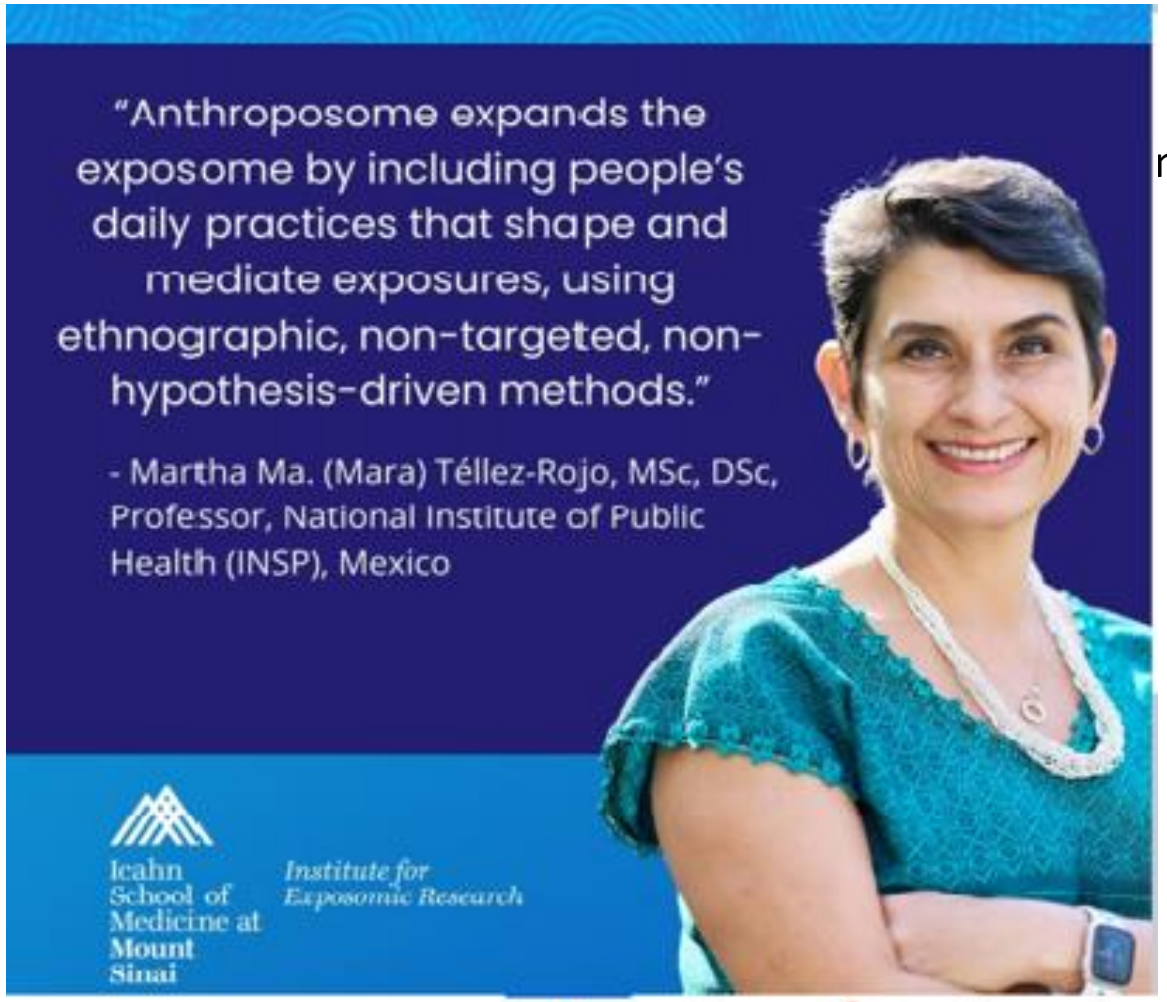
Anita Hardon Fellowship

Transdisciplinary innovations in Exposome Research

My Ambitions as a ExposUM Research Fellow

1. Articulating transdisciplinary and agenda's for Exposome research
2. Developing a multi-modal toolkit for situated exposure assessments
3. Co-creating 'Seeds for a Good Anthropocene'
4. Summerschool for PhD students/Master thesis students
5. Expanding Collaborations in and around Montpellier and globally

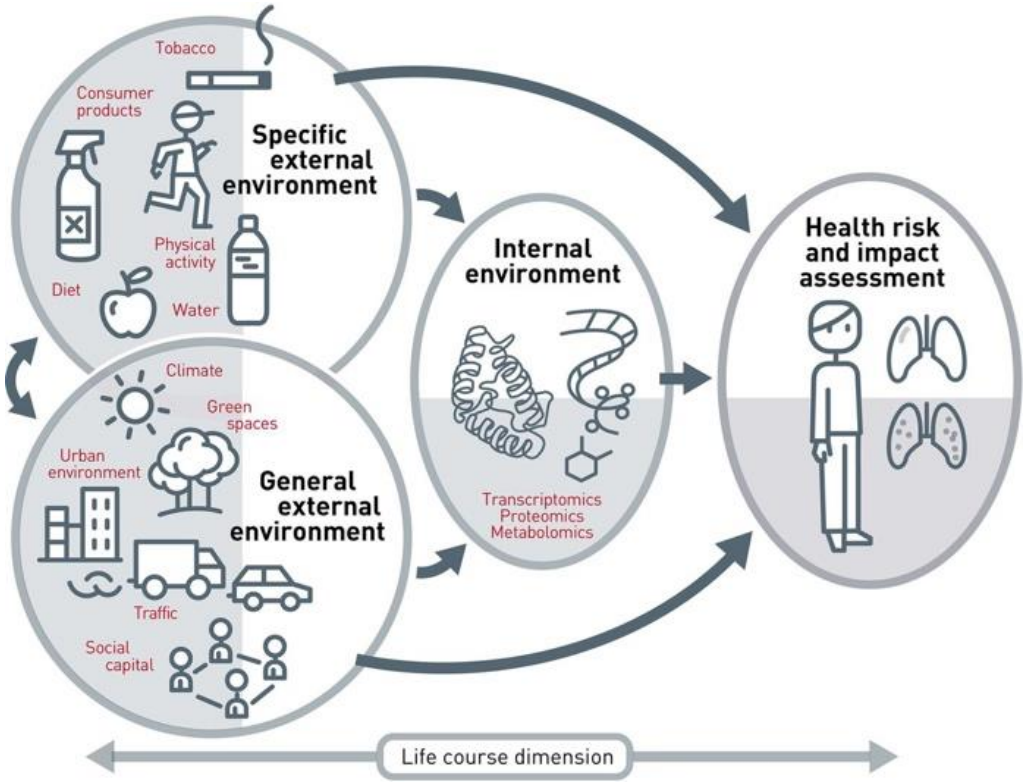
Developing interdisciplinary approaches



mental health

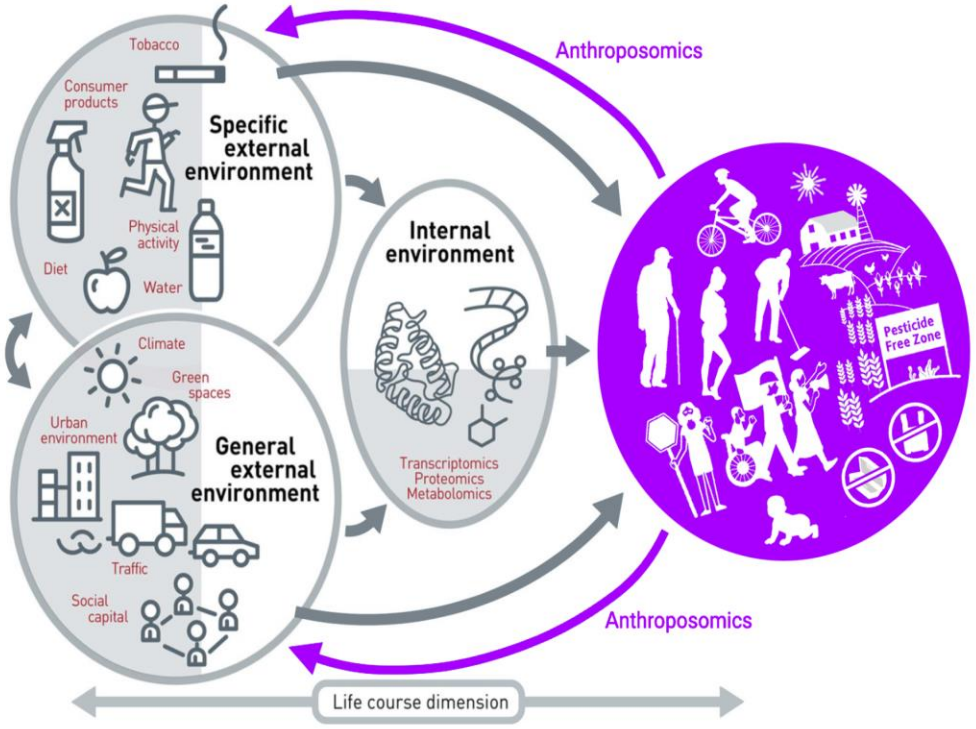
Anthroposomics: Integrating Anthropological Methods into Exposome Research – forthcoming in Environmental Health

Exposome models



Vrijheid M. Thorax 2014;69:876–878. doi:10.1136/thoraxjnl-2013-204949

Anthroposome model



Adapted from *Vrijheid M. Thorax 2014;69:876–878. doi:10.1136/thoraxjnl-2013-204949*

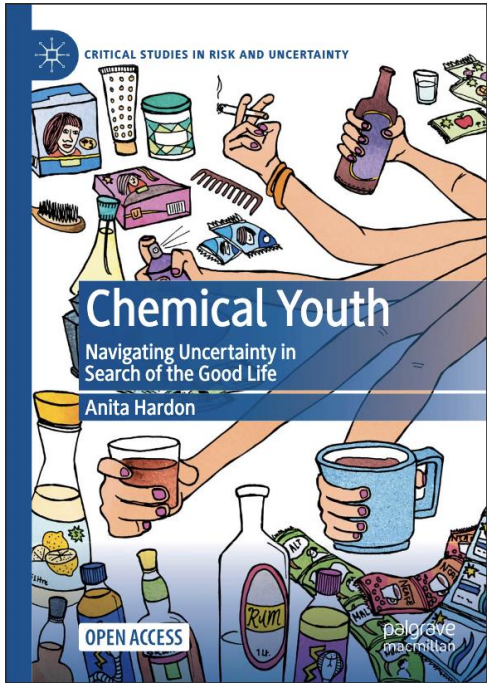
In press

Anthroposome

The full range of micro-ecological practices through which individuals and communities sense, understand, avoid, mitigate and thus, shape exposures across daily life and the life courses

Anthroposomics toolkit

- Open-ended participant observation
- Life history calendars
- Sensorial/experiential cartograhy
- Head to toe interviews
- Chemical household assessments

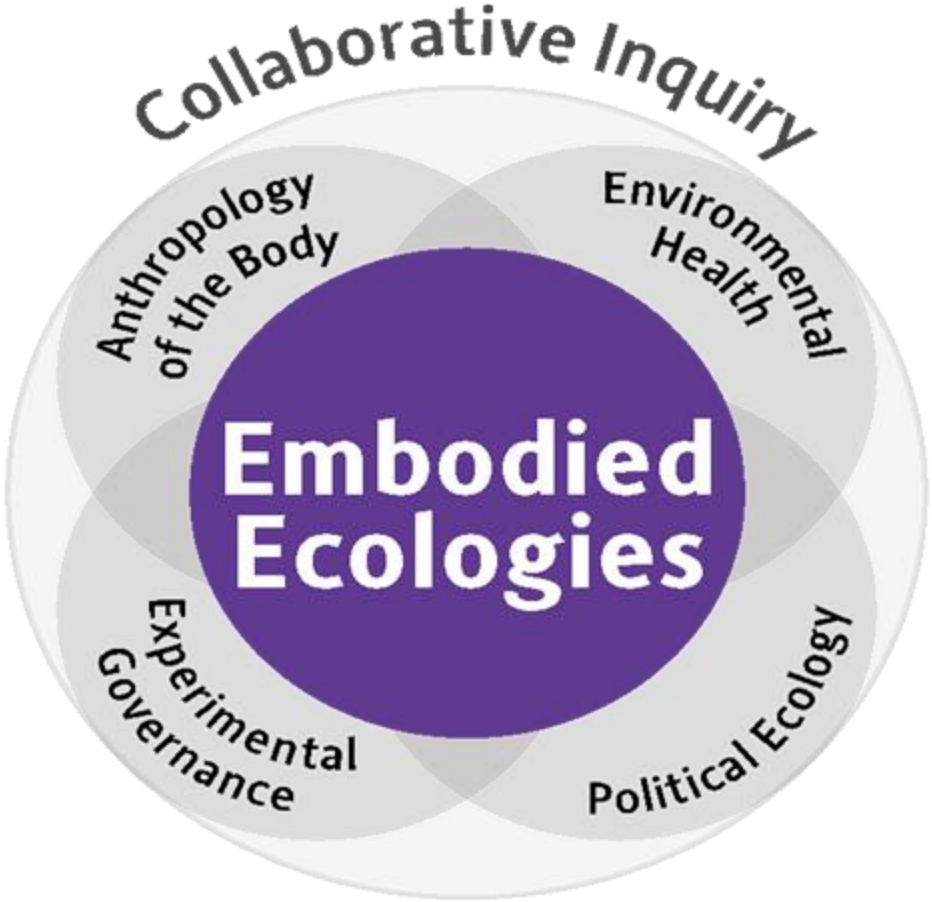


Embodied Ecologies

A collaborative inquiry into how people sense, know and act to reduce chemical exposures in everyday urban life

Anita Hardon

Interdisciplinary Collaboration



Embodied Ecologies

Embodied: how exposures are *sensed and experienced* and the myriad ways in which people *act* to mitigate chemical harm

Ecological: multiple routes of exposure across the places where people live and work, which in turn are shaped by social, political, and economic forces and by regulatory structures and priorities

Regulation: Ambitious Aims – Slow processes

GLOBAL

BASEL CONVENTION

1989

MINAMATA CONVENTION ON MERCURY

2017

STOCKHOLM CONVENTION

2004

saicm

UN environment

2006

EU

2021

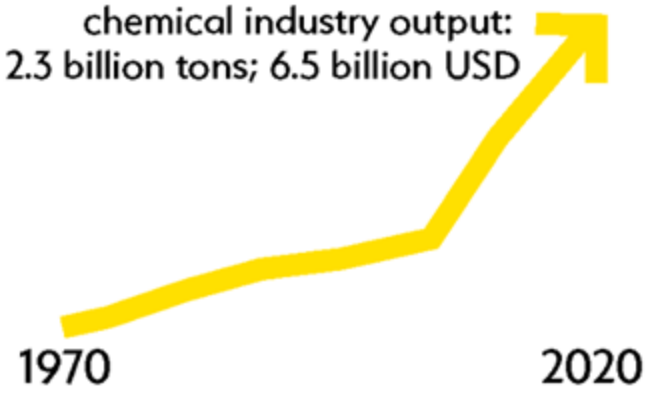
REACH COMPLIANCE

ECHA
EUROPEAN CHEMICALS AGENCY

2006

Lancet Commission on Pollution and Health (2018)

Exposures intensify



Only Half

of the 5000 chemicals

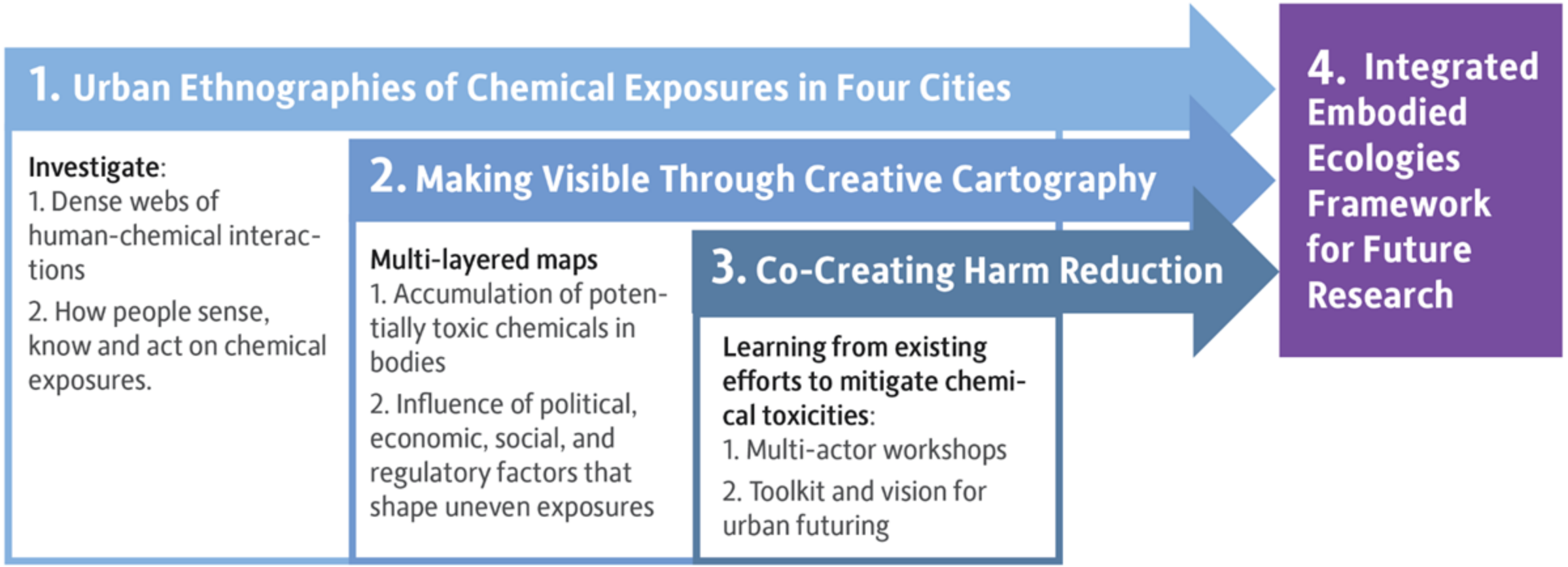
have been

tested for safety

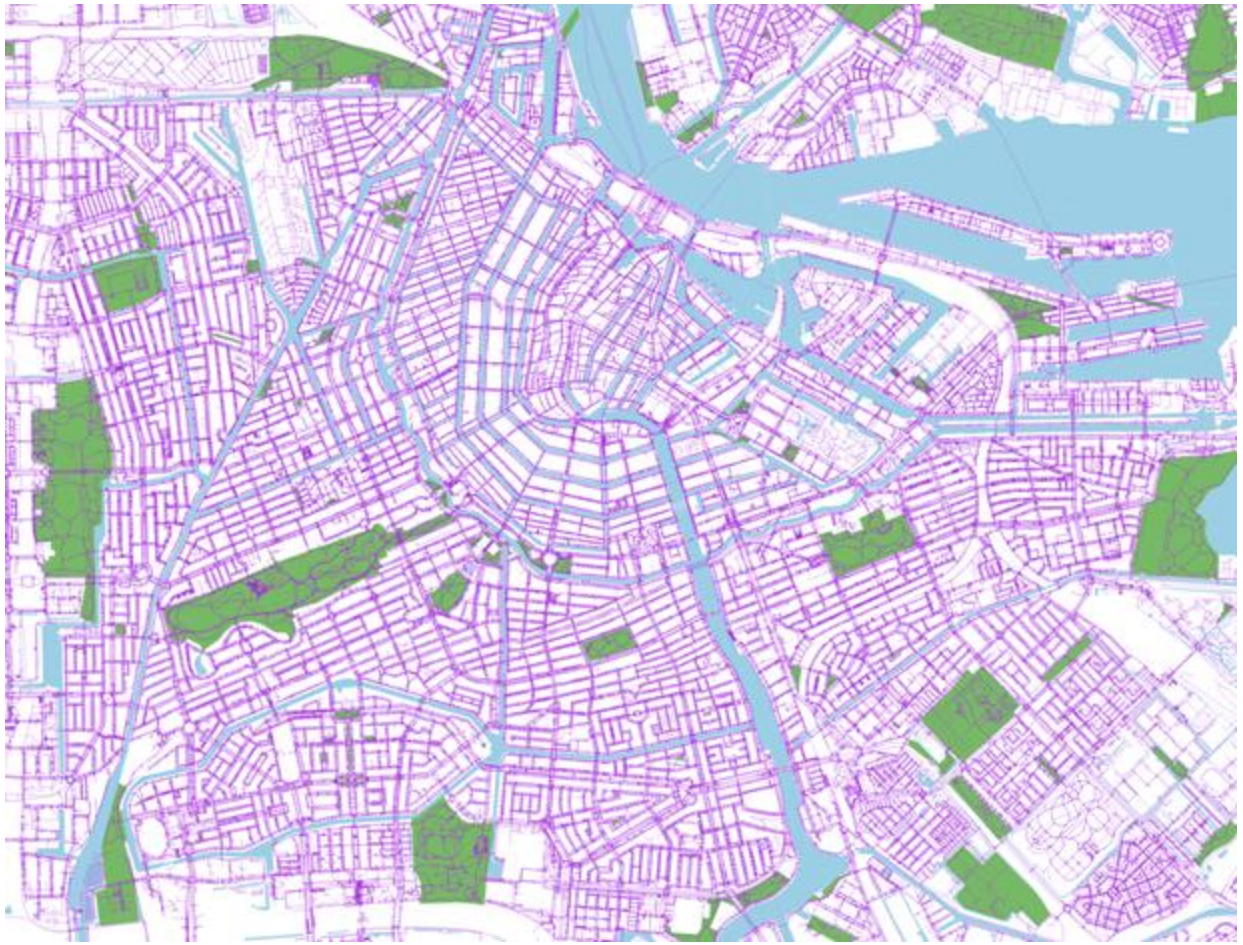
Multiple routes:

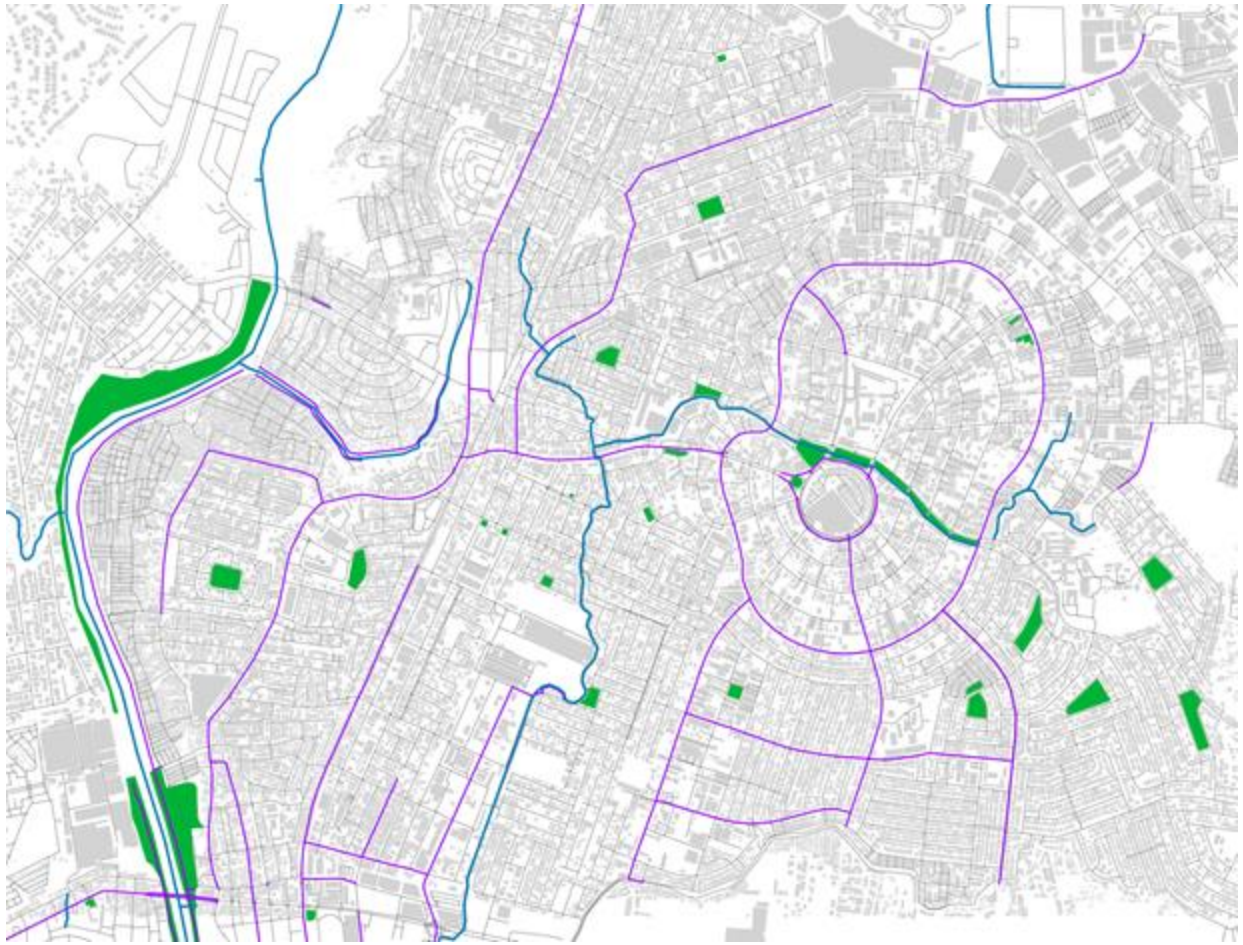
- Water
- Air
- Soil
- Food
- Building materials
- Consumer products

Four Aims – Four Projects



Contrasting cities and sites





1. Urban Ethnographies

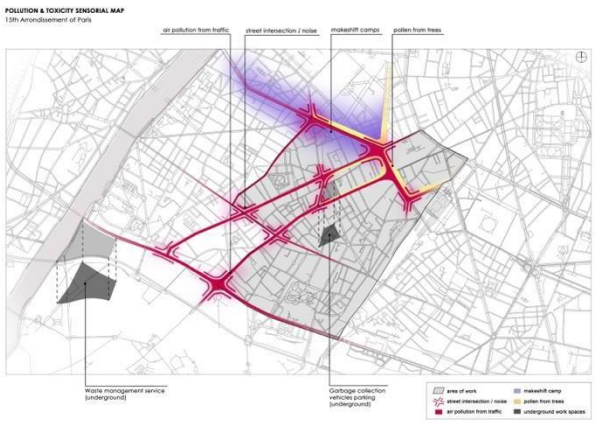
‘Grand Tours’ on cumulative toxicities as experienced by: garbarge collectors, urban and rural farmers, small scale miners, shoe makers, environmental activists, scientists, pregnant women, fire fighters etc.

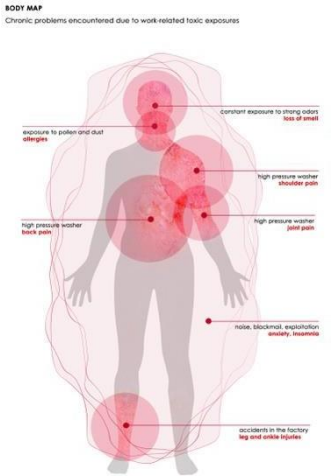
2. Sensorial cartography

Explore relations between embodied experiences and the spaces where they occur

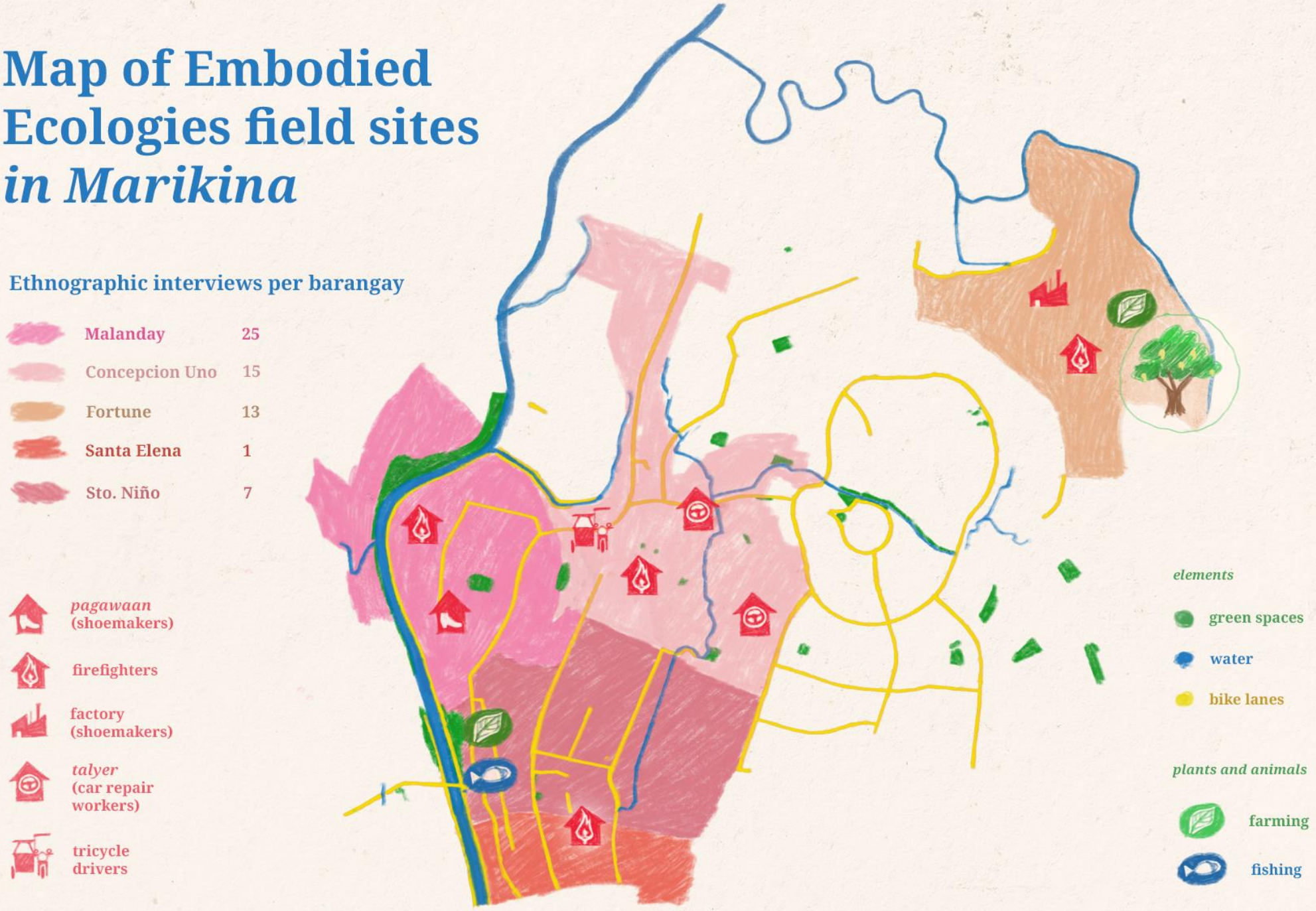
Connect everyday embodied experiences and large-scale processes

Make visible ignored, overlooked, silenced aspect of toxicity



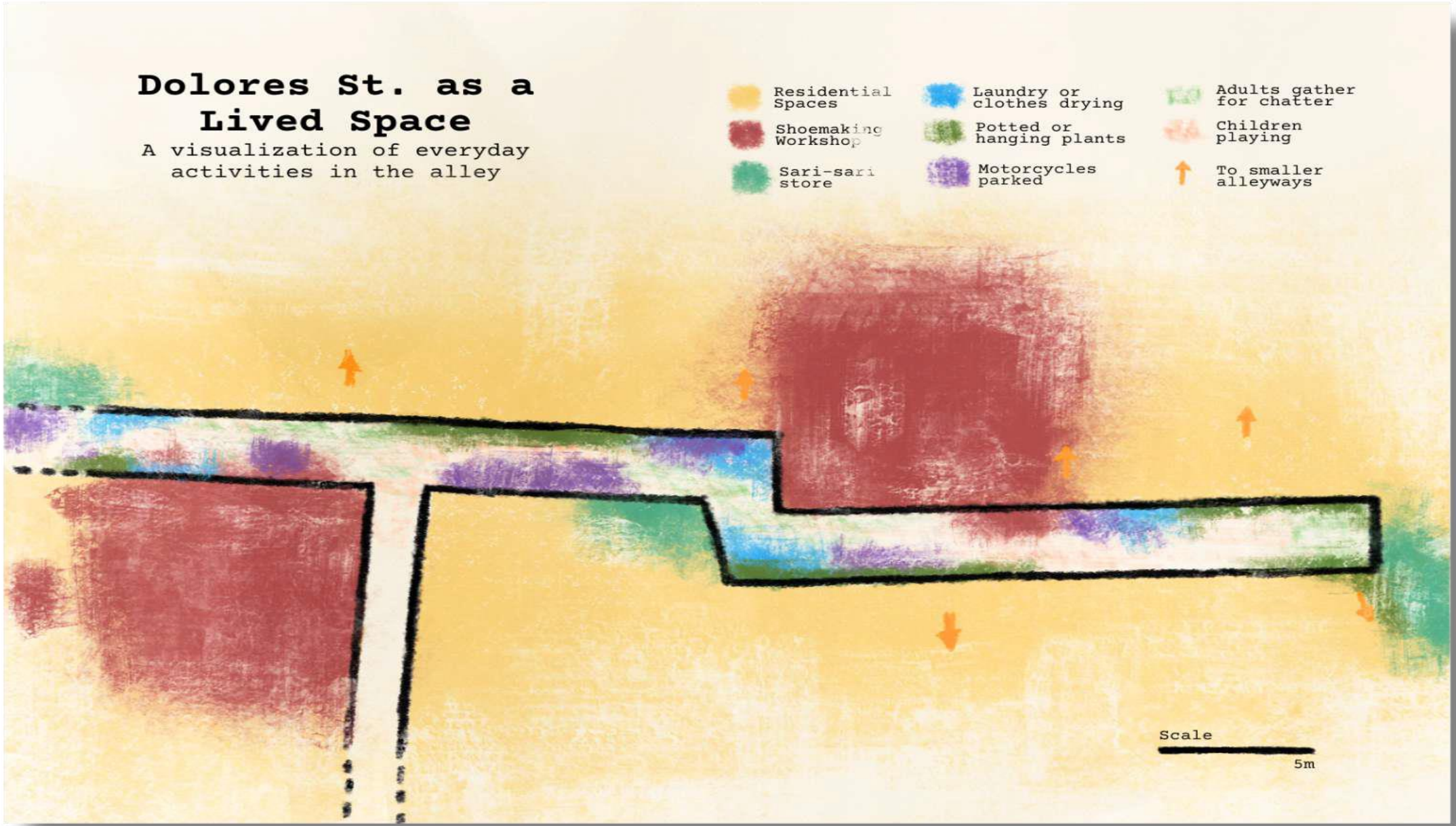


Map of Embodied Ecologies field sites *in Marikina*



Dolores St. as a Lived Space

A visualization of everyday activities in the alley



Workers are “sanay”

Workers practice “art of unnoticing” (Luo 2021) – mindful acts

Use micro-ecological practices

- to strengthen bodily resilience”: healthy eating, vitamins

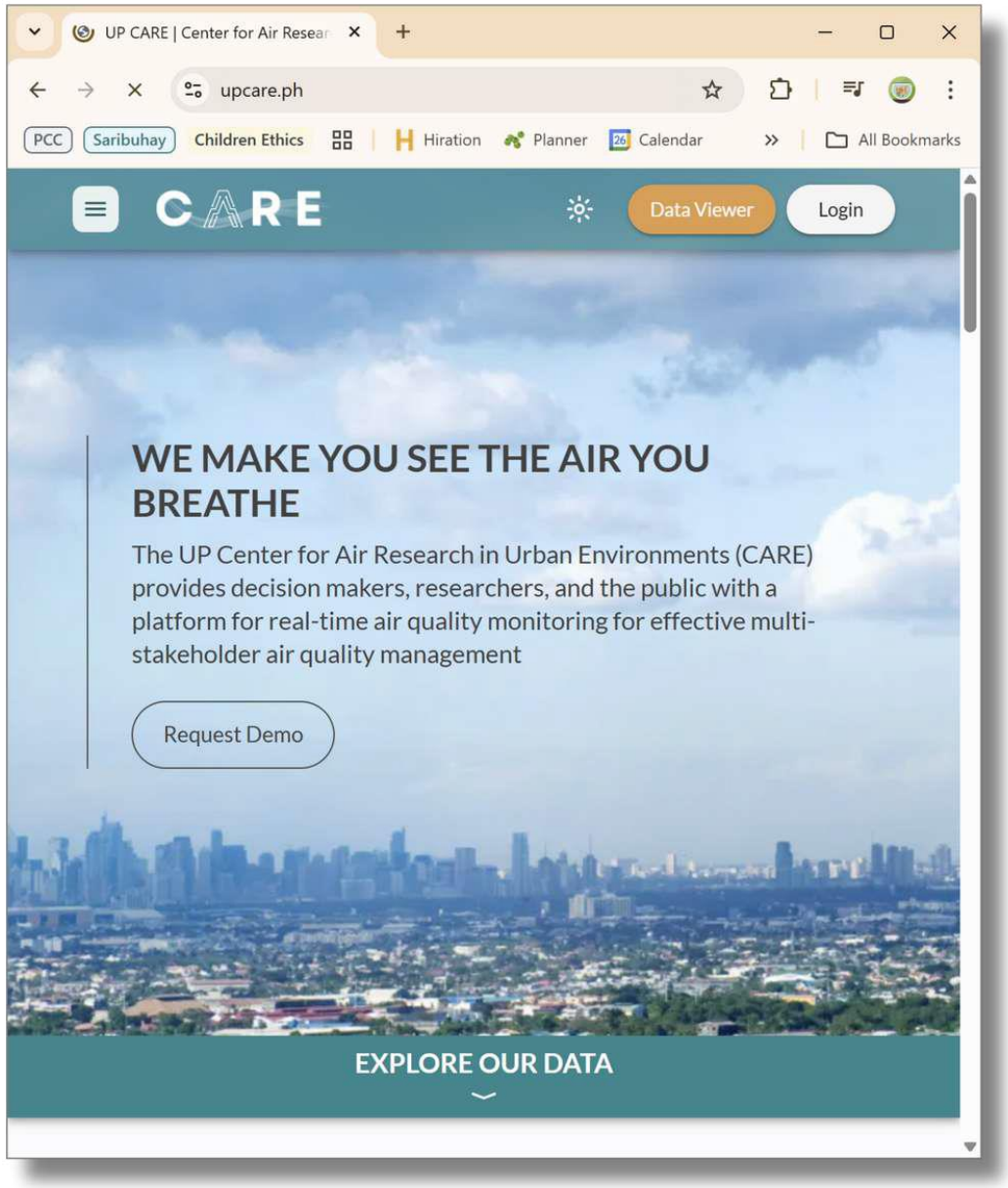
- limit exposures by not smoking; taking mini breaks; ventilating

Transdisciplinary collaboration

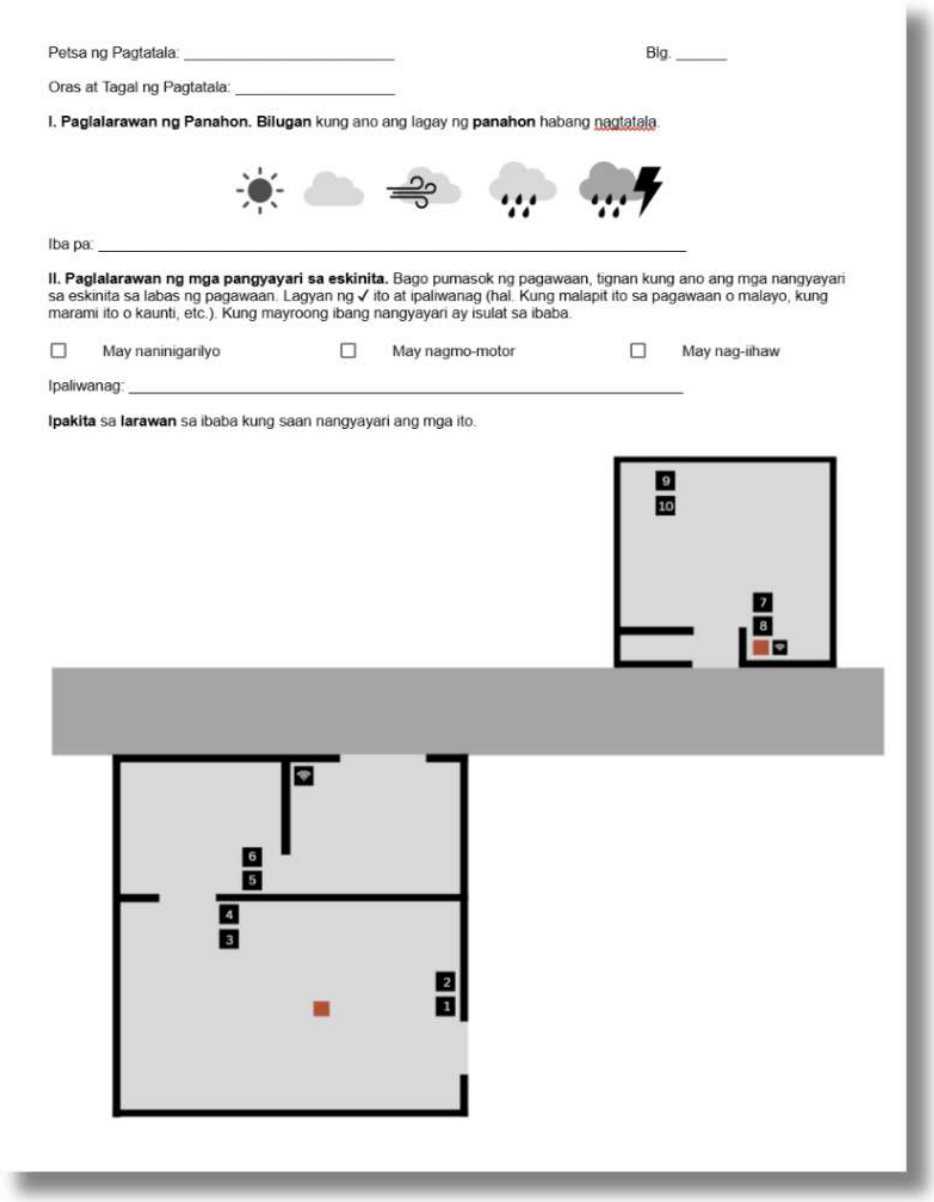
- Multi-modal sensing:

  How micro-ecological practices are
- related to air quality

  To help assess harm reduction practices and develop ‘seeds of a good anthropocene



- r
  co-creation of a “checklist”
  -



Petsa ng Pagtatala: _____ Blg. _____

Oras at Tagal ng Pagtatala: _____

I. Paglalarawan ng Panahon. Bilugan kung ano ang lagay ng **panahon** habang nagtatala.

Iba pa: _____

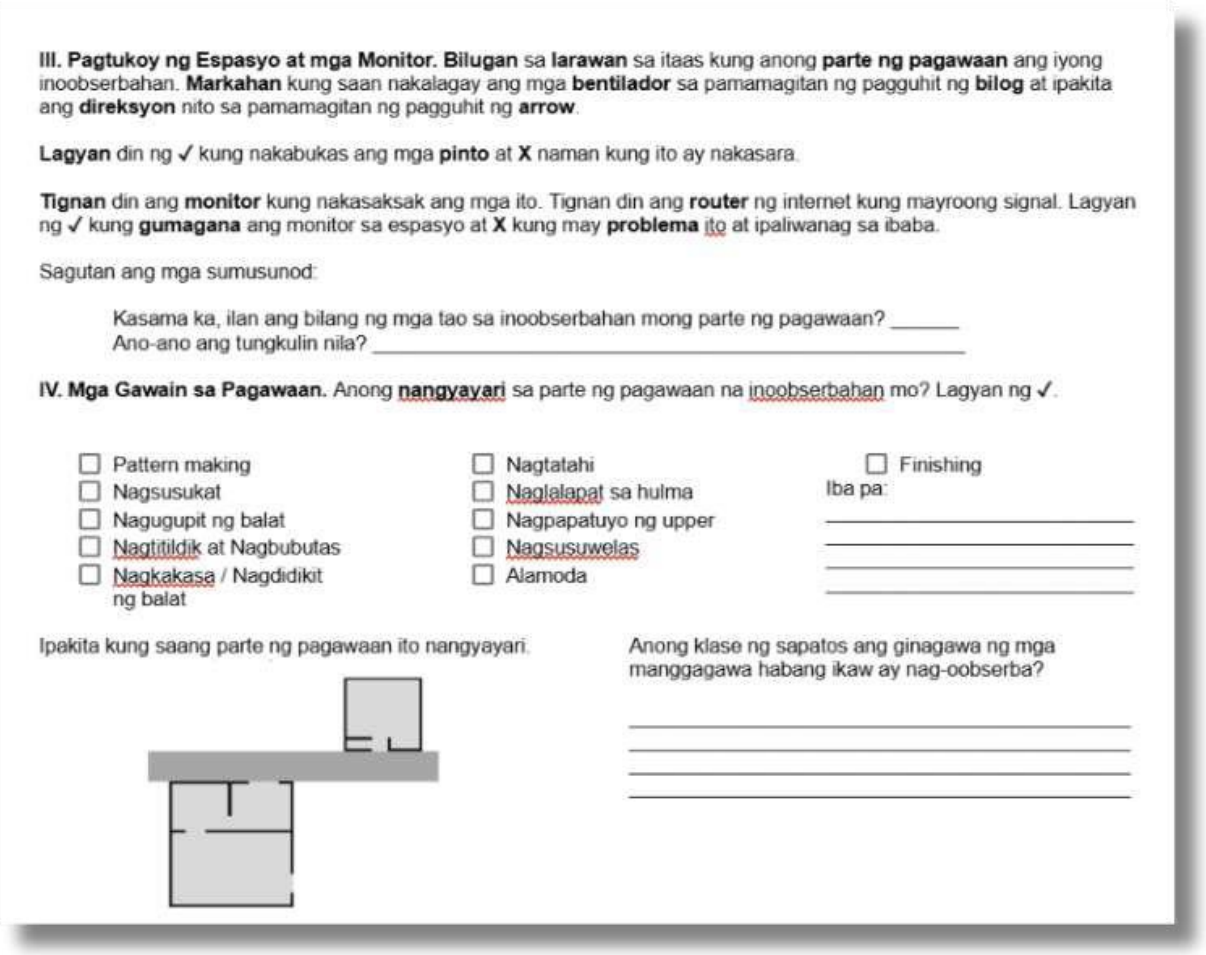
II. Paglalarawan ng mga pangyayari sa eskinita. Bago pumasok ng pagawaan, tignan kung ano ang mga nangyayari sa eskinita sa labas ng pagawaan. Lagyan ng ✓ ito at ipaliwanag (hal. Kung malapit ito sa pagawaan o malayo, kung marami ito o kaunti, etc.). Kung mayroong ibang nangyayari ay isulat sa ibaba.

☐ May naninigarilyo ☐ May nagmo-motor ☐ May nag-iihaw

Ipaliwanag: _____

Ipakita sa **larawan** sa ibaba kung saan nangyayari ang mga ito.

- time, date
- weather
- activities outside the workshop
  - e.g. smoking, motorcycles passing by
- illustrating where



III. Pagtukoy ng Espasyo at mga Monitor. Bilugan sa **larawan** sa itaas kung anong **parte ng pagawaan** ang iyong inoobserbahan. **Markahan** kung saan nakalagay ang mga **bentilador** sa pamamagitan ng pagguhit ng **bilog** at ipakita ang **direksyon** nito sa pamamagitan ng pagguhit ng **arrow**.

Lagyan din ng ✓ kung nakabukas ang mga **pinto** at **X** naman kung ito ay nakasara.

Tignan din ang **monitor** kung nakasaksak ang mga ito. Tignan din ang **router** ng internet kung mayroong signal. Lagyan ng ✓ kung **gumagana** ang monitor sa espasyo at **X** kung may **problema** ito at ipaliwanag sa ibaba.

Sagutan ang mga sumusunod:

Kasama ka, ilan ang bilang ng mga tao sa inoobserbahan mong parte ng pagawaan? _____
Ano-ano ang tungkulin nila? _____

IV. Mga Gawain sa Pagawaan. Anong **nangyayari** sa parte ng pagawaan na inoobserbahan mo? Lagyan ng ✓.

- ☐ Pattern making
- ☐ Nagsusukat
- ☐ Nagugupit ng balat
- ☐ Nagtitildik at Nagbubutas
- ☐ Nagkakasa / Nagdidikit ng balat
- ☐ Nagtatahi
- ☐ Naglalapat sa hulma
- ☐ Nagpapatuyo ng upper
- ☐ Nagsusuwelas
- ☐ Alamoda
- ☐ Finishing

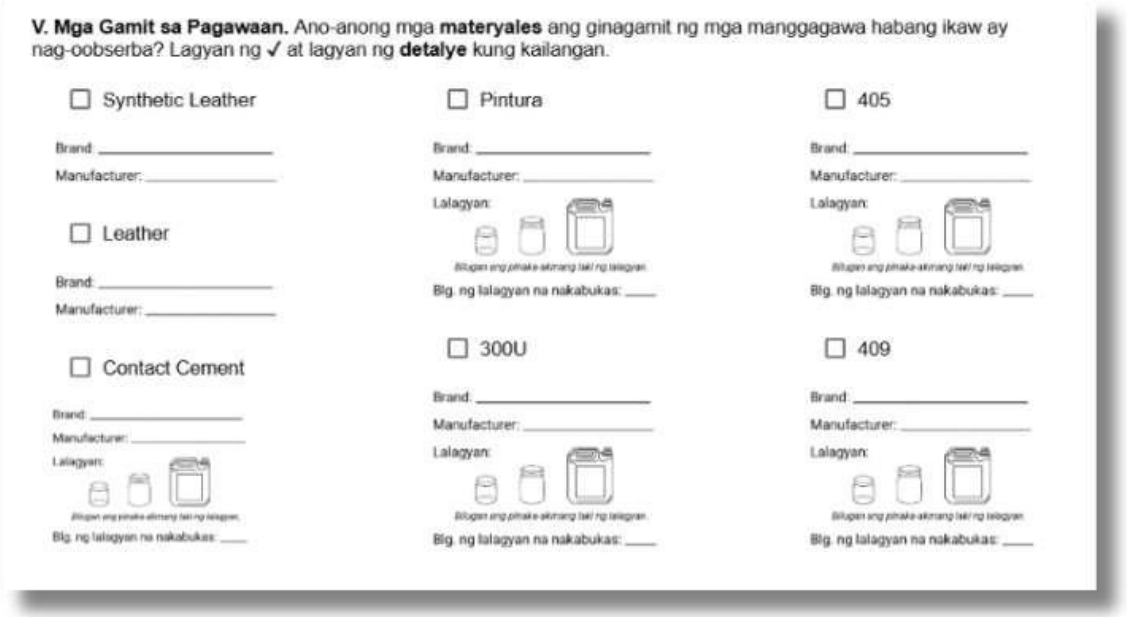
Iba pa:
_____
_____
_____
_____

Ipakita kung saang parte ng pagawaan ito nangyayari.

Anong klase ng sapatos ang ginagawa ng mga manggagawa habang ikaw ay nag-oobserba?

_____
_____
_____
_____

- illustrating airflow
  - the direction of fans
  - whether doors are open or not
- checking of sensors
- number of people
- activities in the pagawaan (shoe-related)
  - illustrating where



V. Mga Gamit sa Pagawaan. Ano-anong mga **materyales** ang ginagamit ng mga manggagawa habang ikaw ay nag-oobserba? Lagyan ng ✓ at lagyan ng **detalye** kung kailangan.

☐ Synthetic Leather

Brand: _____

Manufacturer: _____

☐ Leather

Brand: _____

Manufacturer: _____

☐ Contact Cement

Brand: _____

Manufacturer: _____

Lalagyan:

Bilugan ang pinaka-akmang lalagyan.

Blg. ng lalagyan na nakabukas: ____

☐ Pintura

Brand: _____

Manufacturer: _____

Lalagyan:

Bilugan ang pinaka-akmang lalagyan.

Blg. ng lalagyan na nakabukas: ____

☐ 300U

Brand: _____

Manufacturer: _____

Lalagyan:

Bilugan ang pinaka-akmang lalagyan.

Blg. ng lalagyan na nakabukas: ____

☐ 405

Brand: _____

Manufacturer: _____

Lalagyan:

Bilugan ang pinaka-akmang lalagyan.

Blg. ng lalagyan na nakabukas: ____

☐ 409

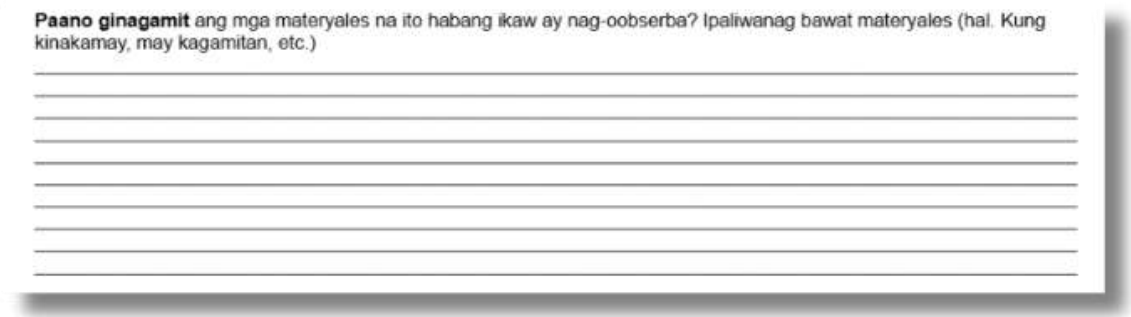
Brand: _____

Manufacturer: _____

Lalagyan:

Bilugan ang pinaka-akmang lalagyan.

Blg. ng lalagyan na nakabukas: ____



Paano ginagamit ang mga materyales na ito habang ikaw ay nag-oobserba? Ipaliwanag bawat materyales (hal. Kung kinakamay, may kagamitan, etc.)

_____

_____

_____

_____

_____

_____

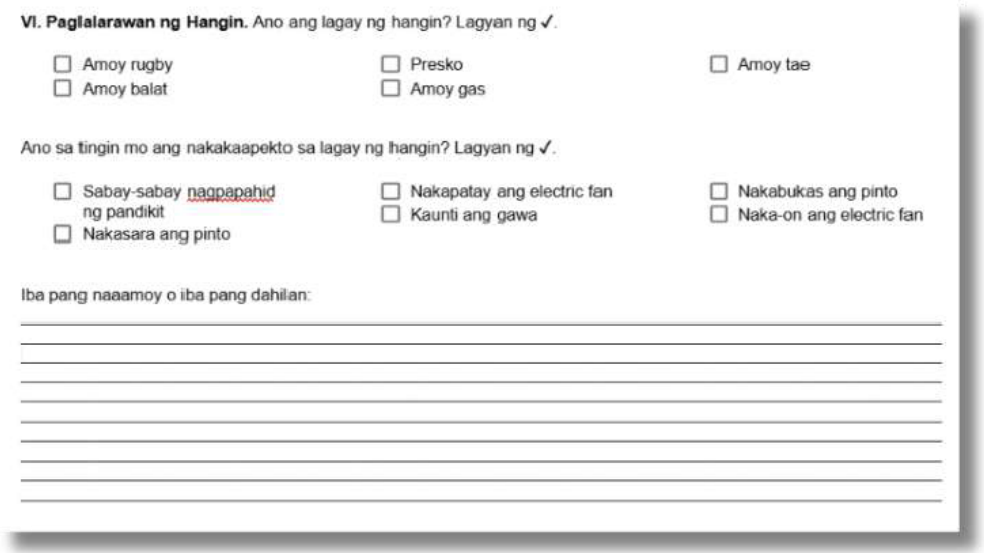
_____

_____

_____

_____

- materials/chemicals used in the pagawaan
  - brand
  - manufacturer
  - container
  - quantity
- description of how these are used
  - bare hands / w/ equipment
  - open canisters



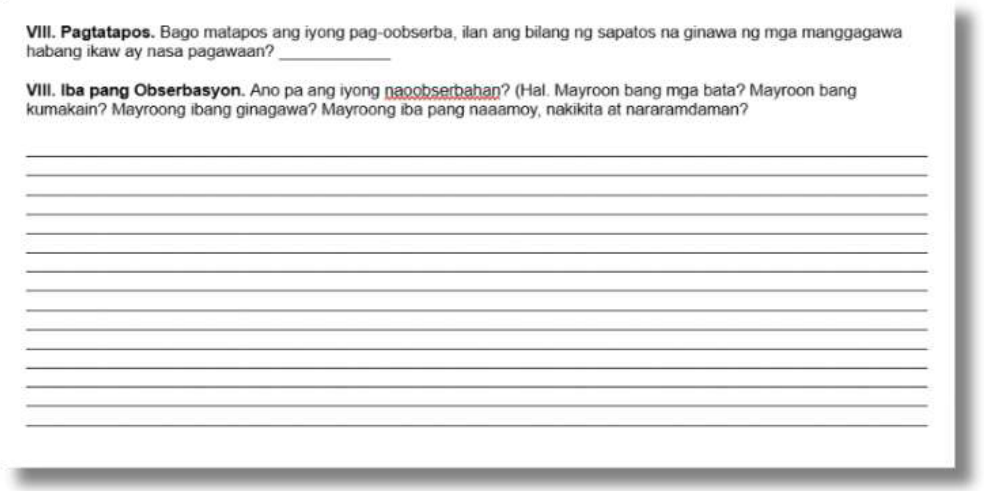
VI. Paglalarawan ng Hangin. Ano ang lagay ng hangin? Lagyan ng ✓.

- ☐ Amoy rugby
- ☐ Amoy balat
- ☐ Presko
- ☐ Amoy gas
- ☐ Amoy tae

Ano sa tingin mo ang nakakaapekto sa lagay ng hangin? Lagyan ng ✓.

- ☐ Sabay-sabay nagpapahid ng pandikit
- ☐ Nakasara ang pinto
- ☐ Nakapatay ang electric fan
- ☐ Kaunti ang gawa
- ☐ Nakabukas ang pinto
- ☐ Naka-on ang electric fan

Iba pang naaamoy o iba pang dahilan:



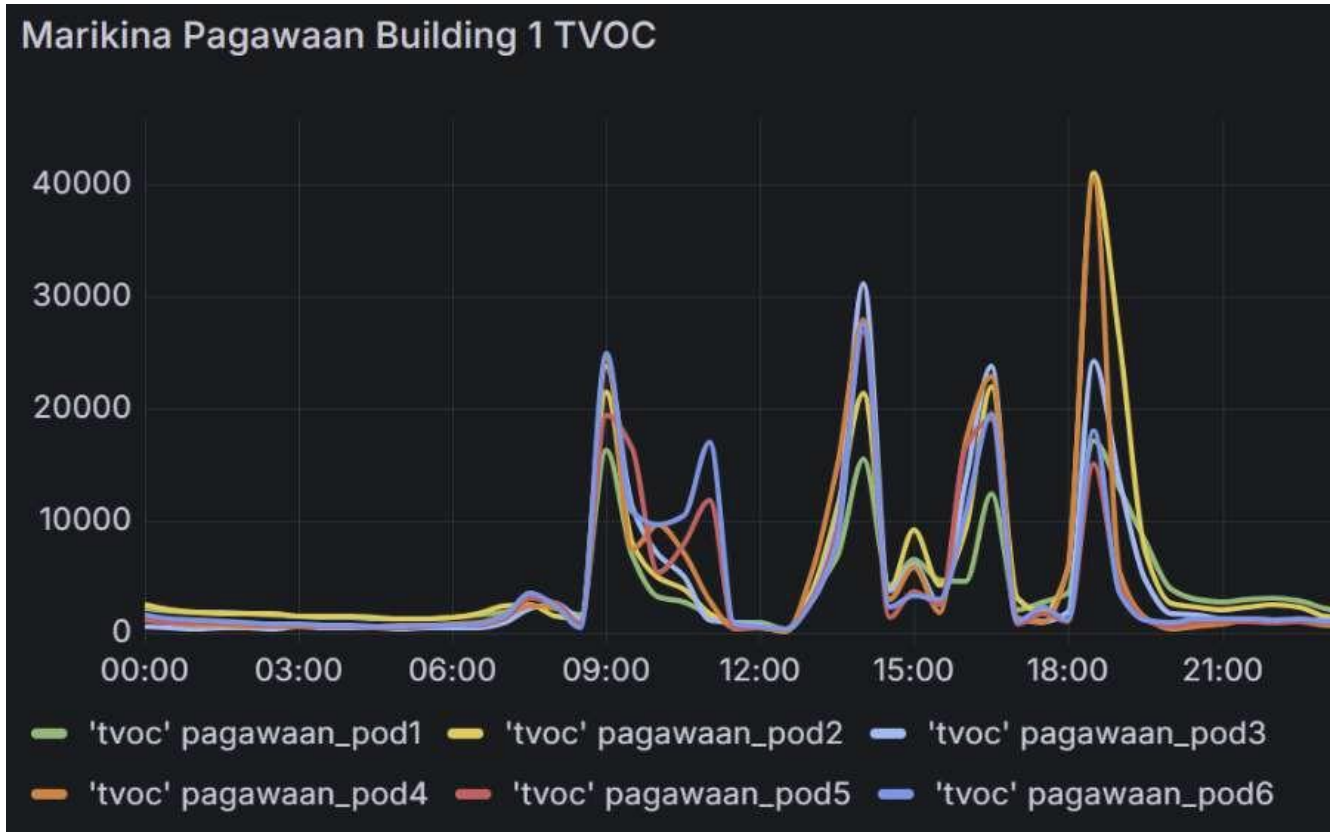
VIII. Pagtatapos. Bago matapos ang iyong pag-oobserba, ilan ang bilang ng sapatos na ginawa ng mga manggagawa habang ikaw ay nasa pagawaan? _____

VIII. Iba pang Obserbasyon. Ano pa ang iyong naoobserbahan? (Hal. Mayroon bang mga bata? Mayroon bang kumakain? Mayroong ibang ginagawa? Mayroong iba pang naaamoy, nakikita at nararamdaman?

- perception of air
  - why
- number of shoes made during observation
- other observations
  - non-shoemaking-related activities (E.g. eating, children inside the workshop, etc.)


CARE

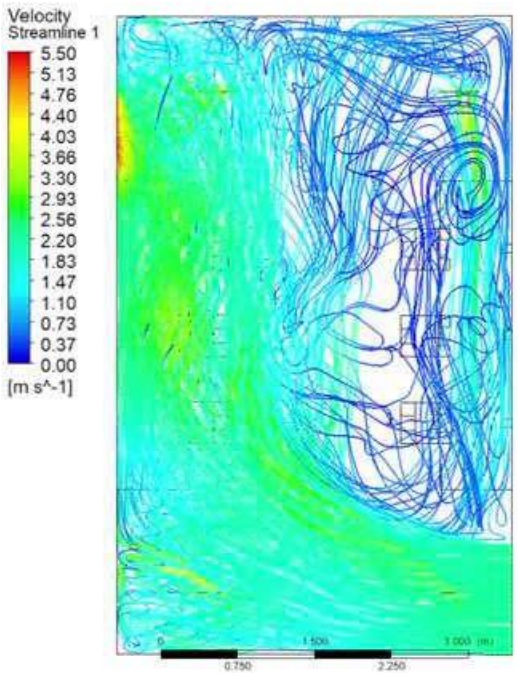
9:00 AM	Mananahi - nagtatahi Manunukat - nagsusukat Mag-aareglo - nagpapahid
10:00 AM	Mananahi - nagtatahi Manunukat - nagsusukat Mag-aareglo - nagpapahid
11:00 AM	Mananahi - nagtatahi Manunukat - nagsusukat Mag-aareglo - nagpapahid
12:00 PM	Lunch break
1:00 PM	Mag-aareglo - nagpapahid
2:00 PM	Mananahi - nagtatahi Manunukat - nagsusukat Mag-aareglo - nagpapahid
3:00 PM	Mananahi - nagtatahi Mag-aareglo - nagpapahid
4:00 PM	Mananahi - nagtatahi Mag-aareglo - nagugupit Coffee break / Snack time
5:00 PM	Mananahi - nagtatahi Mag-aareglo - nagugupit



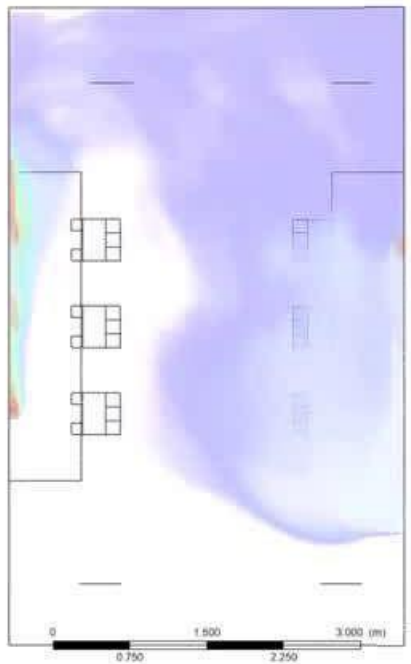
- lower VOCs during breaks
  - lunch break (no people)
  - snack break (some work while eating in the workshop)

Base Ventilation Model Results

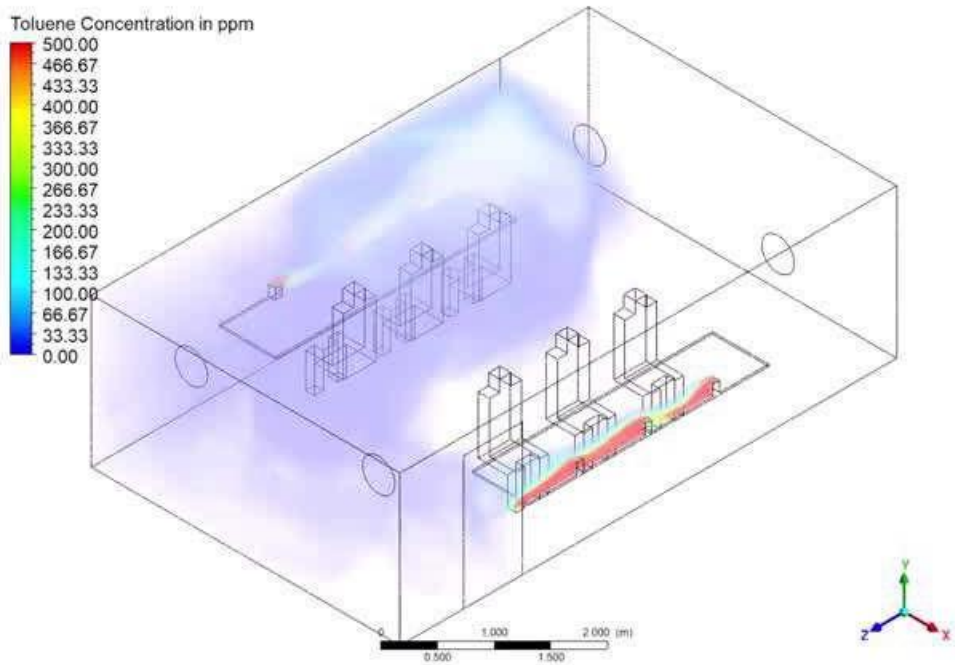
105s



Velocity Streamline
(Top View)



Toluene Vapor Dispersion
(Top View)



Toluene Vapor Dispersion
(Isometric View)

Co-designing seeds for a good anthropocene

Build on observed association between ventilation and levels of VOC and airflows in the workshop

Consider practical issues related to shoemaking – glue needs to dry slowly

Recognize concerns that exhaust fans are expensive

Consider importance of socializing during work hours.

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More from the Embodied Ecologies Team

Rekacewicz, P., Mandler, T., Cordero, D., Echague, P. A. A., Hardon, A., Pauchano, B., ... & Tan, M. L. (2025). Mapping everyday urban political ecologies: Experiential cartography as embodied methodology. *Urban Political Ecology*, *1*(1-2), 88-117.

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Hardon, A., Pakasi, D., Hidayana, I., Taqueban, E., Moyer, E., van Zeben, J., ... & Tan, M. L. (2025). Connecting the Dots: A Collaborative Ethnography of Plastic Leakages in Indonesia and the Philippines. *Practicing Anthropology*, 1-22.

Hardon, A., Dey, T., Pakasi, D., Taqueban, E. M., Hidayana, I., & Nichter, M. (2025). Confronting the material and structural leakiness of plastics: insights from multi-sited ethnography in India, Indonesia and the Philippines. *Cambridge Prisms: Plastics*, *3*, e27.

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