TOWARDS ZERO POLLUTION

Launch of the Global Assessment of Soil Pollution Report

4 June 2021
Baseline global assessment

Soil pollution is one of the major 10 soil threats to soil functioning.

There is a significant lack of information compared to the information available for other threats.

Source: Scopus, 2021

(soil pollution, soil contamination, contaminated soil, polluted soil)
International recognition of soil pollution as a global threat
International mobilisation to tackle soil pollution

- 106 responses from 75 countries
- 53 contributors from 17 companies
- 40 members of the Editorial Board
Global assessment of soil pollution report

14 chapters, 900 pages, over one thousand references reviewed

- Information about major soil contaminants and their fate in the soil matrix
- Description of main sources of soil pollution: natural and anthropogenic
- Principal human and environmental health impacts and routes of exposure
- Regional status: from identification and assessment to legal frameworks, management and remediation
- Summary of some of the best available techniques for management and remediation, including nature-based solutions
Soil pollution jeopardizes the achievement of most of the SDGs

The prevention, control, and remediation of soil pollution are fundamental if we want to implement the 2030 Agenda for Sustainable Development.
Soil pollution reduces crop yields, safety and quality, leading to reduced incomes for rural populations and hitting the most vulnerable hardest.

- +79% of the poorest live in rural areas
- 15-40% loss in agricultural productivity
- +16% total global deaths, worth of billions of USD/year
Industrial, activities, mining and unsustainable waste management represent the main sources of soil pollution in some countries, especially in the Global South.

- Billions of USD/year:
  - Groundwater and freshwater pollution and eutrophication

- +2 billion tons/year:
  - Solid waste worldwide, 30% not managed

- 55% global urban population at risk
Soil pollution causes a chain reaction of degradation of terrestrial and aquatic ecosystems and contributes to exacerbating the effects of climate change.

- **700,000 CO₂ eq**
- **misuse of N fertilisers in agriculture**
- **80%**
- **marine pollution from land-based activities**
- **10-80%**
- **reduction of leaf litter decomposition**
There are still significant gaps in knowledge and uncertainty about the extent of the affected areas and the magnitude of the impact, which is compounded by the emergence of new contaminants.
Soil pollution can result in the loss of ecosystem services, and jeopardizes the achievement of the 2030 Agenda on Sustainable Development.
Impact of soil contaminants on human health

Contaminants in soil have widespread effects on organs and systems, producing a wide variety of health outcomes, from acute to chronic diseases, leading to severe development issues, changes in bodily functions, and premature death.
Conclusions

Contaminant transfer into the food chain

Contaminated plants and soil organisms lead to potentially hazardous accumulations in animals higher in the food web such as grazing animals, birds and ultimately transferred to humans.

Source: adapted from (Ng et al., 2018)
Conclusions
Although many countries have effective processes in place to identify and assess polluted sites, this fundamental step of identifying the liable part (polluter) is still lacking in many states.
Communication between academia, policy makers and society needs to be strengthened to ensure that timely, science-based information on the potential threats posed by soil pollution is available for informed decision making.
Way forward
4 key actions

**Fill knowledge gaps**
Global Soil Pollution Information and Monitoring System

**Improve awareness and communication**
Promote pollution-free options and incentivise 4R approach

**Strengthen legal frameworks**
Global commitment towards preventing, halting and remediating soil pollution in the framework of Zero Pollution/Towards a Pollution Free Planet ambitions

**Foster international cooperation**
Advocate for technology transfer and cross-capacity building for the whole cycle of soil pollution, from prevention to detection, monitoring, management, and remediation
Thank you!

As we strive to **restore 350 million hectares** of land in the framework of the UN Decade on Ecosystem Restoration, we cannot neglect the role of healthy soils.

To restore world's ecosystems we must **address soil pollution and restore soil health** and the ecosystem services it supports.