



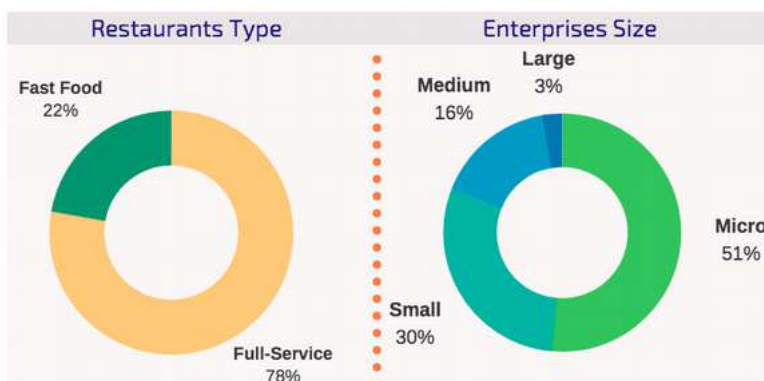
SUSTAINABLE GASTRONOMY

Promoting best practices for sustainable production and consumption to prevent food waste and reduce solid waste in gastronomic establishments

The project "Sustainable Gastronomy" sponsored by the United Nations Environment Programme (UN Environment) and technically coordinated through the Ministry of Environment and Development, had the participation of important actors of Bogotá's gastronomic sector, such as the Cluster of Gastronomy of the Chamber of Commerce of Bogotá, the University of La Sabana (Gastronomy Program), the Association of Sustainable Gastronomy and the Colombian Academy of Gastronomy.

The participation of these actors promoted the restaurants involvement in the project by joining forces between private initiatives, public sector, academia and non-profit organizations; that showed the restaurants the growing interest for the implementation of sustainability criteria in the gastronomic sector.

The main goal of this project was to identify best practices that gastronomy establishments could apply to prevent food waste and decrease solid waste. 37 restaurants from Bogotá voluntarily participated as they saw the opportunity to learn about and strengthen processes within their establishments to promote the management of solid waste and avoid food waste. Participating food establishments were classified as full service restaurants (76%), fast food restaurants (21%) and catering services (3%); that included gourmet, traditional and international restaurants.



The participation of micro and small companies predominated. The catering sector of Bogotá is composed, in general, with more than 80% of micro-enterprises, according to what is expressed by the Gastronomy Cluster of the CCB.

Through this project, a diagnosis of the current situation of solid waste generation and management in gastronomic establishments was made, applicable best practices were identified and a guide of best practices was formulated. The last one aimed to establish best practices for the areas of planning and management, raw materials purchase and storage, kitchen, dining and waste management. These practices focus on the optimization of processes within these areas with the purpose of preventing the food waste and reducing solid waste generation.

Likewise, 5 pilot projects were implemented (5 selected restaurants from the 37) which aimed to strengthen gastronomic establishments that, on the one hand, demonstrated an extraordinary commitment to solid waste management improvement and resource management optimization (raw materials and food) and, on the other, generate an impact that could be perceived by their customers and other restaurants.

RESULTS AND LESSONS LEARNED

The diagnostic results showed the composition of the generated solid waste distributed as food waste, recycling and non-recycling waste. In terms of quantified food waste, these were characterized according to their origin on food preparation waste, deteriorated food from the storage area and leftovers from the customers' plate.

Full-service restaurants produce more food waste (74%) compared to fast food restaurants (53%). This is because fast food restaurants have a more limited offer than full-service restaurants, which means that the amount of food used is lower and therefore there is less generation of preparation waste. Regarding recycling waste, fast food restaurants generate more (46%) than full-service restaurants (22%) because fast food restaurants employ more disposable materials such as plastic utensils and glass bottles.

More than 70% of the produced food waste, both in full-service and fast-food restaurants, correspond to preparation waste that not only includes food parts that can not be used in meals such as seeds, bones, rinds, etc., but are composed of food parts that could potentially be used to make new dishes or enrich preparations.

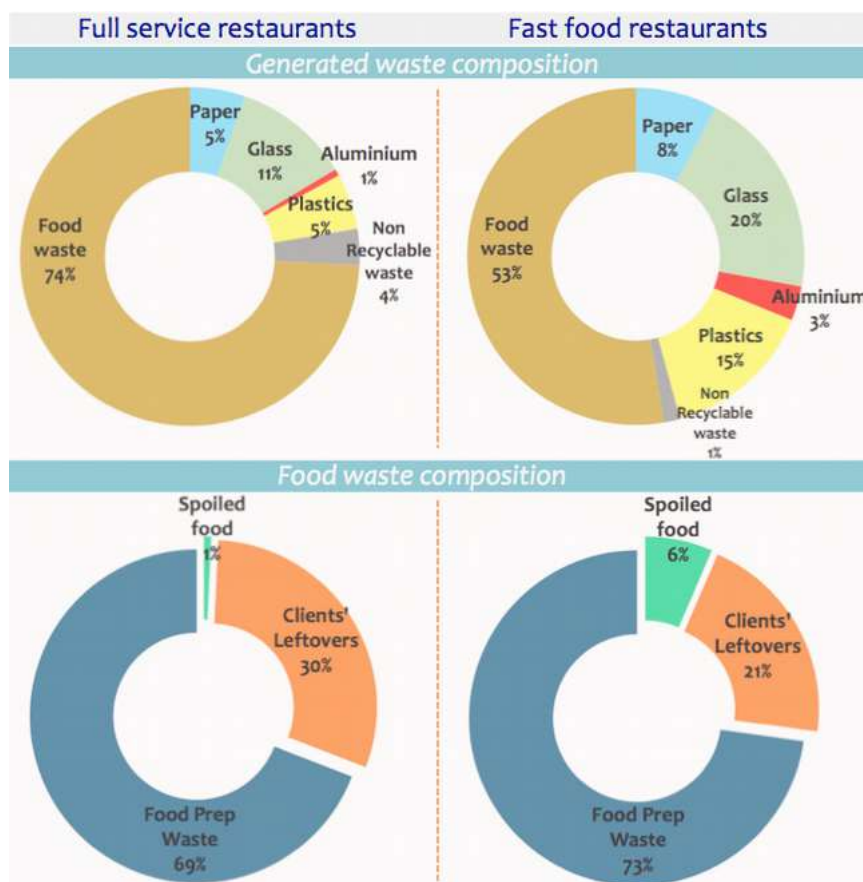
When restaurants know the economic losses that are produced by not using correctly or not take full advantage of food, it is evident then for them how much it costs not have an accurate plan, use incorrect preparation techniques and not serve portions suitable for their customers. Currently, some restaurants are implementing actions, such as the use of fish heads to enrich broths, parts of vegetables to make sauces, fruit hearts to prepare infusions (36% of full-service restaurants and 13% of fast-food restaurants).

Customers' leftovers contribute around 28% of the overall generated food waste. Actually, restaurants do not consider it to be relevant since it does not affect its income statement when considering it as "already sold" product. According to what is reported by international studies, the main reason for customers to leave meals on their plates is that the portions are bigger than they wanted to eat.

Food waste attributed to deteriorated foods (in storage or freezer), is low (2%), such waste is generated due to the need to strengthen the control and inventory processes. This shows that restaurants recognise the importance of having control processes of raw materials and stocks in order to not have economic losses and to waste food.

Food waste reduction and minimization of solid waste generation in food establishments depends on the implementation of best practices that support the efficiency increase and performance in the different processes as well as the continuous improvement and minimization of costs associated with food waste.

Although, now gastronomic establishments are aware that they must make source separation of their waste, some of these do not know the current regulations in this area and others do not know how to



carry out an adequate separation. It was observed through this study that 60% of the gastronomic establishments ensure a correct separation of paper/cardboard, glass, aluminium and plastics materials that are delivered to recyclers. The remaining 40% separates recycling waste from food waste, but does not make specific separation by recycling material.

Solid waste management in the gastronomic sector can be carried out by implementing standard procedures allowing a high percentage of treatment and/or recycling with economic, social and environmentally positive results. However, the national and local guidelines have not been oriented to this sector, which means that there are no infrastructure or management mechanisms. This causes that the individual implemented measures do not find echo in the public institutions that manage the waste.

Currently, there is no regulation and clear control over the management of organic and food waste with the purpose of carrying out its treatment for landfills operation optimization and its valorisation, also actual treatment infrastructure could be insufficient when implementing an integrated management system. Thus, the role and pressure on public authorities regarding aspects of planning, administration and infrastructure management for the separation, collection, transfer, use, treatment and final disposal is transcendental. This implies important challenges to promote generators' co-responsibility, being one of the most important points to be considered in order to strengthen the solid waste integral management in this sector.

With the recent update of the National Solid Waste Management Policy (CONPES 3874, 2016), Colombia is focused on the development of solid waste management, which includes an environmental vision in the public service component, which is a priority in national public policy. For its achievement, from the solid waste sector, it is proposed to move towards a circular economy, which seeks to keep the value of products and materials for as long as possible in the production cycle.

In Bogotá, the Solid Waste Management Plan, in support for the gastronomic sector, proposes the development of projects aimed to raise awareness and user training, the development of studies related to waste characterization and implementation of technical and operational strategies to create a management framework where the waste will be treated using composting, anaerobic digestion and gasification. It is therefore necessary to communicate these projects in the gastronomic sector in order to develop effective collaboration strategies.

Although the gastronomic sector is, in general, in agreement with implementing measures of reduction and source separation of its waste, they do not see any incentive (financial, tax, economic, technical and/or social) to support these measures. The economic instrument development (some existing but unknown in the sector, such as the tax reduction through the environmental control systems implementation) associated with the waste generation reduction and generation of green jobs would improve the willingness to support sustainable gastronomy initiatives, including food waste prevention and integral management of solid waste. Also, the linkage of clean technology suppliers in the food industry should be intensified and linked with government support for sustainable production and consumption.

In the gastronomic sector, solid waste management is closely linked to the restaurants' internal processes and not only to food preparation processes as is normally proposed. This includes sustainability policy generation, work with suppliers, internal staff training, customers' communication and indicator and work plan compliance. This makes the gastronomy sector an important example of the Sustainable Development Goals (SDG) implementation, especially in terms of sustainable production and consumption.

It should be noted that, each gastronomic establishment has different processes and needs, it is therefore necessary to identify and analyse the processes in each of these in order to know the opportunities for improvement and best practices applicable taking always into account the resources and personnel available to do it.

It is very important to understand that the sustainability aspects, which include waste management issues and food waste prevention, are subject to the enterprises' financial sustainability; for this reason, any measure that allows an improvement of socio-environmental conditions in the short-medium term, must be able to demonstrate that they also produce positive impacts on financial sustainability indexes. It is important to evidence that sustainability criteria incorporation improves the financial sustainability

indexes in the planning and waste and raw material cost control, as well as the increase in production process efficiency, therefore this is essential to anchor these measures in gastronomic establishments.

Current food waste and the consequent solid waste generation that ends up in the sanitary landfill is a systemic problem that starts - and affects - both business and environmental management, public policies and consumer attitudes. Therefore, the adoption of sustainable practices in general and food waste reduction will contribute to the creation of healthier environments and to maintain or increase the satisfaction and peoples' life quality. It is necessary to take advantage of the moment of high social sensitivity with this subject to address practices and solutions to food waste, accepting a shared responsibility between the different actors of food supply chain, and assess differentiated and proportional commitments for each one.

Agrifood companies have a prominent role in the search for solutions to the problem of food losses and waste, adopting coordinated practices that could be exemplary and promote attitudes in favour of a sustainable society and economy.

Likewise, the empowerment of the consumer to make informed decisions regarding the establishments that incorporate sustainability criteria in their operation is really important to increase the recognition and "prize" of the dinners towards the gastronomic establishments.

Finally, the support to independent initiatives of measurement, advice and distinction to the gastronomic sector (for example the "SustenTable" - Sustainability to the Table badge promoted by the Sustainable Gastronomy Association (in Bogotá) creates new links between the gastronomic sector and consumers. These initiatives provide greater power to society by helping them to decide which companies are making measurable and quantifiable efforts for Sustainable Gastronomy, as well as motivating and promoting restaurants in sustainability criteria implementation for the optimization of their processes and communication of such efforts for their recognition within their consumers and employees.