Improving odour pollution policies through local citizen science interventions

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Odour pollution has been repeatedly ignored in policy agendas, leaving citizens without recourse. This can result in harmful socio-environmental conflicts within the impacted communities. Combining citizen science and participatory strategies, D-NOSES can help citizens to co-create local solutions together with industries, regional & local authorities, and odour experts. 10 pilots are being launched in 10 European and non-European countries to validate a methodology based on citizen science and the D-NOSES stakeholder engagement framework to improve the management of odour pollution. In addition, the International Odour Observatory is under construction to gather odour data, raise awareness and make environmental information available to all interested stakeholders.

Using citizen science to monitor odour pollution has a clear advantage, since citizens already have for free the best sensor to measure odours, i.e. their own noses. The OdourCollect mobile App (OdourCollect.eu) has been created to empower citizens to gather odour observations and co-create collaborative odour maps in affected communities. With their observations, for the first time, bottom-up, real-time data is obtained to better understand the issue and citizens can get engaged in dialogues with all actors, which can result in their participation in decision-making and in the development of new, local policies. Gathered data will be validated using back trajectory dispersion modelling and real-time meteorological data, and correlated with emission data from the industries to identify situations of improvement and co-design local solutions.

The overall aim of D-NOSES is to introduce odour pollution in the policy agendas at a global scale based on a bottom-up approach and a multi-level governance model implementing Principle 10 of the Rio Declaration by building capacity in local communities. The D-NOSES methodology entails two pillars to bridge the science-society gap:

· The quadruple helix model, to engage the whole range of stakeholders involved in the issue, including local policy makers and environmental authorities, odour emitting industries and local businesses, odour experts and academia, and local NGOs, CSOs, neighbour associations and the affected communities.

· The development of a multi-level governance model for an improved management in odour pollution. The results of the pilot case studies, with the involvement of the environmental authorities and the local municipalities, can result in new bottom-up regulations at the local level, which can be used to set the basis for odour policies at national and even at European levels. In addition, the project will produce DIY guidelines for replicability that could eventually be used to replicate the D-NOSES methodology and multi-level engagement framework to manage emerging environmental issues in other Earth, Planetary and Space Sciences.