



HAL
open science

Scientific indicators and stakeholders' perceptions on soil threats in France: how do they compare?

Eloïse Mason, Sophie S. Cornu, Claire Froger, Nicolas P. A. Saby, Claire Chenu

► To cite this version:

Eloïse Mason, Sophie S. Cornu, Claire Froger, Nicolas P. A. Saby, Claire Chenu. Scientific indicators and stakeholders' perceptions on soil threats in France: how do they compare?. EJP SOIL Annual Science Days & General Meeting, EJP SOIL consortium, Jun 2024, Vilnius, Lithuania. hal-04661384

HAL Id: hal-04661384

<https://hal.inrae.fr/hal-04661384>

Submitted on 24 Jul 2024

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Scientific indicators and stakeholders' perceptions on soil threats in France: how do they compare?

Mason Eloise^{1,3*}, Cornu Sophie², Froger Claire¹, Saby Nicolas¹, Chenu Claire³

¹*INRAE, Info&Sols, Orléans, France*

²*Aix Marseille Univ, CNRS, IRD, Coll de France, INRAE, CEREGE, Aix-en-Provence, France*

³*INRAE-AgroParisTech-Univ Paris-Saclay, EcoSys, France*

* *Presenting author: eloise.mason@inrae.fr*

Soils are under multiple threats on a global scale, with varying levels of intensity and nature in different regions. Therefore, it is crucial to assess soil threats at a local level using specific indicators. Scientific indicators have been developed to accurately assess soil health, yet they can be challenging to implement at a local scale. As some stakeholders have a good knowledge of soil condition, the objective of this paper is to determine whether stakeholders' perception of soil threats can be used as a complementary indicator. The study focuses on five soil threats: erosion, artificialisation, compaction, soil organic carbon (SOC) loss, and contamination. It is based on 1,951 responses from a participatory stakeholder consultation conducted in France in 2021. We explored stakeholders' prioritization of soil threats and elaborated perception maps at the departmental scale. We then compared stakeholders' perception maps with scientific indicator maps per soil threats at the departmental scale. Our findings indicate that stakeholders consider artificialisation to be the most important threat in France. The spatial distribution of soil threats based on stakeholders' perceptions and scientific indicators matches in 43% of the departments for SOC loss, and in over half of the departments for erosion (50%), artificialisation (63%), compaction (57%), and contamination (74%). However, disparities remain in certain departments and depending on the threat. These disparities can be explained by biases in the used indicators (scientific or stakeholders' perception) or in the comparison. It can be concluded that, when these biases are taken into consideration, stakeholders' perception can be used as an indicator for soil threats and can supplement existing scientific indicators.

Keywords: Multi-actor consultation; Soil challenge; Soil degradation; Soil health; Stakeholder perspective