

In 2019 we became concerned with the climate situation around the world, with global warming becoming more and more evident every day. We began to wonder how our city and our community was contributing to this problem and what we could change in order to improve our relationship with the environment. We researched and identified different sources of our school's carbon footprint, and we realized that more than 80% of it comes from pollution generated by the buses that transport students and staff to and from school everyday. Having identified this problem, we started looking for plausible solutions that would reduce contamination from this source. We spoke with various companies that work with biodiesel in our area to begin our project which aims to reduce our carbon footprint by transforming used cooking oil from our community into biodiesel that can be used by the school buses. We realized that the solution we were looking for was also a solution to another problem: water pollution. We were not aware that disposing of used cooking oil in water bodies is a big problem and affects life in water. One liter of used cooking oil pollutes up to one thousand liters of water, and it is very difficult to clean. We hope our project gives the community an accessible and effective transportation method that reduces our carbon footprint drastically, and a way to dispose of used cooking oil correctly. We also hope that our project inspires other communities to find alternatives of transportation to improve our city's air quality and slow down climate change.

So far, we have identified and spoken with a local company called Manos Verdes which collects used cooking oil (including the residual cooking oil from our school's cafeteria) in order to process and transform it into biodiesel and is a completely sustainable company, recycling all of the materials used in the recollection process. We arranged with Manos Verdes to install recollection points at our school in order for the community to collect and bring in used cooking oil from their homes and contribute to this environmental effort. Now we are making efforts to teach our community about cooking oil, the hazards it has on bodies of water and in human health, and to dispose of it correctly to avoid contamination. As we installed the recollection points we advertised the project throughout our community. We arranged presentations for students, staff, and parents. Our other communication channels are social media, the school newsletter, and physical posters to make sure no one misses out on the information. In this way we hope to encourage all of our community to make a change starting from their own homes. We

plan on measuring the impact of our project and demonstrating how it makes a difference through different methods. First of all, we will record data of oil collection from the collection points we will install at school so that we can observe how the community becomes more involved over time and our impact becomes greater. It was not possible to do so as we discovered that collecting used cooking oil is a long process. In our culture, most households use relatively small amounts of oil when they cook, so they take a lot of time to fill a plastic bottle. We will be measuring our impact in a month, hoping that people will have deposited their oil in our box. We also conducted a survey with members of different parts of our community to find out how people feel about the project and their willingness to participate in it, as it can be an extra effort for most. First we found out that the majority of people in our community don't know about the contamination caused by used cooking oil, and they also didn't know how to dispose of it well. We asked about their cooking habits to measure the amount of oil that was being used in their households. Finally, we asked if they would be willing to pack their used cooking oil in plastic bottles to bring them to school, and we had a surprisingly meaningful percentage that expressed they wouldn't do it.

We had trouble continuing with the second stage of our project, which consisted on changing our school buses from using conventional diesel to biodiesel because the company the school works had a lot of setbacks the last few months. The owner suddenly died from a heart attack, so they had to reorganize the entire company. Because of this, they didn't have time or the resources to work with us in our biobus pilot. We hope that the next generations take on our project so that it is possible for the school to be more sustainable, as we dream. When the next students to our pilot stage, where we have functioning buses working with biodiesel, we plan to measure our environmental impact and how using these buses reduces carbon and particulate material emissions. The outcome of our project is not quantifiable in terms of improvement of air quality because the percentage of our pollution is very small compared to all Bogotá, and the air quality largely depends on the rest of the Bogota community and its surroundings. This does not mean that our project will not have an impact. It has the capacity to start similar projects all over the city, up to the level in which impact will be quantifiable through measuring air quality.

Even if we had setbacks, we loved our project because we learned a lot, inspired our community, and made a change for the environment and for the world we live in.

