



Figure 1. Workshop with design students. Source: Personal collection Cifuentes Daniela, Reyes Iris, 2019.

# DESIGNING AT THE SERVICE OF RURAL TERRITORY

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The paper illustrates the opportunity that, as designers, we have explored to solve Service Design issues related to food waste in the Colombian food system, while working hand in hand with the Archdiocesan Food Bank of Bogotá. Founded in 2002, it aims to join the academy (university and school system) and big companies with non-profit organisations that serve vulnerable populations by collecting, selecting and distributing food, goods and services—either donated or purchased. Our project focuses on how to improve the actual service of PREA (“Programa de Recolección de Excedentes Agrícolas”, Agricultural Surpluses Pickup Program), one of the many programmes carried out by the Food Bank.

food design / service design / food banks / agricultural surpluses / circular economy

Colombia has evolved in the agribusiness sector, due to the large amount of natural resources and the great climate conditions. According to the Department of Agriculture, this category generates more than 20% of Colombian employment and contributes approximately 5% of the Gross domestic product (GDP). However, not always food business models are also sustainable: hardly ever they are adjusted to what local communities, vulnerable populations, and farmers need. We must also consider that a huge amount of food is wasted and thrown away in the cities, meaning that in Colombia 10 million tons of food are wasted (Chamber of Commerce, Bogotá 2016).

Given this, and with the premise of fighting malnutrition in the rural and urban area of Bogotá (Colombia's capital city) the Archdiocesan Food Bank of Bogotá emerged in 2002. Nowadays it is the only food bank in the city, located nearby the city's central area. Linked to the bank as interns, we had the opportunity to get to know more about how it works and decided to improve the service it provides. We focused our attention on the "Programa de Recolección de Excedentes Agrícolas" (PREA), the agricultural surpluses pickup programme in which small farmers from rural towns around the city rescue post-harvest waste, to give in exchange of products of the basic food basket and other goods.

## GOAL AND METHODOLOGY

The goal was to apply a design thinking mindset with service design tools, to increase the number of PREA beneficiaries, while identifying weak and strong points of the whole service by observing the system operation in order to strengthen and extend existing networks.

The design process was divided into six main stages:

1. Discovery: Ideal models research, referents study.
2. Understanding: Project planning, interviews.
3. Observation-Definition: Stakeholders map, organisational chart, actual blueprint, fieldwork.
4. Ideation: Brainstorming, critical insights, co-creation workshops, new blueprint.
5. Evaluation: Solutions flow, implementation timeline, future recommendations.
6. Communication: Storytelling, blueprints.

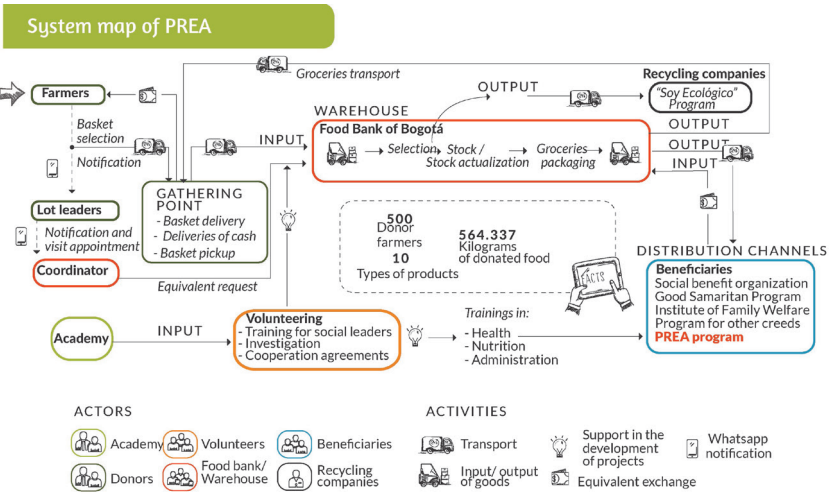


Figure 2. System map of PREA. Source: Personal collection Cifuentes Daniela, Reyes Iris, 2019.

**PROCESS**

The agriculture development and the food industry imply that the products we eat today are made from inputs usually transformed and altered for consumption. Therefore, although farmers are the main suppliers for large industries, their activity has lost importance because their labour has been replaced by the agri-food system. This system, most commonly known as agribusiness, “consists of the total sum of operations related to production of agricultural products, like activities on the farm, storage, processing and distribution” (Caldentey 1998). In considering this, we decided to study the system of PREA and registered the whole process the food bank follows and any other key information in a system map (Fig. 2).

One of the most relevant PREA advantages is the product’s commercial route. The conventional logistical route from farmers to the final consumer has at least five intermediaries. While in the PREA route, the bank is the only intermediary. All the intermediaries are very important, but, the more intermediaries, the more expensive the products are, and it is more likely the produce gets ruined. As part of the internship, we worked as volunteers in the warehouse sorting food to recognise the quality standards for human consumption for each product that ar-

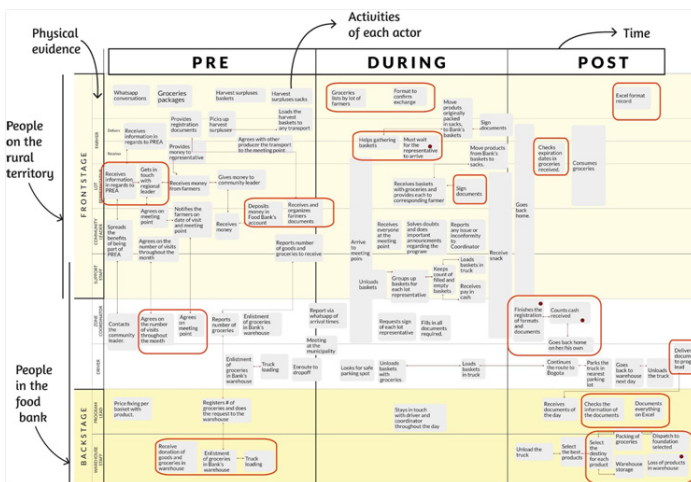


Figure 3. Actual blueprint with critical points. Source: Personal collection Cifuentes Daniela, Reyes Iris, 2019.

rives in the food bank warehouse and goes for donation. We also worked in a “Food Rescue Day” (part of PREA) in the rural territory of Viotá Cundinamarca, picking up surpluses of fruit alongside harvesters. Then, a workshop was organised with industrial design students of our university in Bogotá, to reflect on the problem and the importance of working on a reality of national interest. Finally, we met the PREA director and the coordinator to show them the service blueprint with improvements, inviting them to make any necessary changes (Fig. 3).

The actual PREA’s blueprint (Fig. 3) was organised by four variables: timeline, physical evidence (or products service mediators), frontstage (people on the rural territory), backstage (people in the Food Bank warehouse), and the activities (interaction between actors).

At the same time, service was divided into three columns or three stages: “Pre”, the activities necessary to be done before the next scheduled Food Rescue Day; “During”, what goes on in the course of the Food Rescue Day; finally, “Post”, the activities held after it.

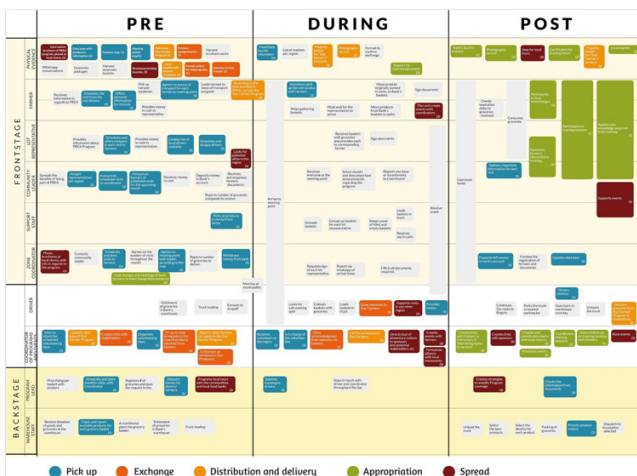


Figure 4. New blueprint. Source: Personal collection Cifuentes Daniela, Reyes Iris, 2019.

Critical points were located on the actual blueprint:

1. Road conditions: a large group of farmers lives far away from the nearest rural town, it means they do not count on good conditions roads. Not always farmers find a way to reach the meeting point in time, and the Food Bank team cannot solve it.
2. Irregular event planning: Special events are not regularly planned.
3. Lack of sponsors: PREA is unknown by potential stakeholders. The team we worked with believed they could profit from these connections, but did not know the best way to extend the network.
4. Logistic errors: Given the short time they have to plan a Food Rescue Day, there are activities left aside but key to provide a better service.
5. Delivery from warehouse: The warehouse staff usually have to throw away a large percentage of PREA products, because the distribution schedule was not properly planned and perishable items would turn into waste.
6. Food bank perceived image by producers: The Food Bank team does not want to be seen as a permanent problem solver. It is important to encourage farmers to be independent.



Figure 5. Classification of fruits suitable for human consumption. PREA Food Rescue Day. Workshop with design students. Workshop with PREA staff. Source: Personal collection Cifuentes Daniela, Reyes Iris, 2019.

## RESULTS

### Proposals for each phase

The first phase relates to “Pickup”. Its objective is to control and record data from each food rescue day. In this, we propose an “Information management protocol” to avoid improvisation when fulfilling their functions. Moreover, registering the producers’ localisation and follow-up to drivers is advised, so that they are geographically monitored to ensure the safety of personnel and product.

The second objective of the Pickup phase is to get more human resources. For this, besides increasing the number of volunteers, we suggest the introduction of these three new agents:

- The PREA Director: Someone with any kind of studies in project management and a related career in agricultural production, with special capacity of leadership.
- The Zonal Coordinator, in charge of the community leaders of each municipality, and responsible only for what happens in the rescue days related to op-

erational tasks in the rural territory.

- The Programmes and events Coordinator, similar to a community Social Worker, responsible for promoting alliances to strengthen sub-programmes.

The second phase relates to "Exchange". Its objective is to recompense producers for their hard work. We propose to make a Sub-programme called "Star Producers". In this way, producers already registered in the database with the largest number of donated produce, will have the opportunity to work with businessmen for product-marketing negotiations and not rely solely on the exchange with the Food bank.

The third phase "Distribution and Delivery" has the purpose of differentiating the PREA product. We propose, indeed, to create another Sub-programme called "Sponsorship producer" where PREA producers promote a school or a foundation in their town, delivering fresh products. In this way, the bank could create support networks.

The fourth phase relates to "Appropriation", with the objective of promoting the independent development of producers and product rotation through the region. For this, training such as agro development courses, entrepreneurship, management and food handling, nutrition, preparation of food for sale, etc. must be implemented. In addition, the exchange of food between producers on events in the rural towns could take place.

The last phase mentioned as "Spread" has the purpose of attracting more producers. This could be possible with three main activities: 1) Brochures with FAQs displayed for people without internet access; 2) Campaigns of the alimentary culture telling stories behind their main and typical recipes; 3) Events on special days, like the farmer's national day.

## **New blueprint**

With the new blueprint we could see how our proposals could work in the service of PREA. A new actor "Programmes and events Coordinator" was added. It remains the variables of time and physical evidence. New activities were classified with a colour code (Fig. 4).

## **CONCLUSIONS**

It is important to define service standards that can be flexible to be replicated in any of the regions. The service, indeed, can be replicable in other Food Banks in the country.



The Food Bank should differentiate PREA products, prioritise their departure, and contemplate new channels for distribution, because the programme guarantees high quality products.

Along the design process we have focused on the "Ideal PREA". We understood that even so, we could not neglect basic determinants of design such as the lack of Internet connection in certain regions, or the availability of monetary resources. Finally, it is important to clarify that the solutions implementation is governed by the foundation's policies and we used its regulations.

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