

CoMobility

Co-Designing Inclusive Mobility

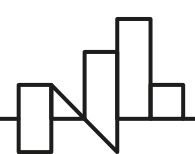
sustainable mobility choices # engaged neighbourhood # artificial intelligence
clean air # carbon neutral # human centered # package of tools for stakeholders

Kick-off meeting
Anna Nicińska

March 18-19, 2021
Online from Oslo, Lublin, and Warsaw

SOME QUOTES FROM THE PROPOSAL

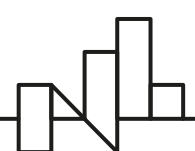
- building people-centred cities that facilitate active transport modes and reduce number of trips by private cars is much needed
- policy-makers lack effective approaches for convincing public opinion to support reduction of car ownership
- engage neighbourhoods in designing people-centred mobility solutions to decrease air pollution
- by tight, ongoing, and regular cooperation with municipalities, citizens, businesses and other local stakeholders we build a platform for democratic exchange of experiences.
- we use the expressed voices to learn about barriers and opportunities in adapting environmentally-friendly mobility choices.
- the solutions co-created and tested in the city lab framework will be disseminated during workshops with participants from other cities



ACCESS TO MOBILITY SERVICES OVER CAR OWNERSHIP

A package of methods and tools to change mobility choices:

- 1) a method for co-designing inclusive and evolving mobility in local communities;
- 2) air quality and climate change projections for future mobility scenarios;
- 3) identify barriers and opportunities for reduction of car ownership in Poland;
- 4) evaluate possible benefits of various mobility solutions;
- 5) develop transfer learning for data to ensure scalability and transferability;
- 6) evaluate transferability of the solutions between municipalities;
- 7) deliver open access to the ML model of individual mobility choices;
- 8) build awareness of the relation between mobility choices and air quality;
- 9) promote active mobility and public transport in local communities.



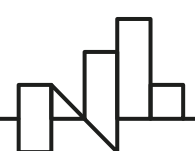
POLAND AND WARSAW

High use of passenger cars in **Poland**

- **21 million** cars (in total, 2016),
- **526** (2014) → **571** (2016) passenger cars **per 1000** inhabitants,
- cars trips = **77.3%** of passenger-kilometers travelled (2015),
- use of buses and coaches (**14.5%**) > EU28 average (**9.4%**) (EC, 2019).

High use of passenger cars in **Warsaw**

- **1.18 million** passenger cars registered (2016),
- **673** passenger cars **per 1000** inhabitants (2016), from **433** in Wilanów to **1001** in Śródmieście,
- **1136.5 mln** passengers of public transport (2016),
- **14** parkings „Park and ride” (**4242 spaces**) and **493 km** of **cycling roads** (2016),
- **205 city bikes stations** (Veturilo) with **3059 bicycles** in 2016 (GUS 2017)
- **22% of the voivodeship’s road traffic incidents** took place in Warsaw in **2020**, **23.5%** in **2019** (GUS 2020)
- ongoing debate on private cars, road safety, air quality in Warsaw



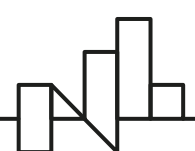
BIGGER PICTURE

Open science

- **transparency of research process**
- stakeholders' co-ownership of scientific production
- open access to data, methods, and publications if possible (IPR and GDPR regulations)
- wide set of audiences of the research and respective pro-active communication
- scientific literacy of citizens
- incentives for reorganization of municipalities decision making process
- scientific excellence of team and students

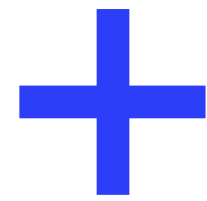
Advances

- higher geographical resolution data
- knowledge for policy-makers and access to data-driven solutions
- access to the models and methods in various contexts
- access to information for general public, citizens and journalists
- innovations in local business
- **improved air quality, better health, and reduction of economic losses due to ill-health**



PROCESSES AND METHODS

**CO-DESIGN
PROCESS**



DATA
COLLECTION
IN COMOBILITY



MACHINE
LEARNING
MODEL



TRANSPORT
MODELLING



EXISTING
DATA



EMISSION
MODEL

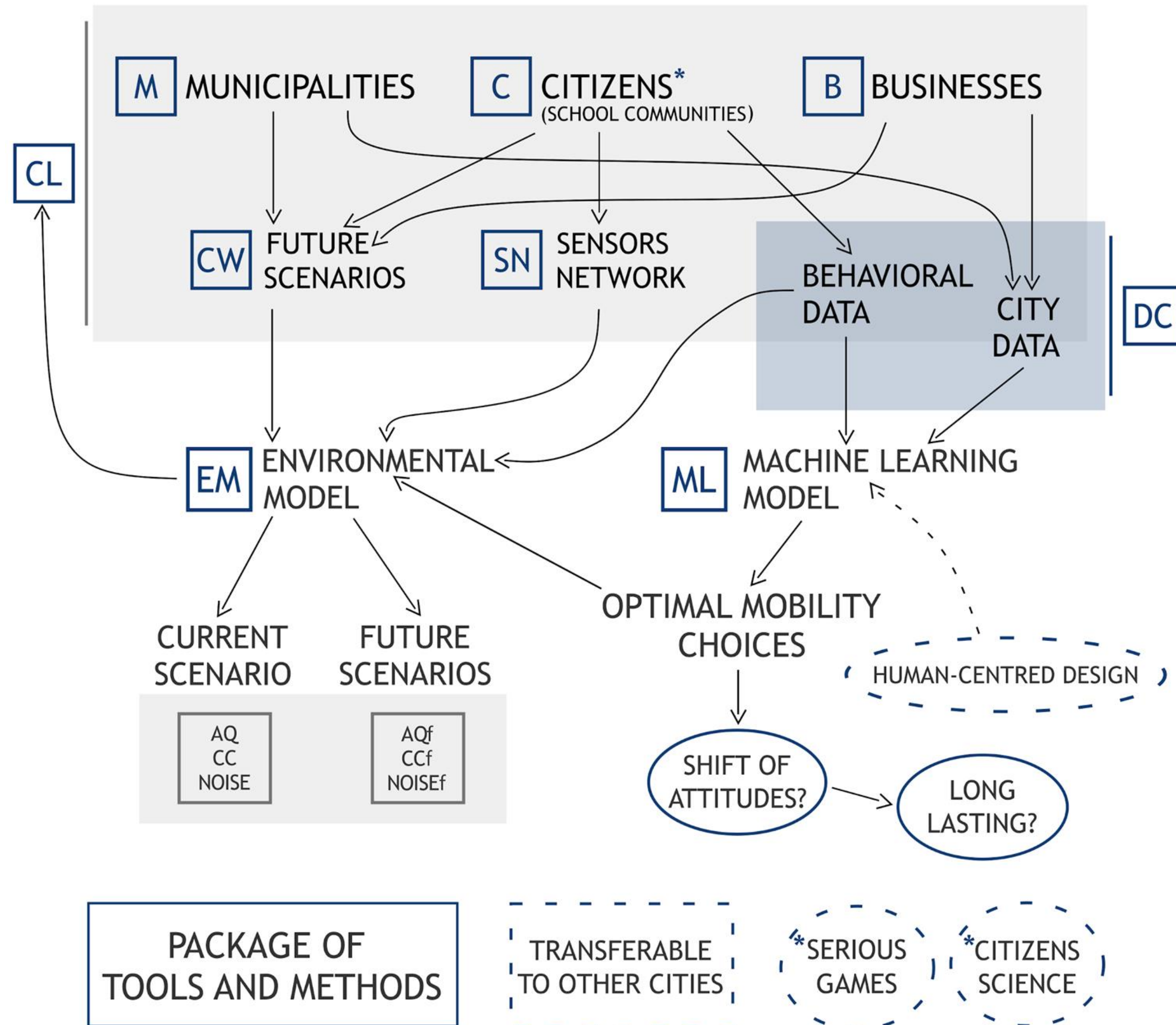


Tight cooperation with:

- citizens,
 - municipalities,
 - businesses,
 - other stakeholders
- at each stage of the project**



PROCESSES AND METHODS, in detail



CL: City Labs

- co-creation of mobility solutions and real life scenarios tested in 5 (3+2) City Labs
- education, gamification and citizen science

DC: Data Collection

- data (qual. & quant.) collection in schools (each CL) and Warsaw
- experts interviews
- existing city data

ML: Machine Learning

- predictions on mobility choices based on individual and transport system features

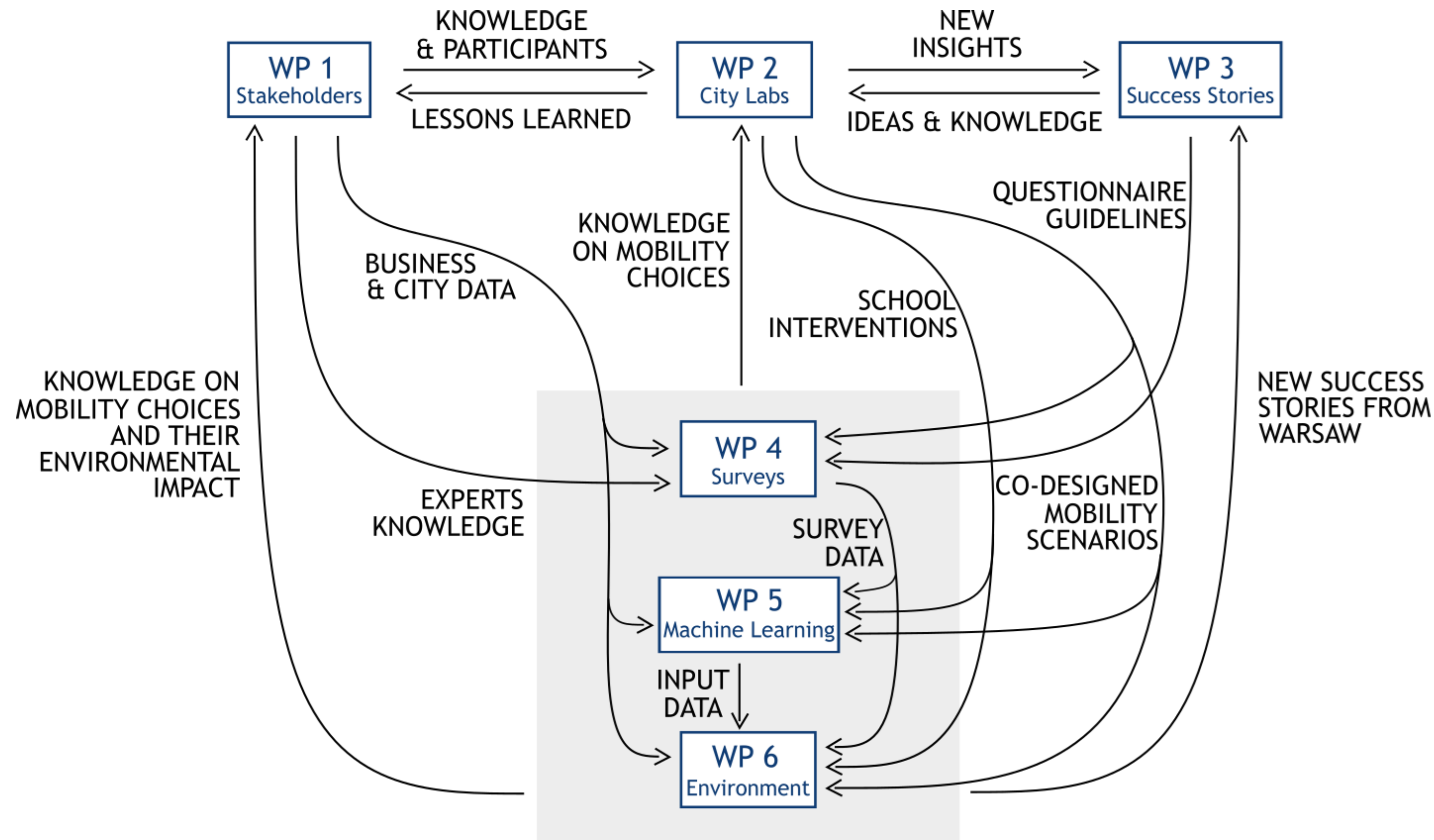
EM: Environmental Model

- predictions on air pollution and greenhouse gases reduction to test real life and hypothetical scenarios

Iteration, evaluation, transferability, scalability



WORK PLAN



Package Leaders:

WP1



UNIWERSYTET
WARSAWSKI

WP2



WP3



FRIDTJOF NANSENS INSTITUTT
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WP4



Szkoła Główna
Handlowa
w Warszawie

WP5

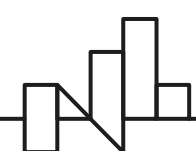
Politechnika
Warszawska

WP6



Norsk institutt for luftforskning
Norwegian Institute for Air Research

Evaluation:

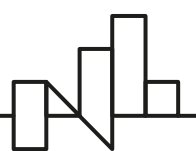


CO-OPERATION

1 Capital City of Warsaw

2 Association of Polish Cities, City of Cracow

3 Subcontractors: transport model, surveys



TEAM



UNIWERSYTET
WARSZAWSKI

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