



Food and Agriculture
Organization of the
United Nations



CONCEPT NOTE

International Network on Soil Pollution (INSOP)

Channelling collective action towards Zero Pollution

Why INSOP?

Although studies on soil pollution started back in the 1970s, we are still facing significant knowledge gaps related to the fate, persistency, accumulation and risks of soil contaminants. Pollution is one of the biggest environmental problems globally posing a significant risk to the environment and human health¹. Actions at the local level can have effects beyond national borders. Joint and coordinated actions are therefore required to prevent soil pollution and to control, manage and remediate polluted soils. In 2015, the Global Soil Partnership (GSP) and the Intergovernmental Technical Panel on Soils (ITPS) identified soil pollution as a major threat to the world's soils and began to collect data at national, regional and global levels (FAO and ITPS, 2015).

In 2017, the United Nations Environment Assembly (UNEA) of the United Nations Environment Programme (UNEP) adopted a Ministerial Declaration "Towards a Pollution-Free Planet," as well as a Resolution on "Managing Soil Pollution to Achieve Sustainable Development," recognizing the importance of healthy soils and the need to combat soil pollution to achieve a sustainable future for all. This resolution called for joint actions by all relevant United Nations agencies, Member States, Multilateral Environment Agreements and stakeholders, the private sector scientists, and experts, civil society, and individuals to take action. Future international actions on soil pollution will therefore need to reflect that inclusiveness and collective responsibility.

FAO's GSP seized the momentum and advanced the coordination of global actions on soil pollution to address key knowledge gaps and improve technical capacities to detect, quantify, map and monitor soil pollution. In 2018, FAO and the ITPS organised the Global Symposium on Soil Pollution (GSOP18) together with UNEP, the Secretariat of the Basel, Rotterdam and Stockholm Conventions, and the World Health Organization (WHO). The GSOP18 was the first step in creating an international network of experts from governments, academia, industry and remediation companies to bring together existing information on soil pollution and identify key gaps, needs

¹ FAO. 2015. Status of the World's Soil Resources report. Rome, Italy. ISBN: 978-92-5-109004-6.
<https://www.fao.org/documents/card/en/c/c6814873-efc3-41db-b7d3-2081a10ede50/>

and solutions, as reflected in the recommendations of the GSOP18 outcome document “Be the solution to soil pollution”². The publication of the Global Assessment of Soil Pollution³ by FAO and UNEP in 2021, developed through the collaboration of many of these actors, laid the knowledge base for developing concrete actions to achieve a Zero Pollution future and set a clear agenda for action.

Therefore, the creation of this network is an urgent response to these global efforts and will allow to articulate in an effective, coordinated and inclusive coordinated way all the stakeholders to implement the global action agenda on soil pollution and advance towards a world with Zero Pollution.

The Network

The International Network on Soil Pollution (INSOP) has the overall aim of stopping soil pollution and achieve the global goal of zero pollution. To this end, INSOP works to improve knowledge on the full cycle of soil pollution, from assessment to remediation, as well as on the effect on environmental and human health and the provision of soil ecosystem functions and services. It also aims to strengthen technical capacities and legislative frameworks for the prevention of soil pollution, and promotes the exchange of experiences and technologies for the sustainable management and remediation of polluted soils.

The INSOP brings together governments, academia, the private sector, NGO's and other stakeholders across the world in order to collect, harmonize and disseminate available soil pollution information and seek solutions to prevent, control and eliminate soil pollution and improve soil health.

INSOP's mission is to support and facilitate joint efforts towards reducing the risks of soil pollution and effectively remediating already polluted areas. INSOP serves the global community by:

- Providing an international forum for the generation and dissemination of knowledge on soil pollution;
- Promoting and exchanging good practices, practical and scientific knowledge and innovative solutions for managing polluted soils in a sustainable manner;
- Establishing interdisciplinary cooperative links between governments, academia, the private sector, and society to stimulate the development of cleaner and more sustainable solutions and consumption options; and
- Strengthening technical and technological capacities through coordination among existing networks.

² FAO. 2018. Be the solution to soil pollution. Outcome document of the Global Symposium on Soil Pollution., p. 32. Rome, Italy, Food and Agriculture Organization of the United Nations.
<http://www.fao.org/3/ca0362en/CA0362EN.pdf>

³ FAO and UNEP. 2021. Global Assessment of Soil Pollution: Report. Rome. <https://doi.org/10.4060/cb4894en>

INSOP thematic areas of work

INSOP focuses on 6 main areas of work under each of which various tasks will be carried out to achieve the results summarised in the table below in the short, medium and long term. Other tasks and deliverables may be added if deemed appropriate by consensus by INSOP members at annual meetings.

- 1) **Assessment of soil pollution** - This work area will focus on harmonizing laboratory methods (standard operating procedures – SOPs) for the measurement of soil contaminants, including innovative technologies working together with the Global Soil Laboratory Network (GLOSOLAN). A training program will be established for the application of harmonized methods as well as specialized technical equipment. In the medium/long term, this work area will work on compiling all existing threshold values for different contaminants and different land uses and will generate standard threshold values for international application. This work area will also promote the inclusion of soil pollution metrics and indicators into conventional soil surveys, and the inclusion of data and information on soil pollution into national and global soil information systems.
- 2) **Mapping soil pollution** - The generation of a spatial datasets on the distribution of polluted soils and potential sources of pollution is of utmost importance in informed decision making, so that pollution "hot spots" or areas of special concern due to the risk to human health and the environment can be easily identified. The existence of information on multiple sources of pollution will also allow a better understanding of the coexistence of contaminants and facilitate the management of sites with mixed contamination. This area of work will be carried out in close consultation with the International Network of Soil Information Institution (INSII).
- 3) **Monitoring and regulation of polluted soils** - The monitoring of polluted soils requires the establishment of regulatory frameworks that support the regular collection of information and the comparison of data to define trends. These regulatory frameworks should also include soil health indicators to assess the state of soils. INSOP will advocate for the creation and strengthening of global, regional and national commitments to prevent, halt and remediate soil pollution. This work area should help countries to develop and strengthen the inventory and monitoring of point-source and diffuse soil pollution at national and regional levels, and will contribute to feed the Global Soil Health Observatory. As part of its activities, this area of work will support countries in establishing national biomonitoring and epidemiological surveillance systems

to identify, assess and monitor damage and diseases attributable to soil pollution and support preventive actions.

- 4) **Sustainable management and remediation of polluted soils** - Under this area of work, INSOP will focus on the collection and dissemination of sustainable management and remediation practices and technologies for polluted soils, with special emphasis on nature-based solutions. For the latter, INSOP will work closely with the International Network on Soil Biodiversity (NETSOB) to ensure the sustainable use and management of soil biodiversity. Technology transfer and cross-capacity building will be advocated from regions and countries with extensive knowledge and experience in soil pollution to developing countries with less or no experience in the field. A global training programme for developing capacities on the full cycle of soil pollution will be established.
- 5) **Agricultural practice and food quality** – Soil pollution possesses a risk to food security and its quality in two ways: reduced crop yields due to toxic levels of contaminants, and crops grown in polluted soils are unsafe for consumption by animals and humans. Under this area of work, INSOP will investigate how the quality of crops is changing in response to different pollutants. INSOP will also work on knowledge dissemination of how different sources of pollution negatively affect food quality and the environmental and human health impacts associated with food contamination coming from the soil. It will closely collaborate with the Soil Doctors Programme as well as with the International Network on Fertilizer Analysis (INFA) to raise awareness and train farmers on soil pollution.
- 6) **Soil and water interaction** - Soil and water are often linked to each other and when soil pollution occurs, the contaminants can be leached or carried into the water bodies entering rivers, lakes and oceans sometimes possessing an irreversible risk to the aquatic environment. This area of work will focus on tracing different classes of contaminants which exacerbate the aquatic environment once entered the water. Coupled with the monitoring and remediation areas of work, it will help to create a stronger regulation and policies which will protect and reduce the soil pollution impact on the aquatic environment.

As a cross-cutting theme, INSOP will launch a global awareness campaign on soil pollution to promote public awareness of responsible and environmentally friendly consumption and how each individual can be part of the solution. INSOP promotes "soil pollution free" efforts and options for citizens to select from when choosing

agricultural, forestry or any other products. Citizen science activities and citizen observatories will also be encouraged to improve early warning systems and community monitoring of soil pollution. INSOP will also collaborate with other GSP actions to advocate for the inclusion of soil pollution and soil health in all levels of education.

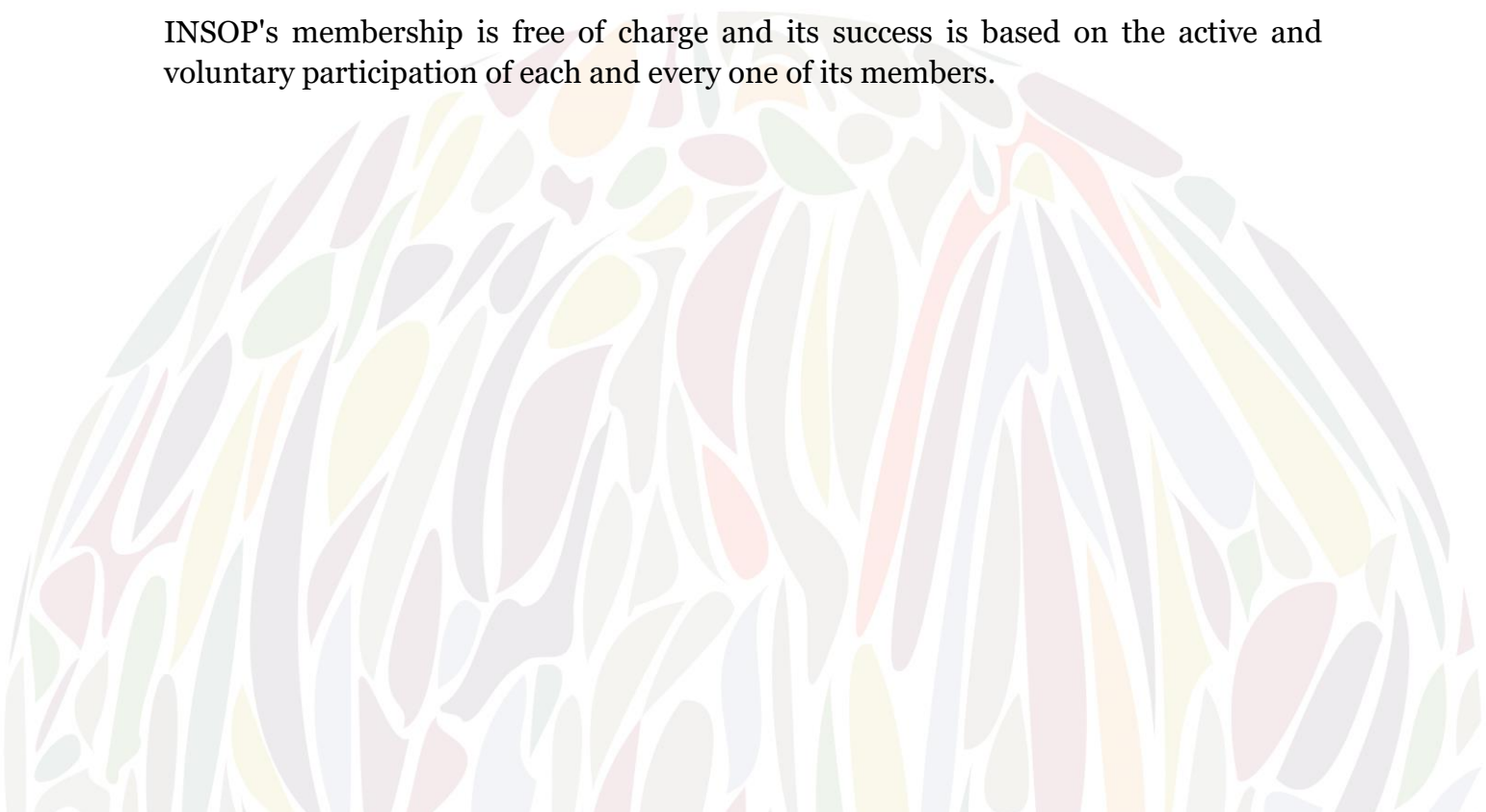
Why joining?

By joining INSOP you will contribute to addressing knowledge gaps on soil pollution at all levels. You will contribute to disseminating and raising awareness of the importance of curbing soil pollution by addressing the main contaminants of concern, their potential sources and their effects on the environment and human health.

You will participate in the process of building reliable soil data and information systems and in decision making for the development of internationally accepted methodologies and indicators. As a member of INSOP you will also be able to share your management and remediation practices and techniques, improve and extend the use of innovative technologies and participate in the joint design of nature-based solutions and other sustainable options.

As part of the INSOP, you can strengthen engagement and visibility, link to policy and policy makers, and open opportunities for future collaborations with other members. You will be part of an extensive network of experts and other networks created within the framework of the United Nations, thus offering a unique opportunity to engage with governments, academia, the private sector and civil society. In addition, you will have free access to technical advice, training programmes, capacity building and educational materials, while contributing to their development according to your areas of expertise. Your institution/organisation will be part of a global community committed to sustainable soil management and will be able to have a positive impact at national, regional and global levels.

INSOP's membership is free of charge and its success is based on the active and voluntary participation of each and every one of its members.



| Timeframe | Task | Outcome |
|---------------------------|--|--|
| Short-term goals | Finalize the technical manual on soil pollution | Technical Manual on assessing, mapping, monitoring and reporting of polluted soils |
| | Identify the main soil contaminants and laboratory methodologies in order to develop standard operating procedures (SOPs) in close cooperation with GLOSOLAN | SOPs for contaminants of major concern |
| | Analyze national soil legislation and identify the most common and minimum requirements addressing soil pollution | Policy brief on soil pollution legislation |
| | Finalize the Online database on best available techniques for managing and remedying polluted soils, in consultation with NETSOB | Online database on best available techniques for managing and remedying polluted soils |
| Short to medium-term goal | Gather existing threshold values of soil contaminants | Global database of soil contaminants threshold values |
| | Contribute to the development of soil pollution indicators to determine soil health | Soil health index |
| Medium-term goals | Develop SOPs for other soil contaminants, including emerging contaminants in cooperation with GLOSOLAN | SOPs for other soil contaminants |

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|-----------------|--|--|
| | Develop the methodology to map soil pollution/contaminants and identify data gaps in close cooperation with INSII | Global soil pollution map(s) |
| | Develop indicators and guidelines for assessing the risk/toxicity of soil pollution on human health and the environment | Human-health and environmental monitoring guidelines |
| | Establish a capacity building program on the full cycle of soil pollution, from assessment to monitoring and the application of SOPs | Soil pollution capacity-building programme in 6 FAO languages disseminated through EduSOILS, the Global Soil Doctors programme, and GLOSOLAN |
| Long-term goals | Develop a global range of threshold values for soil contaminants (soil guideline values) under different land uses | Global soil guideline values |
| | Help to establish national legislation on soil pollution prevention, control and remediation, including risk assessment approaches | National legislation on soil pollution developed/strengthened |
| | Develop national capacities and strengthen technology transfer for the sustainable remediation and management of polluted soils | Sustainable remediation (including NbS) to treat polluted soils and to enhance soil health and biodiversity applied at national level |

