Mobilize Learning Lab - Resilient Sustainable Transport

THE WORLD BANK

IFC International Finance Corporation WORLD BANK GROUP

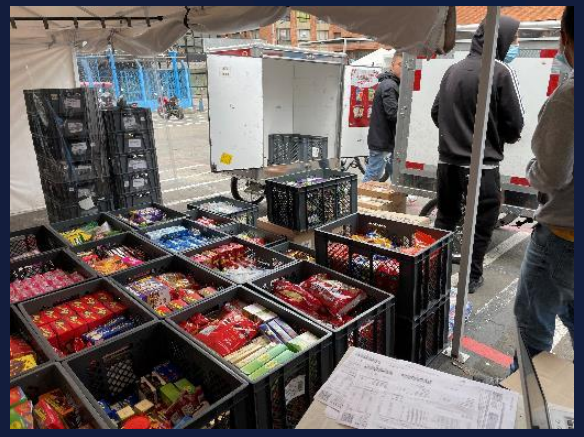
ESMAP Energy Sector Management Assistance Program

despacio®

logyca

BOGOTÁ

Context



- **48% of GHG emissions in Bogota** come from **freight transport** sector
- **BiciCarga** aimed to the **decarbonization** of the last-mile **urban freight sector**, using **solar energy and e-cargo bikes.**
- **It fostered collaborative schemes** between **private stakeholders**, not typical in the logistics sector by a **Cross-docking platform**
- The pilot **tested e-cargo bikes' performance** in transporting **dry cargo**, such as parcels, and non-refrigerated goods, such as **refrigerated foodstuffs**

Objectives

Knowledge

Operational performance of e-cargo bikes, environment impacts, gender & social impacts

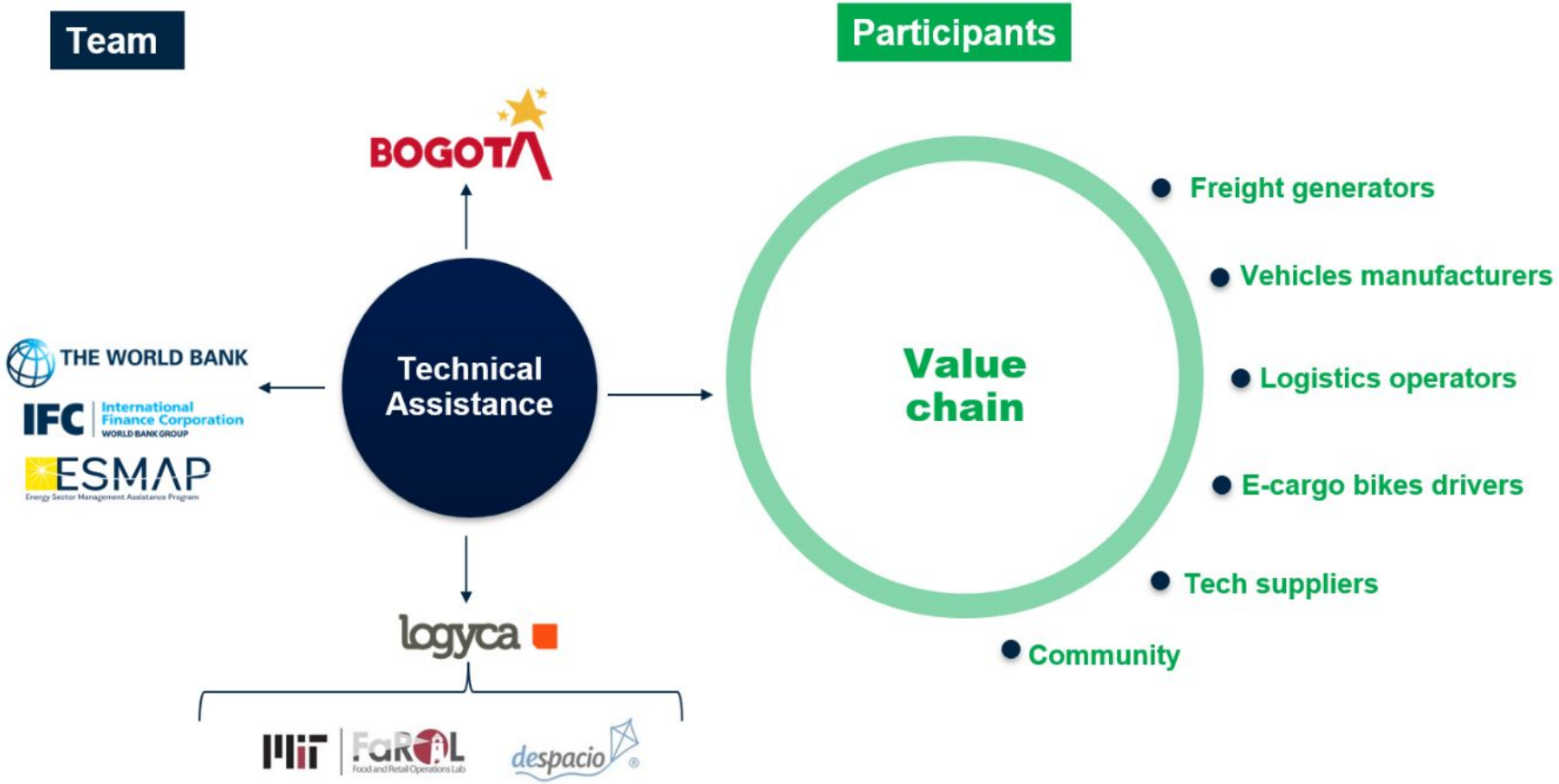
Policy

Generate public policy guidelines

Actions

Massification of the use of alternative vehicles for last-mile deliveries

Actors involved



A total of 12 companies from the private sector

Generators: 4

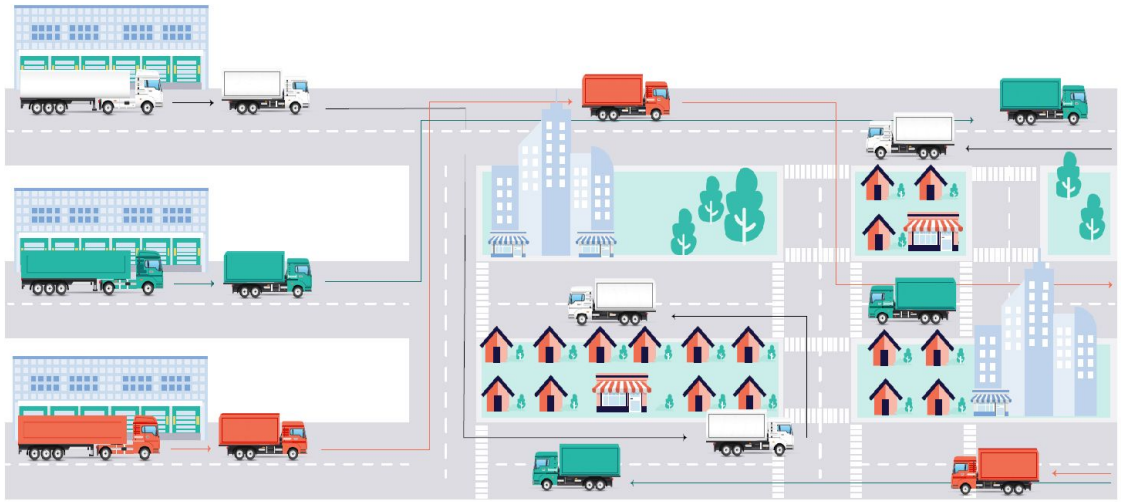
Operators: 4

Suppliers: 4

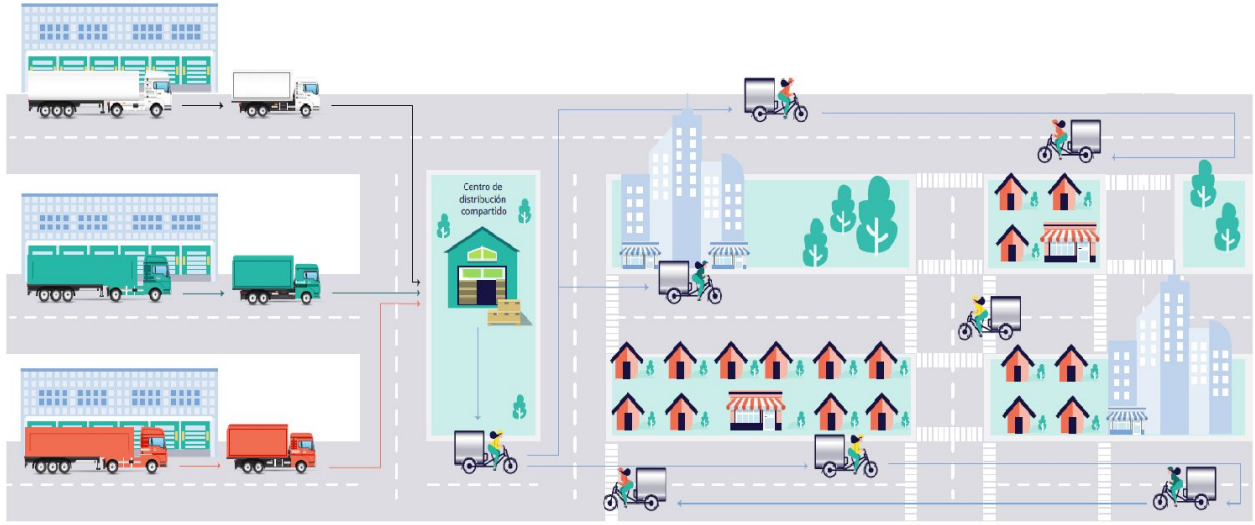
1. Central features

Central features

Current operation

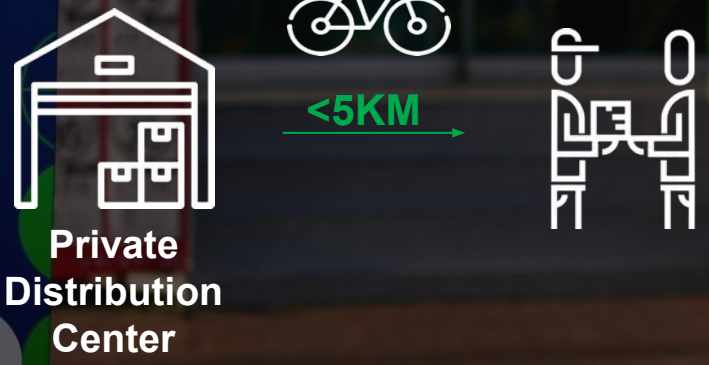


Better last-mile

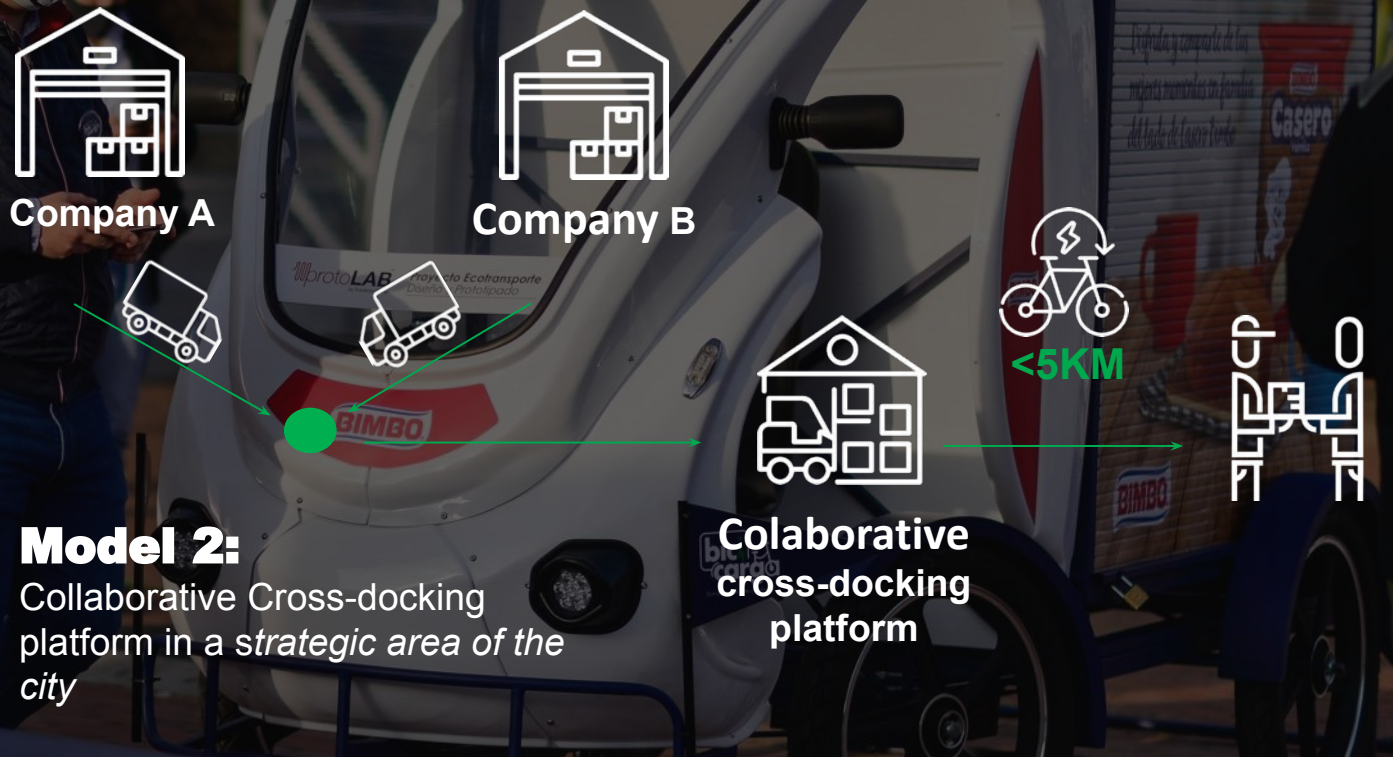


Source: Despacio

Pilot models



Model 1:
Centralized operation
Private and exclusive distribution centers



Model 2:
Collaborative Cross-docking platform in a *strategic area of the city*

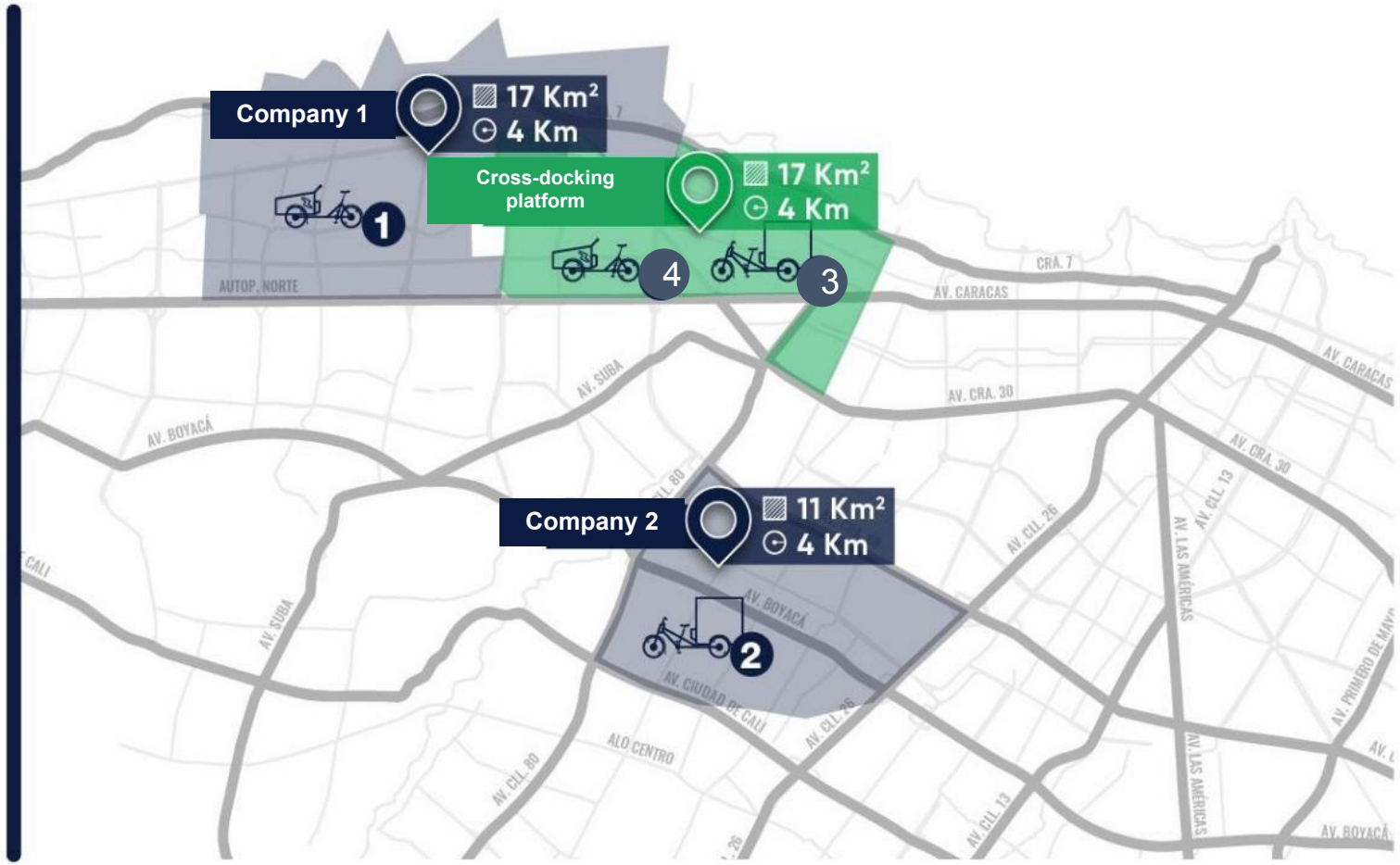
Operation zones

Models 1 & 2

Model 1 zone

Model 2 zone

No. vehicles



2020-2021: Phase I BiciCarga

- Model 1 & 2 with companies of parcel, e-commerce, and package food

2021-2022: Phase II BiciCarga

- Model 2 with companies of package food & refrigerated foodstuffs
- E-trikes batteries were energized with solar power

Cross-docking platform

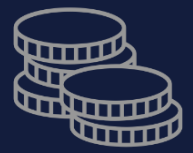
bici carga
Distribución eficiente y ecológica

Indicators

Operational efficiency

-Kg delivered
-Vehicle occupancy (Kg)
-Daily deliveries per vehicle
-Distance traveled
-Solar energy system efficiency

Costs



-Operating cost variation
-Fuel consumption Kwh/gal cost variation
-Cost of platform use

Gender and Social Impact

Gender:
--Work barriers.

Social impact:
-Driver perception
-Community perception
-Perception of clients or cargo receivers.

Environmental Impact

-Avoided emissions per vehicle
-Avoided emissions from solar electric power generation

2. Main results

Main results Phase I

bici carga
Distribución eficiente y ecológica

45,199
Deliveries

59t
of goods
delievered

67%
Deliveries/h
incresed

11,776 km
traveled

Model 2

30% less operating time
33% less distance traveled

Source: LOGYCA-Despacio

Main results Phase II

bici carga
Distribución eficiente y ecológica

17,077
deliveries

63%
Deliveries/Km
incresed

32,6t
goods delivered

4,747 km
traveled

30% less
operating time

Source: LOGYCA-Despacio

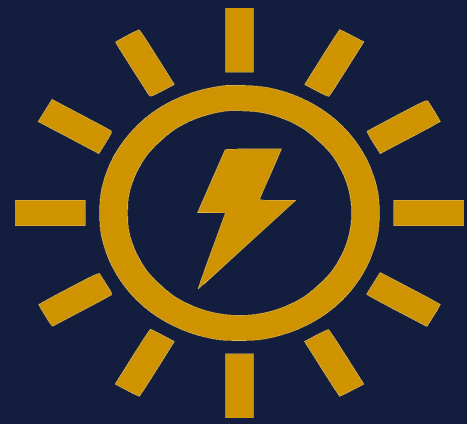
Main results: environment

A total of

3.6 tons CO_2 Avoided

Phase I: 1.97 tons CO2 = 2 trucks & 4 motorcycles

Phase II: 1.22 tons CO2 = 2 trucks



Consumption of solar energy in phase II

40 Kg CO_2 Saved

Energy genereted represents

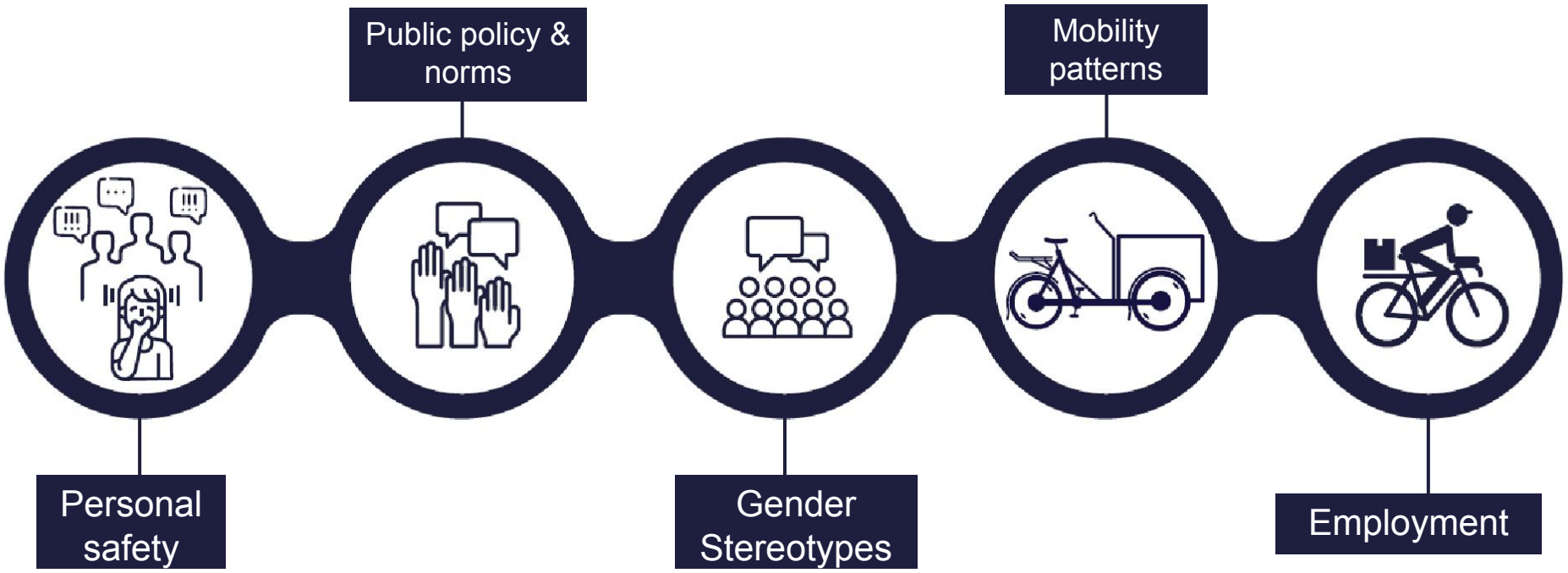
173 Kg CO_2 avoided

Source: LOGYCA-Despacio

3. Gender analysis results & social impacts

Cyclelogistics for women

Objective: identifying barriers and gender stereotypes that limit women to work in the cycle-logistics as cargo bike drivers.



32 interviews:

17 with women drivers:

- 12 bike messengers, bike-carriers and
- 5 drivers of electric cargo tricycles.

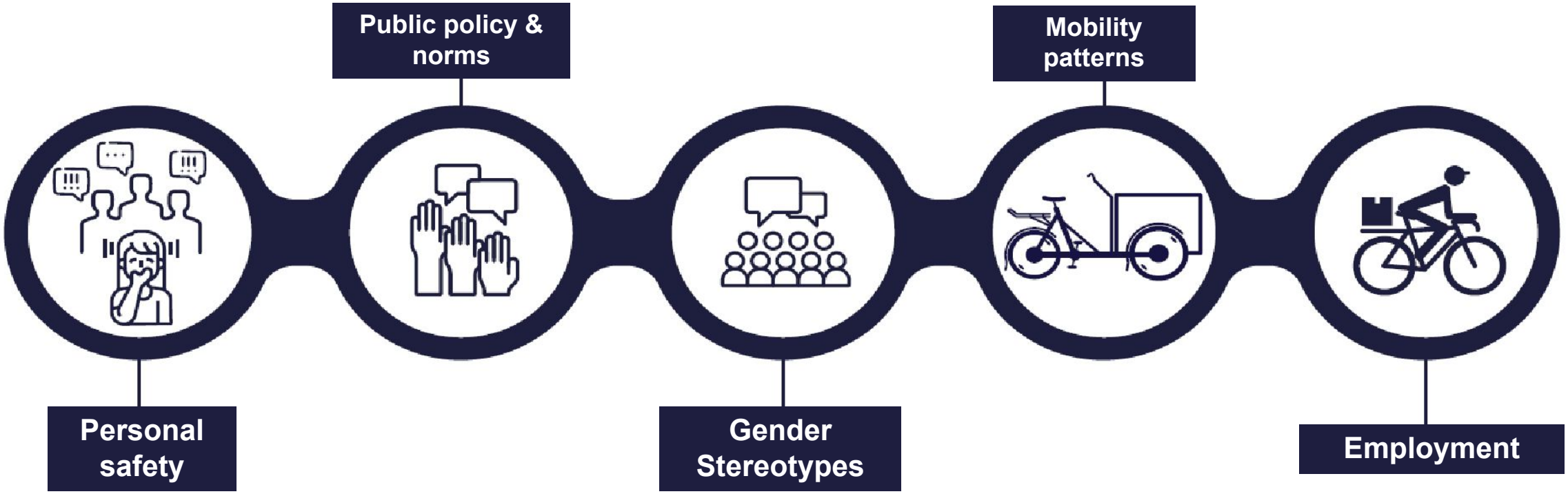
8 with drivers between both phases of the pilot.

6 with the administrative and management team of the pilot companies**.**

Cyclelogistics for women

59% **Women divers NOT aware of corporate policies** to increase female employees or improve their working conditions.

18% **Uses cyclo-infrastructure** for his work.



94% **Suffer** sexual **harassment** developing their job

71% **NO difference** between a **female & male drivers** in developing the work.

83% **Job announcements NOT mention** that it is for women.

Social impacts

Perception surveys of customers or final cargo receivers

83% Think using e-trikes by their suppliers is a **very good idea.**

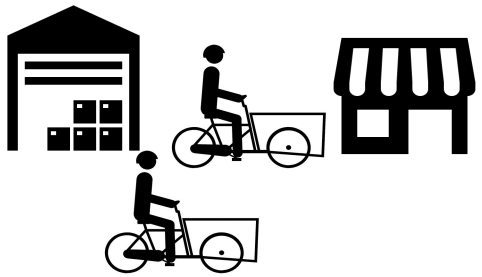
79% Customers **feel very safe or confident** that the goods were transported on e-trikes

90% **Reduction of pollution** is one of the main positive aspects of using e-cargo bikes.

Source: Despacio

6. Conclusions

Conclusions



BiciCarga demonstrated that **collaboration is a crucial component** for the **viability and efficiency** in cycle-logistics because **it reduces costs** of last-mile strategies (i.e. cross-docking platform).

There is a **need to strengthen labor inclusion and harassment prevention policies** in public spaces through greater dissemination and more effective strategies, based on **joint efforts** between **public and private actors.**

BiciCarga set the **first steps towards the scalability** of this type of distribution models with **e-cargo bikes by private companies**. Therefore, it **needs to develop a regulatory framework** for the operation of cargo bikes for commercial purposes in Bogota and other cities in Colombia.

More information....

Prácticas de Bicilogística en América Latina

Available here:

Thanks.

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