Additional activities required for the process, such as assessing the stages of production processes within the sanitary sewage system and estimating the amount of locally sequestered carbon by trees, will also be undertaken during this period.

Relevant data

- **Population:** 238,648 inhabitants
- **Mayor:** Ary José Vanazzi
- **GCoM Member since:** 2020
- **Project name:** Implementação, Operação e Desenvolvimento do OMC
- **Project Category:** Mitigation and Adaptation
- **Year of implementation:** 2022
- **Funding:** Municipal Environment Fund and CAPES CNPq



SOLUTIONS

Implementation

The development of the São Leopoldo Climate Change Inventory involves the participation of faculty members and students from the Graduate Program in Civil Engineering (PPGEC) at Unisinos.

To compile this document, we utilized the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC) methodology, which enjoys international recognition and extensive application in inventory development. This methodology ensures both robustness and clarity in emissions measurement and facilitates comparability between national and international inventories.

Emissions are calculated using the Ciris platform, incorporating data from transportation, solid waste management, sewage treatment, and electricity consumption. This data is supplied by various municipal public management sectors and coordinated by the Municipality's Secretariat of Environment.

The development of this inventory aligns with the principles outlined in Agenda 2030 and the UN's Sustainable Development Goals (SDGs). Furthermore, it adheres to the principles of the Mercociudades Network, inspired by the mission to foster participatory citizenship without borders.

Setting objectives and goals will lead to the production of regular reports. Upon completion of the project, a Life Cycle Assessment (LCA) of the processes will be conducted to evaluate the effectiveness of the proposed systems. This involves training human resources with a solid scientific background. The data collected and analyzed will be used to create four annual inventories of GHG emissions for the municipality of São Leopoldo - RS, along with its ongoing Climate Action Plan (PLAC). By implementing the proposed systems, carbon credits can be generated for the municipality's marketing and benefit.



Photo 1: Disclosure of the GHG Inventory at the I Seminar.

Financing

Conceived through a collaboration between the Secretary of Environment of São Leopoldo and the research group Núcleo de Caracterização de Materiais (NucMat) affiliated with the PPGECC at the University of Vale do Rio dos Sinos, this project has been underway since July 2022 and is scheduled to continue for four years, concluding in June 2026.

The initial steps towards making the project feasible were taken with the signing of the decree by the city's mayor to establish the Climate Change Observatory of São Leopoldo - RS. Access to municipal resources was facilitated by presenting the project to the members of the Municipal Environment Council (COMDEMA), who, during a plenary meeting, approved the allocation of these resources for specialized technical services to be delivered by Unisinos, PPGECC, within the Center for Characterization of Materials (NucMat). In addition to approving this cooperative initiative, funds were allocated for establishing the physical infrastructure of the Climate Change Observatory, an administrative entity tasked with implementing climate change policies.

The project team comprises technicians from São Leopoldo's City Hall Secretariats, as well as students and professors from Unisinos. The professors, who are pursuing their doctoral and master's degrees, receive individual funding provided by CAPES, CNPq, Unisinos, and the project itself.

“The climate change mitigation policy is the outcome of extensive involvement from various local governance sectors, educational institutions, private companies, public service providers, labor unions, and professional organizations, all striving for an intelligent city with sustainable development.

The emissions inventory represents the initial stride toward realizing these objectives and will serve as a roadmap for future endeavors addressing this globally significant matter.”

ÉVERSON GARDEL DE MELO
Coordinator of the Climate Change
Observatory of
São Leopoldo

“The society finds in the Emissions Inventory a fundamental tool for understanding the impacts of our activities. Beyond being an initiative of municipal public authorities, it should serve as a catalyst for the cultural shift we need to implement, ensuring a sustainable future for generations to come.”

ANDERSON ETTER
Municipal Secretary of
Environment of São Leopoldo

RESULTS AND LESSONS LEARNED

Key results

The partnership for the elaboration of the GHG inventory brought benefits to all actors involved. For the local government, the highlights are

- The gain of a systemic vision of the municipality's activities, the expertise on the main causes of GHG emissions, the cooperation between various actors of society and local governance, the approximation of the climate change issue with the local population, and the importance of cooperation to achieve common goals.

For Unisinos, on the other hand, there were important trade-offs:

- The organizational learning developed, the ability to define priorities, the training of human resources, the participation in the real problems of the municipality, the drafting of laws, and the short-term solutions.



Photo 2: Headquarters of the Climate Change Observatory.

“The OMC is aligned with the mission of Unisinos, in which the premises of sustainable development are intrinsically linked to the formation of human resources at all levels in the institution, resources that will have the OMC, a source of knowledge, opportunities to contribute to the continuous construction and optimization of the inventory of emissions of the city, and especially to design and implement actions to prevent and mitigate the impacts associated with life in society leopoldense.”

CARLOS ALBERTO MENDES MORAES
Associate Professor at
NUCMAT/Unisinos

Acknowledgment

We would like to thank the Municipality of São Leopoldo for sharing this case study.

The GCoM encourages local government signatories to share their climate actions. If you have a case study or successful project, please contact us by email or other channels.

© Global Covenant of Mayors 2023



Funded by the
European Union



pactodealcaldes-la.org



[/PactodeAlcaldes](https://twitter.com/PactodeAlcaldes)



[/pacto-de-alcaldes](https://www.linkedin.com/company/pacto-de-alcaldes)