



Social sustainability and transport: strategic implications



UN Expert Group Meeting
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Social/sustainability and Intermodal participatory action research collaboration: Chile-India-US

1. Ecologies of modes
2. Intermodality
3. “Social” sustainability



1. Ecologies of modes

Look at what's wrong



And what's RIGHT



And what's RIGHT



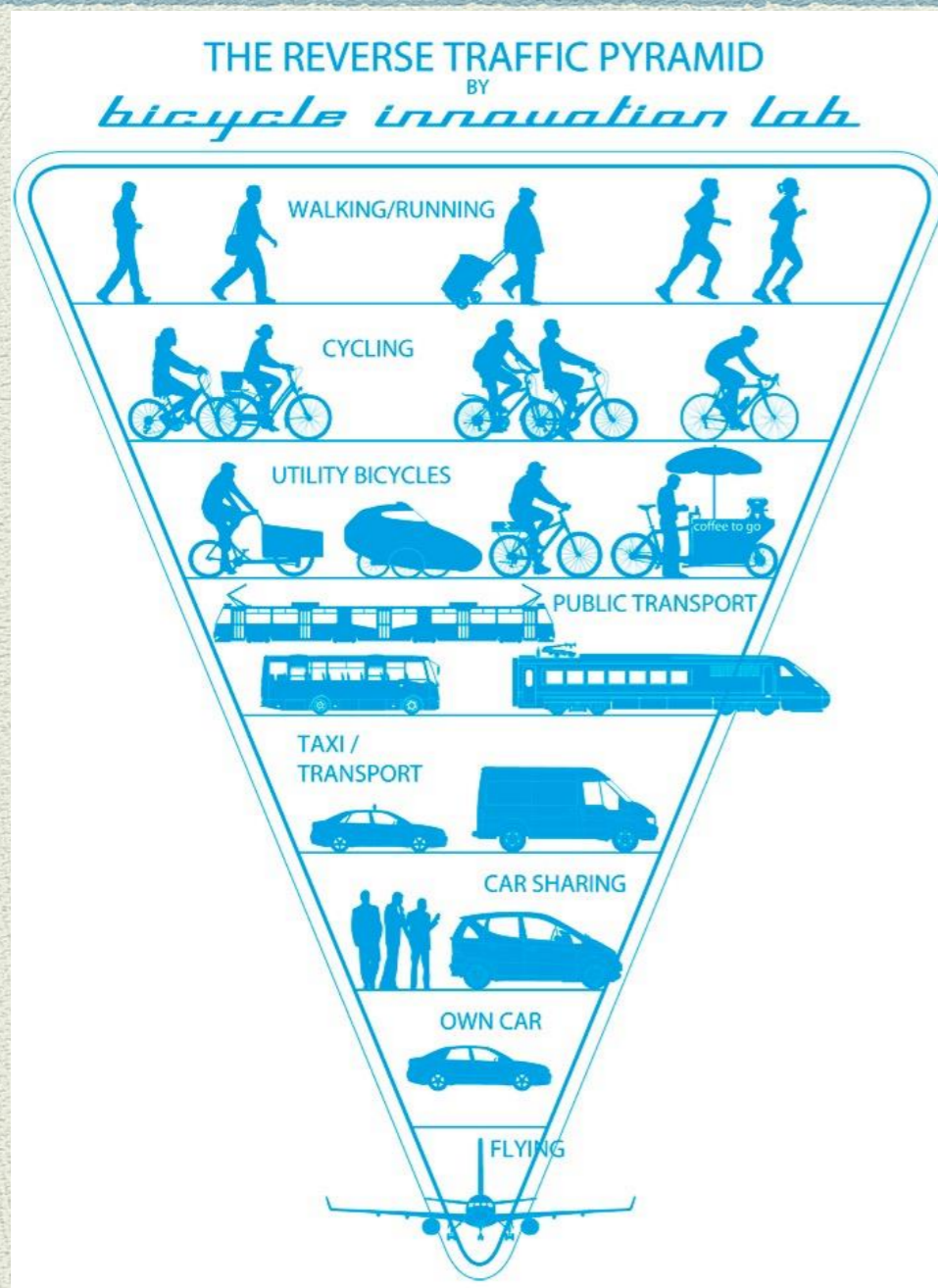
And what's RIGHT



Focus on CONNECTIONS between a sustainable ecology of modes



Reverse pyramid



More space
More resources
More mobile services
More jobs/businesses
Car-free lifestyle

Less road space
Fewer resources
Shift ownership

Each transport mode a niche

Walking (0-2 km) Cycling (2-8 km)
Short trips and access to public transport



Public transport (5-15 km).
Longer distances in places that concentrate origins and destinations.



Car:
Long distance,
low density

ORIGINAL CONCEPT:
TOM GODEFROOIJ, I-CE.

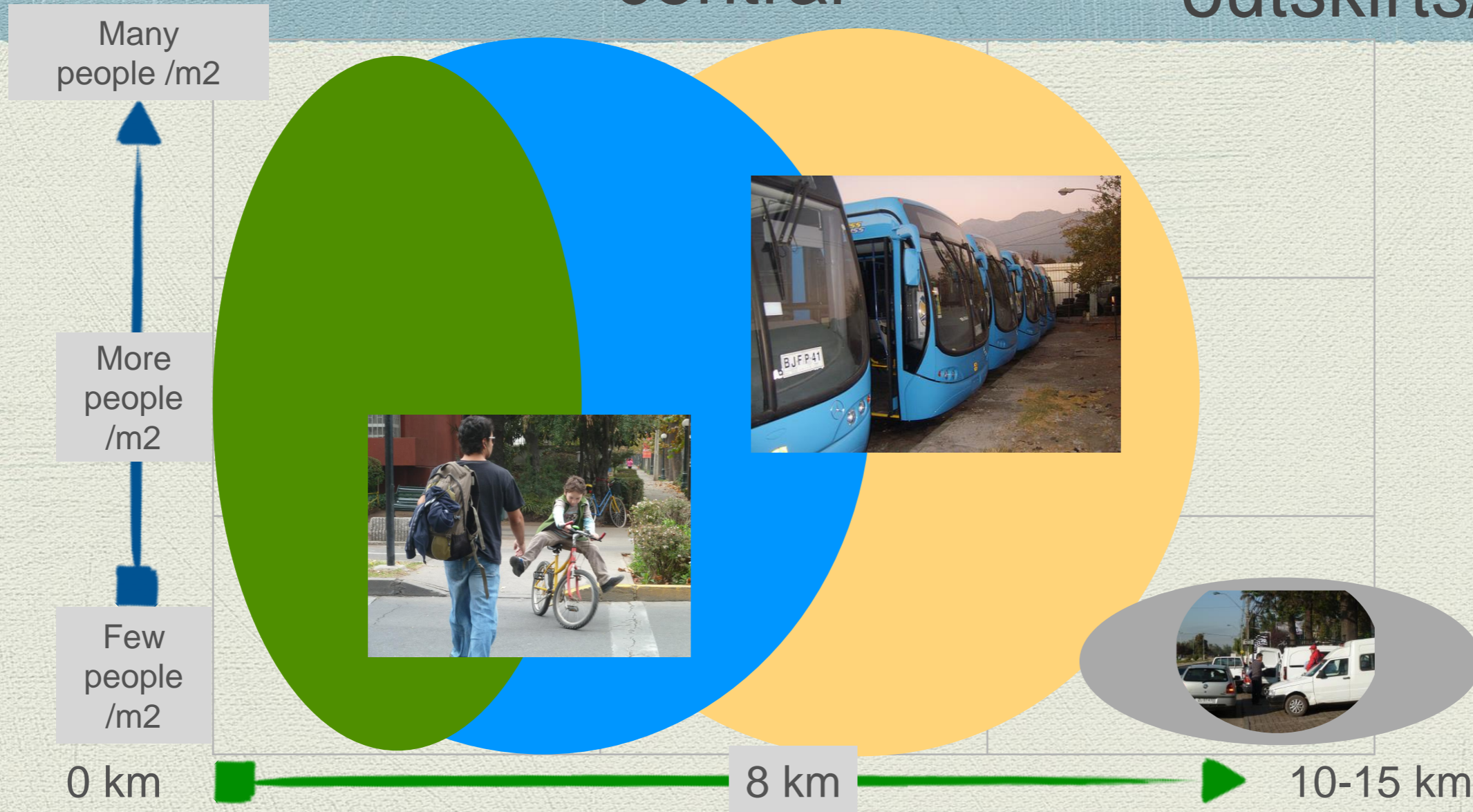
← **+++ more trips+++** →

← **- fewer** →

Re-distribute MODES & ROADS by design, distance and density

central

outskirts/rural



KEY	
Walk	
Cycle	
Public transport	
Car	

Mid- to high densities

+ short trips (0-10 km), walking and cycling (bicitaxis, bikeshare, tricycles)

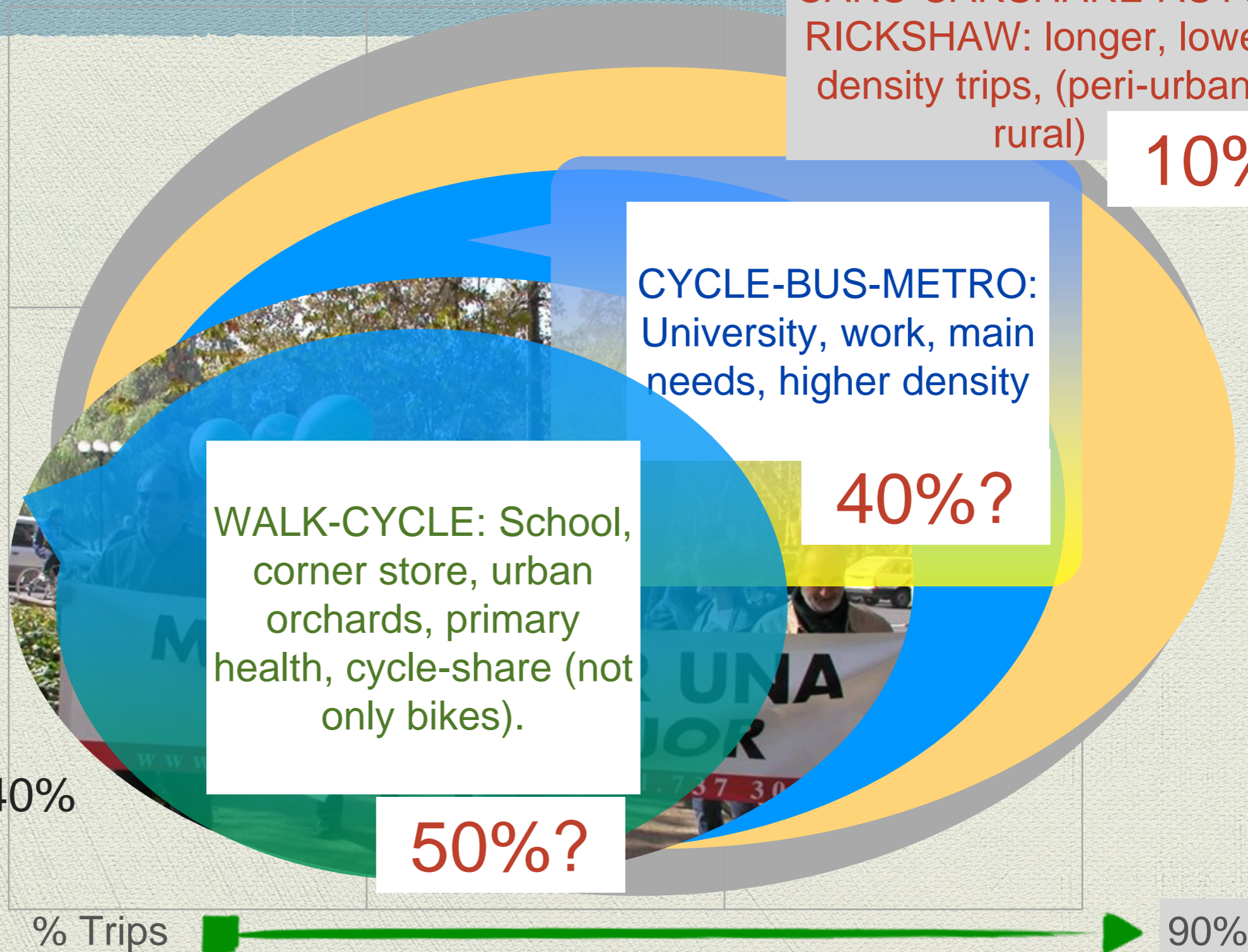
+ Medium trips (5-15 km), BRT-Metro

Low density, long distances, Private car

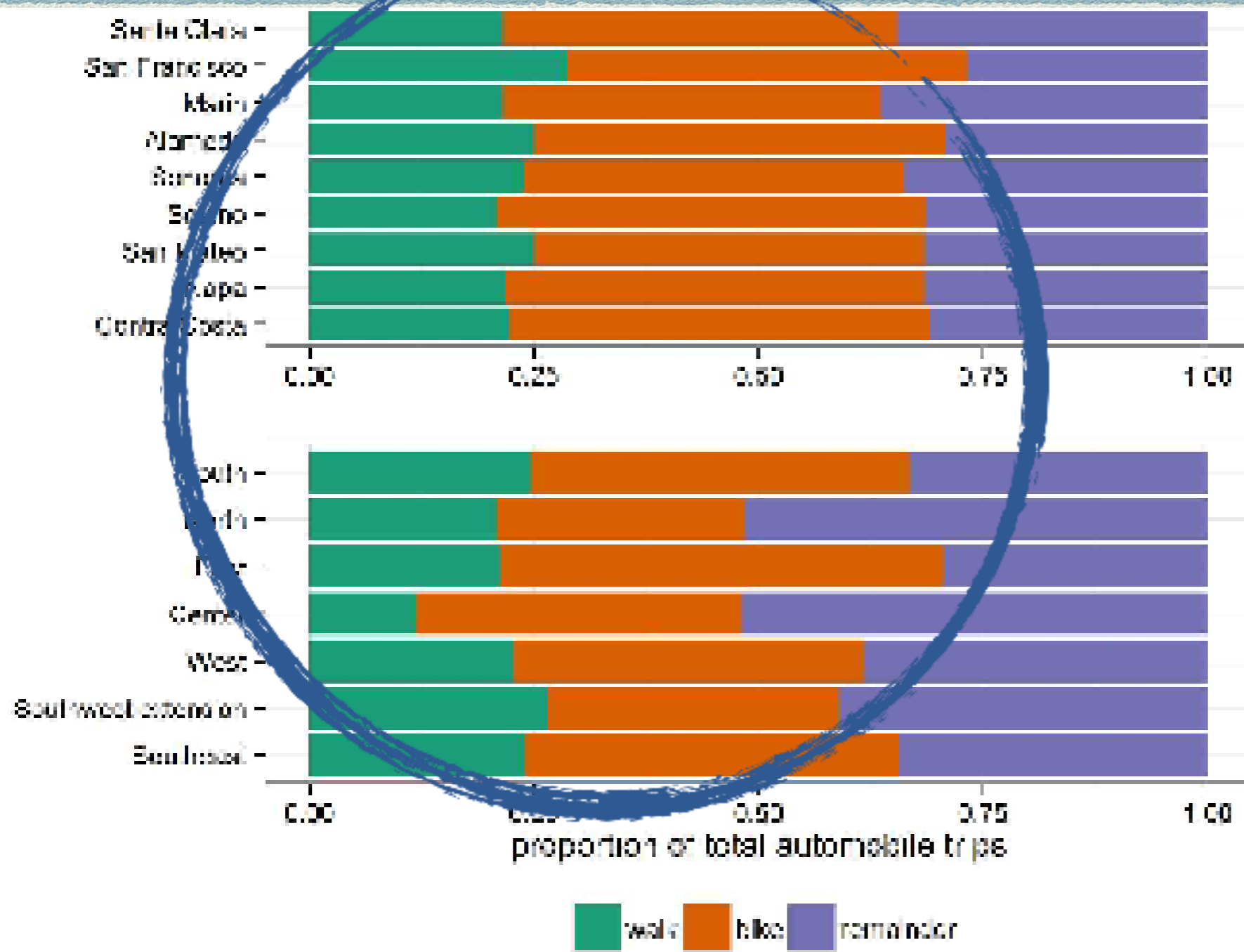
RE-LOCATE daily services, plan to targets, for modal share, but also road space.

KEY	
Walk	Green
Cycle	Blue
Public transport	Yellow
Car	Grey

ALREADY
Walk (36%); +
Cycles (4%) = 40%
Bus-Metro 25%
Car 25%



Potential modal shift targets: % of trips



Well over half and up to 75% of car trips in the Bay area (above) and Metro Santiago (below) more suited to walking and cycling

Potential for modal shift targets

TABLE 4. Mode shift targets in the San Francisco Bay Area and Santiago de Chile.

	Current mode share (%)	Share of trips (%)			Target modal share (2020)
		< 2 km	2 – 8 km	> 8 km	
<i>San Francisco Bay Area</i>					
Automobile	71.5	23.4	44.8	31.7	12.9
Walking	19.3	96.3	3.7	0.03	37.7
Bike	2.1	47.7	46.8	5.5	36.7
Public transit	6.0	16.0	39.8	44.2	12.9
<i>Santiago Metropolitan Region</i>					
Automobile	25.6	21.6	42.0	36.2	13.3
Walking	34.4	95.8	3.8	0.39	46.6
Bike	4.0	62.8	32.4	4.8	26.7
Public transit	29.4	8.9	39.3	51.7	13.3

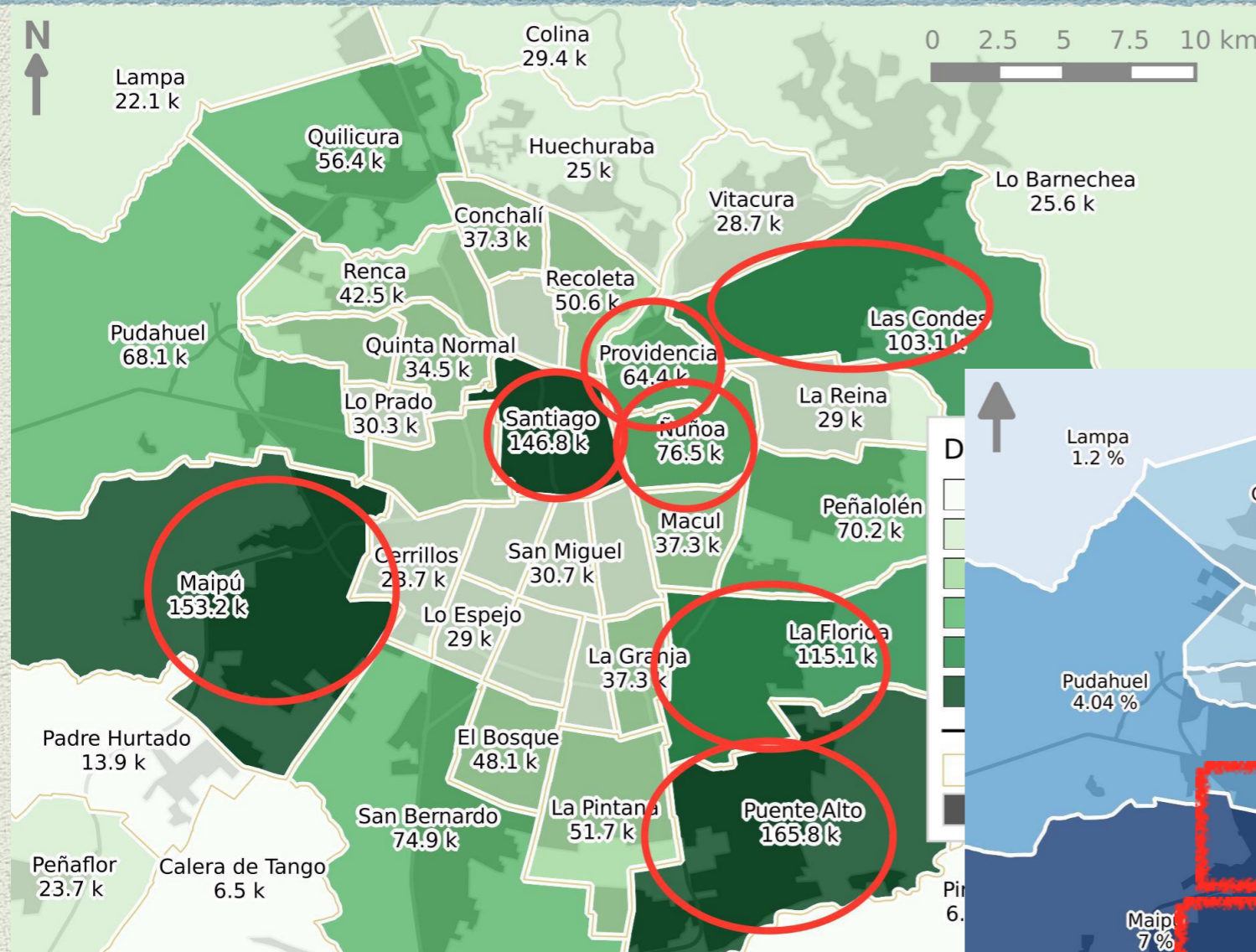
Source: Data from California Department of Transportation (2013) and SECTRA and Universidad Alberto Hurtado (2014). Estimates of potential for modal shift described in text.

Key lessons for planning

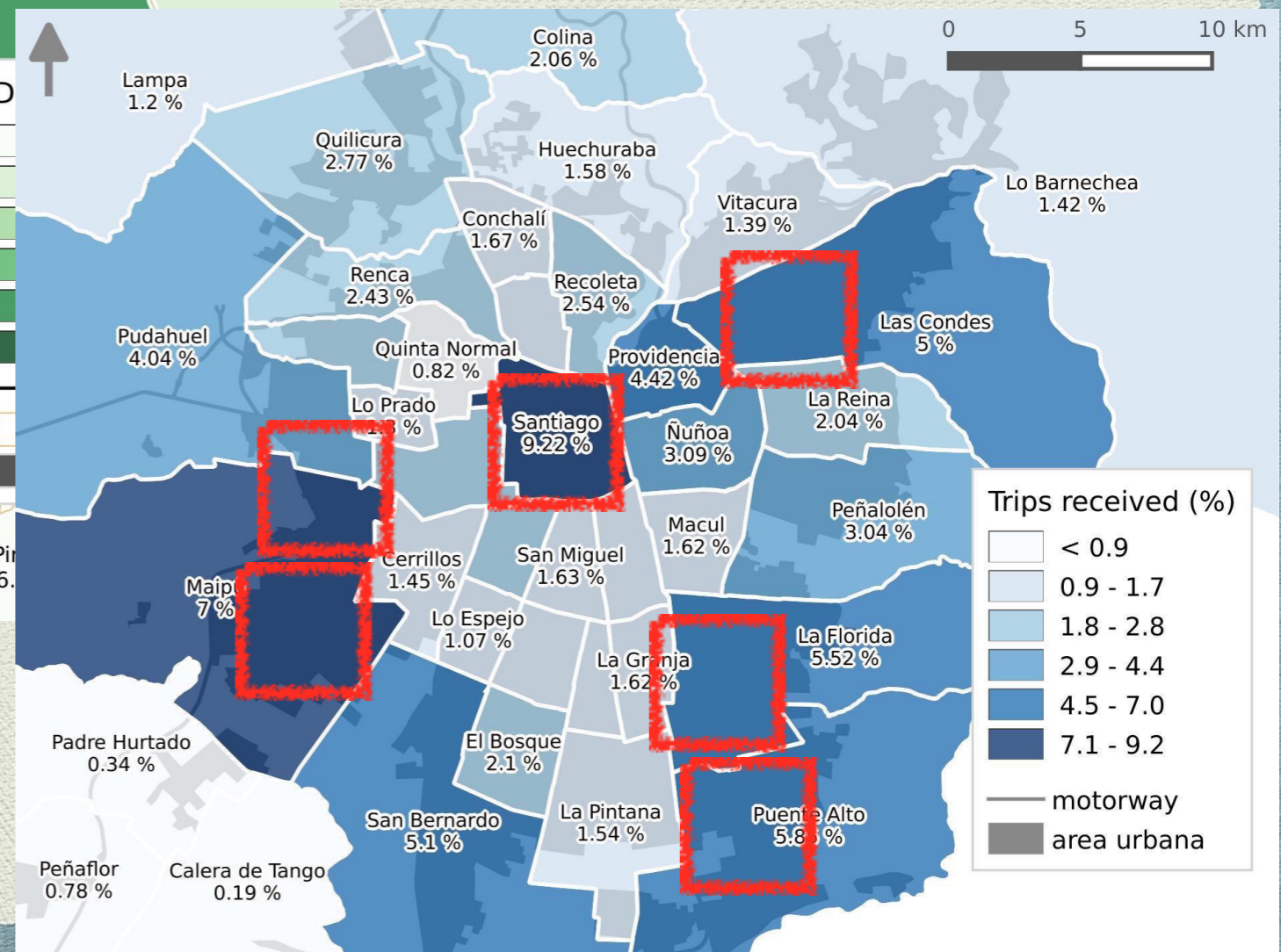


- 1. Non-work travel destinations** — for education, local retail, health, public services — often fall directly under local/regl authorities. They often *involve majority of trips*, particularly by *women and other vulnerable people*.
- 2. Reverse trips (street fairs, local service booths)** should be valued and used more.
- 3. Active-public transport precincts** to maximize health, social, employment benefits.

Santiago in general



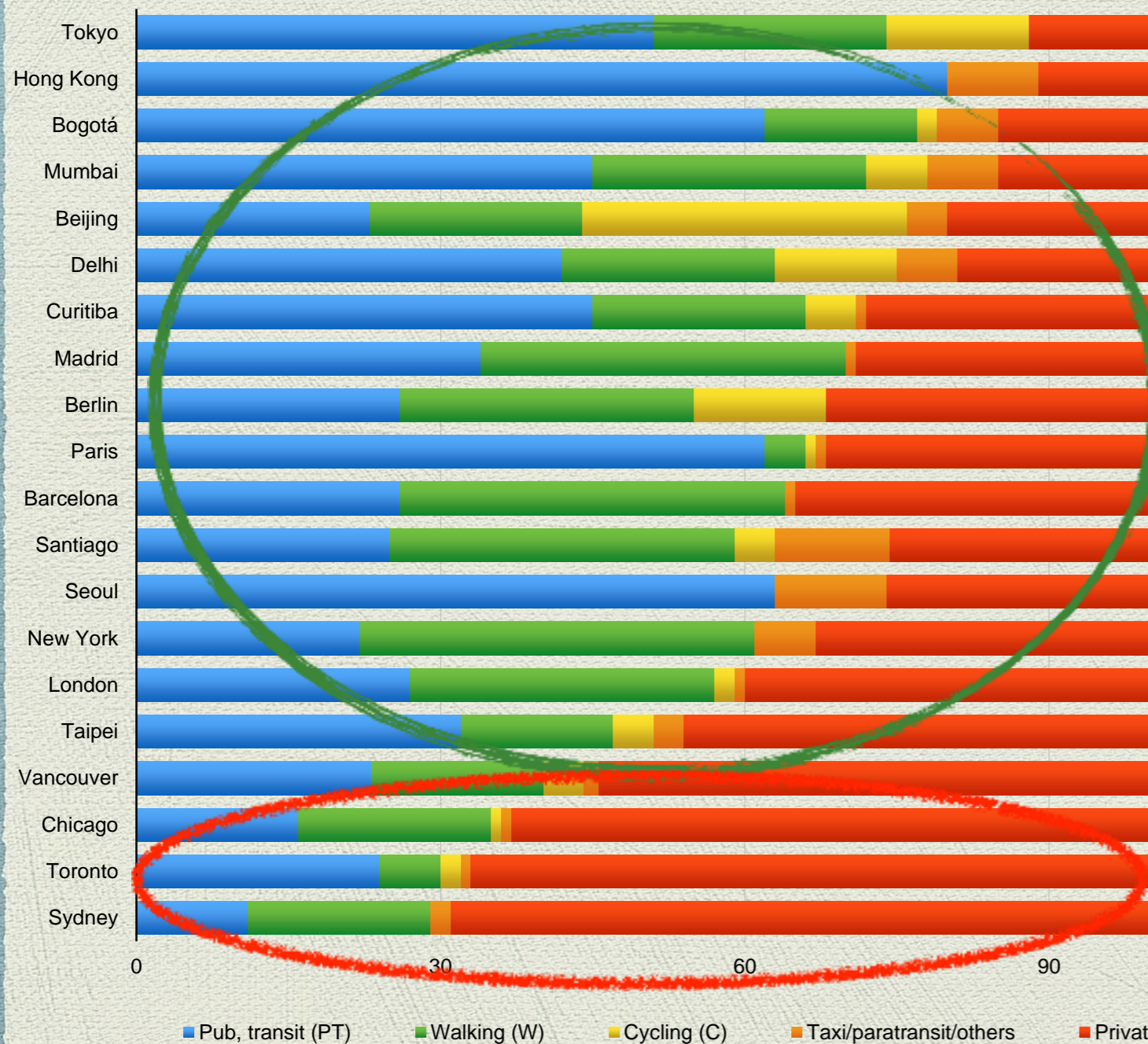
Destination density



Residential density

2. Intermodality

Sustainable transport majority



Potentially a powerful alliance

Source: *Journeys*. November 2011, Singapore Transport and Land Authority Academy, <http://app.lta.gov.sg/ltaacademy/Journeys.htm>, Accessed 24 February 2014. Vancouver figures from City of Vancouver Administrative Report. 30 May 2013. http://former.vancouver.ca/ctyclerk/cclerk/2013_0612/documents/cfsc2.pdf, accessed 24-Feb-2014.¹²⁰

“Intermodality”

- ◆ **Multimodality:** The presence of different transport modes, usually with little or no coordination among them.
- ◆ **Intermodality:** A focus on the seamless integration of diverse modes, considered socially, environmentally and economically sustainable.



ECF + World Cycling Alliance



CYCLING DELIVERS ON THE GLOBAL GOALS

Shifting towards a better economy, society, and planet for all



CYCLING DELIVERS ON THE GLOBAL GOALS

The Global Goals, as stipulated in the preamble of the Sustainable Development Goals (SDGs), seek to realize the human rights of all. Cycling is already delivering on these goals worldwide, and this is a good reason to invest more in cycling. Making transportation more sustainable is of critical importance for humanity and the planet. Moreover, active mobility is a human right on all scales - including the right to cycle. Governments at all levels should provide safe access to public space, protect those that walk and cycle, and ensure - through mobility - equal participation in society. Investment in better conditions for cycling - including e-cycling, cargo cycling and public bicycles - will help achieve these Global Goals as cycling is directly linked to the following 11 Global Goals:



Goal #1: End poverty in all its forms everywhere.

Cycling is an affordable and simple mode of transport enabling access to education, jobs, markets, and community activities in both urban and rural areas. The bicycle is often the only affordable technical means of transport for people and goods, and thus helps individuals to lower the cost of transport for their household. Cycling can more than halve commuting time for those otherwise dependent on walking, giving them access to more job opportunities, schools, markets, and communities. In addition, the potential for economic growth through cycling-related job creation is high. Investments in cycling offer good opportunities for sound national, regional and international poverty-reduction strategies.



Goal #3: Ensure healthy lives and promote well-being for all at all ages.

Cycling generates healthy and non-air-polluting lifestyles. The physical activity cycling generates reduces heart diseases and other negative impacts of sedentary lifestyles. Air quality and road safety improve when individual motorized transport is replaced by cycling. Creating safe conditions for cyclists contributes to reducing the number of global deaths and injuries from road traffic accidents.



Goal #2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture.

Cycling plays an important role for many small-scale food producers. It can provide secure and equal access to land, resources and inputs, knowledge centers, financial services, markets and opportunities for non-farm employment. Cycling helps to ensure access, in particular for the poor, to food all-year round. By widening the area accessible to people who do not have an alternative mode of transportation, cycling ensures better access to food markets and communities, increasing nutrition options and ensuring the sustainable transportation of food products.



Goal #5: Achieve gender equality and empower all women and girls.

Cycling provides access for women and girls to water, schools, markets, and jobs that are otherwise inaccessible through available transportation means or walking. Safe infrastructure for cycling supports gender equality as it increases the number of women and girls that take advantage of cycling.

ADAPTING and transforming “cycleinclusion” (Dutch)



Holanda



Chile

Cycle-INCLUSION



SEVILLE



DELHI

Cycle-INCLUSION



SANTIAGO



TAIPEI

CYCLE-INCLUSION: WORK



Pradip Kumar: Rickshaw Bank

Uses of a rickshaw



Pradip Kumar: Rickshaw Bank

Old vs. Rickshaw bank



Changes to rickshaws
(shown on left):

- Aero-dynamically designed, thus lighter
- More spacious
- More attractive to clients
- Comfortable for all age groups
- Longer life
- Rickshaw designed by IIT, Guwahati



Forms of bike-public transport integration

	Main Measures	Examples
	<i>Strong information and promotion / behaviour change, usually combined agency and civil society effort.</i>	
1	Bike parking at train and bus stops	Bogotá, Munich, Amsterdam
2	Bike racks on buses	Mainly North American cities
3	Bikes on rail cars	Common in Europe, off-peak US
4	Bike rentals	The Netherlands, tourism
5	Public bike systems	Netherlands, Germany, Copenhagen
6	Bikesharing, some fare-integration	Paris, Santiago, Sevilla, etc.
7	Bike routes connecting to public transport stations/stops	Netherlands, Germany, Denmark
9	Shared bus-bike-tram lanes	France, Belgium, Germany, UK
10	Cycle Taxis/Rickshaws/Smartphoneapp	India

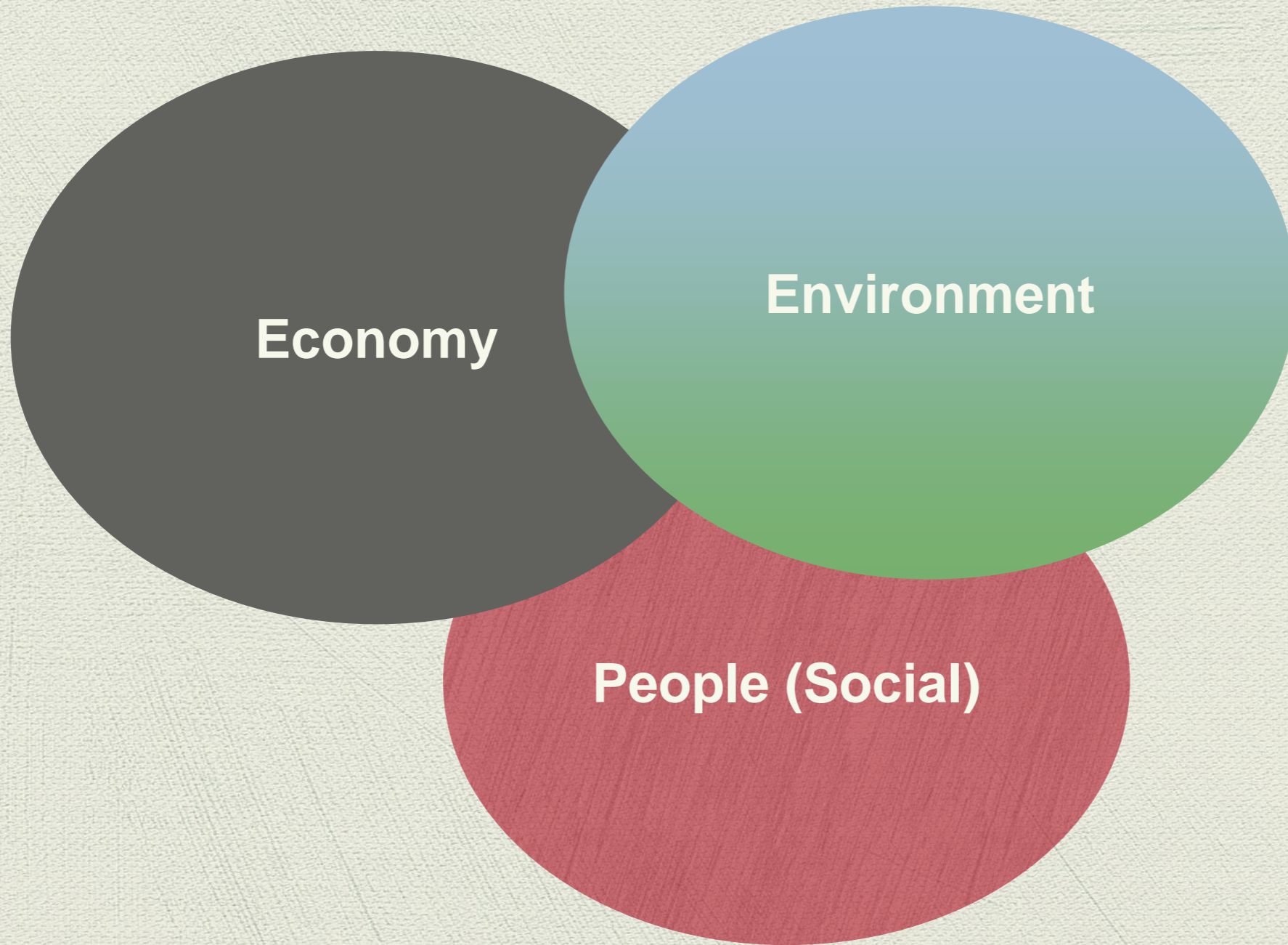
Key lessons for planning



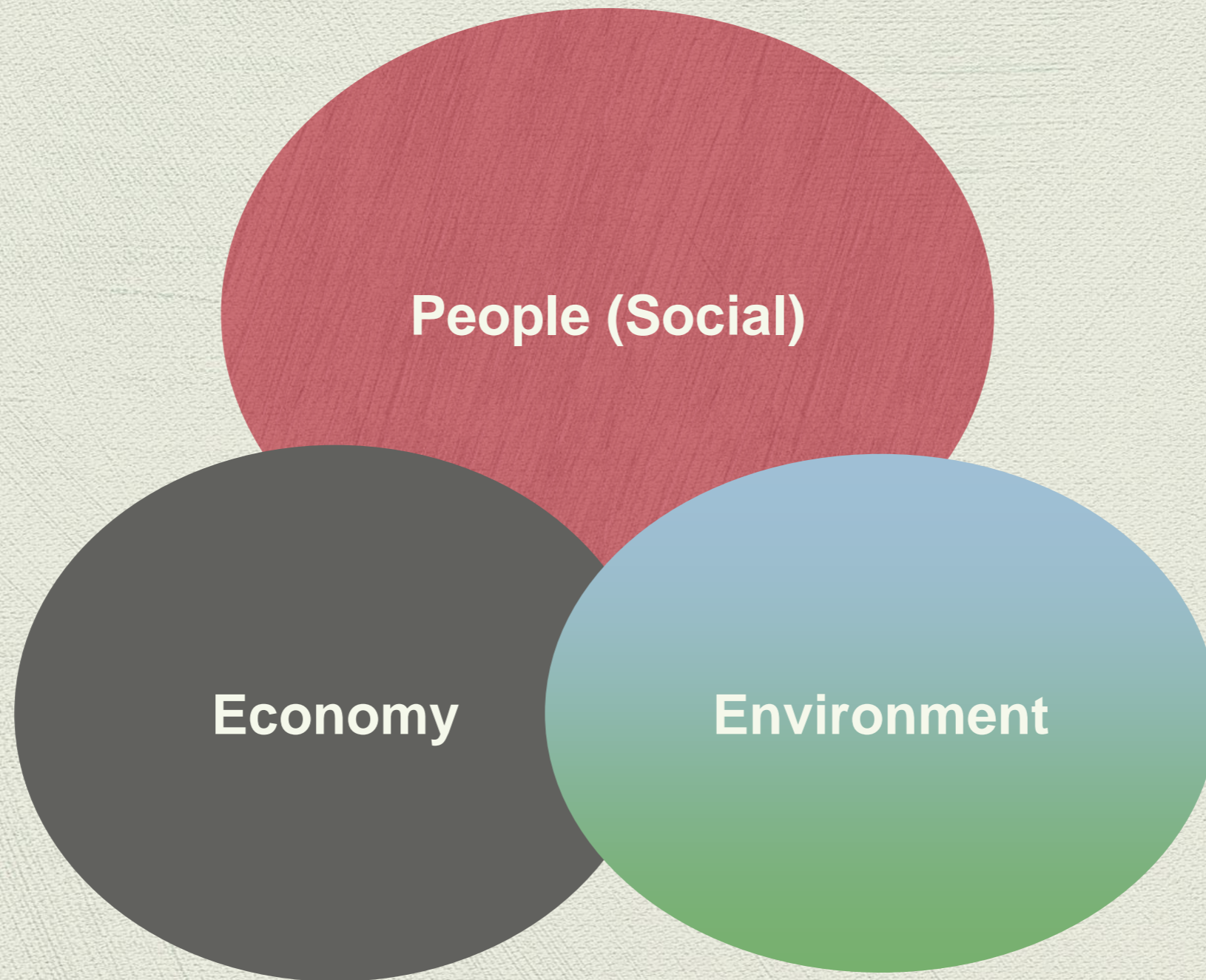
1. **TRICYCLES AND BICYCLES** are key tool for social equity, environmental and economic sustainability
2. **Good for everyone, not just direct users:** Save space on roads, don't pollute, improve individual health and reduce social health costs.
3. **Modal share targets** and **car-free city precincts** key tools for change.

3. Social sustainability: the importance of *agency*

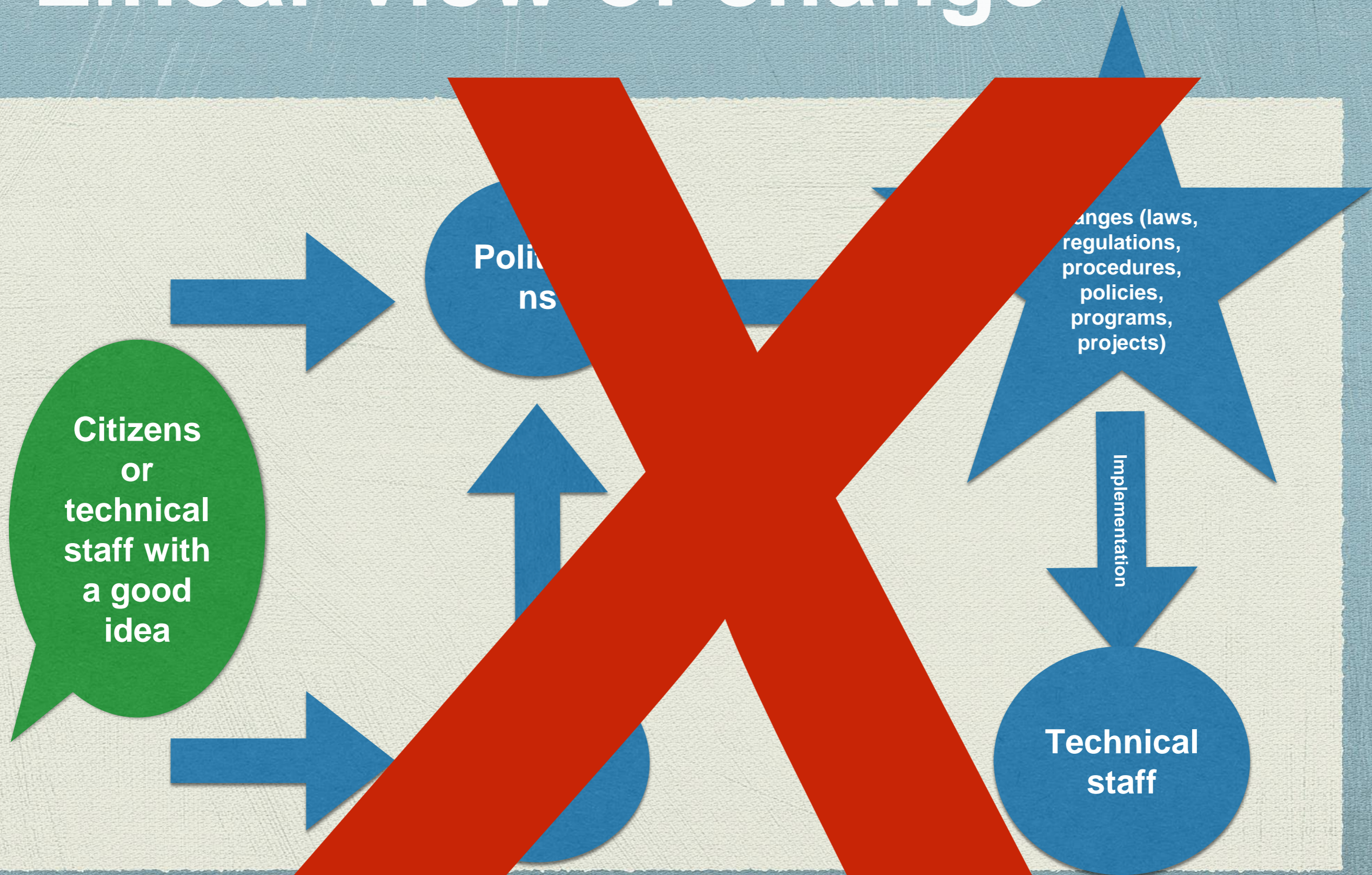
Is one aspect more important than others?

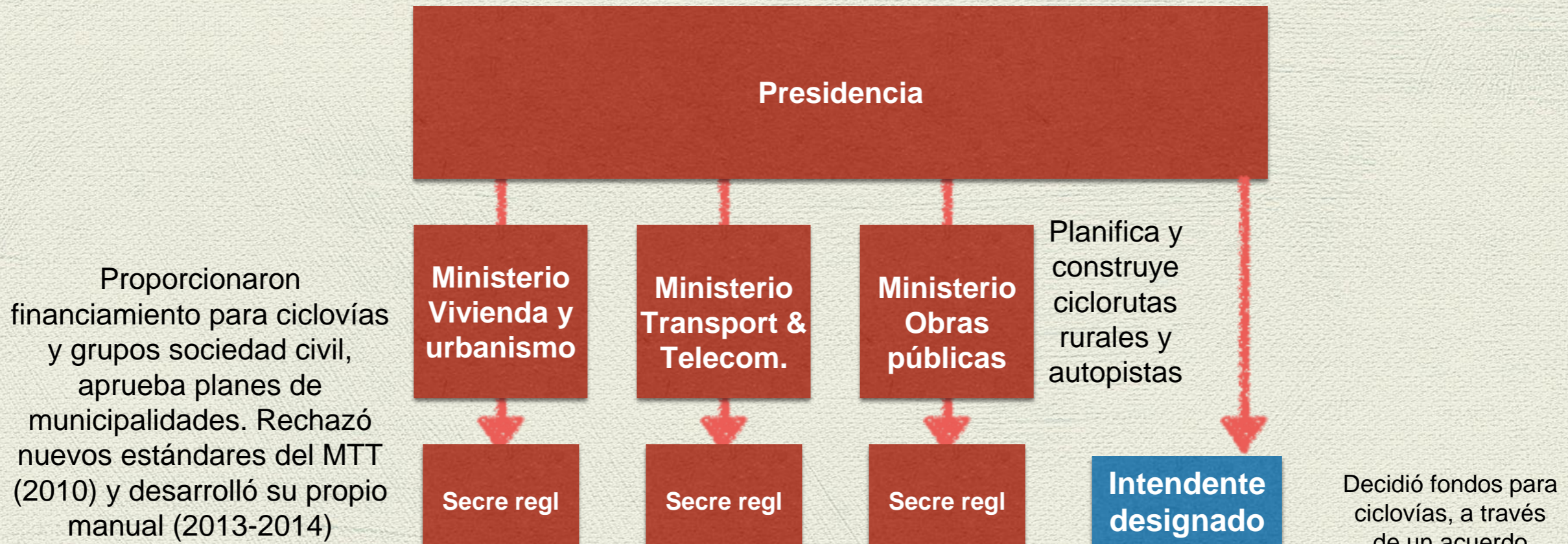


Is one aspect more important than others?



Linear view of change





Proporcionaron financiamiento para ciclovías y grupos sociedad civil, aprueba planes de municipalidades. Rechazó nuevos estándares del MTT (2010) y desarrolló su propio manual (2013-2014)

Alcaldes y concejales elegidos (52 en Santiago)

Providencia	Santiago	Ñuñoa	Las Condes
Recoleta	El Bosque	La Reina (Canalistas del Maipo)	Pedro Aguirre Cerda
Vitacura	Maipú	La Florida	Otros...
Otros...	Otros...	Otros...	Otros...
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Concejo Regional (elegido 2013)

Funcionarios (1 trabajando en bici)

Providencia, Santiago y Ñuñoa lideraron una planificación más cicloamistosa, otros siguieron pero requerían apoyo de SERVIU (MINVU, sin expertise) y fondos del Consejo Regional

Antes (y después) de la Mesa, ninguna coordinación formal entre actores, participación ciudadana no vinculante.

Presidencia

Nacional

Proporcionaron financiamiento para ciclovías y grupos sociedad civil, aprueba planes de municipalidades. Rechazó nuevos estándares del MTT (2010) y desarrolló su propio manual (2013-2014)

Ministerio Vivienda y urbanismo

Ministerio Transport & Telecom.

Ministerio Obras públicas

Planifica y construye ciclorutas rurales y autopistas

Secre regl

Secre regl

Secre regl

Intendente designado

Regional

Decidió fondos para ciclovías, a través de un acuerdo interministerial logrado por intendente DelPiano. Anfitrión de la Mesa ProBici con grupos de Sociedad Civil (CUCH).

Concejo Regional (elegido 2013)

Funcionarios (1 trabajando en bici)

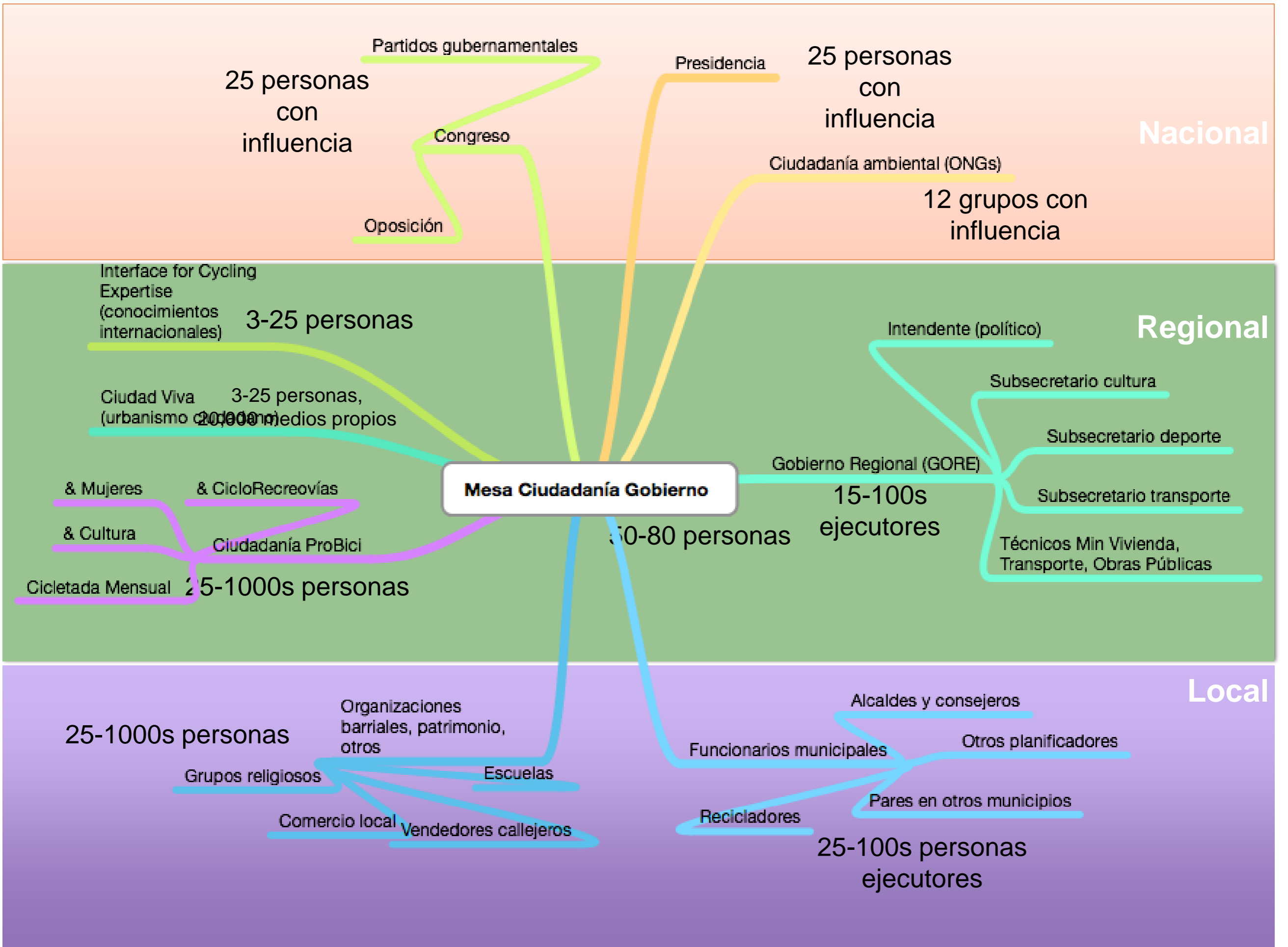
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Local

Antes (y después) de la Mesa, ninguna coordinación formal entre actores, participación ciudadana no vinculante.





The importance of **civil society**
(*organized citizens*)



Conflicto

The Passive Informational Approach



Users, citizens
"powerless,
ignorant, passive,
follow orders

Paternalismo



Coproducción

And the kind of “participation”

Susskind et al. 1983.

Conflict and paternalism

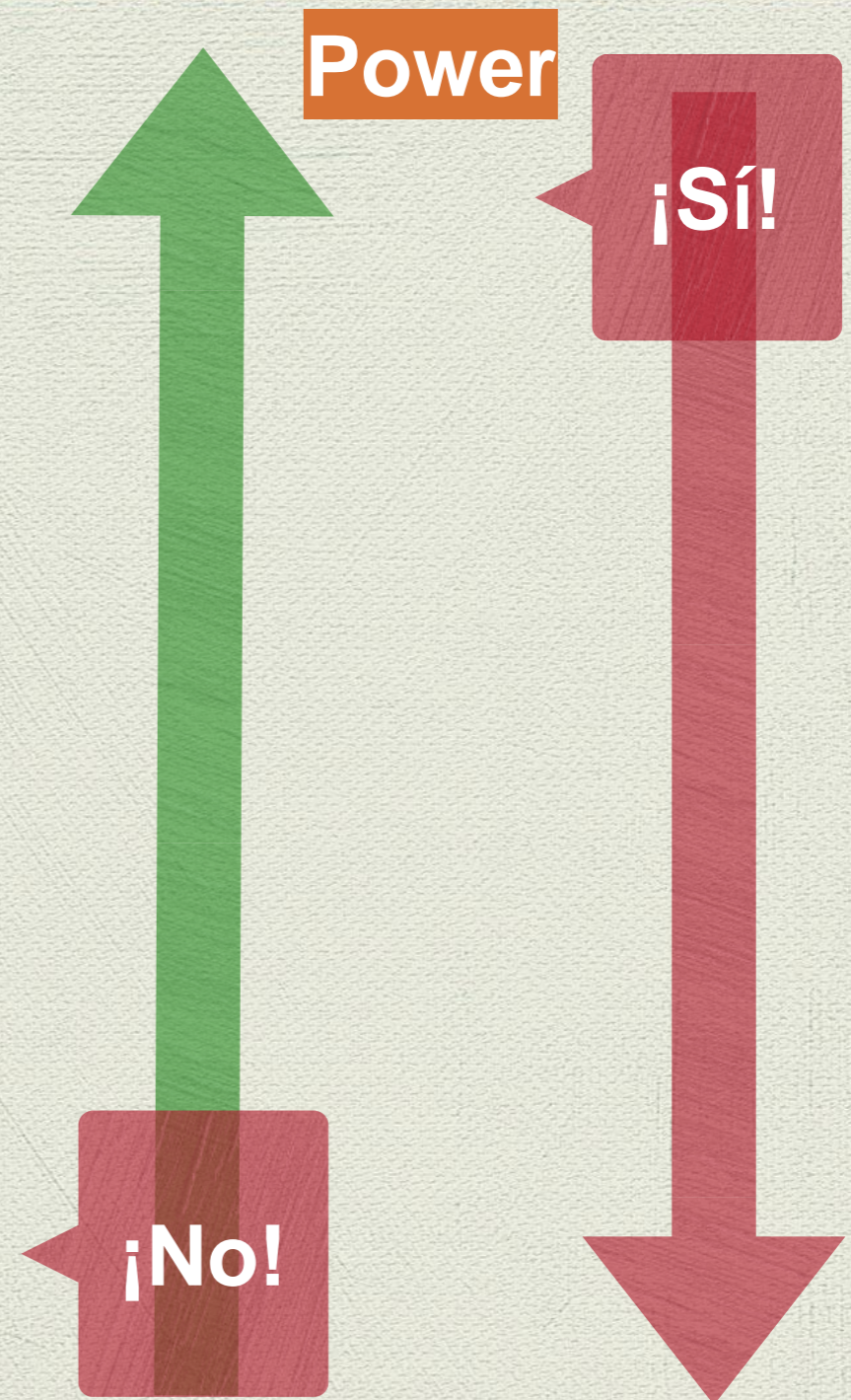
- Two faces of the same coin
- Exclusion-Inclusion
- Discrimination-Power behind the scenes

Citizens

Power

¡Sí!

¡No!



More fruitful:

Co-produce, collaborate

- ◆ Deliberation
- ◆ Diversity
- ◆ Interdependence (Booher & Innes 2002)

I understand

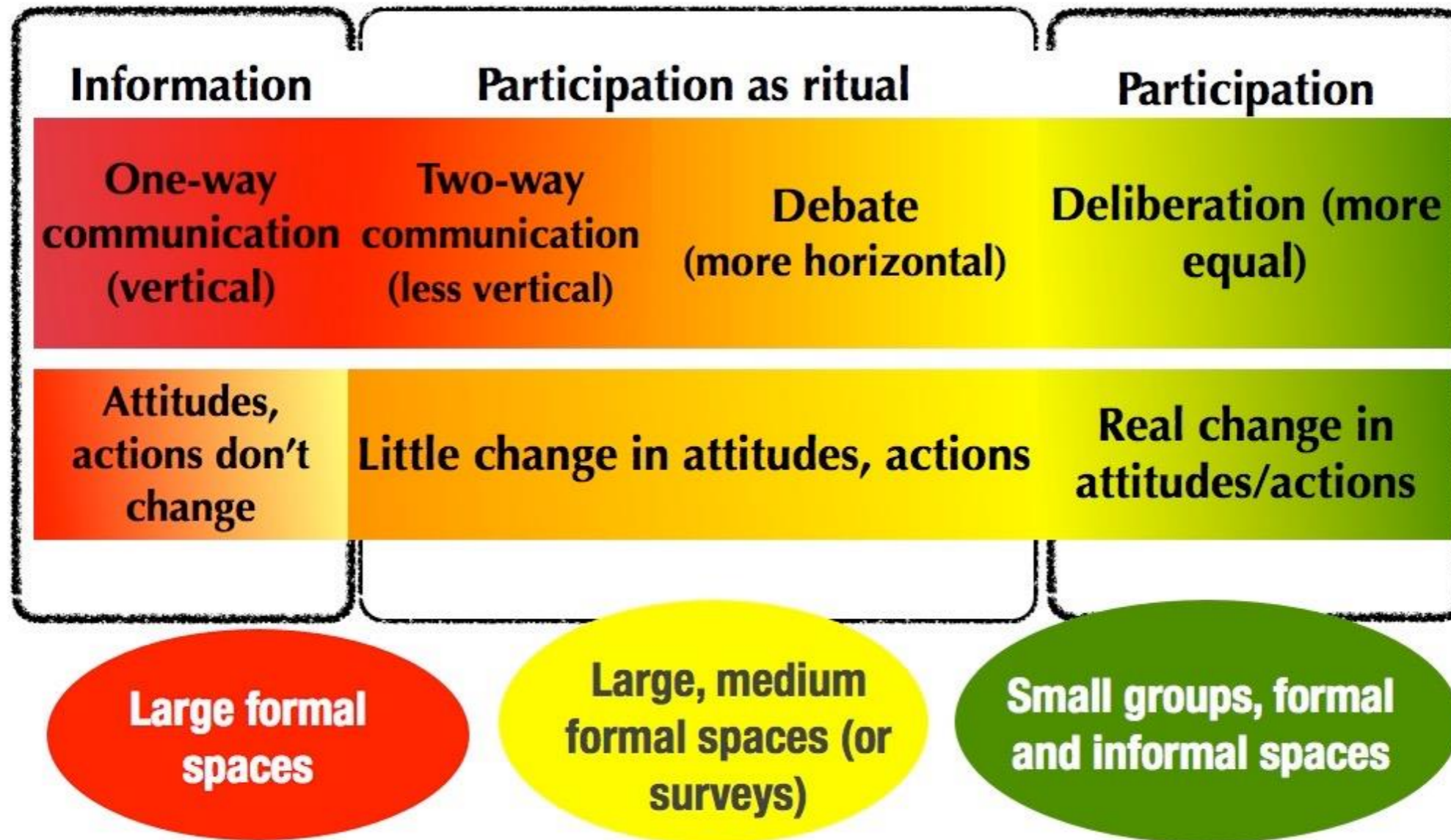
Power

- ◆ **Builds strategic conviction**
- ◆ **Systemic change**
- ◆ **Credibility and continuity**



Mesa Ciudadanía - Gobierno para el Plan de Ciclo Rutas del Bicentenario (2007-2010), con asesoría holandesa.

Communication/participation spectrum



Transformation requires “deep” participation in small groups

Understand we are an “ecology” of actors

- ◆ Diverse
- ◆ Interdependent
- ◆ With *different* profiles, leaderships, strategies and organizations, and *some common* objectives



Live and let live, collaborate where we agree

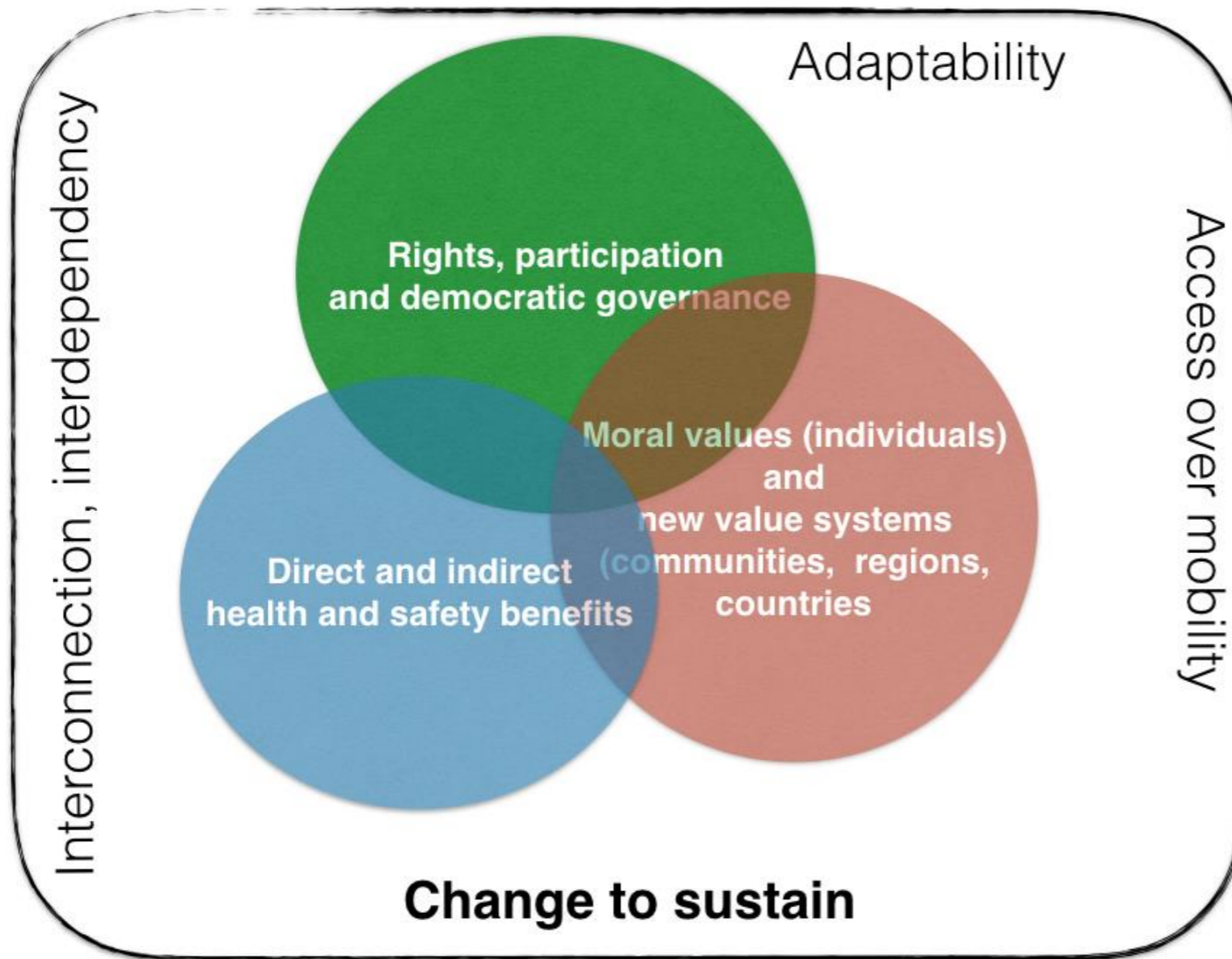
Key lessons for planning



1. No country has achieved steady progress without a diverse, complex, robust ecology of citizen *organizations*.
2. Individual participation is good, but **collective participation i.e. organizations is BEST.**
3. ***Civic capacity*** should be a top priority for investment and funding under the Sustainable Development Goals.

Social sustainability and transport

New paradigm: socio-ecological systems



Replogle, 1990
Polèse and Stren, 2000
David Banister, 2005
Newman and Jennings, 2008
Low and Gleeson, 2003
Lucas, 2004
Manzi and Lucas, 2010

Research-participation-action



Laboratory for Social Change

A space for research in the community, *with the community*, led by Transport Engineering (PUC) and Living City, which brings together leaders and partners working in the Living Laboratory of real cities. With support from the Center for Sustainable Urban Development (Cedeus) and the Across Latitudes and Cultures, Center for BRT Excellence

www.cambiarnos.cl

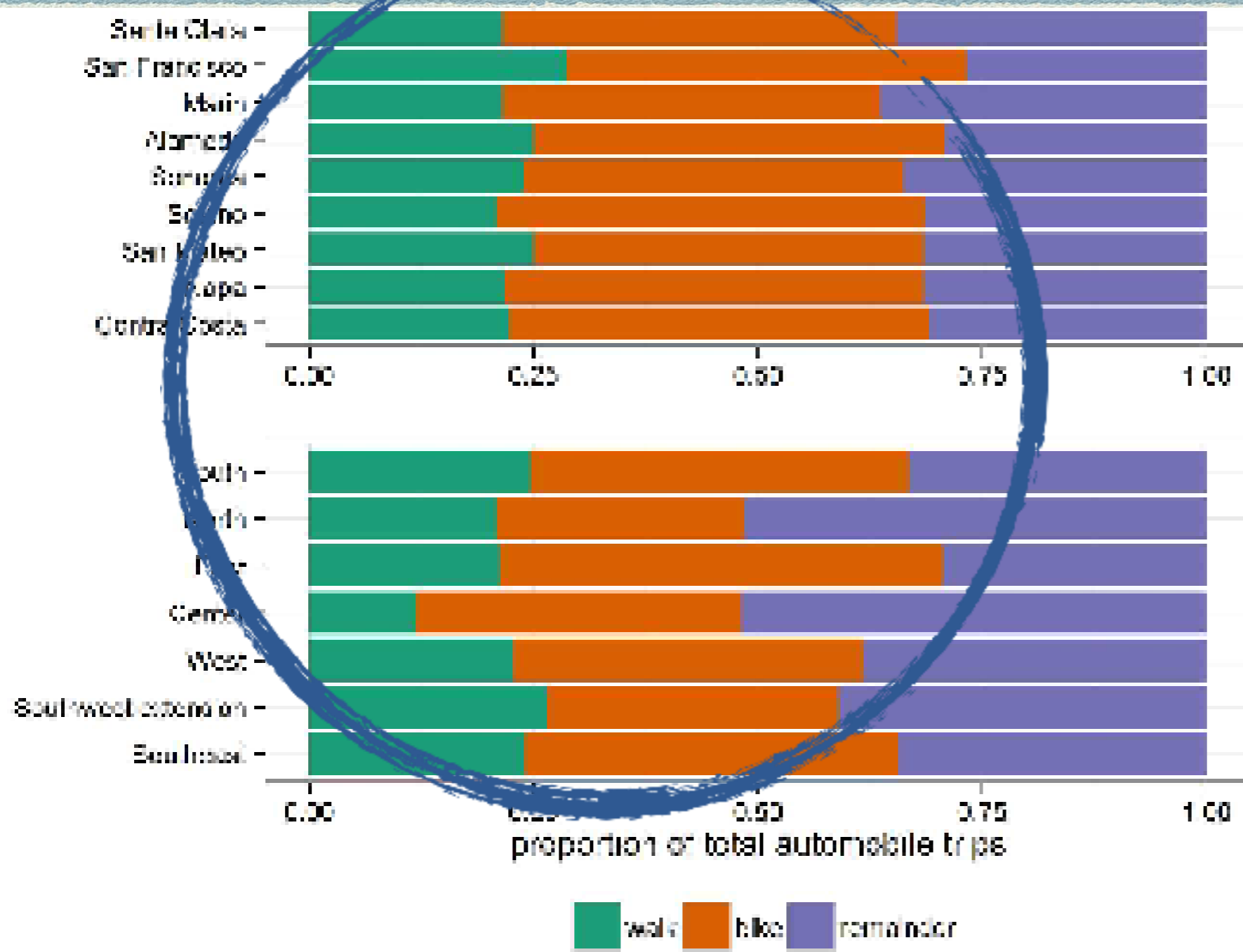


Thank you - ¡Gracias!



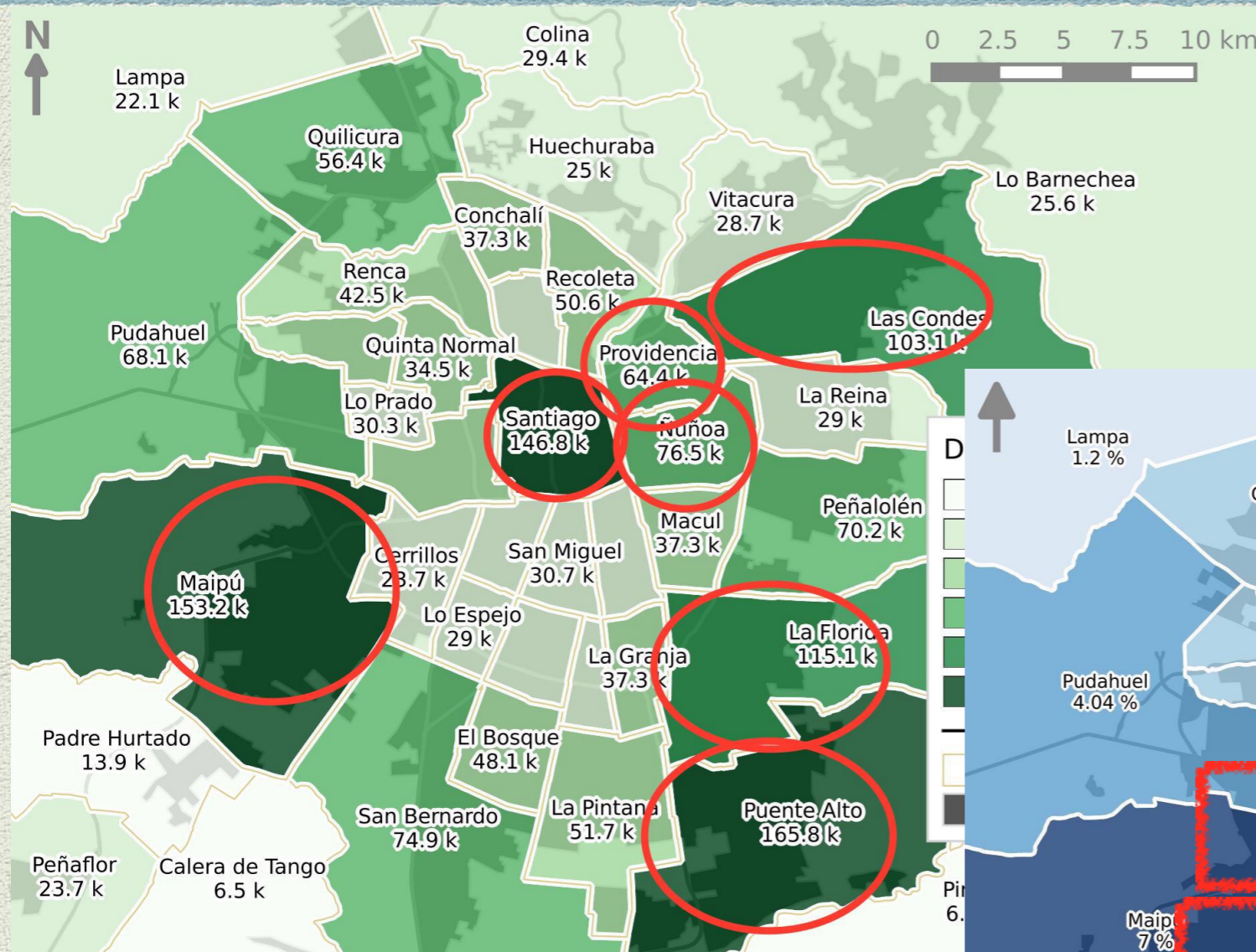
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Potential modal shift targets: % of trips

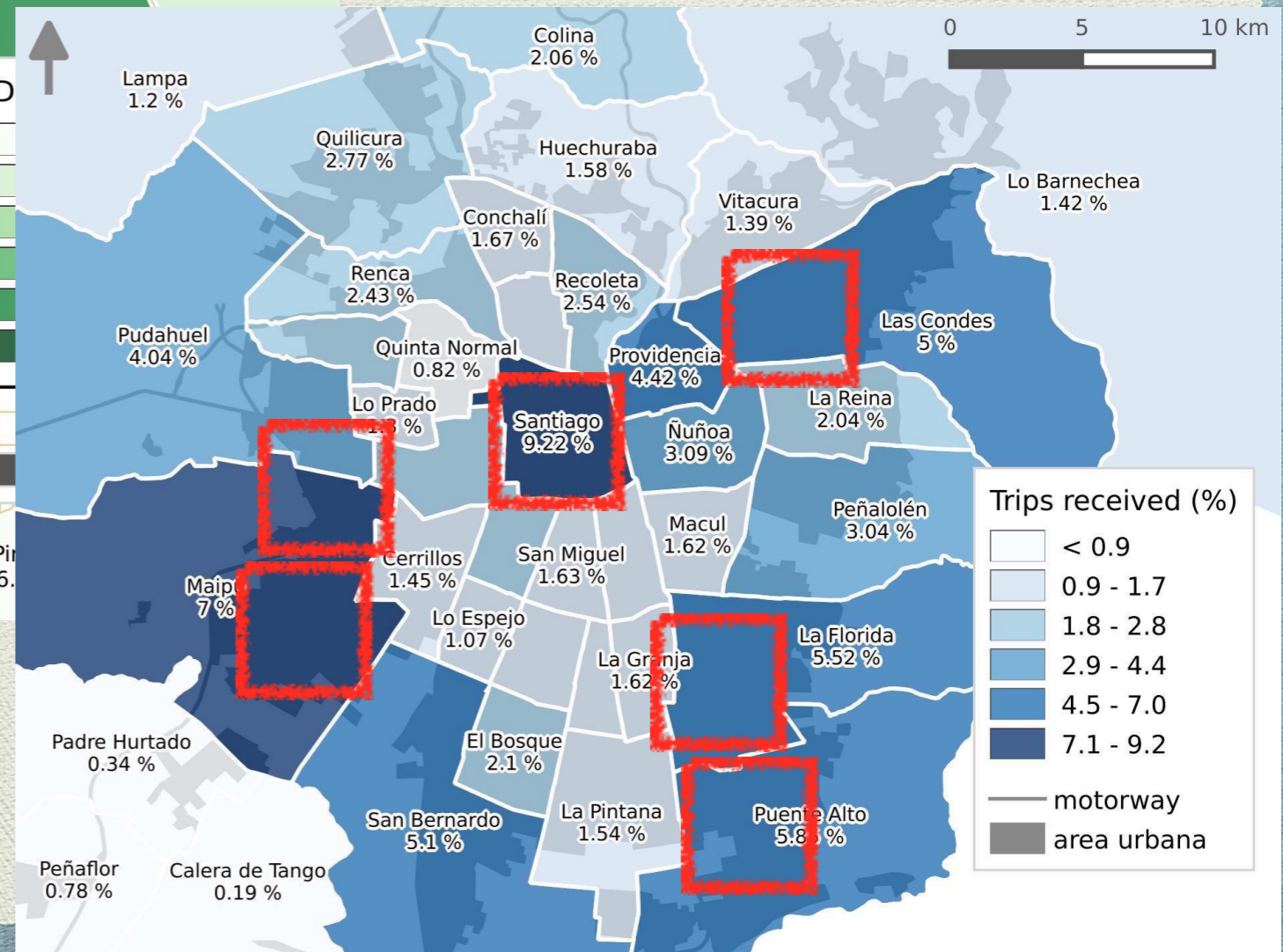


Well over half and up to 75% of car trips in the Bay area (above) and Metro Santiago (below) more suited to walking and cycling

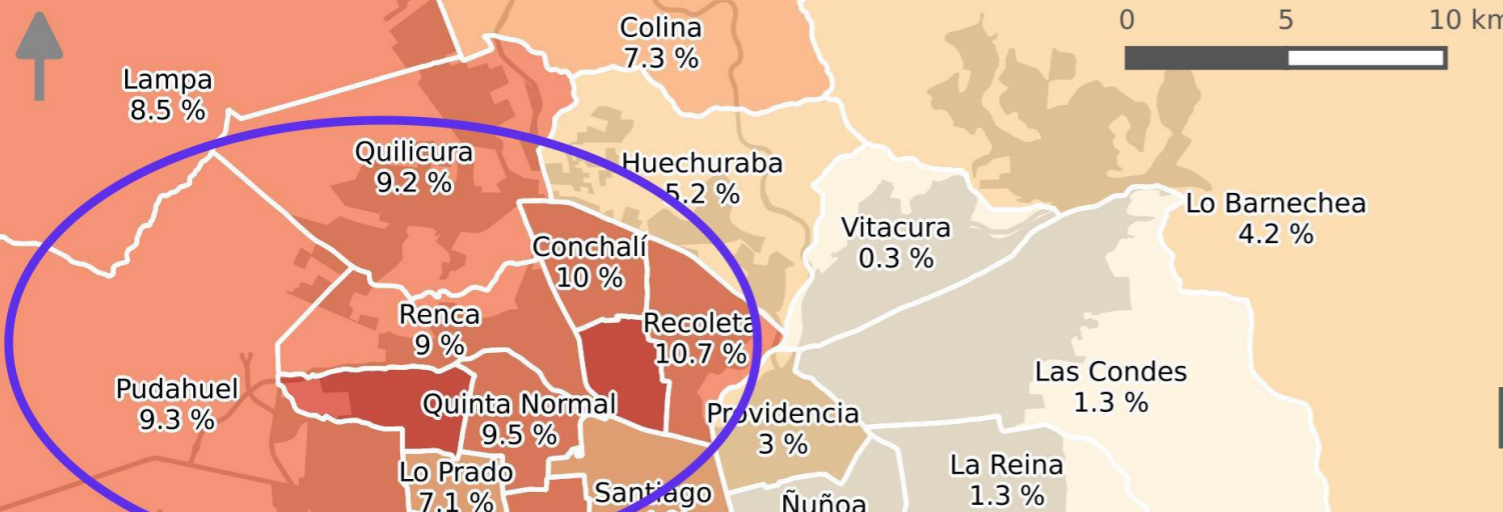
Santiago in general



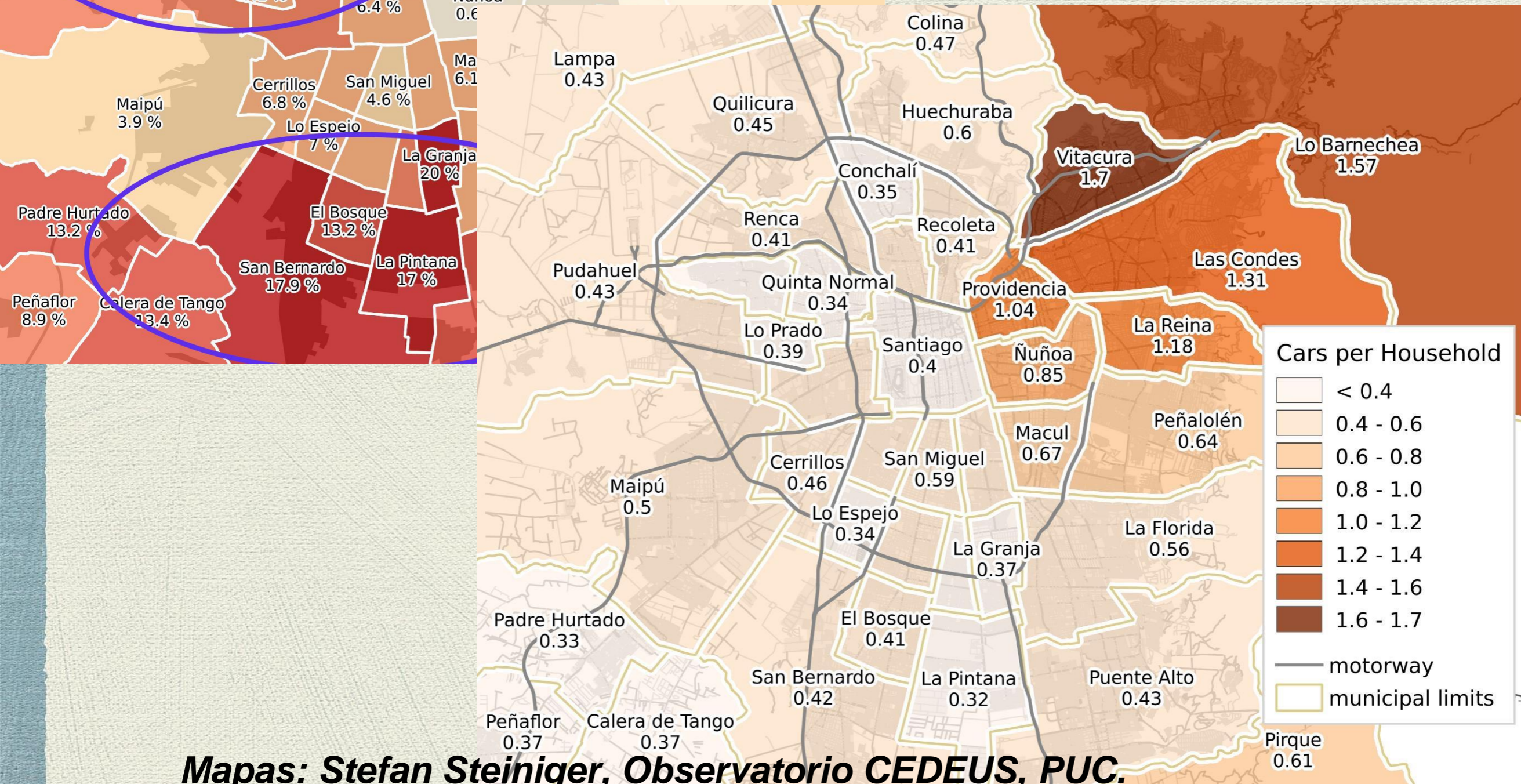
Destination density



Residential density

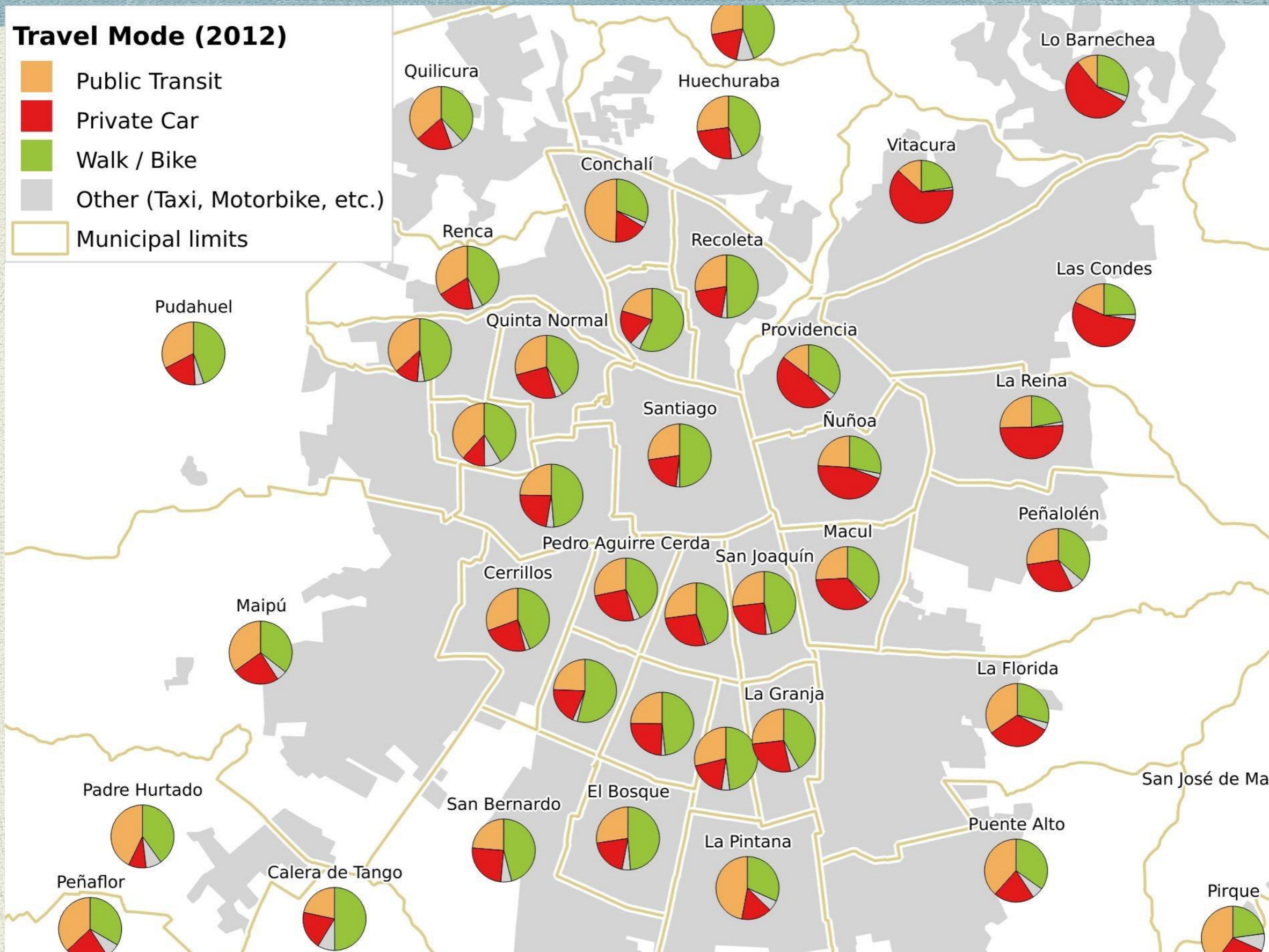
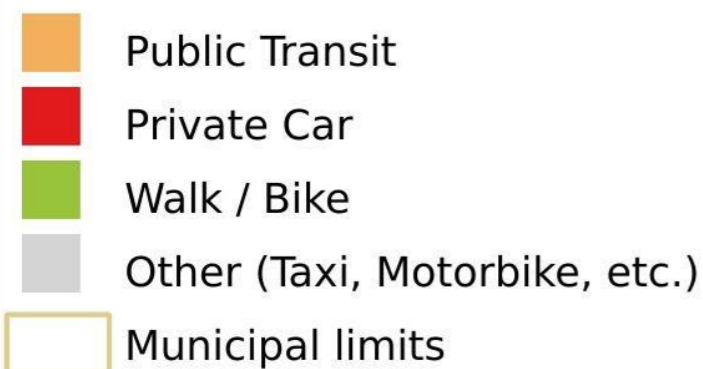


Santiago: Un 60% de los hogares NO tiene automóvil



Mapas: Stefan Steiniger, Observatorio CEDEUS, PUC.
 Datos: Ignacio Tiznado, Ignacio Tiznado, Ingeniería de Transporte PUC

Travel Mode (2012)



Mapas: Stefan Steiniger, Observatorio CEDEUS, PUC.

Datos: Ignacio Tiznado, Ignacio Tiznado, Ingeniería de Transporte PUC

Across Latitudes and Cultures

Bus Rapid Transit Centre of Excellence

- Headquarters: Dept of Transport Engineering and Logistics, ***Pontificia Universidad Católica de Chile***
- Instituto Superior Técnico, ***Lisbon Technical University***
- Institute of Transport and Logistics Studies, ***University of Sydney***
- ***Massachusetts Institute of Technology***
- ***EMBARQ Network***, World Resources Institute Centre for Sustainable Transport

