

D-NOSES

Distributed Network for Odour Sensing,
Empowerment and Sustainability

You've got the buzzwords, have you got the people?

*María Alonso Roldán, Lucía Paz Errandonea, Simone Rüfenacht, Nora Salas Seoane,
Rosa Arias, Louise Francis and Hannah Stockwell*



IDEAS
FOR
CHANGE



ecsa | Eurc
Citiz
Assc



ISWA
International Solid Waste Association

AMIGO



POLITECNICO
MILANO 1863



ENVIRQMETRICS
Building Capabilities and Efficacy

ecotec



S. João da Madeira
Câmara Municipal

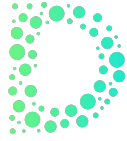


lipor



Founded by the Horizon 2020
programme of the European Union
Grant Agreement No 789315

#dNosesEU #odourObservatory



D-NOSES

Distributed Network for Odour Sensing,
Empowerment and Sustainability

Agenda for this workshop



The D-NOSES project

The D-NOSES inclusive engagement
model

The example of Barcelona

Stories about inclusiveness

Zoom discussion - hear from our
community champions

About D-NOSES



D-NOSES

Distributed Network for Odour Sensing,
Empowerment and Sustainability



Odour Pollution

Odour

- Can affect our quality of life
- Difficult to measure
- Second cause for environmental complaints after noise

→ good and bad smells can lead to nuisance

Odour monitoring methods

- Expensive
- Inefficient and / or long process
- No information on odour NUISANCE

Disparate regulations



The D-NOSES approach

Instead of relying on traditional ways to monitor odours...

Citizen Science for odours

- There is no better sensor than our nose!
- Enabling citizens to monitor odour themselves
- Using accessible online tools

Advantages

- Cost-effective
- Accessible to all
- Enables the identification of patterns of odour episodes across space and time
- Enables the identification of potential sources of odour



A bottom-up approach

ACCESS
INFORMATION
PARTICIPATION
JUSTICE

Principle 10

of the Rio Declaration on Environment and Development guarantees that all persons, particularly those in vulnerable situations, have access to timely and reliable information, can participate significantly in the decisions that affect their lives and have access to justice in environmental matters, thereby contributing to the implementation of the Sustainable Development Goals



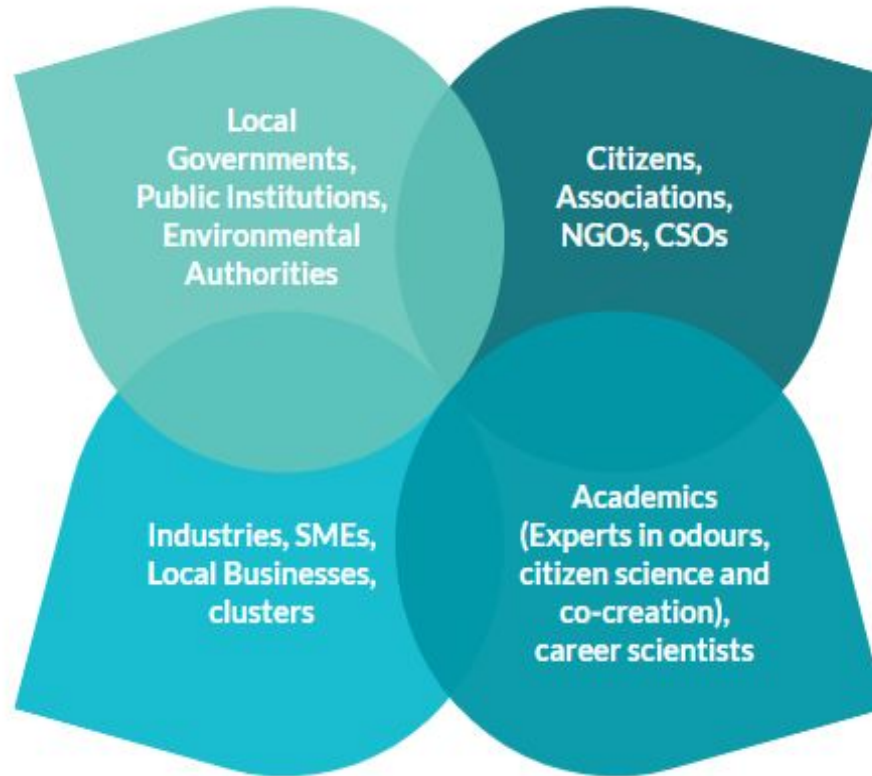
Principle 10 of the Rio Declaration

- Access to information
- Public Participation
- Environmental Justice

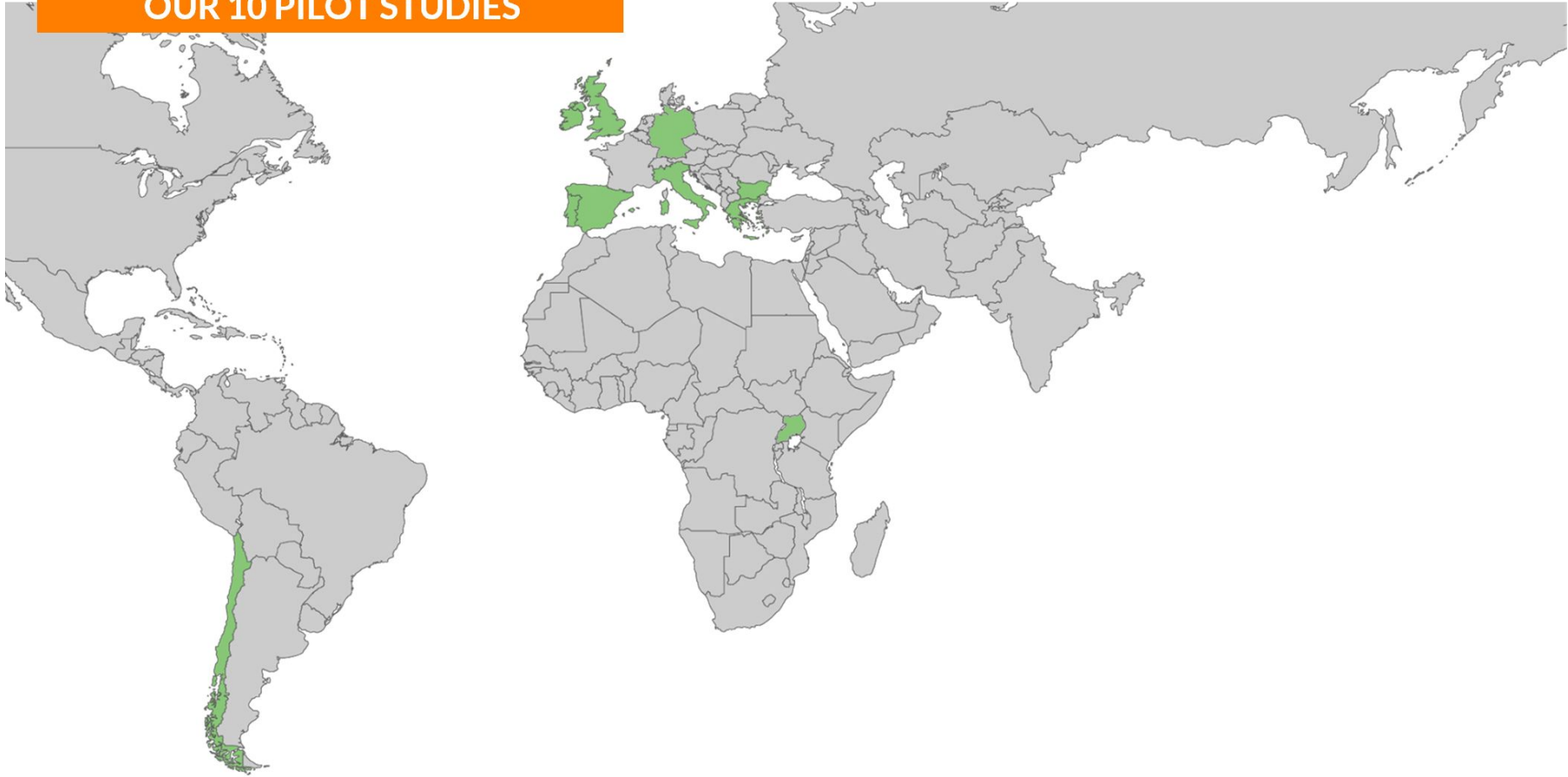
Sustainable Development Goals

- Good health and wellbeing
- Sustainable communities
- Partnerships / “Leave no one behind”

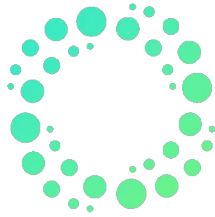
The quadruple helix model - “Leave no one behind”



OUR 10 PILOT STUDIES



From local to global



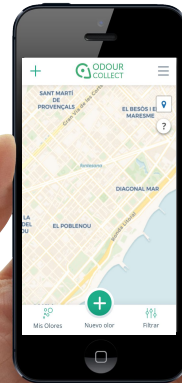
ODOUR OBSERVATORY.com



Community Maps

dnoses.communitymaps.org.uk

ODOUR
COLLECT.eu





D-NOSES
Distributed Network for Odour Sensing, Empowerment and Sustainability

ODOUR POLLUTION A GROWING SOCIETAL CONCERN














HIGHLIGHTS

- Odour nuisances, being the second cause of environmental complaints after noise, lead to a significant decline in our quality of life and must be urgently addressed.
- Odour regulations across Europe and within countries differ significantly from each other. In many places they are even completely lacking. There is a need for better multi-level governance in Europe in order to protect its citizens.
- Odorous gases are commonly measured at the source (emission). The level of the odours in surrounding residential areas (perception) is more complex to determine, but also much more relevant to measuring the impact on residents.
- The Distributed Network for Odour Sensing, Empowerment and Sustainability (D-NOSES) project will reverse the way in which odour pollution is commonly tackled, through a co-creative citizen science approach.

MAIN ODOUR ISSUES IN EUROPE

The sources that generate odours in European communities are numerous and diverse. In many cases the same community is exposed to more than one odour source. Industrial activities, waste management and agriculture/stocking represent the main challenges regarding odour emissions within Europe.

HOW TO CITE

D-NOSES consortium (2019). Odour Pollution - A growing societal concern. D-NOSES Policy Brief #1

Authors: Ineser Rodriguez (ICL), Clara Lisa Galán (ICL), Ana Rodríguez (ICL), Ana Rodríguez (ICL), Alicia Rodríguez (ICL), María José Rodríguez (ICL), María José Rodríguez (ICL), María José Rodríguez (ICL).

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement 101019122.

D-NOSES Coordinator and Project Support: ECOW through open innovation and discussion with the D-NOSES consortium. Website access controlled as part of D-NOSES.









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The D-NOSES inclusive engagement model



The D-NOSES inclusive engagement model

1

IDENTIFY
THE ISSUES

2

STAKEHOLDER
MAPPING

3

FRAME (THE
PROBLEM)

4

PILOT
DESIGN

5

DATA
COLLECTION

6

DATA
ANALYSIS

7

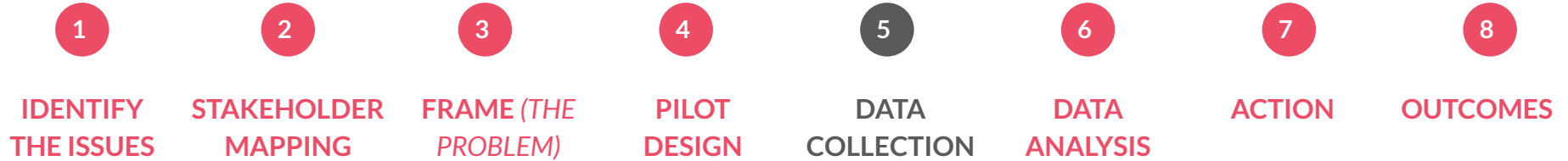
ACTION


8

OUTCOMES



Ensuring Inclusiveness



A large crowd of people is gathered for a protest or demonstration. The scene is filled with individuals of various ages and ethnicities, many wearing winter clothing like hats and scarves. Several people are holding up signs and banners, some of which are partially visible, such as one that says "FEMINIST FIGHT BACK" and another that says "KEEP YOUR STATES". The background shows a city street with buildings and trees. The entire image is overlaid with a semi-transparent grid of teal dots.

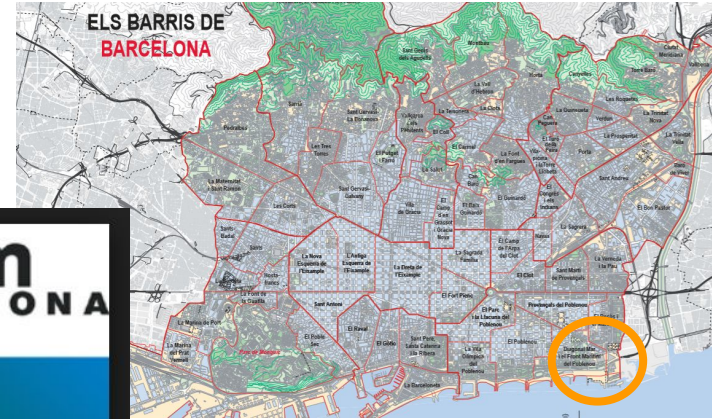
Once we have got the model, how do we
get the people?

The example of the Barcelona case study

The D-NOSES methodology in action!

The pioneer Pilot in Barcelona: The Forum Area

- Complex and challenging area for community engagement -> diversity of social realities
- Historical problem of odour issues -> Multiple odour emitting sources (W and WWT plants)
- Feasible collaboration with the Regional Authority (D-NOSES AB) -> manages most of the odour emitting activities



1 2 3 4 5 6 7 8

IDENTIFY THE ISSUES

Multiple
odour
emitting
sources:
Waste,
Wastewater
&
Sludge
treatment
plants
Incinerator



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IDENTIFY THE ISSUES



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IDENTIFY THE ISSUES



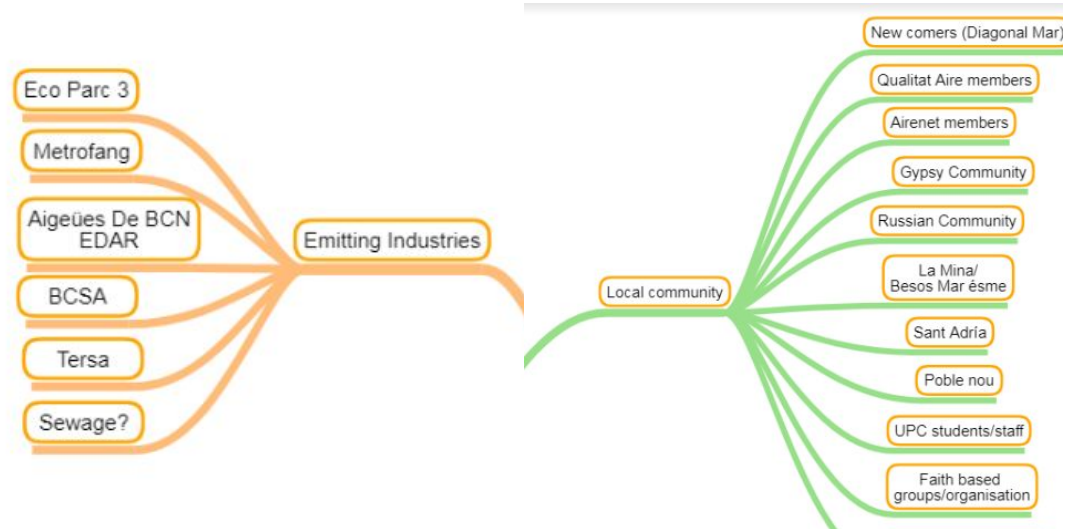
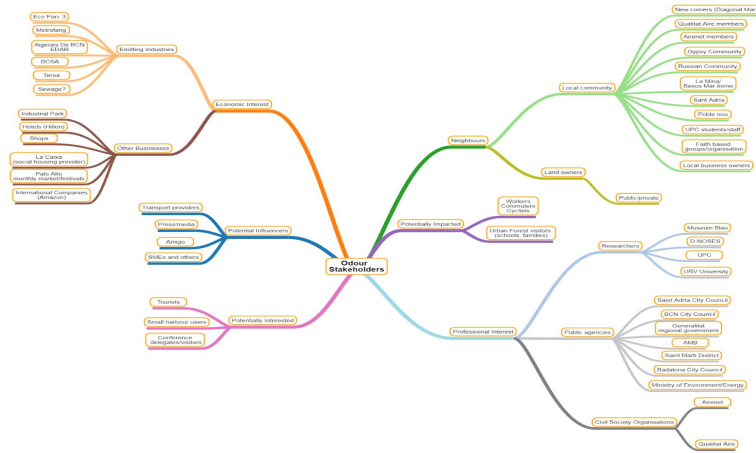
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STAKEHOLDER MAPPING

Identifying:

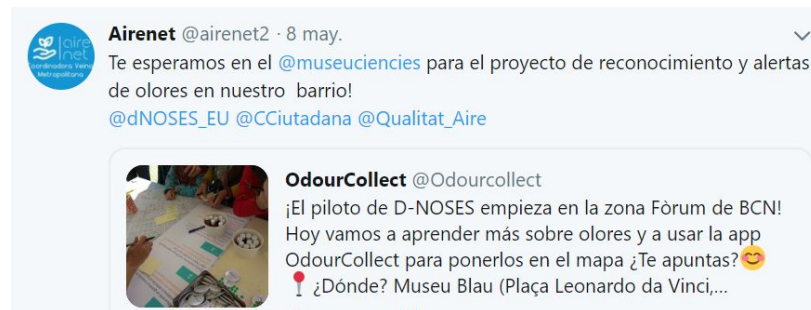
- *Odour emitting activities*
- *Communities/CSOs*
- *Public sector*
- *Research*

-> Potential motivations, barriers and mitigation strategies

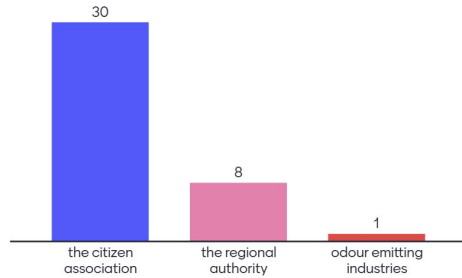


FRAME THE PROBLEM

- Meetings with the Regional authority (AMB) -> which manages most of the emitting industries (W & WWTP)
- Meetings with the Citizen Association (AireNet) -> including more than 50 CSOs within, very active with the odour issue
- Visits to the emitting industries to better understand the problem



Where would you start? Which stakeholder would you engage first?



1. Where would you start? Which stakeholder would you engage first?
Regional Authority, Citizen Association, Emitting industries?

Go to [menti.com](https://www.menti.com)
Enter the code 19 65 18 4

FRAME THE PROBLEM

Barriers

Regional Authority:
Concerns and fear of
dissemination of a bad
odours map of Barcelona

CSO: Defiance to be
another project promising
solutions with little effect

Industries: defiance to share
any data available

Opportunities

Presentation of an innovative
scientific methodology based
on previous successful
initiatives

Involvement of all actors from
the quadruple helix

Promoting dialogue &
transparency -> strengthening
relationships amongst actors

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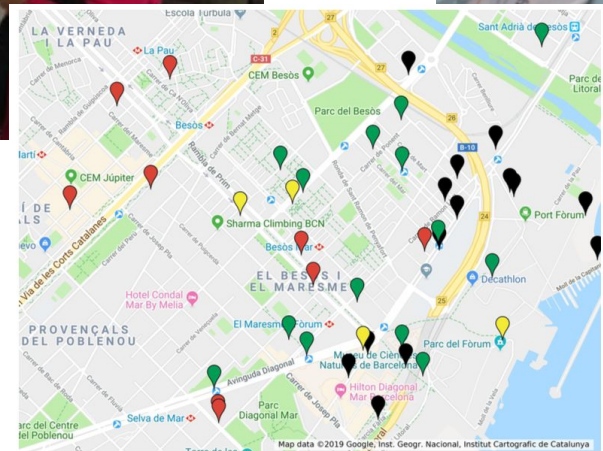
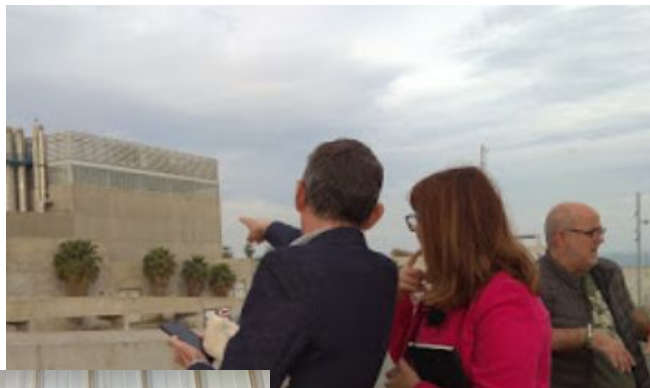
FRAME THE PROBLEM



Going where the community is

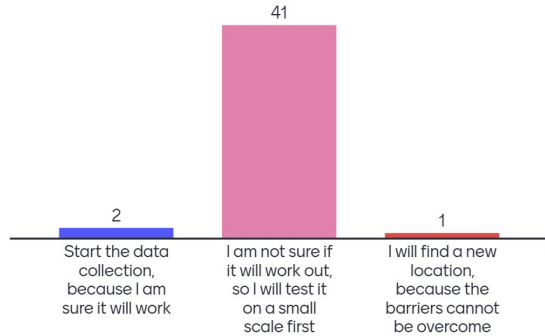
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FRAME THE PROBLEM



What would you do next?

Mentimeter



2. What would you do next?

Go to menti.com

Enter the code 20 00 22 0

The Beta Pilot

Aim: the aim of the Forum Beta Pilot is to test the engagement methods, training materials and mobile app that have been developed for the project, along with real users and in the context of a real world situation. The results will help us in designing the next pilot actions



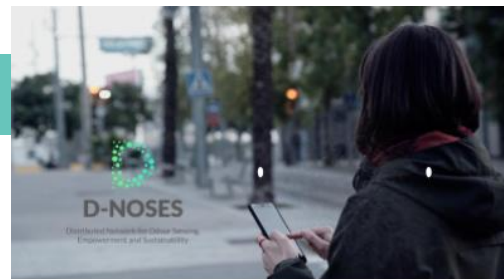
1 month

A year



Benefits

- *To get to know the odour problems in the area*
- *To improve data collection and test the App*
- *Identification of Community Champions*
- *Hypothesis formulation and research questions*
- *Pilot design*



¡AYÚDANOS A IDENTIFICAR OLORES!

¿LLEGAN MALOS OLORES A TU BARRIO? Participa en el proyecto D-NOSES para mejorar la gestión de los olores y ganar calidad de vida. Conoce nuestra App OdourCollect (odourcollect.eu).

¿DÓNDE? MUSEU BLAU (Museu de Ciències Naturals, Plaça Leonardo da Vinci, 4-6 Barcelona)

¿CUÁNDO? JUEVES 25 de ABRIL 17:30 - 19h

¡VEN Y PARTICIPA!

Para información e inscripciones: Escribe a dnosesbcn@ibercivis.es o envía WhatsApp al 691449914. También puedes inscribirte aquí dnoses-pilotoforum.eventbrite.es

The calendar of the Beta Pilot: 4 sessions

Workshop 1
25th April

Workshop 2
8th May

Interviews
8th May to 4th June

Workshop 3
4th June

Workshop 4
25th June

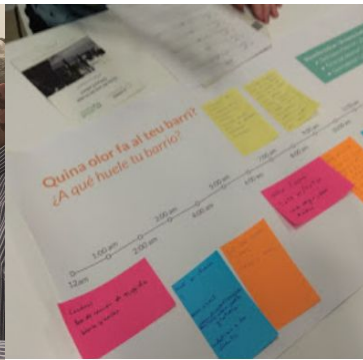
Meeting and
understanding
the issue

Odour training and the
OdourCollect App

Data collection and
interviews for doubts and
feedback

Data analysis and
co-design of hypothesis
and actions

Co-design of
next actions for
the pilot
continuation



PILOT DESIGN

The Barcelona pilot design was based on the beta pilot participants inputs and co-creation activities:

- *To be where the people are:*
 - *Joining the community events agenda with the D-NOSES initiative*
 - *Decentralized strategy for odour trainings and co-creation actions: each area has different needs and people attend workshops in their area*



PILOT DESIGN

- **Organisation of odour training + OdourCollect App training + Sensory Walks to feed the data collection phase and improve odour observations**



Are you experiencing any problem?

Contact us or report any incidence through the app

You can also contact us via email
odourcollect@bercivis.es

Become a super citizen scientist!

Interact with other users

Look up the odour map

Be part of a pilot case study

odourcollect.eu @Odourcollect odourcollect

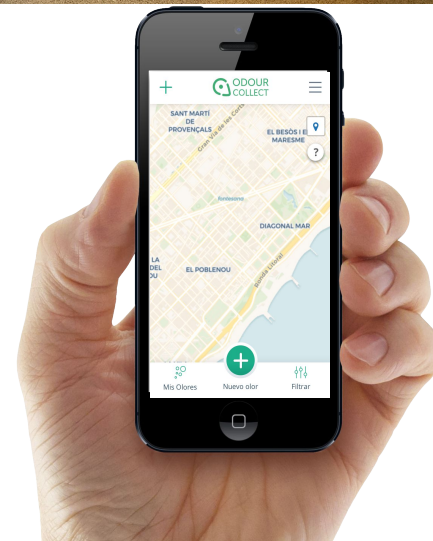
D-NOSES

Funded by the Horizon 2020 programme of the European Union Grant Agreement No 101015

IBERPULVER LOCAL CHANGE ECOTEC ECOTEC lipo

OdourCollect is part of the D-NOSES project

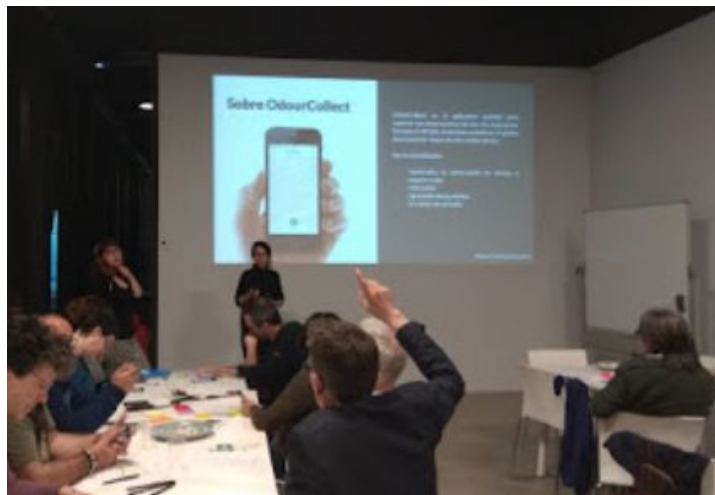
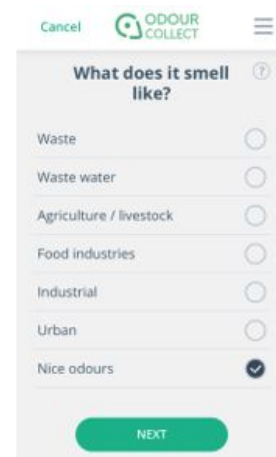
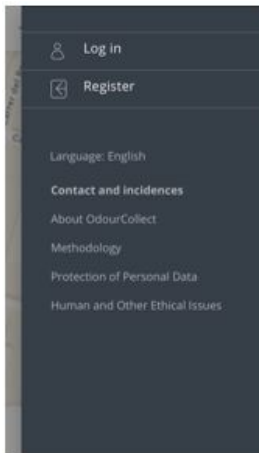
dnoses.eu



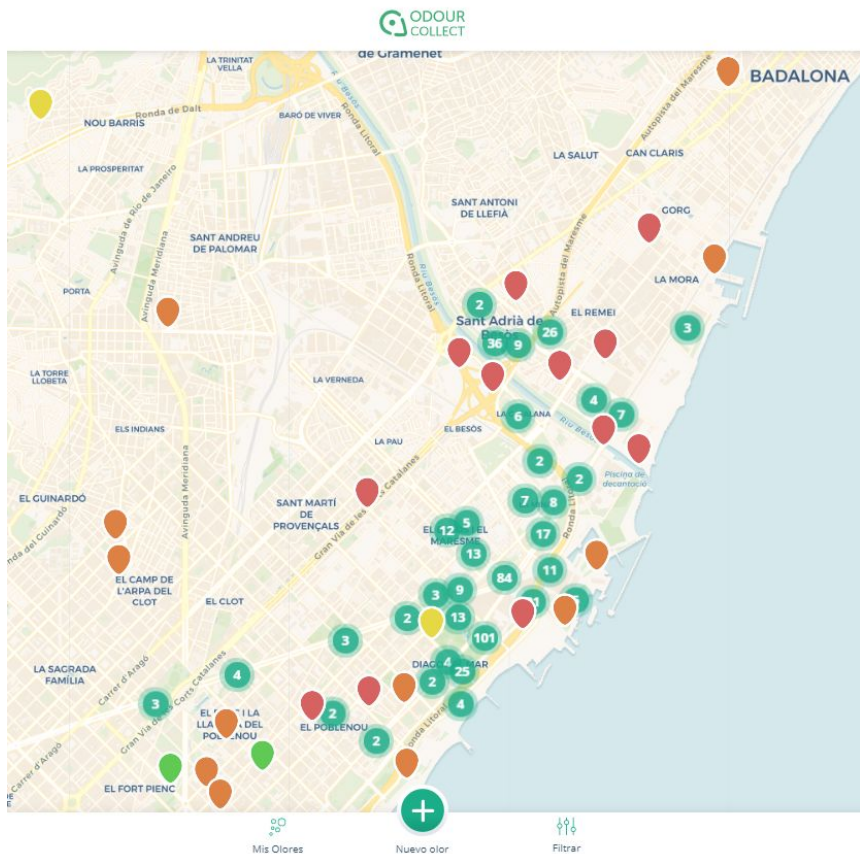


PILOT DESIGN

- *Improvements of the features and functionalities of the OdourCollect App through a co-creation process*



DATA COLLECTION

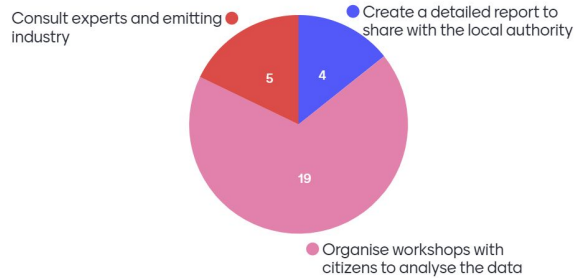


480 odour observations gathered using the OdourCollect App in the Forum Area during 12 months

The frequency of odour observations have varied depending on the engagement actions with communities as well as intense odour episodes

What would you do with the data?

Mentimeter

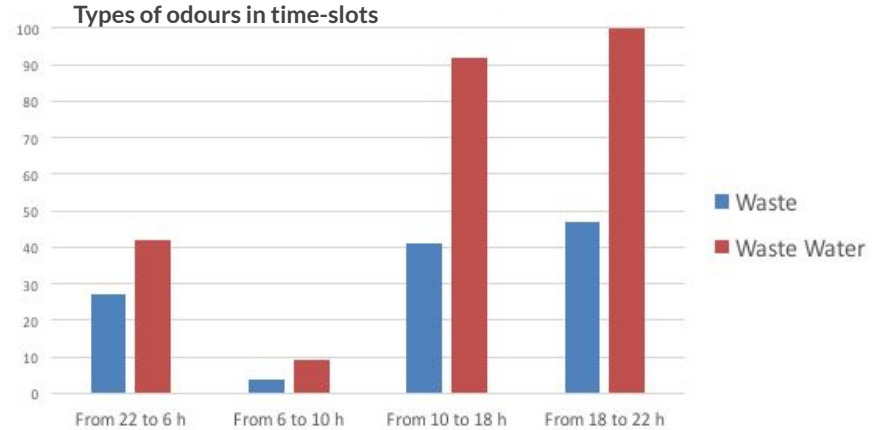
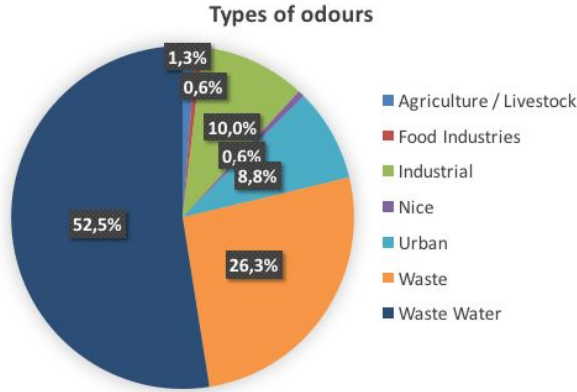


3. What would you do with the data?

Go to [menti.com](https://www.menti.com)

Enter the code **53 29 27 1**

DATA ANALYSIS



- Most reported odours by citizens correspond to the odour emission activities in the area: Waste water (52.5%) and Waste (26.3%)
- Similar % throughout data collection (consistency)
- As citizens suggested, observations proved that odour episodes were concentrated during night hours

What's next?

- *Data Analysis has been visualized and shared with communities to make sense of it -> a preliminary report has also been sent to them*
- *We want to correlate odour observations with industrial operations to look for improvements*
- *We have now gained the approval of the Regional Authority -> even if we have struggled*
- *We are now creating a working group with the emitting activities in order to correlate the data and look for improvements*
- *All these will be reflected in a Report for the communities*

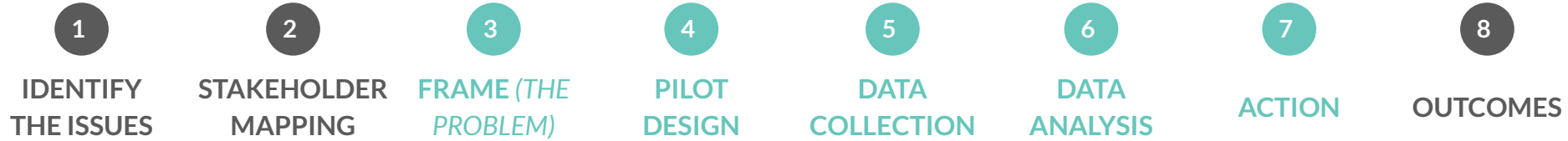
Questions?



Stories about inclusiveness

A large crowd of people is gathered for a protest or demonstration. Many individuals are holding up signs with various messages. Visible signs include "FEMINISTS FIGHT BACK", "HUMAN RIGHTS", "KEEP YOUR CASHIERIES OPEN", and "WOMEN'S RIGHTS ARE HUMAN RIGHTS". The crowd is diverse in age and appearance. The image is overlaid with a grid of teal dots, with a few larger dots scattered in the upper left and right corners.

D-NOSES Engagement - Citizen Science



Goggles & microphone



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IDENTIFY
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PROBLEM)

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OUTCOMES

Finding participants in *mysterious* ways



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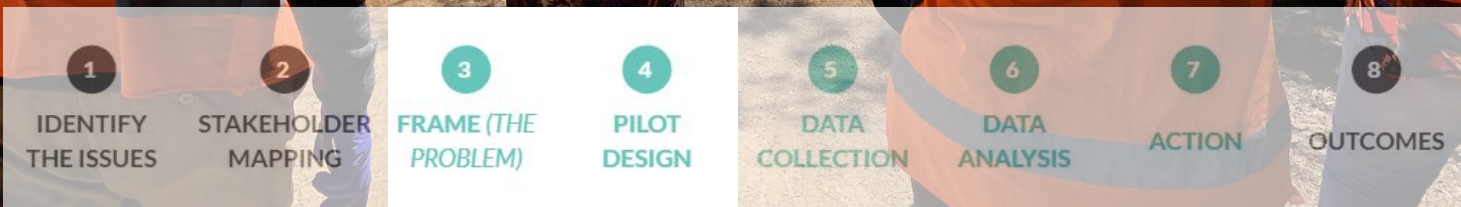
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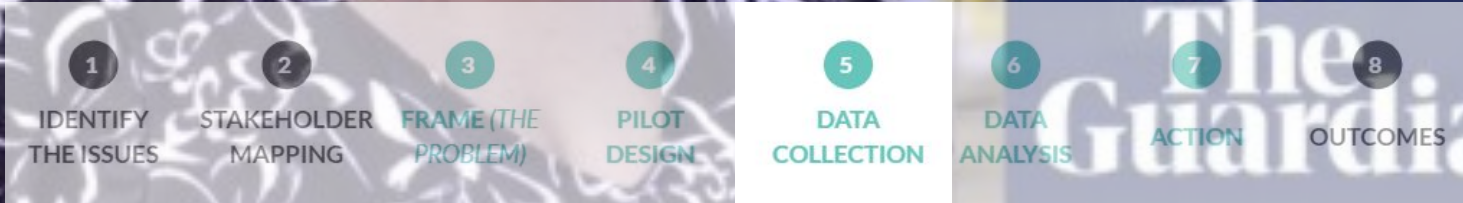
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OUTCOMES

Take a walk on the wild side



Team up



Londoners claim toxic air from gasworks damaging their health

Walking by the river.



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OUTCOMES

Engaging kids

Smell Diary Keep a note of what you can smell, and when...

Kampala NOSES

Funded by the Horizon 2020 programme of the European Union
Grant Agreement No 789315

AMB D-NOSES

About the situation			About the odour				
On what date did you notice the odour?	At what time did you notice the odour?	Where did you notice the odour?	What type of odour was it? (see list below)	How strong was the odour? 1 (mild) - 5 (very strong)	Where was the odour coming from?	How long did the odour last on this occasion?	Comments
19/10/21	19:31	Intersection of Busay, Gereed, Chanyanya Fields, Central	Urban	3 (very strong)	Unknown	20 minutes	This is a busy road and today the smell could have stronger than usual!
		above the river - River	Waste	1 (mild)	Unknown		
		above the river - Down	Waste	1 (mild)	Unknown		
		near the road	Waste	1 (mild)	Cops		
					Unknown		

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OUTCOMES

Could you repeat, please?



D-NOSES

dNOSES.EU

Name: _____

Adresse: _____

Datum	Zeit	Art des Geruchs	Intensität des Geruchs (1 bis 6)	Wie angenehm/unangenehm ist der Geruch? (-4 bis 4)	Wie lange dauert die Geruchsepisode?	Wissen Sie woher der Geruch kommt?	Weitere Kommentare

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OUTCOMES

Reporting in times of COVID

D-NOSES - Grupo de voluntários em S. João da Madeira
Private group · 50 members

About Discussion Rooms Members Events Media

About this group

O objetivo deste grupo privado é partilhar informações com voluntários residentes em S. João da Madeira que irão colaborar no registo de de odor... See more

- Private: Only members can see who's in the group and what they post
- Visible: Anyone can find this group.
- São João da Madeira: General group

IDENTIFY THE ISSUES STAKEHOLDER MAPPING FRAME (THE PROBLEM) PILOT DESIGN

D-NOSES - Grupo de voluntários em S. João da Madeira

o que é certo é que aqui no centro de SJM cheira a fossa desde ontem 😞 Vou registar agora ao final do dia..

Like Reply · See translation · 21 w

Write a comment...

Pedro Fonseca Santos
3 April · 🌐

Bom dia, venho só partilhar convosco o atual mapa com o registo de odores em S. João da Madeira o que significa que há cada vez mais registos de odores, muitos dos quais com a vossa colaboração. Vamos então continuar os registos, de preferência em três períodos distintos do dia (início do dia, hora do almoço e final da tarde). Obrigado a todos!

Caso tenham alguma dificuldade em utilizar a aplicação Odoour Collect estejam à vontade para nos contatar ou partilhar aqui a vossa ... See more

See translation

ODOUR COLLECT

5 DATA COLLECTION

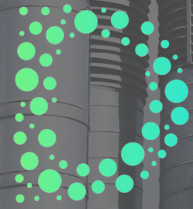
6 DATA ANALYSIS

7 ACTION

8 OUTCOMES

Community champions





D-NOSES

Distributed Network for Odour Sensing,
Empowerment and Sustainability

Thank you!

#dNosesEU #OdourObservatory



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programme of the European Union
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#dNosesEU #odourObservatory