



Food and Agriculture
Organization of the
United Nations

INSOP Monitoring and regulations WG priority meeting

29 November 2023

INSOP-INSOILFER joint collaboration on soil pollution

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INSOP-INSOILFER June Meeting recap



Food and Agriculture Organization
of the United Nations



INSOP-INFA priorities:

- Knowledge dissemination on the environmental and human health impacts of poor-quality fertilizers

Key activities:

- Harmonization of the SOPs for the analytical evaluation of heavy metal content in phosphate fertilizers;
- Identify and advocate for the involvement of institutes and laboratories to support in the analysis of heavy metals present in fertilizers;
- Understand the distribution of heavy metals in fertilizers globally;
- Highlight the fertilizer pollution to affected countries and propose solutions, i.e. strengthen current legislation on fertilizer packaging
- Capacity building to train farmers and technicians on fertilizer misuse and overuse



INSOP Monitoring WG priority

- In partnership with INSOILFER, spread awareness and identify countries willing to monitor the concentration of heavy metals on fertilizer labels

The graphic is a banner for the 'ACTION PLAN' of the 'INTERNATIONAL NETWORK ON SOIL POLLUTION'. It features the FAO logo and the text 'Food and Agriculture Organization of the United Nations'. The main title is 'PRIORITIES OF THE MONITORING WORKING GROUP (WG) ON SOIL POLLUTION', dated 'OCTOBER 2023 VERSION'. The first priority is 'Advocate for a better understanding of national legal instruments on the prevention, monitoring and/or remediation of soil pollution'. Below this, it lists the 'OUTCOME', 'KEY PERFORMANCE INDICATORS' (both long and short to medium term), and 'KEY ACTIVITIES'. The bottom right corner features the 'GLOBAL SOIL PARTNERSHIP' logo.

Food and Agriculture Organization of the United Nations

INTERNATIONAL NETWORK ON SOIL POLLUTION

ACTION PLAN

PRIORITIES OF THE MONITORING WORKING GROUP (WG) ON SOIL POLLUTION

OCTOBER 2023 VERSION

PRIORITY 1

Advocate for a better understanding of national legal instruments on the prevention, monitoring and/or remediation of soil pollution

OUTCOME

A global INSOP database is developed and utilized by the countries to learn about the existing legal instruments of soil pollution prevention, monitoring and/or remediation

KEY PERFORMANCE INDICATORS

	LONG TERM	SHORT TO MEDIUM TERM
	Proposal of an international instrument that positions soil pollution as a major global challenge and monitors its impacts	Number of countries are advocating for the development of soil pollution legal instrument

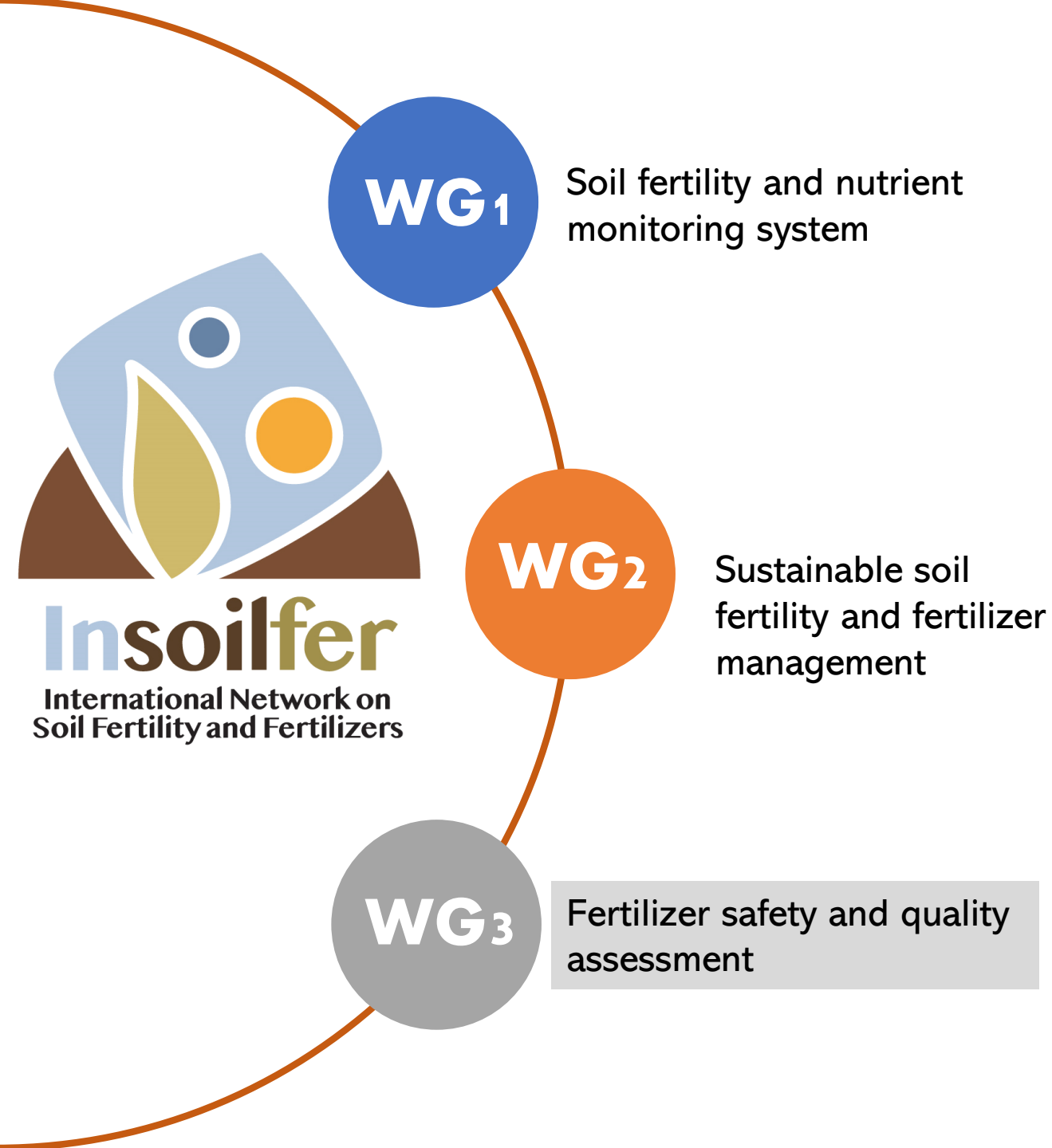
KEY ACTIVITIES

- In support of SoilEX, INSOP members help to analyze national soil legislation and identify minimum principles for addressing soil pollution;
- In support of SoilEX, INSOP members prepare a policy brief on the current legislation and existing gaps in monitoring soil pollution;
- Assist countries willing to develop soil pollution policies;
- In partnership with INSOILFER, spread awareness and identify countries willing to monitor the concentration of heavy metals on fertilizer labels; and
- In support of SoilEX, launch a series of webinars aiming to explain soil pollution legal instruments currently in place.

GLOBAL SOIL PARTNERSHIP

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Goals:

- Adoption and implementation of sustainable and balanced soil fertility management.
- Ensure global food security through the sustainable use of fertilizers and promote soil fertility.
- Avoidance of the underuse, misuse, and overuse of fertilizers.
- Reduction of the environmental and crops, animal and human health impacts of unsustainable fertilizer use and soil management practices.
- **Evaluation and improvement of the safety and quality of fertilizers.**
- Promotion of the soils for nutrition policy at national and global levels.

INSOILFER WG3 priority



Regulations and policies
(fertilizer quality and safety,
including heavy metals)

Developing guidelines for
quality standards



Import and export legislation
compiled into a database

PT launch for 2024
NPK
Heavy metals

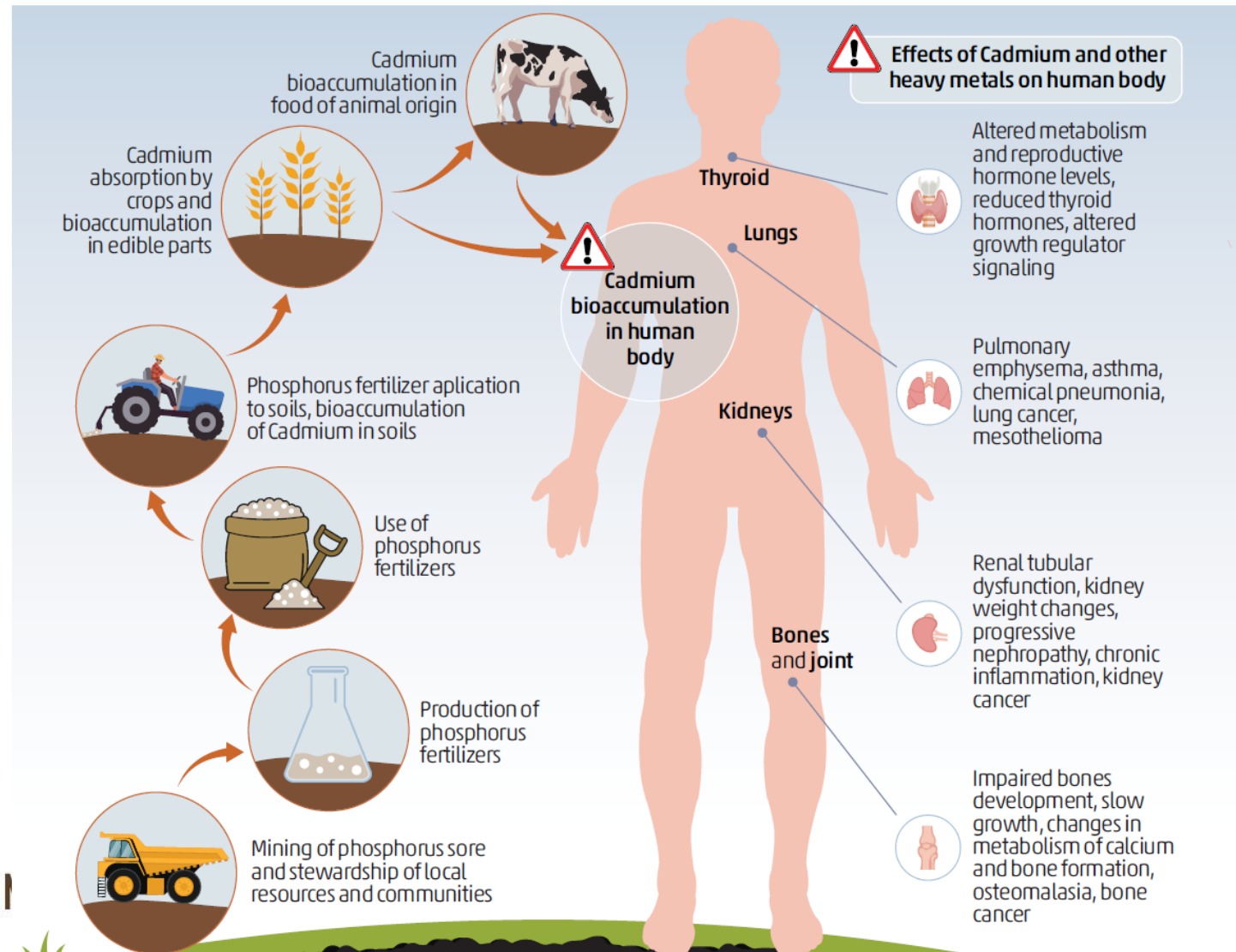
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The importance of monitoring heavy metals in fertilizers

- Heavy metals in the food chain
 - To maintain the productivity of farms, phosphate fertilizers will continue to be used worldwide. Thus, heavy metals (Cd, Cu, U, etc...) levels in soils must be actively monitored and managed.
 - If high levels are detected in some soils, it may prevent the affected land being used for certain farm activities.

INSOP I



Countries with monitoring system in place

New Zealand

- The Code of Practice
 - Limit for cadmium in fertilizers of 280mg Cd/kg
- Cadmium Management Strategy
 - Manages Cd in New Zealand. It also provides a basis for government agencies, regional councils, and the farming and fertilizer sectors to work together

<https://www.mpi.govt.nz/funding-rural-support/environment-and-natural-resources/land-and-soil-health/monitoring-cadmium-in-nz-soils/>



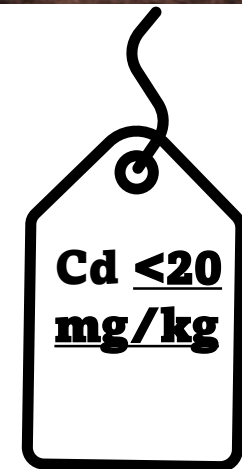
Countries with monitoring system in place

European Union

- Cd limit in phosphate fertilizers is introduced to reduce health and environmental risks: 60 mg/kg

<https://www.europarl.europa.eu/news/en/press-room/20181119IPR19407/fertilisers-cadmium-parliament-and-council-negotiators-reach-provisional-deal>

- The co-legislators also agreed on a voluntary “low cadmium” label. Where the fertilizing product has a Cd <20 mg/kg, the statement “Low cadmium (Cd) content” or similar may be added



Any other countries

➤ Open discussion

Actions to be taken



Identify countries with limits for heavy metals in fertilizers

Countries knowledge transfer to INSOP-INSOILFER

Identify countries of concern willing to develop limits for heavy metals in fertilizers

Develop a roadmap and inform countries on the what should be done to adopt the limits

Partner with fertilizer industries in supporting them to recognize its social responsibility and to contribute to the food and nutritional security

What can you do?

Short-term

INSOP-INFA are already working on SOP development as a first step in addressing fertilizer pollution.

Empowering legislation aspects in monitoring heavy metals in fertilizers is our next step in a joint INSOP-INSOILFER taskforce

Identify countries with limits for heavy metals in fertilizers (spreadsheet template or survey)

Identify countries of concern willing to develop limits for heavy metals in fertilizers

Gather and publish permissible limits in different countries



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THANK YOU



Table 3. Limits for Cd in P fertilizers in several countries expressed as Cd:P ratio, Cd:P₂O₅ or concentration of Cd in the fertilizer product. (adapted from Chaney [11]).

Country	Limits	mg Cd/kg P	mg Cd/kg P ₂ O ₅	mg Cd/kg 45% P ₂ O ₅ Product
Limits for Fertilizer-Cd				
USA-Washington	0.0889 kg Cd/ha/yr	2040	889	400
USA-Oregon	7.5 mg Cd/% P ₂ O ₅	774	338	152
USA-California	4 mg Cd/% P ₂ O ₅	412	180	81
Australia	300 mg Cd/kg P	300	131	59
Canada	0.0889 kg Cd/ha/yr	2040	889	400
Japan		340	148	67
Austria	75 mg Cd/kg P ₂ O ₅	275	120	54
Belgium	90 mg Cd/kg P ₂ O ₅	206	90	40.5
Denmark		110	48.0	21.6
Netherlands		40	17.5	7.9
Finland	21.5 mg Cd/kg P ₂ O ₅	49	21.5	9.7
Sweden	43 mg Cd/kg P ₂ O ₅	100	43.7	19.7
EU Proposal (2001)	20 mg Cd/kg P ₂ O ₅	45.8	20	9
	40 mg Cd/kg P ₂ O ₅	91.6	40	18
	60 mg Cd/kg P ₂ O ₅	137	60	27

Table 1. Cadmium contents (mg/kg) of sedimentary and igneous phosphate rocks [25].

Country	Deposit	Average Cd	Range
Sedimentary Deposits			
China	Kaiyang	<2	—
Israel	Zin	31	20-40
	Undifferentiated	24	20-28
	Arad	14	12-17
Jordan	Oron	5	—
	El-Hasa	5	3-12
	Shidyia	6	—
Morocco	Undifferentiated	26	10-45
	Bou Craa	38	32-43
	Khouribga	15	3-27
	Youssoufia	23	4-51
Senegal	Taiba	87	60-115
Syria	Khneifiss	3	—
Togo		58	48-67
Tunisia		40	30-56
United States	Central Florida	9	3-20
	North Florida	6	3-10
	Idaho	92	40-150
	North Carolina	38	20-51
Other countries		13	<1-100
Overall Sedimentary Averages		21	<1-150
Igneous Deposits			
Brazil	Araxa	2	2-3
	Catalao	<2	—
South Africa	Phalaborwa	1	1-2
Russia	Kola	1	<1-2
Other countries		1	1-5
Overall Igneous Averages		2	<1-4