HEART HEALTHY HOODS

erc · Universidad de Alcalá

Congreso de Promoción de la Salud -
Osasunaren Sustapenerako Kongresua
14 y 15 de Mayo de 2015

Entorno Urbano y Salud Cardiovascular

Manuel Franco MD, PhD

Social and Physical Urban Environment and CV Health: The Much Needed Population Approach

Manuel Franco MD, PhD

For the HHH investigators

ERC Starting Grants

FUNDING	**1.5 million € for 5 years**
OBJECTIVE	To encourage independent careers of excellent investigators providing enough support in the critical moment (starting to develop their own team).
ELEGIBILITY	PI must have a PhD degree in the last 2 to 7 years. **Available to non-EU researchers.**
REQUISITES	At least one relevant publication without his/her thesis advisor
	At least 50% effort
PROFILE	**High potential, project with potential social Impact in Europe.**

Interdisciplinary team
PI: Social Epidemiology

Geography

University of Alcalá

London School of Hygiene and Tropical Medicine

Health Sociology

University of Salamanca

Johns Hopkins School of Public Health

Primary Care System
Primary Care Research Unit, Madrid

Epidemiology

University of Alcalá

Johns Hopkins School of Public Health

Photography

Knowledge Dissemination

Citizen Science

Cardiovascular Health

First cause of **death** in Europe (47% of all deaths in 2010)

Increasing **prevalence** (50 mill. patients in 2009 in Europe)

Rising social and economic **costs** (196 billion € in 2009)

Traditional medical preventive approaches are **individual**

Studies **social determinants** of disease

Methodologies from **Social Sciences and Public Health**

Focus on **population preventive approach**

Addresses growing **social inequalities** in health

Heart Healthy Hoods Study
## Main Goal

Neighborhood Socioeconomic Status
Unemployment – Education – Poverty
Immigration Composition

Tobacco Environment

Physical Activity Environment

Food Environment

Alcohol Environment

Social Environment

Individual Socioeconomic Status
Occupation –Income – Education
Gender – Immigration

Smoking

Physical Activity

Obesity

Diet

Alcohol **Physical Environment**

CVD

Social and **Physical**
Environment

Individual
Cardiovascular Health
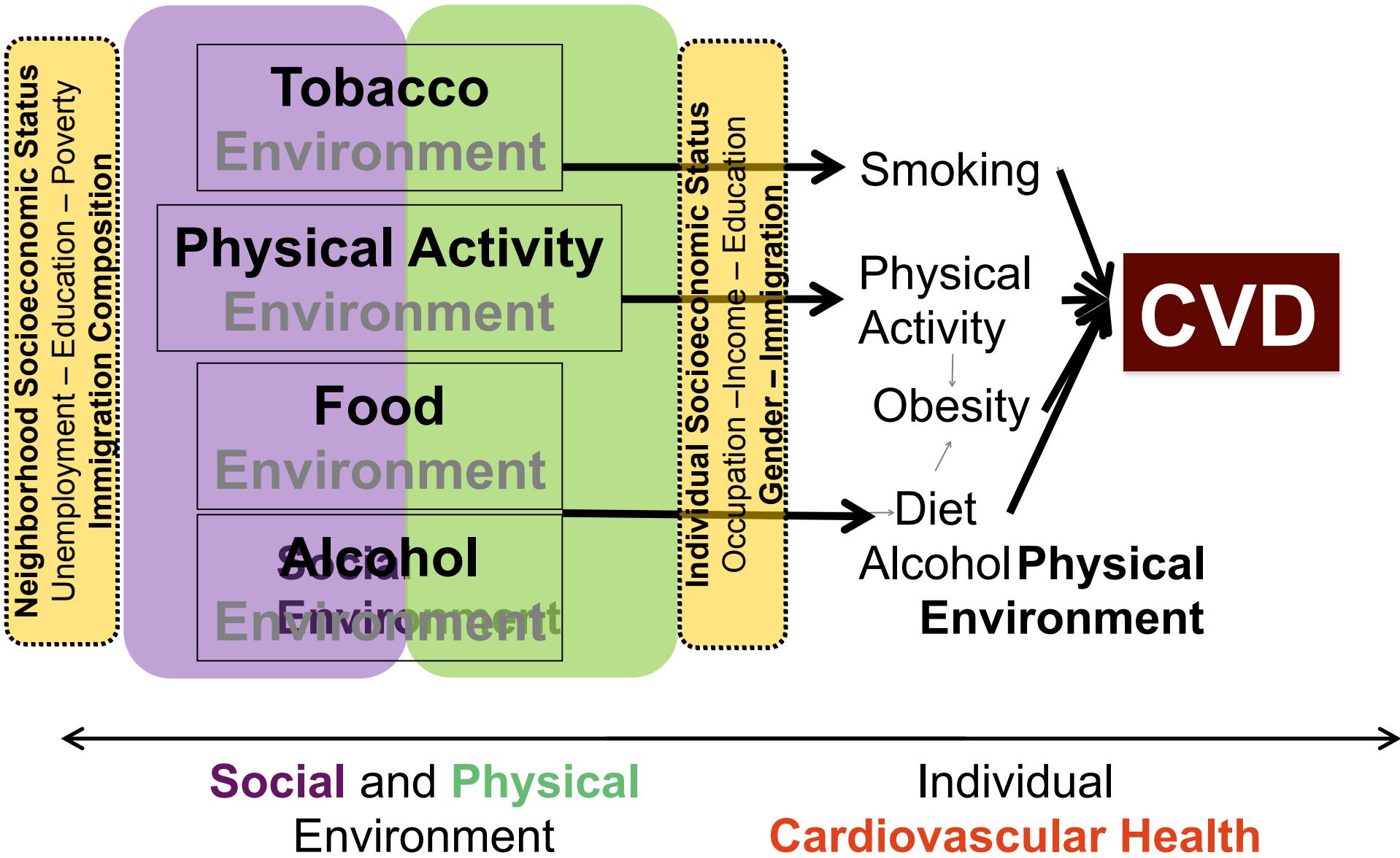
To study the impact of the

social and physical environment in terms of

tobacco, alcohol, food and physical activity

on residents cardiovascular health

1. To include **a qualitative approach to understand the context and meanings** of the urban environment in relation to cardiovascular health

2. To develop **measurements to characterize the social and physical urban environments** in a systematic and accurate fashion

3. **To compare** the relation between the urban environment and cardiovascular health in the **United States with** this relation in **Europe**

4. **To evaluate naturally occurring changes (natural experiments)** such as public policy interventions occurring during the time of the study modifying the urban environment

To provide scientific evidence to the general population, researchers and policy makers to intervene at the population level to prevent the first cause of death in Europe

PROYECTO HHH - ÁREA DE ESTUDIO
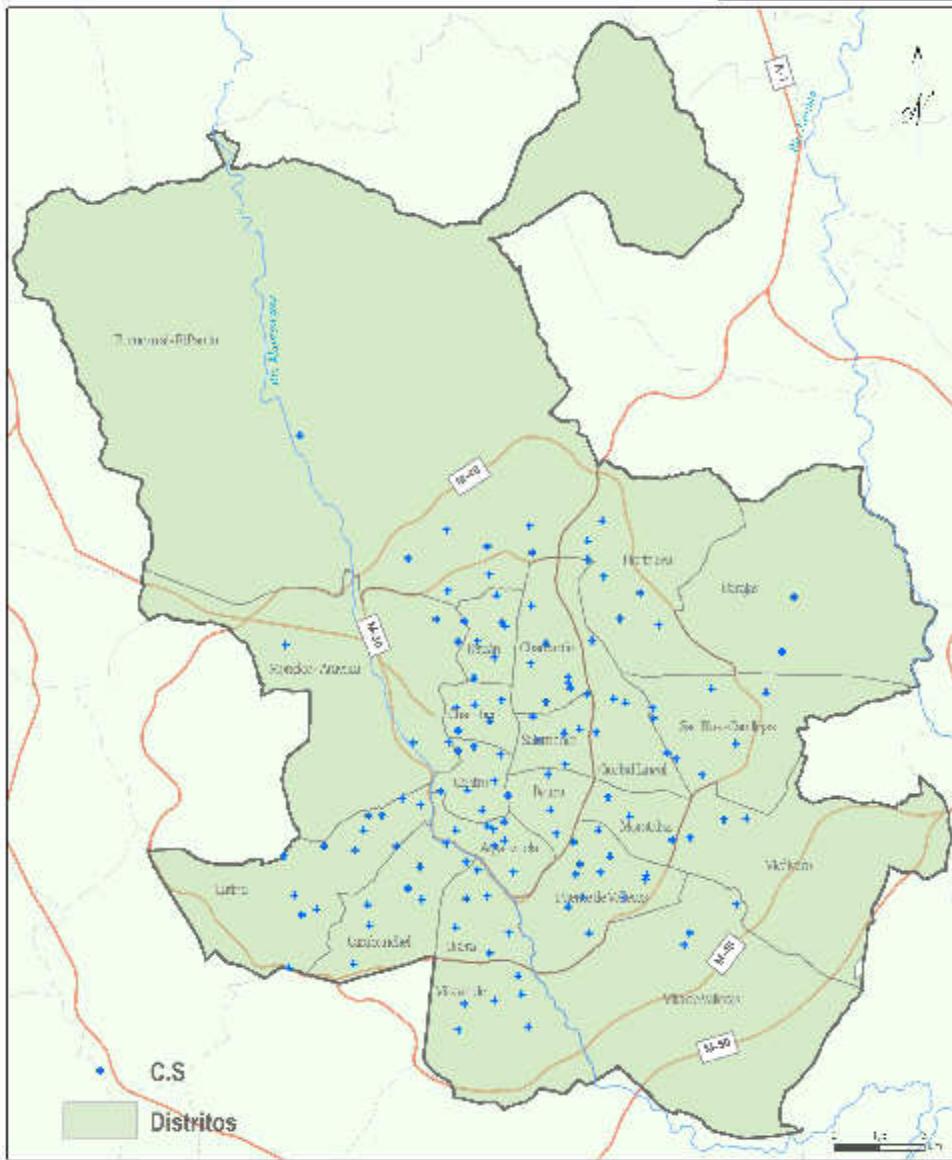
21 Districts

128 Neighborhoods

2412 Census Sections

3,2 Mill. Residents

Access to the Integrated Primary Care Health System Database

1,4 million residents 40-75 ys. old

http://hhhproject.eu

Cohort Study	**Baseline Visit**	2,500 participants →	**Final Visit**
Whole Population Study	**1st Database Mining**	1,4 million people →	**Final Database Mining**

Multilevel Association Analysis

Environment *Tobacco* *Alcohol* *Food* *Physical Activity*	1st Assessment	Neighborhoods →	2nd Assessment

4 year follow up
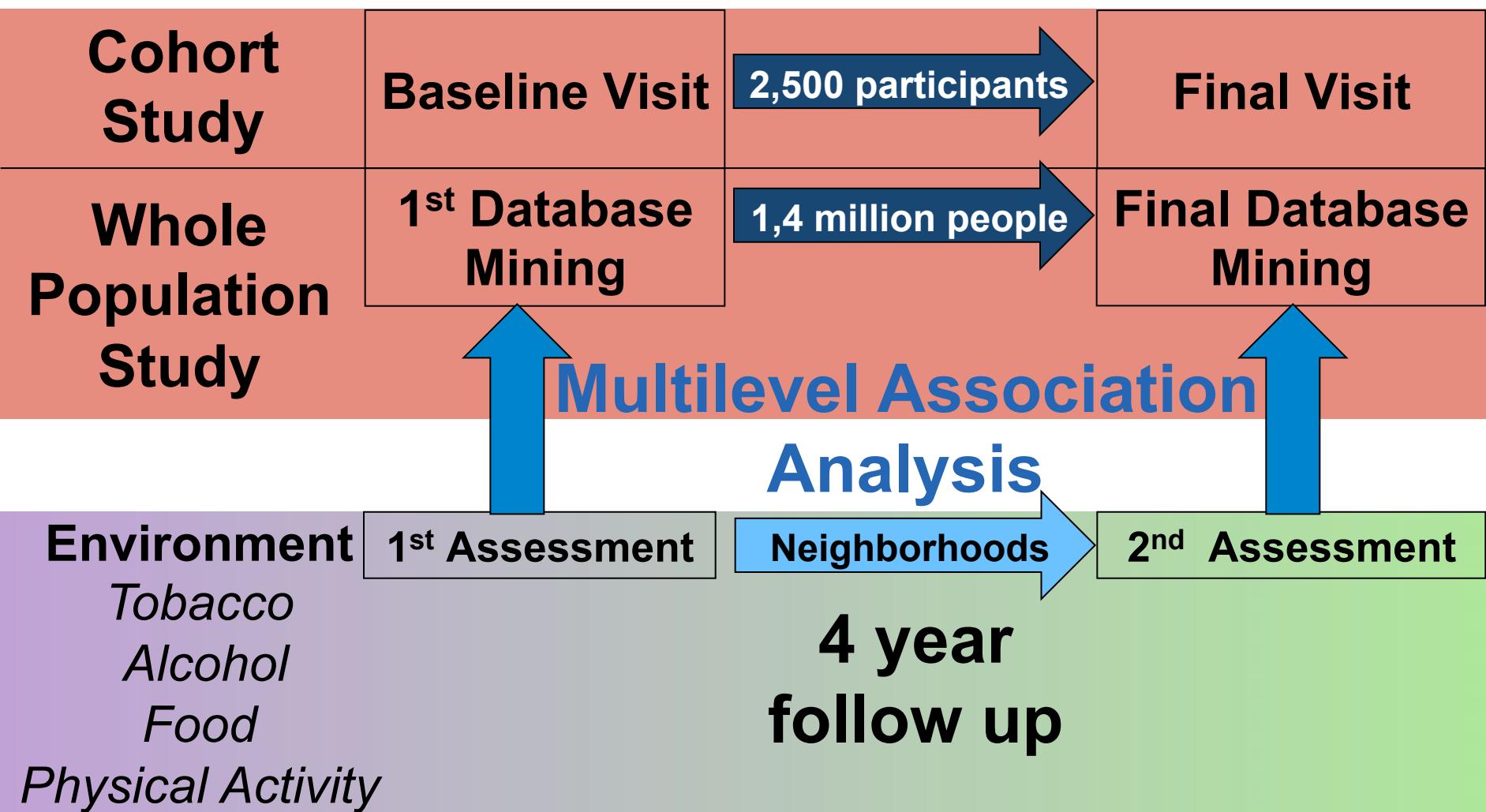
HHH Pilot Study Area
12 Census Blocks

12 Census Sections
16.000 inhabitants

Madrid Region

Madrid Municipality
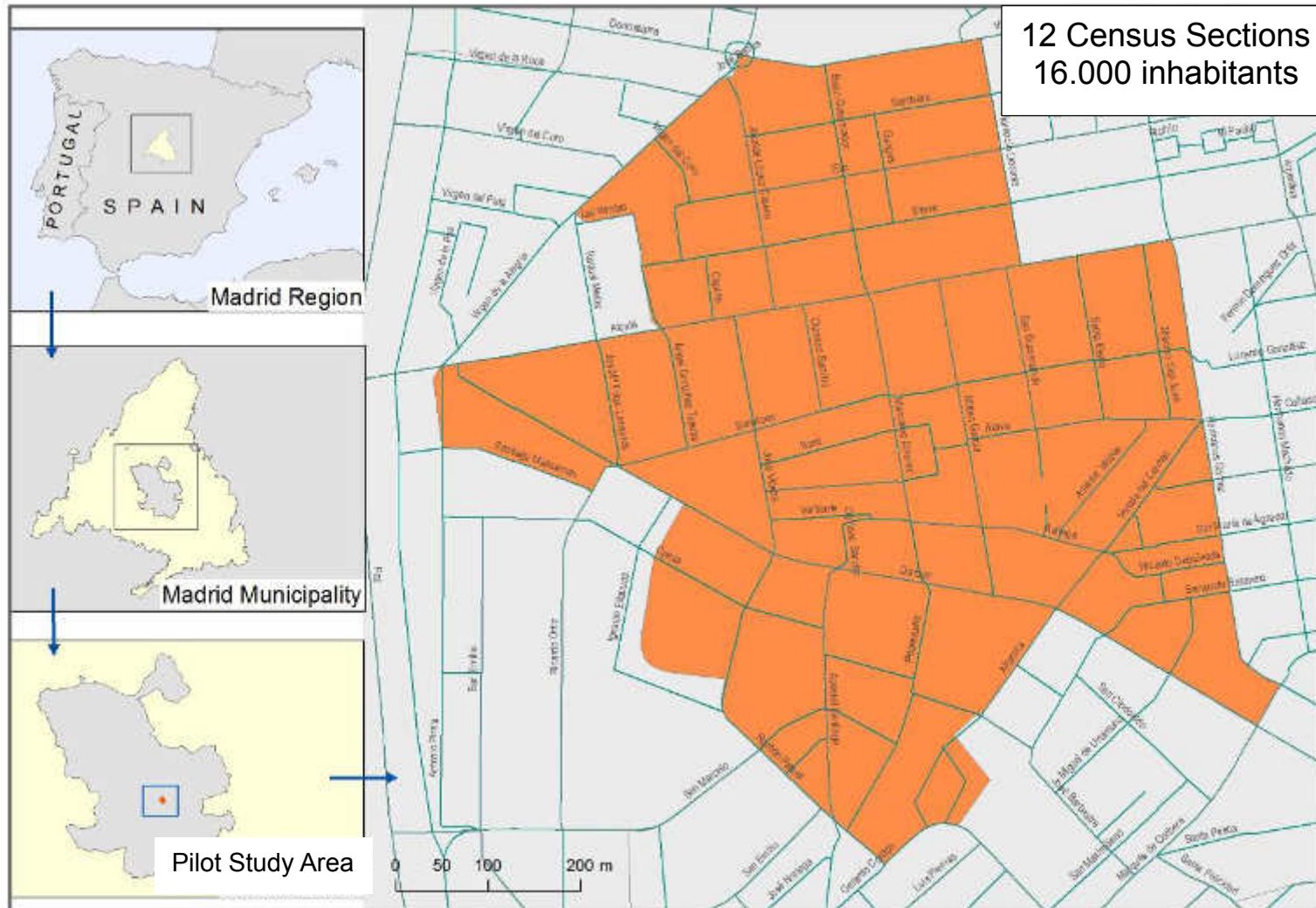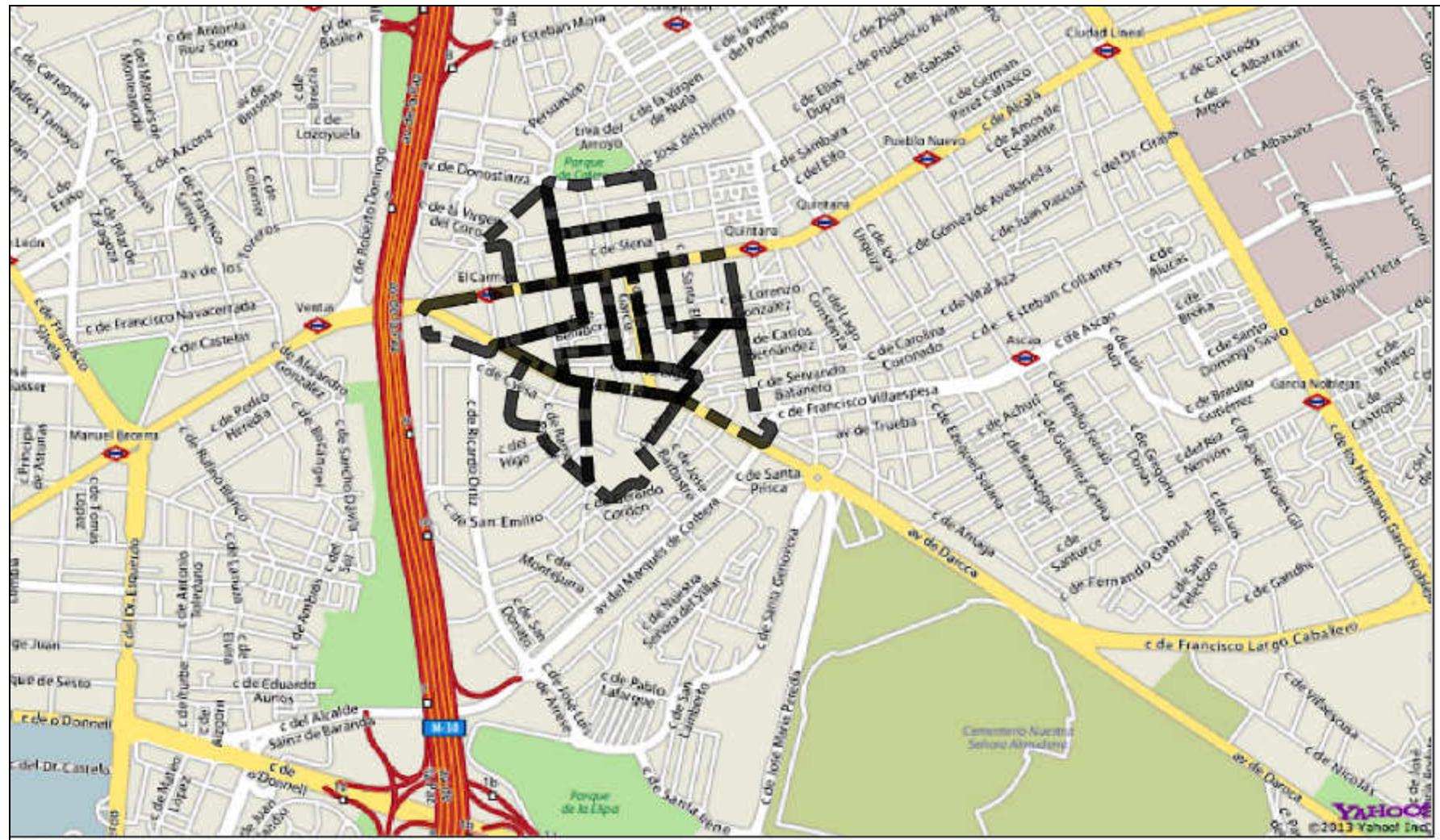
Pilot Study Area

HHH Pilot Study Results

SaludMadrid

Centro de Salud
Daroca

Comunidad de Madrid

Pilot Study Sociodemographic Profile Primary Health Care Records

- Total Pilot Area Population: 15,751

- Population in the Primary Care Health System Geocoded to census section level: 14,857 (95%)
  - ***Possibility of obtaining data for 2 million people***

- Median Age: 44 (Range: 0 to 106)
  - 49% Above 45 years (CVD Health Target Group)

- Sex: 55% Women (65% in >75 years)

- Primary Care Health Centers: 98% in 3 centers

- Education: 50% > primary education

- Immigration: 19% foreign-born

Pilot Study Cardiovascular Profile
Primary Health Care Records

- Population 45-106 ys. old: 7,252

- Sex: 59% Women

- Diabetes Prevalence: 12%

- Diabetes Control (HbA1c<7):   63%

- Hypertension Prevalence: 34%

- Obesity (BMI >30):   20%

- Dyslipidemia, all types: 32%

HHH Pilot Study
Exposure Assessment Results
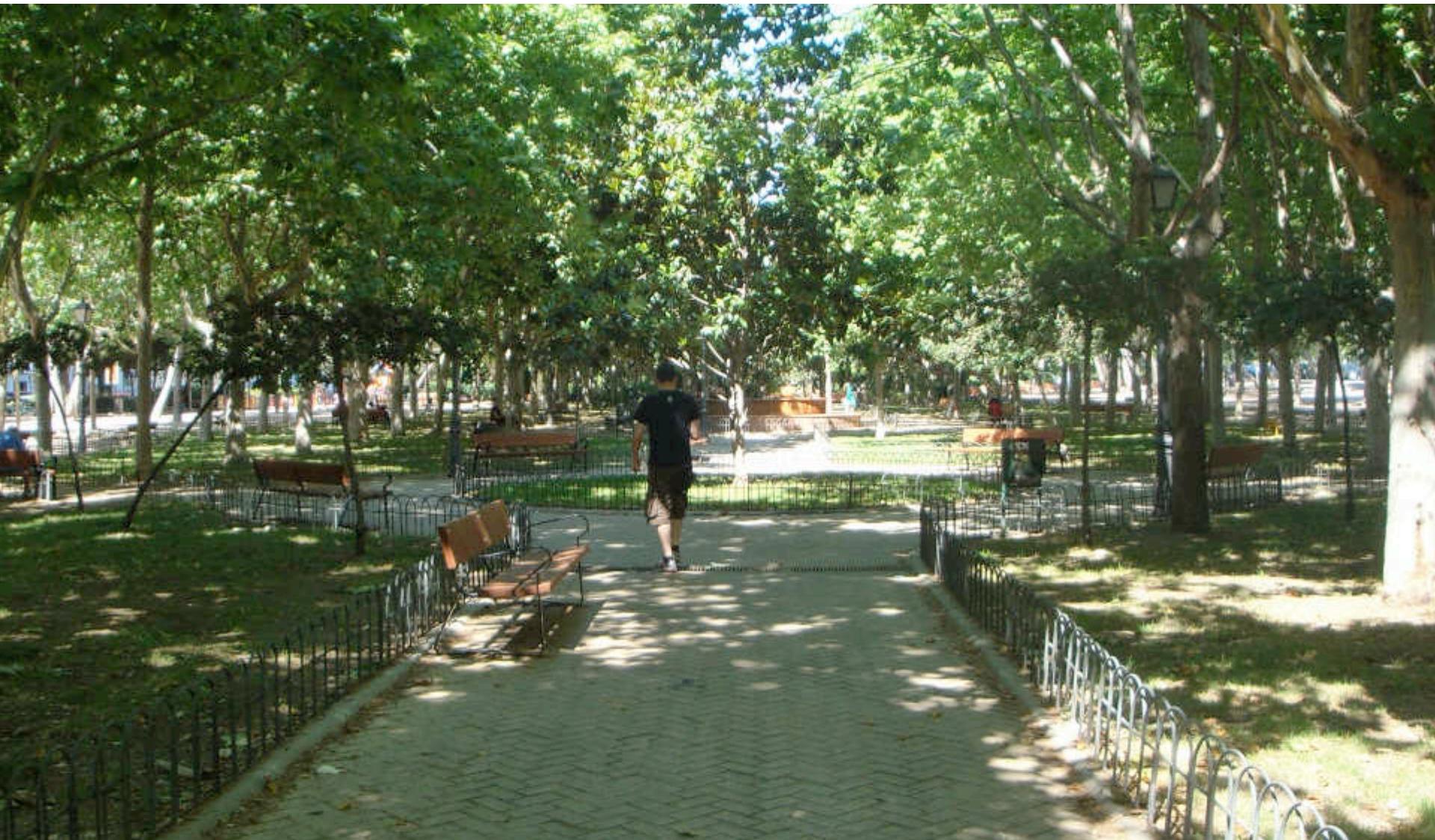
Assessment of walking and cycling environment in the streets of Madrid: On-field and Virtual audits

36 secciones censales (12 por área)
500 segmentos (NOMECALLES)
454 (90.8%) finalmente medidos
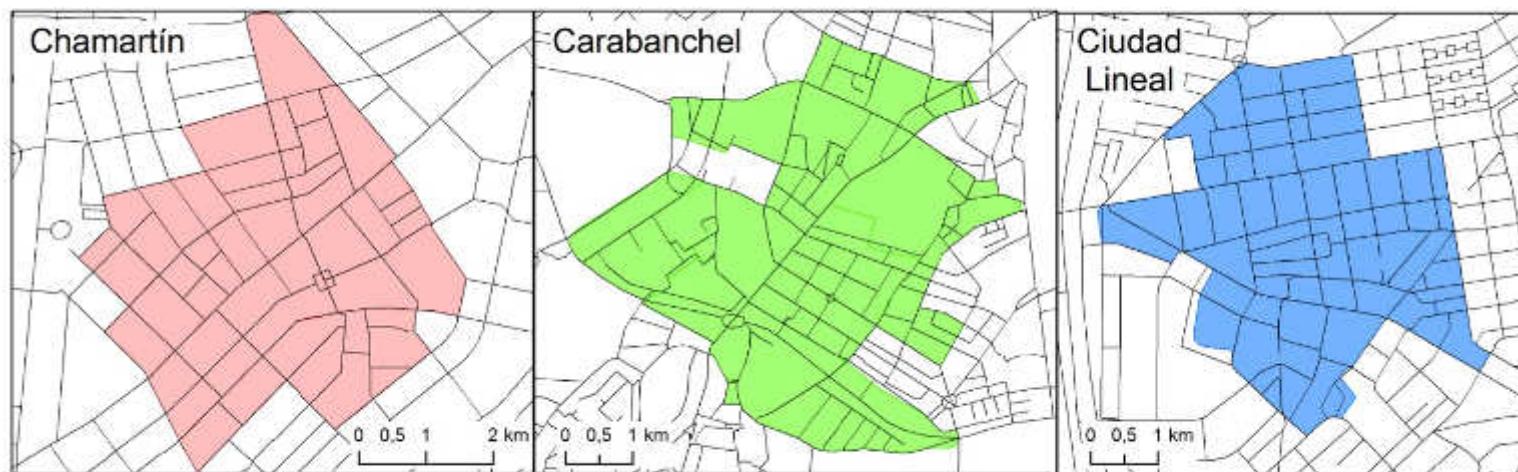
Recogida de datos:
febrero-mayo 2014

Orden de medición:
1. Ciudad Lineal
2. Chamartín
3. Carabanchel

½ secciones censales
primero medición directa

Medición directa

## Google Street View

Imágenes Google Street View: 2008–2014
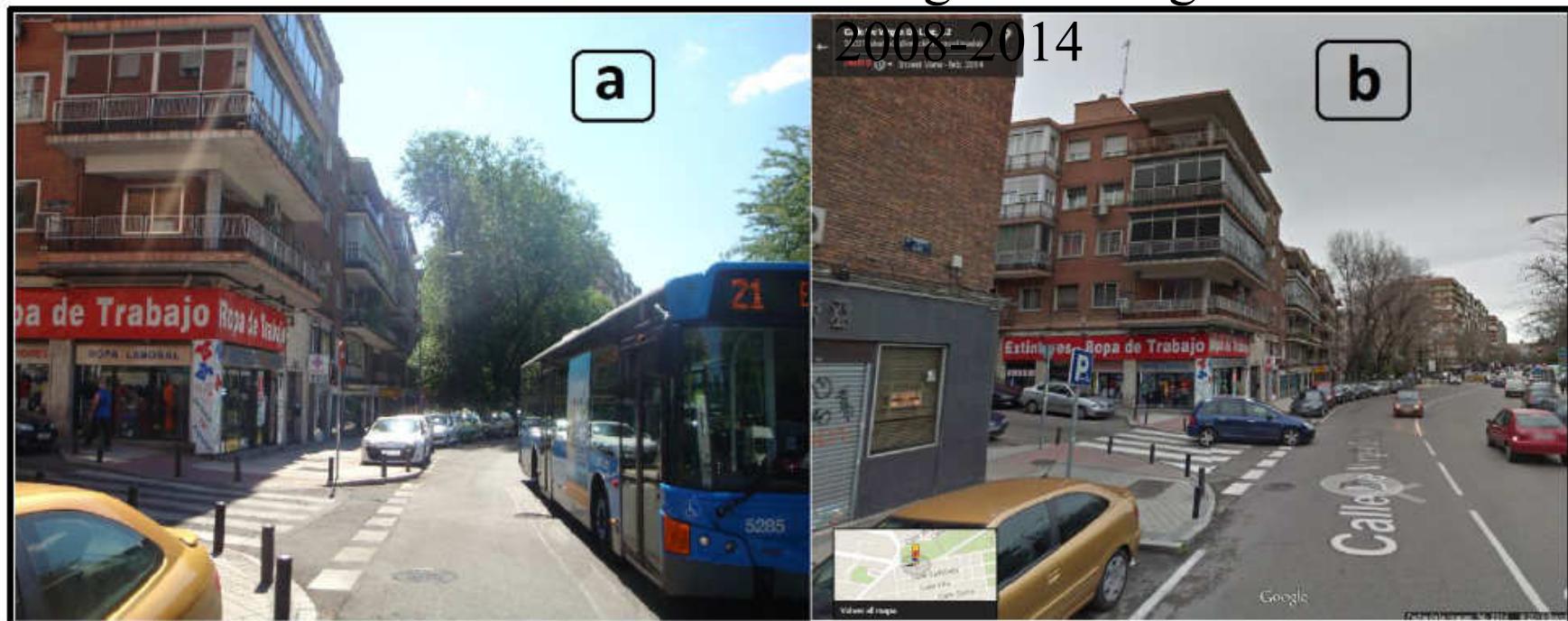
FIGURE 5. Picture of a street feature as it was used in on-field visits (a) and online audit (b). Both images were obtained in May 2014. Virtual picture corresponds to an image taken by Google in February 2014.

WALKABILITY KERNEL DENSITY
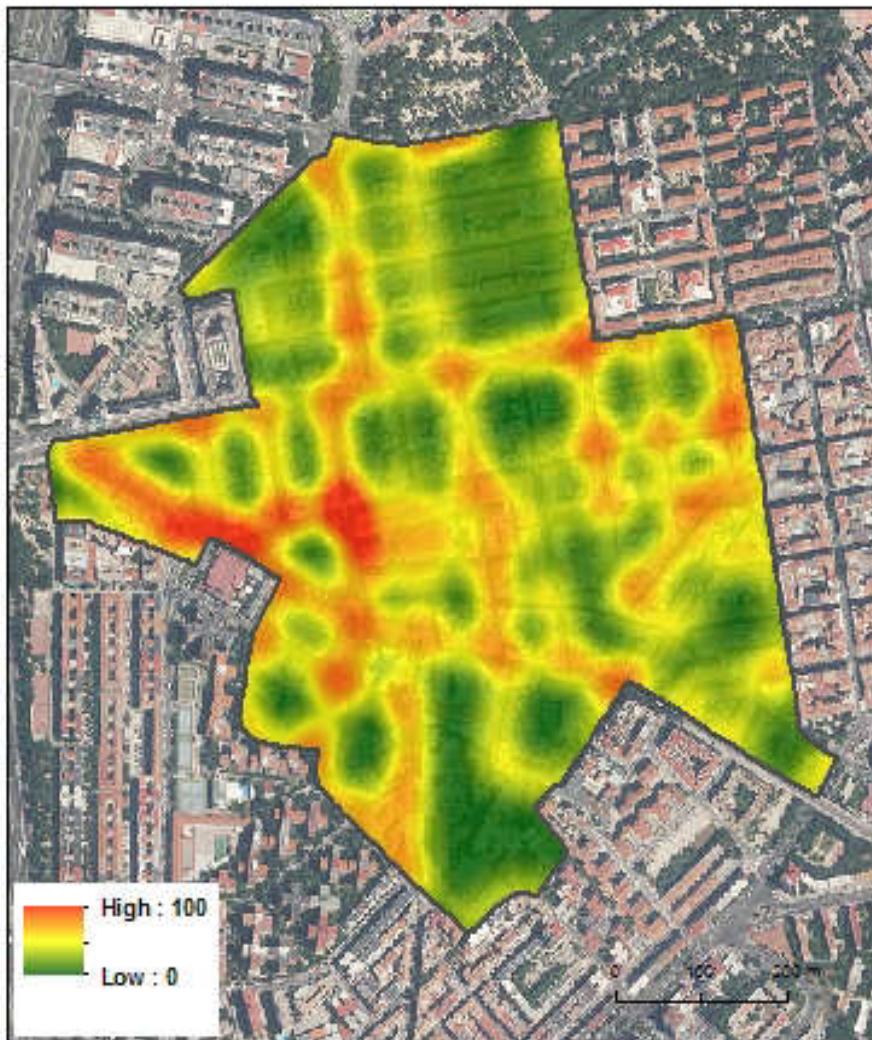
STREET VIEW
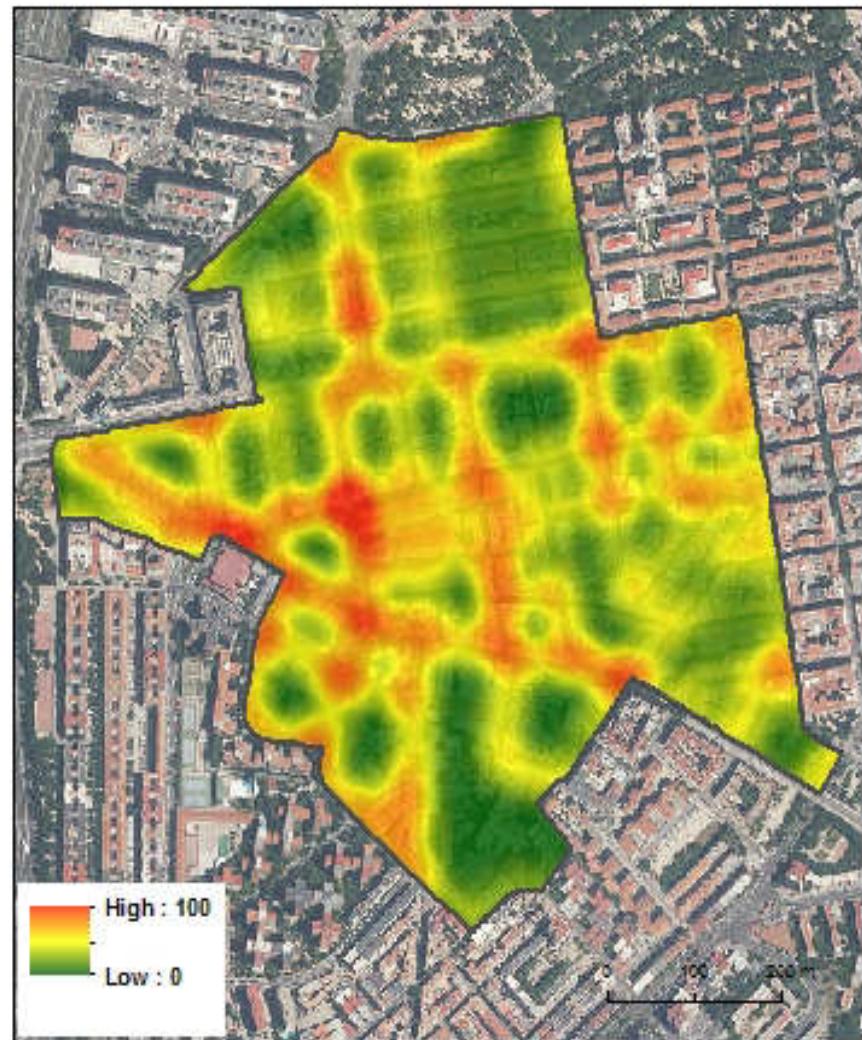
ON FIELD

Accesibilidad peatonal a la Red de Autobuses en el barrio piloto de Ciudad Lineal

Velocidad a pie de 3,5 km/h

Velocidad a pie de 4,5 km/h

0   60   120 Metros
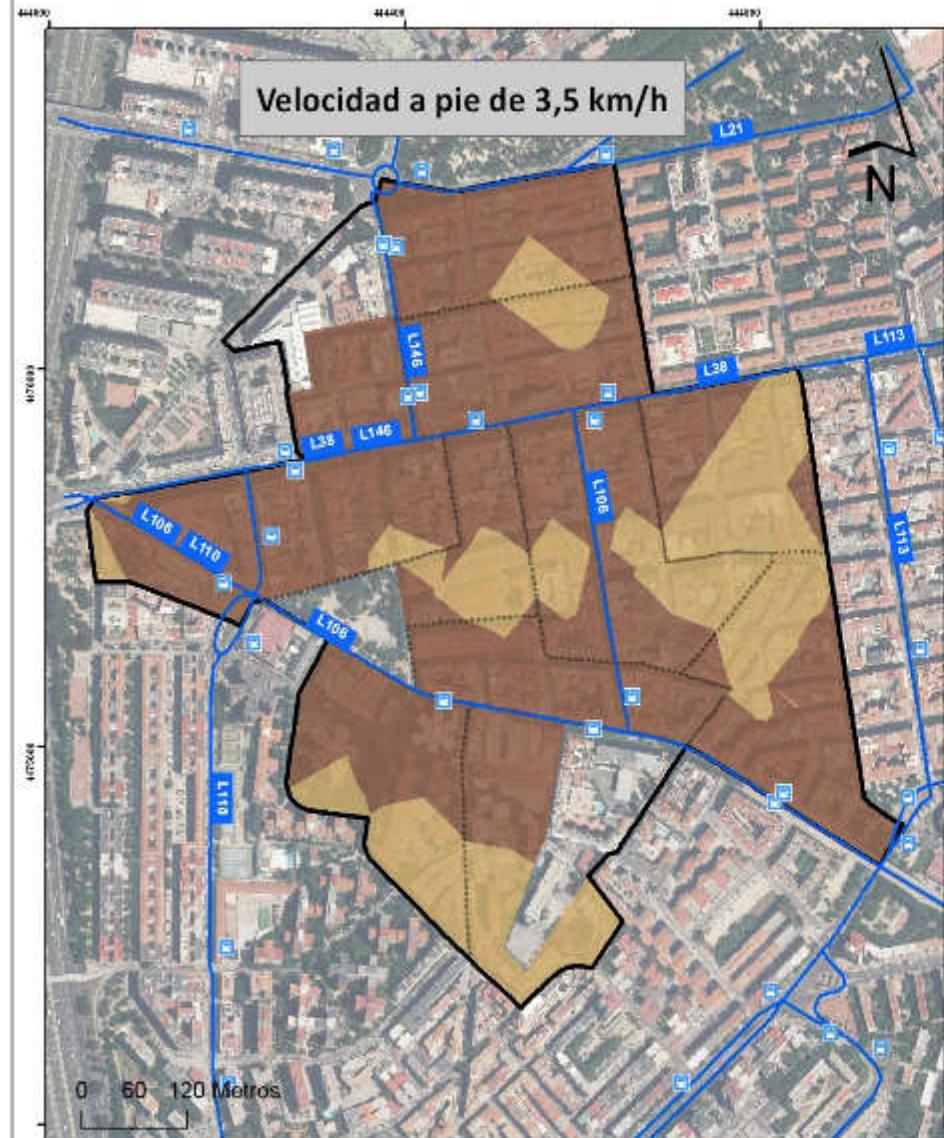
Barrios
Cardio-Saludables
HEART HEALTHY HOODS

Universidad
de Alcalá

Intervalos de tiempo

0 - 3 minutos

3 - 6 minutos

Red de Autobuses

EMT

Líneas de Autobuses

Parada   L38   Línea

Ortofotos: IGN - PNOA 0559

Sistemas de coordenadas: ED50/UTM zona 30N
Proyección: Trasversal de Mercator

Accesibilidad peatonal a la Red de Metro en el barrio piloto de Ciudad Lineal

Velocidad a pie de 3,5 km/h

Velocidad a pie de 4,5 km/h

Quintana

El Carmen

La Elipa

Intervalos de tiempo

- 0 - 3 minutos
- 3 - 6 minutos
- 6 - 9 minutos
- 9 minutos o más

Red de Metro

- Línea 2
- Línea 5
- Estaciones Línea 2
- Estaciones Línea 5

Barrios Cardio-Saludables
HEART HEALTHY HOODS

Universidad de Alcalá

Ortofotos: IGN - PNOA 0559

Sistemas de coordenadas: ED50/UTM zona 30N
Proyección: Trasversal de Mercator
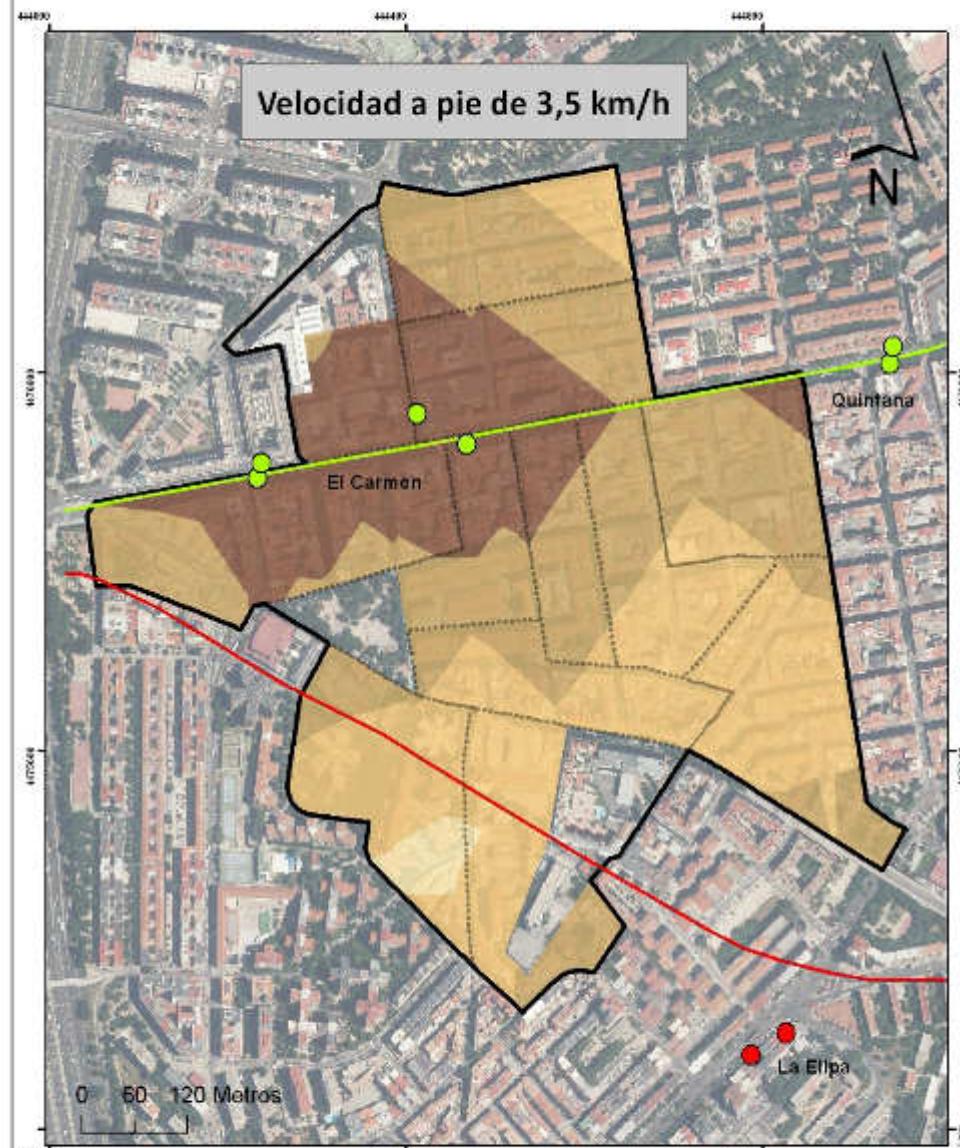
FOOD STORE AND HEALTHY FOOD AVAILABILITY INDEX
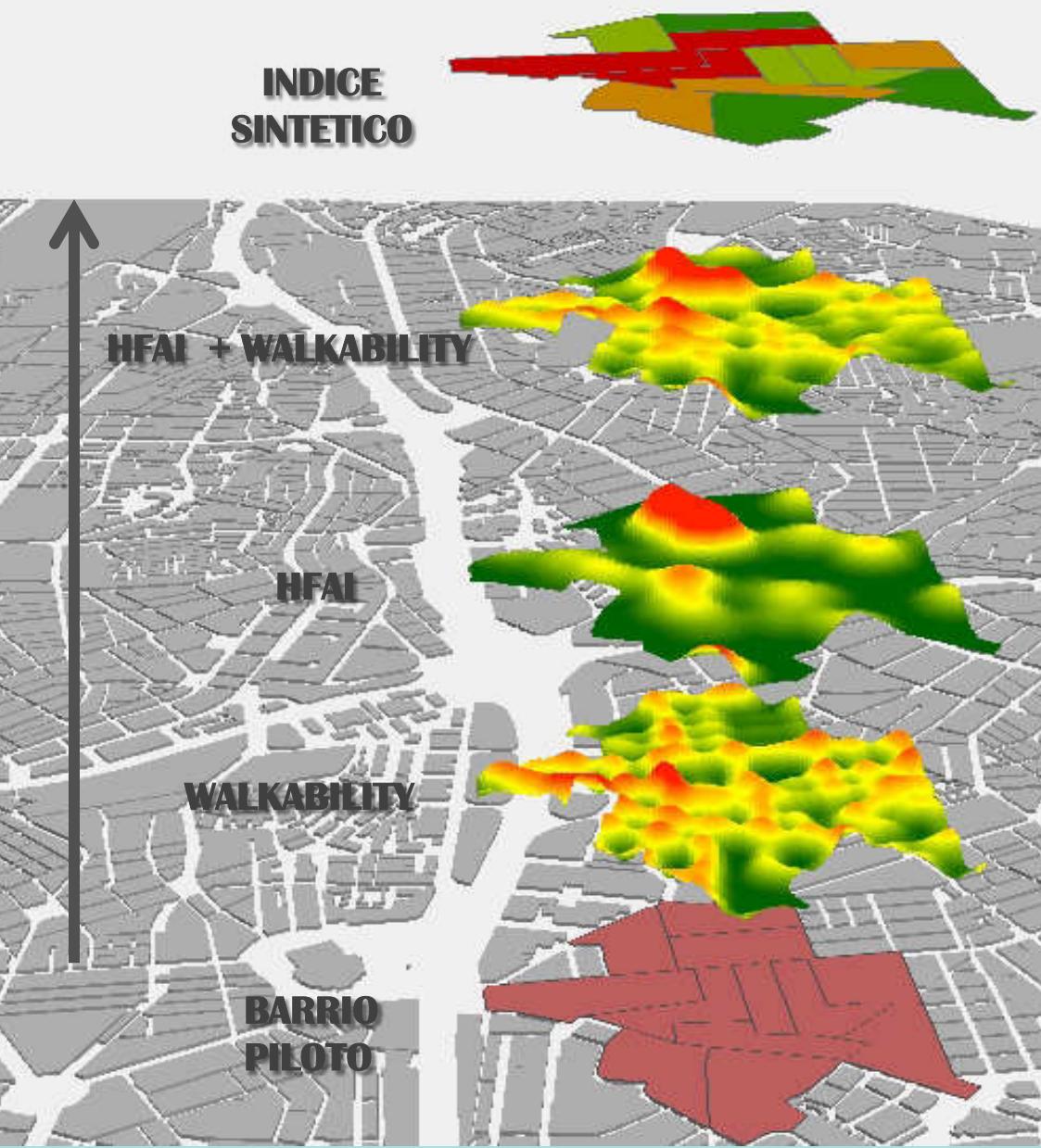
Corner store
Specialty store
Gas station
Grocery store
Supermarket

High : 100
Low : 0

TYPE STORE

KERNEL DENSITY
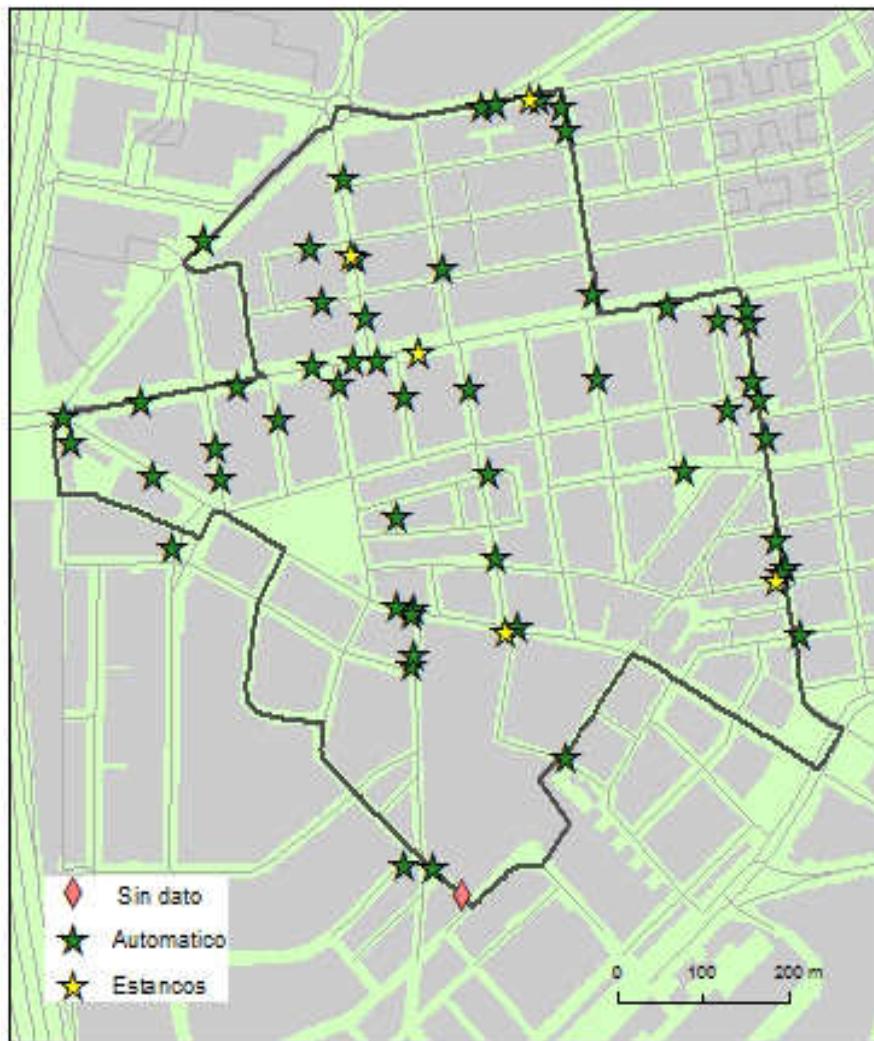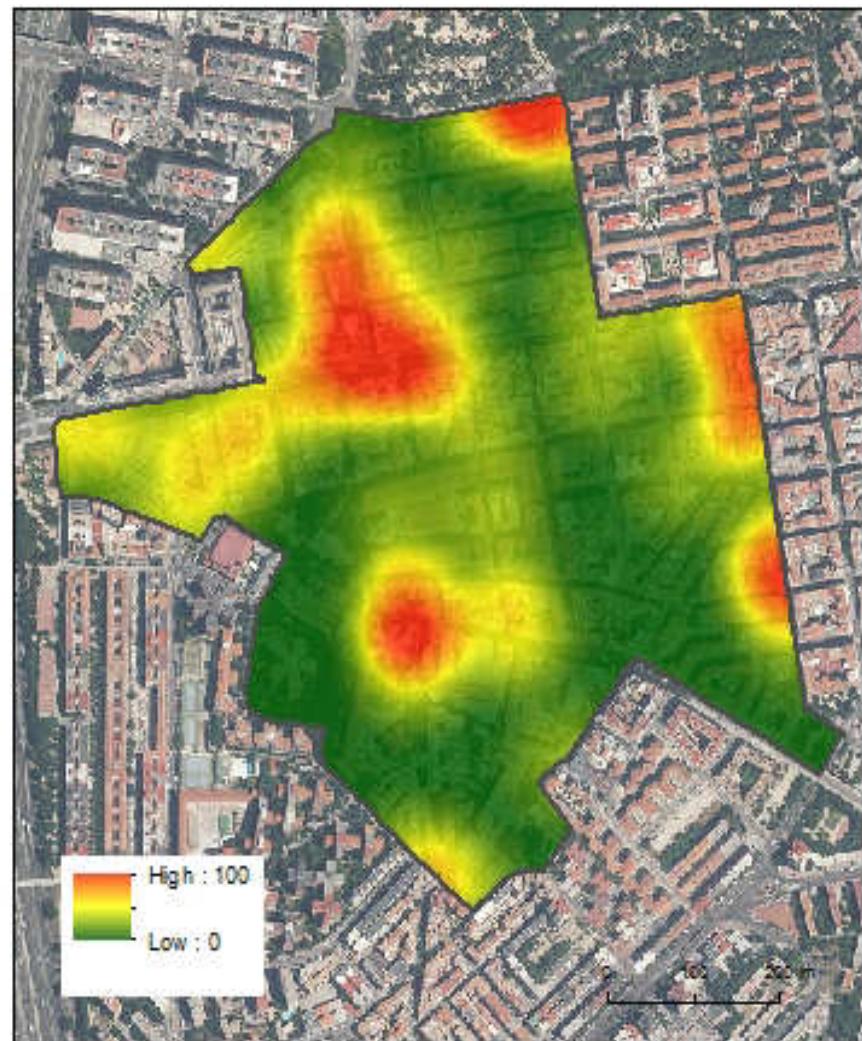
FRIGO

MISSIS FREDI MNI FREK

REPARAMOS MOVILES

REPARAMOS MOVILES

PARA UNOS DIENTES LIMPIOS Y SANOS
Orbit

RECARGA aquí tu móvil

YOU

¡YA A LA VENTA AQUÍ!
SKYLANDERS

VADO PERMANENTE

MISSILE

Mahou   Mahou   Mahou

ALCOHOL

TYPE STORE

Sin dato
Consumo
Venta

0   100   200 m

KERNEL DENSITY

High : 100

Low : 0

TOBACCO

TYPE OF SALE

Legend:
- ◆ Sin dato
- ★ Automatico
- ★ Estancos

Scale: 0 — 100 — 200 m

KERNEL DENSITY

High : 100
Low : 0
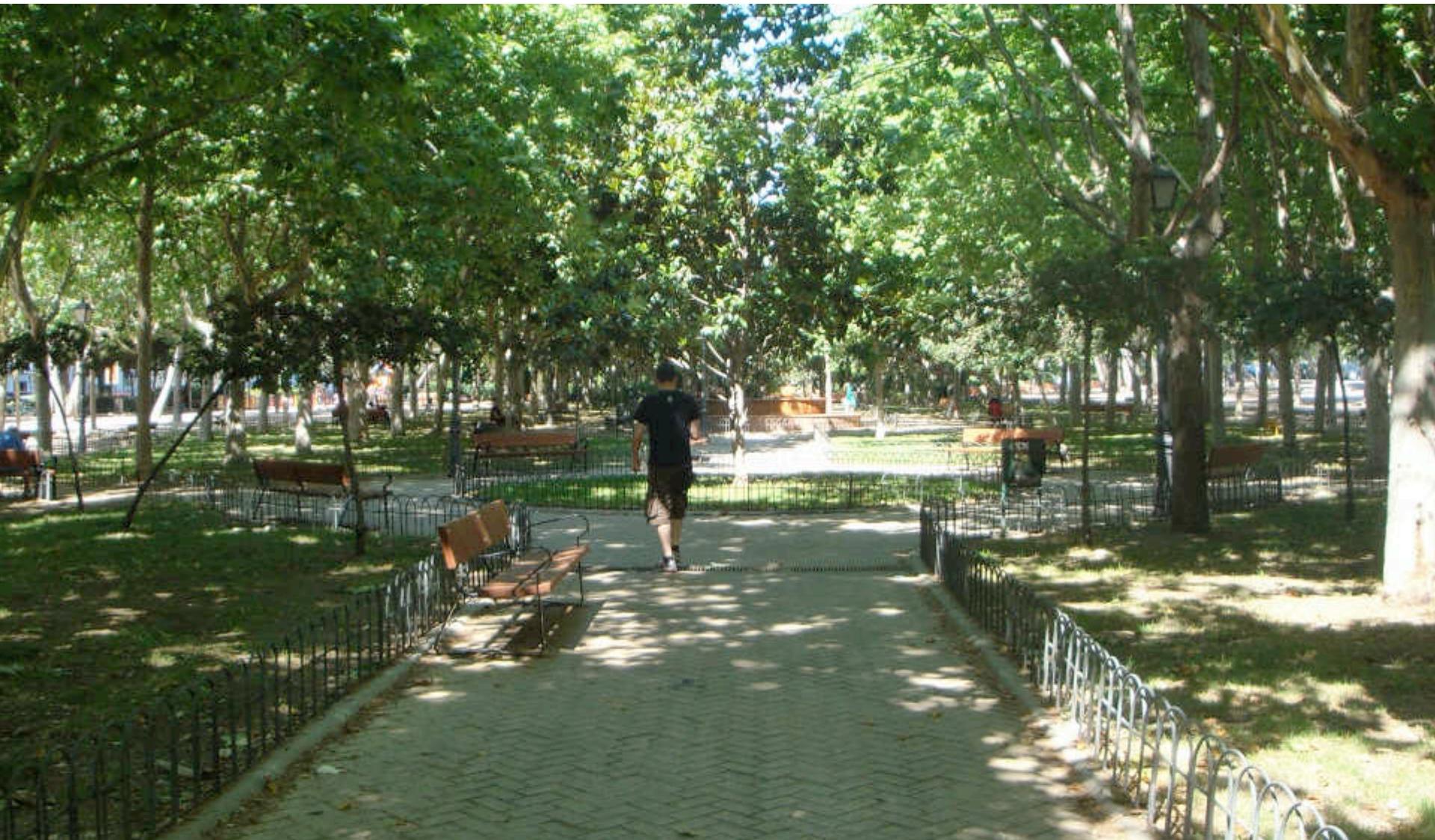
HHH Pilot Study
Exposure Assessment Results

Objective: Gain better understanding of residents and stakeholders perceptions and norms regarding neighborhood environment and cardiovascular health

Stratified purposeful sampling to include "**key neighbourhood informants**". 15 conducted and transcribed semi-structured interviews:

- *6 long term residents (Females and Males)*
- *2 recent immigrants*
- *3 health practitioners*
- *2 primary school teachers*
- *1 food market leader, local butcher*
- *1 neighborhood association / community leader*
- *1 local politician*

Food Environment: *"Voy al mercado de La Elipa que ya conozco a la gente….De toda la vida, claro, yo al carnicero ya le compro hace 30 años"*

Physical Activity Environment: *"Y cuando somos mayores, pues yo voy en una silla de ruedas por la calle, si hubiera bancos en la calle yo no necesitaba la silla porque andar pues 20 metros ando muy bien, pero yo a lo mejor los 25 no"*

Alcohol and Tobacco Environment: (Not perceived as socially influenced) *"Por el nivel cultural yo creo que sí que hay una mayor tendencia al consumo elevado de alcohol, no exageradamente"*

The role of immigration in shaping behavior patterns related to the use of open spaces   *"…mi hijo no va al parque porque está lleno de inmigrantes." "Los inmigrantes, que cogen las canchas como espacios propios, y ahí han tenido problemas"*

The current economic crisis shaping the neighborhood´s shopping environment *"Yo tengo hamburguesa porque tengo a mi nieto a comer y entonces tengo no sé cuánto… 3 o 4 euros…, entonces o comemos hamburguesa o no comemos"*

The role of social networks shaping health behavior patterns in residents *"se han perdido muchos hábitos de consumo, el hábito de antes se salía a tomar el vermut el domingo y te juntabas con tu vecino, con tus amigos y tal."*

General public engagement in scientific activities

Citizens actively contribute to science with their intellectual effort

Participants raise new questions and create a new scientific culture.

Volunteers acquire new learning and skills, and deeper understanding of the scientific work in an appealing way.

As a result of this open, networked and trans-disciplinary scenario, **science-society-policy interactions are improved leading to a more democratic research based on evidence-informed decision making.**

Photovoice and Urban Health

- Photovoice is a novel participatory-action research method engaging the community in disease prevention

- First Photovoice health project in Spain

- MAPFRE Foundation funded this project in collaboration with the Madrid Public Health Institute

- http://hhhproject.eu/research/photovoice/

FUNDACIÓN**MAPFRE**

¡MADRID! madrid+salud

INSTITUTO DE SALUD PÚBLICA

PHHHOTOVOICE
Villaverde District
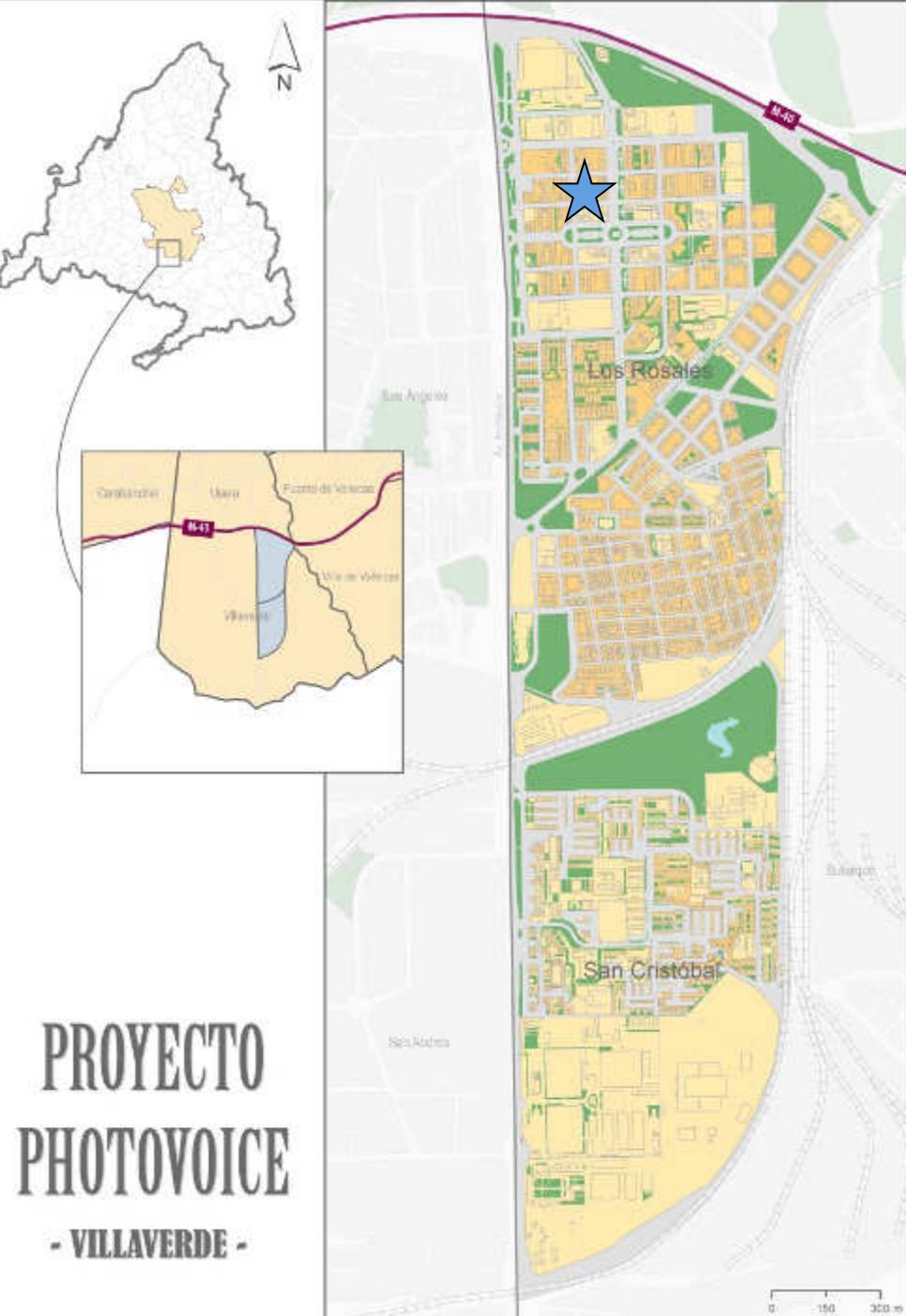
Two neighborhoods:

- **Los Rosales**

- **San Cristóbal**

⭐ Madrid Public Health Institute, Villaverde Center

University researchers and Madrid Public Health Institute meetings, January 26th 2015

- Organizing the field-work ahead (contacting process)
- Understanding the technique
- Setting our goals
- Schedule and deadlines

Methods. Photovoice Technique

We carry out a minimun of 5 sessions where participants receive basic training on the use of the camera and discuss over the photographs taken

To facilitate photos discussion we use the SHOWED scheme:
– What do you **S**ee here?
– What is really **H**appening?
– **HOW** does this relate to our lives?
– Why does this problem or strength **E**xist?
– What can we **D**o about it?

Group discussions are analyzed using qualitative techniques

Methods: Photovoice Sessions Structure

1. INTRODUCTION	o Topic: Food Environment and Neighbourhood o Working dynamics and schedule. o Photography Workshop: Take your camera!! o The message to capture.
2. CHECKING UP SESSION	o Participants bring 5 photos. o SHOWED with one photo o Sharing the experience: problems taking pictures o Looking over the message "Food and Neighbourhood". o Portraits
3. POSITIVE ANALYSIS	o Participants bring 5 final photos. o Classification: Positives/Negatives o Discussion on the positive ones
4. NEGATIVE ANALYSIS	o Discussion on the negatives o Returning the cameras
5. FINAL SESSION	o Concept maping

Villaverde, San Cristóbal Female Group

San Cristóbal Female Group

Each participant brings their 5 final photos. They classify all pictures in positives and negatives (3th and 4th sessions)

- Discussion about the positive aspects of neigbourhood
- Thinking about different categories within the positives/ negatives aspects
- Mental training for the next sessions and concept mapping

*To provide scientific evidence to **researchers,** the **general population and policy makers** to intervene at the population level to prevent the first cause of death in Europe*

HHH Communication Strategy:

- Mass media: TV, Radio, Newspapers, Online news

- Social networks: Twitter, Webpage

- Directly addressing Policy Makers

  - Regional Gov Oct 2013, Foro de Sanidad UAH 2014

  - *Political parties (London Bycicle Urban Planning and Transportation policies)*

**Entorno urbano y salud en Madrid
Impacto Social del Estudio ERC**

Resultados sobre los cuatro **factores de riesgo** de las **E**nfermedades **C**rónicas **N**o **T**ransmisibles:

Tabaquismo

Consumo elevado de Alcohol

Sedentarismo

Mala alimentación

Los resultados ofrecen evidencias políticas relacionadas con la primera causa de muerte en Europa

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Hannah Badland, University of Melbourne

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Ezkerrik Asko !