

Montevideo, Uruguay

Greenhouse gas emissions inventory: First experiences



A greenhouse gas inventory serves as a tool to quantify and weigh greenhouse gas emissions (GHG). The Municipality of Montevideo (Intendencia de Montevideo, IM) prepared and presented the results of their first greenhouse gas emissions inventory in June 2010. The inventory, for example, revealed that two-thirds of the city's emissions stem from the burning of fossil fuels. The inventory enables the city's Climate Change Work group to propose policies that promote a low-carbon economy and more efficient use of energy.

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Abstract

Natural greenhouse gas (GHG) concentrations in the atmosphere, such as carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O), have a stabilizing effect on the earth's temperature. However, an increased amount of these gases in the atmosphere, primarily from human activity, is changing the natural balance of the earth's climate and results in global warming. Despite climate change being a global problem, solutions are available at the local level. A local GHG inventory can provide the basis for forecasting emission levels and developing climate change policies with the purpose of reducing anthropogenic GHG emissions.

Montevideo's first GHG emissions inventory identified and measured the sources and trends in emissions within the city. It uses 2006 as the base reference year. The inventory illustrates that local governments are important and can act as key drivers for sustainable public policies.

Importance of greenhouse gas emissions inventories

The GHG emissions inventory is a pivotal tool for identifying, weighting and quantifying emissions associated with human activity. Drawing upon this information, policy-makers can use this tool to develop and implement strategies and policies for emission reductions and climate action plans. Although Uruguay does not contribute significantly to global warming, it is vulnerable to the effects of climate change and is increasingly affected by extreme events.

Consequently, the National System in Response to Climate Change and Variability was approved in May 2009. This national system focuses on Uruguay as a whole. The responding framework is not specific to Montevideo's local activities and emissions. As such the new GHG inventory tools for cities, which focus on the local level, respond to this gap. This inventory tool enables the city to devise specific local measures.



Population / Land area

~ 1.3 Mill. / 525 km²

Montevideo joined ICLEI in November 2007.



El Proyecto PoliCS – Políticas PoliCS - Sustainable Construction Policies is an ICLEI initiative that involved five local governments in South America with the objective of improving energy efficiency and expanding low-carbon economies. Buenos Aires was selected to participate in PoliCS, in part, due to its work with PEEEP.

Case Study

City context

Montevideo is the largest city and the capital of the Oriental Republic of Uruguay and the southernmost capital city of the Americas. Montevideo is situated on Uruguay's southernmost region, on the northern bank of the River Plate (Río de la Plata), and belongs to the Department of Montevideo (an administrative region), the smallest of the country's 19 Departments. In terms of inhabitants, more than

half of Uruguay's total population resides in Montevideo's metropolitan area (1.9 million inhabitants in 2000), with 1.3 million people living in the city itself.

In 2007, Montevideo joined ICLEI and was selected as one of PoliCS pilot governments. Montevideo has shown ongoing commitment to sustainability. The city developed a number of good policies on sustainable construction. Several groups, led by Montevideo's Planning and Environmental departments, have been working on sustainability in an integrated manner.



The Executive Tower (Torre Ejecutiva), the head office of the national government. It is located on Independence Square (Plaza Independencia) cornering the Old Town and the city centre.

National System in Response to Climate Change and Variability

Uruguay like other countries is vulnerable to climate change. The President's Office began a process in March 2009 to address climate change and the National System in Response to Climate Change and Variability was established by Decree No. 238/009. The System's purpose is to serve as a coordination body for private and public entities that work on climate issues or are affected by them. The first step was to develop and implement the National Response Plan to Climate Change.

Montevideo's GHG inventory: A tool for combating climate change

City GHG inventory as a part of the PoliCS project

One of the first activities that were implemented, as part of the PoliCS project, was a greenhouse gas inventory in each participating city. This was a crucial first-step as the inventory provided project partners with information on the GHG emissions sources of the city. With this information the cities could focus on developing specific policies to stabilize and/or minimize emissions.

Methodology and tools used

The methodology used to develop Montevideo's inventory follows the international Intergovernmental Panel on Climate Change's (IPCC) guidelines laid out in the 2006 Revised Directives. This ensures the consistency with national inventories. The International Local Government GHG Emissions Analysis Protocol (IEAP) was followed in the development of the city's inventory. ICLEI developed the IEAP to assist local governments in inventorying their GHG emissions in a way that tailors most to their needs (i.e. changing the sectors slightly for reporting). IEAP is informed by the guidelines provided by IPCC and the GHG Protocol developed by the World Business Council for Sustainable Development and the World Resources Institute.

Montevideo and ICLEI ensured that city staff were intricately involved in applying the inventory tool so that future GHG inventories could be developed without the need to invest in outside expertise. A consultant hired by ICLEI

worked closely with a team from Montevideo's Environmental Development Department to ensure that more than one city staff member was trained on how to update the inventory in the future. The team agreed that the inventory would be developed in excel tables instead of feeding information into a program that would process the data automatically. This was to make certain that the process would be more transparent and easier for city staff to understand. Once all the data was processed, the inventory was uploaded onto an online tool that produces analytical reports.

The inventory tool tracks emissions from the following sectors: energy, industrial processes, agriculture, land use and waste.

Collecting information

One of the first steps in conducting a GHG inventory is to collect information on the sources of emissions using a preliminary study. Once it was clear which emission source categories and subcategories should be included, it was important to bring stakeholders, such as government departments into the inventory development process to provide data, information on data resources, and personnel resources. However, obtaining information on emission levels became one of the greatest challenges because data was not always readily available.

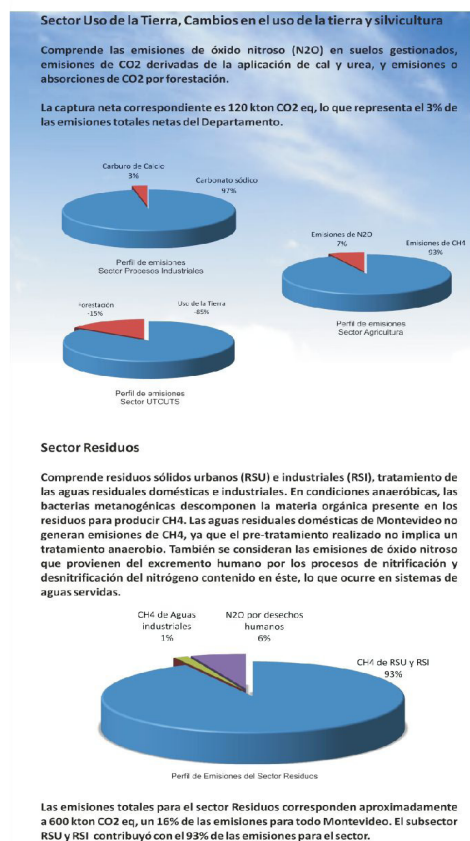
The inventory is a first step in a long process

It is important to keep in mind that the inventory is not an end in itself, but rather a first step in a long process of building climate action plans and other activities. For example, the city government has already implemented a number of workshops on greenhouse gas mitigation strategies with the aim of developing a mitigation Response Plan for 2011.

City GHG inventory as a part of the PoliCS project

The inventory was developed under two projects implemented by Montevideo's Environmental Quality Service Laboratory. The first of these projects is PoliCS, Sustainable Construction Policies in partnership with ICLEI. The second is the Territorial Climate Change Project (Proyecto Cambio Climático Territorial - TACC) that aims to develop a Climate Change Action Plan for Montevideo's metropolitan region with the support of the United Nations Development Programme (UNDP).

Under ICLEI's Cities for Climate Protection (CCP) Campaign, the organization has worked with hundreds of governments worldwide to implement the five milestone of the CCP campaign. Key milestones include the development of a GHG inventory and a climate action plan.



Conclusiones

El mayor aporte a las emisiones de GEI proviene de la quema de combustibles.

Las emisiones totales en el Departamento representan el 63% de las emisiones totales del Área Metropolitana.

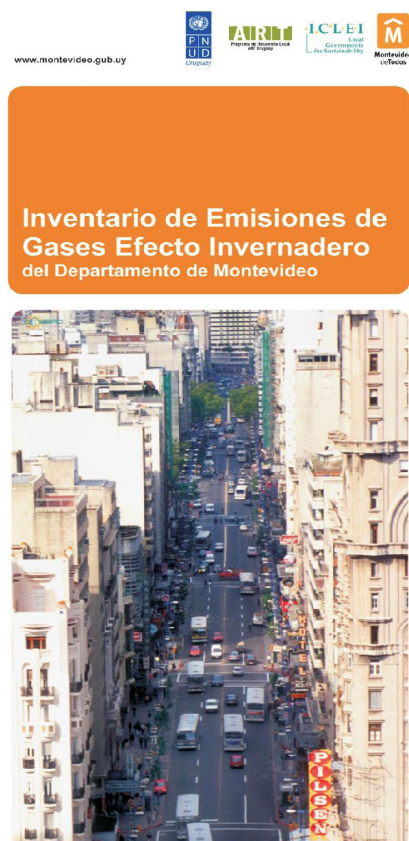
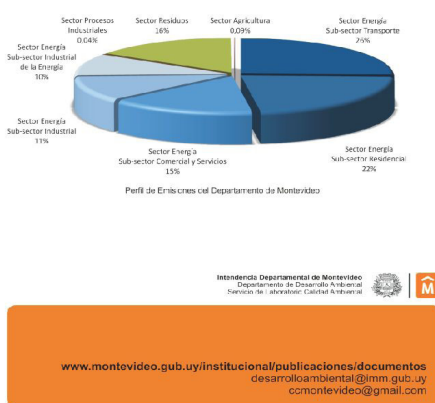
La gestión de los residuos corresponde al 16% de las emisiones totales departamentales.

Considerando los tres principales sub-sectores emisores en el sector Energía (Transporte; Residencial; Comercial y Servicios) y el sector Residuos se contemplan el 79% de las emisiones totales en el Departamento.

Si se incluye en el cálculo acumulado las emisiones de la industria, se contemplan el 90% de las emisiones.

Los sumideros existentes en el año 2006 por Uso de la Tierra, Cambios en el Uso de la Tierra y Silvicultura corresponden apenas al 3% de las emisiones netas.

El siguiente gráfico presenta el resultado total desglosado por sectores y sub-sectores del Inventario de Emisiones de Gases Efecto Invernadero por el Departamento de Montevideo.



The brochure presents the objectives of the inventory, results per sector and the main conclusions. It is important tool to communicate with citizens, partners and other governments.

Results

Data collection and cooperation

The inventory enabled: identifying data to be collected, creating a culture for collecting relevant information, overcoming barriers of obtaining data, establishing inter-organizational communication channels, identifying additional requirements on information from industries, liaising with various actors, building capacity throughout the management process, and learning how to use the new tools.

Creation of a working group across departments

The Environmental Development Department set up a working group with city staff to work on all climate change related issues. It included several other departments, such as Planning and Mobility, Health, Coordinating Centre for Departmental Emergencies, Unit for Rural Development, Local Development, the Energy Commission as well as the Sustainable Construction Technical Group

(created as a result of PoliCS). The Technical Group organized discussion groups with other stakeholders, such as NGOs and representatives from the private sector. Collaboration within the working group and the group of stakeholders created greater opportunities for sharing information.

Conclusions from the inventory

Montevideo's inventory revealed that waste and energy (transportation, residential and commercial services) together are responsible for 79 percent

of greenhouse gas emissions. These could subsequently be better targeted.

Beyond the inventory

The GHG inventory will be used as a baseline for identifying emission mitigation measures in regional climate change plans. The plans are being developed through participatory processes with the UNDP as a partner.

The inventory will also encourage the development of sustainable construction policies and explore solutions for reducing GHGs in the housing and construction sector.

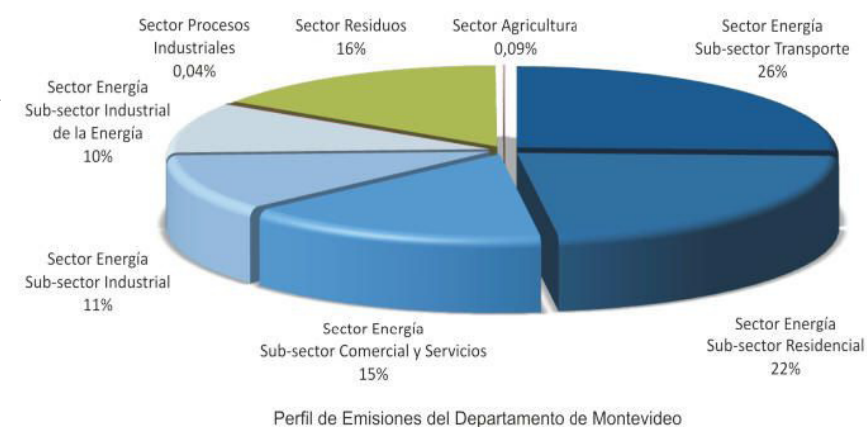
Lessons learned

Building internal capacity

One of the key accomplishments of the project was the engagement of employees from Montevideo's Environmental Quality Service Laboratory, rather than hiring external consultants to deliver a finished product. By involving all parties in an active decision making process through direct open communication, future inventories can be developed without long-term reliance on external expertise or the purchasing of tools such as other inventory programmes and softwares.

Important role of partnerships

Consultants and employees from three different organizations (Montevideo, ICLEI and UNDP) worked in close collaboration to develop the inventory process.



Emissions profile of the Department of Montevideo.

This cooperation ensured that various issues were managed constructively and the group-work was carried out effectively and resources were used efficiently. These elements contributed to the success of the entire project. The partnership produced results that benefited all partners.

Increasing the understanding of the goals of an inventory

At the beginning, the information collection process was met with some resistance, on personal or institutional levels, due to the lack of knowledge or understanding of the final goal of the project. To facilitate data collection, it is recommended that data holders receive information on the goals, purpose and objectives of the project.

Data collection

Another challenge is obtaining the necessary information since data is either too dispersed, comes in unsuitable formats, is incomplete, or has not been recorded. More often than not information was obtained through informal contacts and networks instead of formal channels.

It is essential to maintain a reliable network of contacts (formal as well as informal) to facilitate lengthy data searches. The institutionalization of such processes and increasing the knowledge of where information is stored and who is responsible for the data also improves data collection.

Future inventories

Undertaking an emissions inventory is a complex and time-consuming activity. The Environmental Quality Service Laboratory aims to update the inventory every two years. The inventory will facilitate the comparison of GHG emissions over time and help policy makers to track the progress of their emissions reduction policies.

Tools

The final lesson learned relates to stressing how important GHG emission inventories are for each city. By comparing emission levels and scenarios, decision makers can determine if the measures they propose are effective. To achieve this, it would be valuable to install a management tool that would permit the harmonization of criteria and to assure data quality. This tool would ideally be used to delegate responsibilities, for auditing results and enable responsive policies.

Replication

Organisations like ICLEI have an important role in promoting sustainable public policies. Montevideo's participation in the PoliCS project is a good example of the benefits that a local government can receive in being part of networks such as ICLEI. In the case of Montevideo, this alliance enabled the city to advance climate change politically and technically.

Montevideo has invested in disseminating its GHG inventory at several occasions including the Global Summit for Regions on Climate Change in 2010. Through such events, local governments are receiving information on how they have an important role in combating climate change. Montevideo will continue to reach out to show their GHG inventory and future actions to motivate others to act.

Key Contacts

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Budget and finances

The inventory was carried out within the framework of two projects: The PoliCS project coordinated by ICLEI, and the Territorial Approach to Climate Change project for the Metropolitan Area of Montevideo, coordinated by UNDP.

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Sources

- Montevideo Municipal Council (Intendencia de Montevideo): www.montevideo.gub.uy/.
- Montevideo Environmental Report: www.gam.org.uy.
- United Nations Development Programme (UNDP), Uruguay: www.undp.org.uy/.
- United Nations Development Programme (UNDP), Uruguay: www.undp.org.uy/.
- Brochure of the inventory: www.montevideo.gub.uy/sites/default/files/articulo/gei_inventario.pdf.

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de Todos



British Embassy
Brasilia

ICLEI – Local Governments for Sustainability is an international association of local governments implementing sustainable development. ICLEI's mission is to build and serve a worldwide movement of local governments to achieve tangible improvements in global sustainability with special focus on environmental conditions through cumulative local actions.



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