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

Advice for policy makers

This document has been produced as part of the Distributed Network for Odour Sensing, Empowerment and Sustainability (D-NOSES) project funded by the Horizon 2020 programme of the European Union.

The goal of the project is to support and guide a collaborative journey to tackle odour pollution with the active involvement, in all phases, of key quadruple helix stakeholders (policy makers, civil society, industry and academia). The project focuses on the implementation of Principle 10 of the Rio Declaration, the access to justice in odour pollution in accordance with the Aarhus convention and is aligned with the SDGs of the UN 2030 Agenda.
This document is available on the International Odour Observatory (IOO), an online platform that aims to fill the gap in accessing information in relation to odour issues. It has been created to help anyone who has a part to play in causing or addressing odour pollution, including individuals and communities; policy makers and regulators; researchers and industries. It includes information on odour issues, regulations, research, data collection methods and potential mitigation measures or solutions.

*If you are a **policy maker or a member of a regulatory authority/regulator** and your region/community is affected by odour, here is a helpful guide to support you to effect positive change.*

Definition of actors for the purpose of this document:

- ➔ *Policy or decision makers are actors, who shape the laws and regulations in a certain city/area/country;*
- ➔ *Regulatory authorities/regulators are responsible for the compliance of industries/companies/corporations etc. with applicable regulations.*

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Guidance for decision makers:

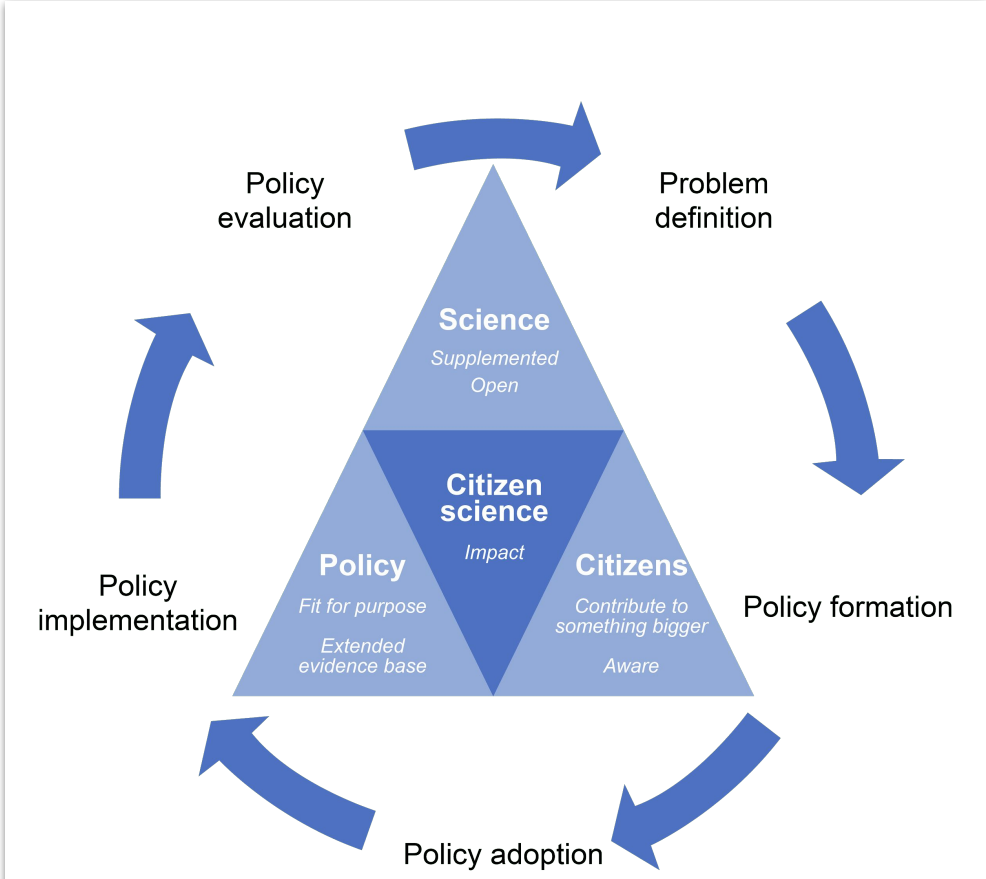
Promote citizen science as an innovative way to tackle odour pollution

Odour regulations are highly disparate across Europe, and even within countries. In fact, many European countries do not have any regulations in place regarding odorous substances. The most widely used odour measurement techniques (such as e-noses, dynamic olfactometry or field inspections using the grid and plume methods) do not provide any real-time information on the discomfort or annoyance of impacted citizens. Furthermore, such methods often have high levels of uncertainty, are time-consuming and cost-intensive.

You can read more about the traditional measurement methods, their advantages and drawbacks on the International Odour Observatory[1] and in the first D-NOSES policy brief[2].

The intervention of citizen science in odour pollution is of great interest, it allows for real-time data at lower economic costs and can empower citizens by becoming part of the solution or investigation.

Citizen science has recently been experiencing an increase in support from the European Commission, mainly in the fields of environmental monitoring and regulations. In its working document 'Best Practices in Citizen Science for Environmental Monitoring',[3] the European Commission assesses the impact and policy applications of citizen science by providing an inventory of environmental citizen science initiatives of EU policy relevance and identifies the policy values of citizen science:



Three main pillars of citizen science in the policy cycle: scientific excellence, citizen engagement and policy-relevance

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Therefore, whether you are contributing to the formulation of a new regulation on odour pollution or you are participating in the revision of an existing one, consider promoting citizen science and the use of citizen science data to effectively measure nuisance in real-time.

Through its free OdourCollect platform[4], D-NOSES contributes to the generation of citizen science data that are being considered by regulators and industry in several pilot studies. These citizen generated data can be used in combination with scientific dispersion models, such as PrOlor, to identify the source(s) of odours where these are unknown and where the amount and quality of data allows it.

Communicate with your community

Make sure to include the citizens of your community at early stages of the decision-making process as it increases the 'ownership' and the societal support of new policies. Include them also in the Evaluation step of the policy cycle. OdourCollect, which allows citizens to record odour episodes in real-time, creating a database of observations across your community, can be a powerful tool to evaluate the impact of a new policy.

For this, make sure to provide open communication channels to promote the exchange and communication of your community's opinions, problems and needs.

Stay updated on odour issues and citizen science

Visit the International Odour Observatory to find out more about odour issues, regulations, scientific research, data collection methods and potential mitigation measures or solutions and refer to the D-NOSES green paper (coming up in 2021).

Stay up to date with the newest developments in the field of citizen science by visiting EU-Citizen.Science[5] and use open access data (e.g. from the D-NOSES project) to inform your policies.

With the intention of introducing a citizen science based methodology to tackle odour pollution, a large group of entities from Spain (environmental consultancy firms, industries, government agencies and citizen representatives) are currently working on the elaboration of a guide to be validated by AENOR (Spanish Association for guidelines and certification). The guideline describes phases and considerations to diagnose odour pollution through citizen science based tools and describes the phases of a project, starting at the very early definition of the problem and going through stages from the recruitment of quadruple helix stakeholders, strategies to ensure citizen engagement during the project, definition of the project phases, coordination and plausibility parameters. In Spain, there is no central odour regulation at a country level but just a few local regulations, that vary from city to city. Having a citizen science based guideline for odour pollution will set a standard to improve odour pollution using citizen science, act as recommendation for policy makers to implement participated strategies at monitoring air quality and introduce social innovation tools to an arena that, until now, has been an exclusive domain of traditional tools as field inspections and olfactometry.

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Guidance for regulatory authorities/ regulators

Be transparent

If your community is affected by odours, you are most likely taking numerous actions to solve this issue as a regulatory authority. The citizens, however, may not be aware of such efforts and may not understand why the odour issue has not yet been eliminated. For this reason, make sure to inform, at all times, your citizens of any actions you take to solve the odour issue and their progress - from reaching out to industries to participating in pertinent initiatives and programmes, etc. And make sure that Best Available Techniques (BATs), if available, are implemented in industrial permits. If the industrial permits do not include BATs relevant to odour nuisance, reach out to decision makers to ensure their inclusion.

Our advice:

- Make sure that your plans, the timetable and the progress of your actions are openly and regularly communicated to your community, even if the outcome is not what you expected or aimed for. By doing so, the citizens will have more appreciation of your efforts to solve the issue and of the complexity of odour pollution.
- Do not raise expectations! It is important to convey to your citizens that it is not always possible to completely solve an odour pollution issue as it depends on technological and financial factors, which are usually limited.
- To easily disseminate information, try to engage with the existing groups and associations within your community.

Adopt participatory democracy actions:

You can take the initiative of forming a working/steering group with members from society, NGOs, industries, universities and odour experts. Once a common plan is decided, it is critical to demonstrate a strong commitment to meeting your community's needs.

Our advice:

- D-NOSES developed an 8-steps engagement plan [6] that you can use to support your (quadruple helix) stakeholder engagement and citizen science efforts.
- A **DIY guideline for project replicability in odour-conflicted communities** will be ready in 2021. You can use it to facilitate and promote project replicability in your community, to reproduce the project methodologies and use the project tools.
- You can consult our Community Maps [7] to learn about the good practices that worked in other communities and the existing regulations. You can also add and share your own experiences and knowledge.
- If you do not have experience in engaging citizens in your local governance and in creating and managing working/steering groups, consider contacting a citizen science or community engagement specialist – you can contact the D-NOSES partners for support.

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Promote the usage of OdourCollect within your community:

OdourCollect is a free and open application that can be used on mobile phones or in your browser. You can record episodes of odour in real-time and create a database of observations across your community. As a regulatory authority, you can promote the usage of OdourCollect to:

- Identify the major or unknown "odour hot spots" within the odour-affected area, which need your immediate attention. This can help you with the allocation and prioritisation of resources.
- Check the effectiveness of the actions you are already taking to solve the odour problem. This can be more economic and time-efficient compared to traditional measurement techniques, which can be cost-intensive and do not provide any information on discomfort or annoyance of the impacted citizens.
- Understand the temporal and spatial patterns of odour annoyance which can be matched with industry activities to pinpoint the odour emitting activities for investigation.

Be aware that some members of your community may not have access to smartphones! You will need to provide the option for offline data collection methods (such as odour diaries 8, or an easily accessible option for complaints via phone) that also adhere to clear protocols for handling and storing of complaint data.

Contact details for further information or support:

Odour research
Politecnico di Milano, laura.capelli@polimi.it

Traditional odour measuring
Ecotec, gerhard@olores.cl
Envirometrics, info@envirometrics.gr

Citizen science
Mapping for Change, info@mappingforchange.org.uk
ECSA, Tim.Woods@mfn.berlin

Industry liaison
ISWA, juribe@iswa.org
AMIGO, carlosdiaz@olores.org

OdourCollect
Science for Change, rosa.arias@scienceforchange.eu
ibercivis, odourobservatory@ibercivis.es

Community Maps
Mapping for Change, info@mappingforchange.org.uk

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Bibliography

1 https://odourobservatory.org/

2 https://odourobservatory.org/wp-content/uploads/sites/2/2020/03/Policy-Brief_-Digital-A4-Europe_EN.pdf

3 https://ec.europa.eu/environment/legal/reporting/pdf/best_practices_citizen_science_environmental_monitoring.pdf

4 https://odourcollect.eu/

5 https://eu-citizen.science/

6 https://odourobservatory.org/wp-content/uploads/sites/2/2020/09/ECSA_2020_Final.pdf

7 https://dnoses.communitymaps.org.uk/welcome

8 https://odourobservatory.org/wp-content/uploads/sites/2/2020/07/Smell-diary-template-updated.pdf

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