Food and Agriculture Organization of the United Nations

International Network on Fertilizer Analysis (INFA)

Wesley Feldmann
INFA Chair

INFA
International Network on Fertilizers Analysis

GLOBAL SOIL PARTNERSHIP

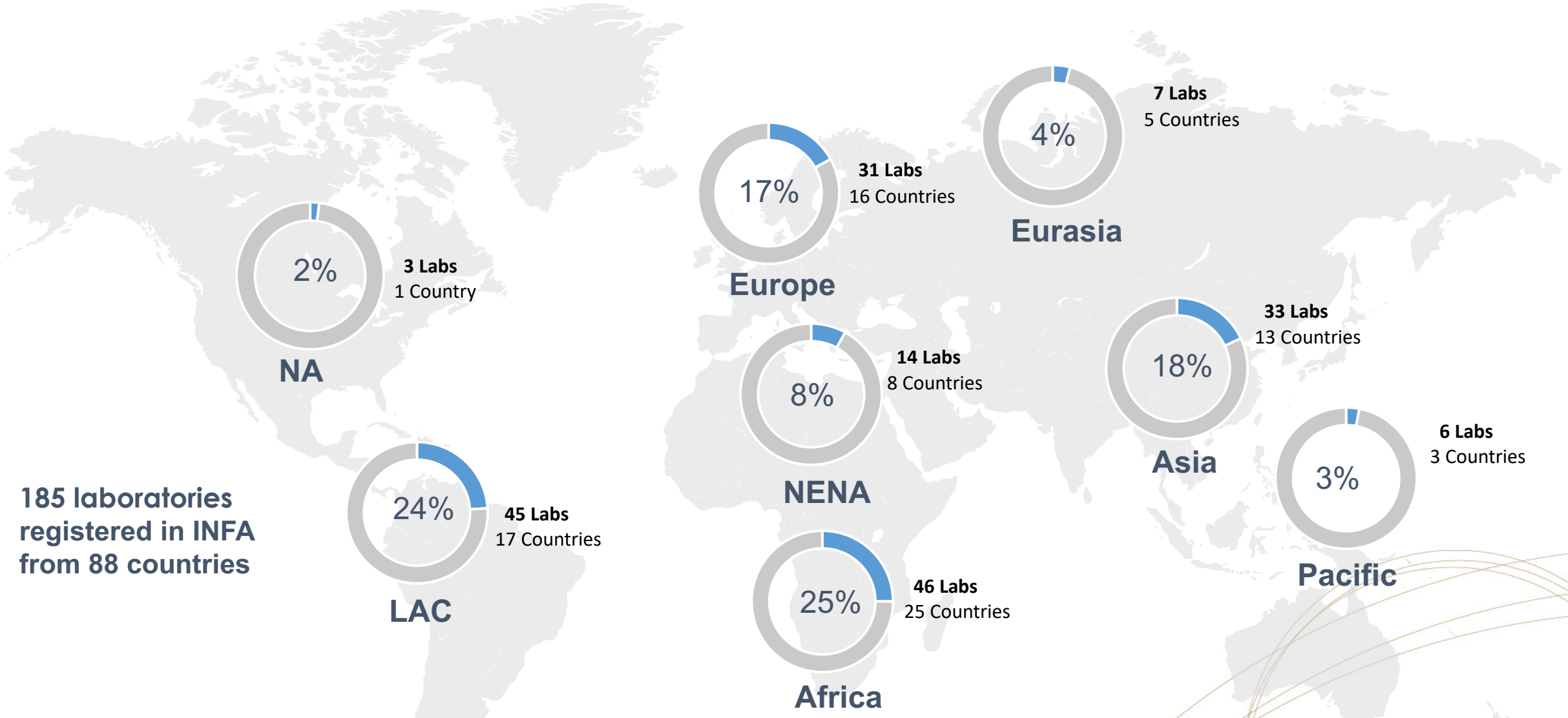
GLOBAL SOIL PARTNERSHIP

11th Plenary Assembly

12-14 July 2023

Introduction to the International Network on Fertilizer Analysis (INFA)

- Established in December 2020, as a sub-network of GLOSOLAN
- Supports the implementation of the International Code of Conduct for the Sustainable Use and Management of Fertilizers (The Fertilizer Code)
- Supports the implementation of the Sustainable Development Goals, the Agenda 2030 for Sustainable Development, and the FAO mandate on food security and nutrition
- Globally consists of 185 laboratories from 88 countries analyzing or interested in analyzing fertilizers


185 laboratories registered in INFA from 88 countries
2%
3 Labs
1 Country
NA
24%
45 Labs
17 Countries
LAC
17%
31 Labs
16 Countries
Europe
8%
14 Labs
8 Countries
NENA
25%
46 Labs
25 Countries
Africa
4%
7 Labs
5 Countries
Eurasia
18%
33 Labs
13 Countries
Asia
3%
6 Labs
3 Countries
Pacific

Harmonized methodologies for fertilizer quality assessment available for all

Investing in harmonized fertilizer quality assessments for sustainable soil and fertilizer management

Working groups workshops in March 2022 to define methodologies and matrixes

Third INFA Meeting in October 2022

Second Working group 1 meeting, in May 2023

Publication of three harmonized SOPs by the end of 2023

Defining quality indicators and making the results comparable through harmonized methodologies

Total Nitrogen Kjeldahl
Total Nitrogen Combustion
Total Phosphorus- Acid digestion
Total Potassium - Water-Soluble
Organic fertilizers – Sample preparation

GLOBAL SOIL PARTNERSHIP

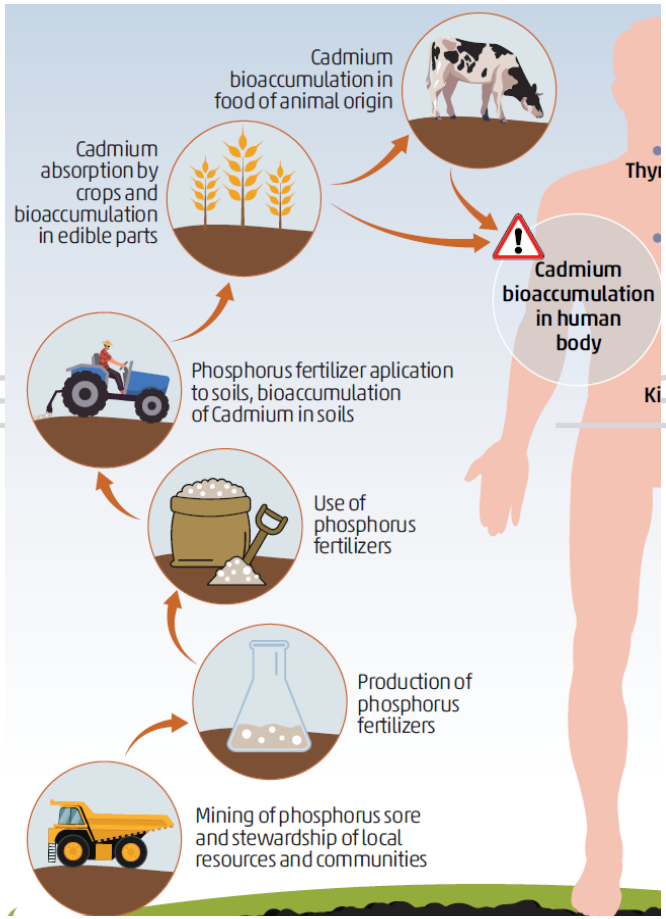
Improving the quality of fertilizers and achieving zero pollution

INTERNATIONAL NETWORK ON SOIL POLLUTION
CHANNELLING COLLECTIVE ACTION TOWARDS ZERO POLLUTION

GLOSOLAN
GLOBAL SOIL LABORATORY NETWORK

INFA
International Network on Fertilizers Analysis

Synergistic actions to measuring and monitoring the heavy metal content in mineral fertilizers and soils as a first step to reduce or avoid severe environmental contamination and health problems



Two meetings
One general SOP under harmonization

INSOP-INFA meeting on fertilizer quality assessment, February 2023

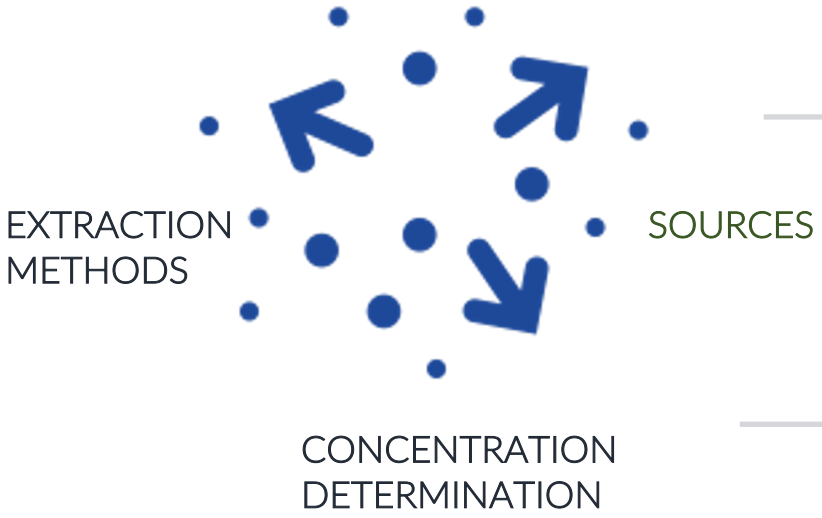
69 laboratories from 49 countries harmonizing methodologies, equipment and improving the knowledge of the permissible limits of heavy metals in soils and fertilizers

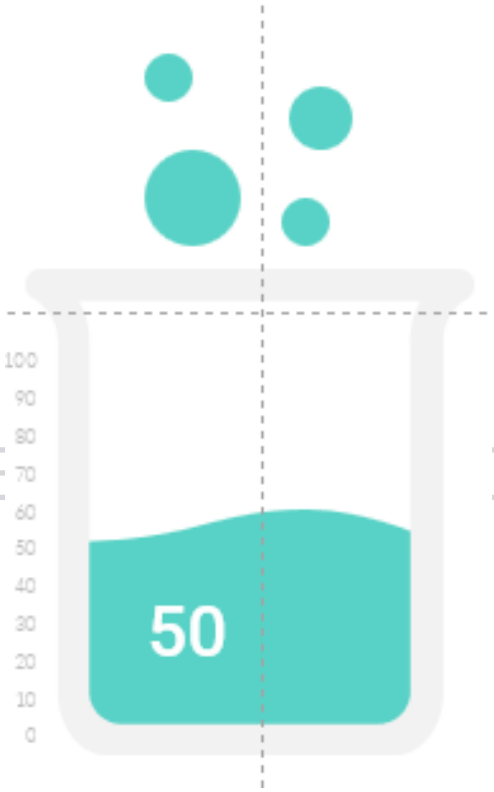
Panel of experts working together on gathering information and SOPs harmonization

Effective quality control procedures within everyone's reach

The different methods for recovering elements from fertilizers produce highly variable results for the same sample, making comparisons difficult

Preparing to launch the first global PT in 2024





Development of laboratory skills and infrastructure is critical for effective function

Focus on development of guidelines for:

- Laboratory sample preparation
- Quality control
- Collaboration with other networks to produce targeted guidelines

Preparation of the first global proficiency test (2023), survey for gathering customs information

Run the PT in 2024

Harmonized methodologies for fertilizer quality assessment available for all

Compilation of quality standards (e.g Cd and expand to other heavy metals)

Import and export legislation compiled into a database

Developed in guidelines for quality standards

PT launch for 2024

Quality and safety beyond chemical fertilizers

Soil microorganisms are a solution to replenish soil nutrients, increasing general soil fertility and reduce or avoid GHG emissions.

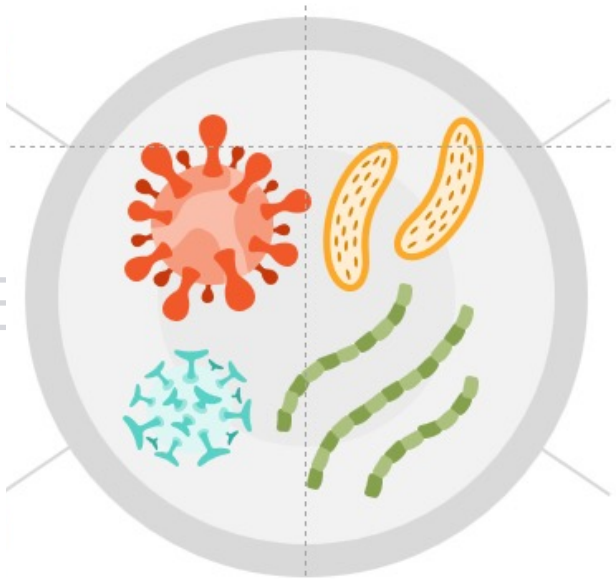
Social factors changing the global outlook

Uneven distribution of nutrient stocks

Supply shortages triggering price hikes and risking farmers

Soil fertility loss and GHG emissions

Higher prices leading to soil nutrient crisis



Quality and safety control is crucial

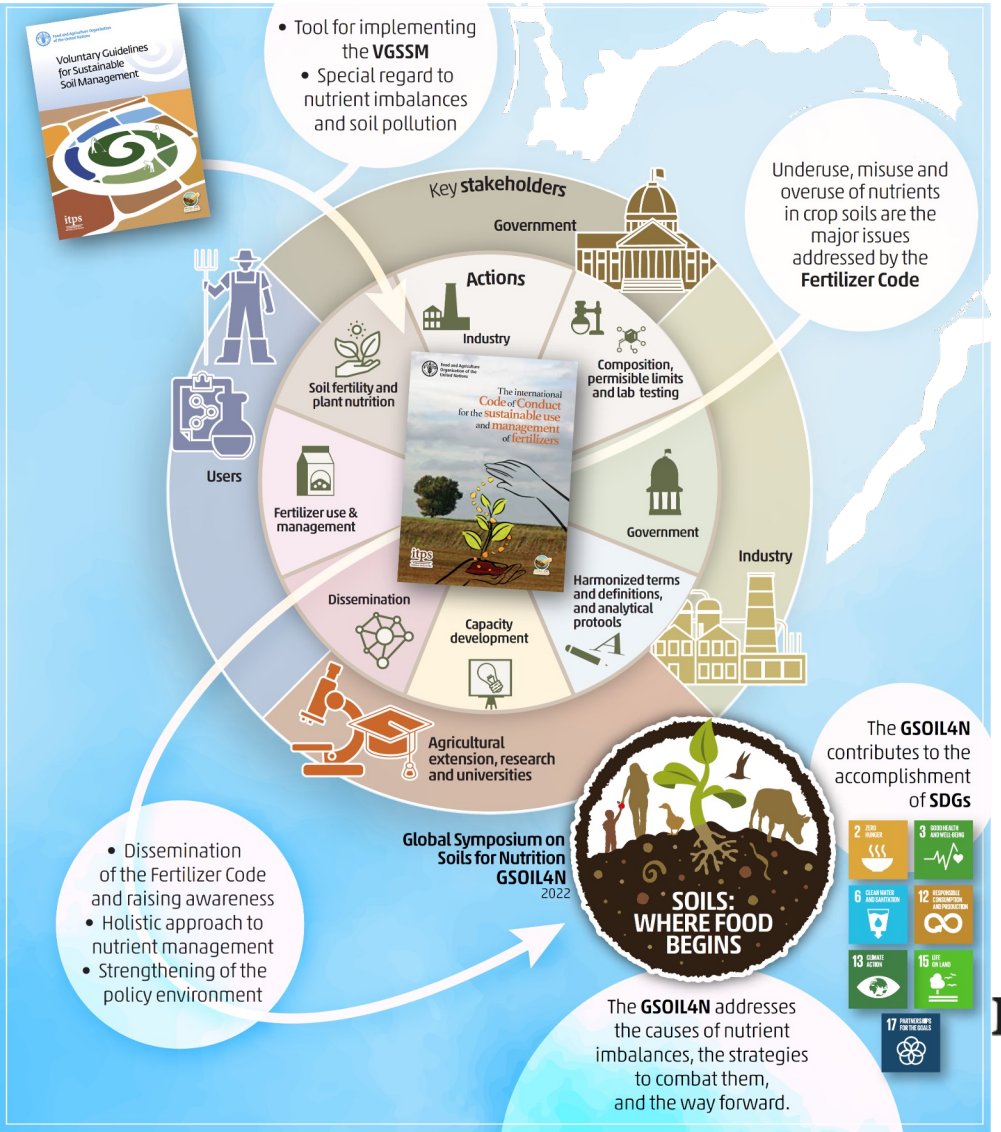
Biofertilizers:
Nitrogen-fixing bacteria
Phosphorus solubilizing fungi

Bioles, recycled nutrient sources

Biostimulants

Efficiency tests
Identification
Safety

INFA will operate under the INSOILFER framework



The International Network on Soil Fertility and Fertilizers - INSOILFER will be launched on July 17th, and it aims to:

- ✓ The adoption and implementation of sustainable and balanced soil fertility management
- ✓ Avoiding the underuse, misuse and overuse of fertilizers
- ✓ Reducing the environmental and health impacts of fertilizer use
- ✓ Evaluate and improve the safety and quality of fertilizers

INSOILFER has integrated the already existing INFA which counts about 185 members from 88 countries

INFA becomes the working group 4 of INSOILFER

1

Establishment of a soil nutrient monitoring system

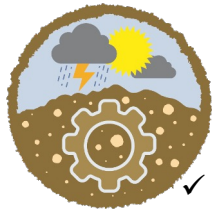
- ✓ Support decision-making system on soil nutrient management at national and local scales.
- ✓ Useful for investment planning and evidence-based recommendations for sustainable fertilizer use, innovations development, and circular economy that promote a carbon neutral footprint.

2

Promotion and dissemination of the sustainable management of soil nutrients and fertilization practices

- ✓ Promote that SSM and sustainable fertilization practices are widely known and disseminated at the farm scale.
- ✓ With particular emphasis on innovations that optimize nutrient use efficiency.
- ✓ Linked to human nutrition and soil health.

3



Capacity development for reducing the impacts of soil nutrient management on the environment and climate change

- ✓ Strengthening capacities for measuring the impacts of misuse and overuse of fertilizer on the environment and GHG emissions.
- ✓ Capacity building for reducing nitrate and phosphate pollution of groundwater, green water, and blue water (derived from fertilizer application).
- ✓ Reduction of nitrous oxide, carbon dioxide and methane emissions

4

Fertilizer safety and quality assessment

- ✓ Assessment and monitoring of the quality and safety of traditional (organic and inorganic) and innovative nutrient sources (biofertilizers, biostimulants, and recycled sources).
- ✓ INFA becomes the WG4 , focused on harmonizing methodologies and protocols for the quality and safety assessment of fertilizers, building and strengthening national capacities of laboratories.

Food and Agriculture Organization of the United Nations

GLOBAL SOIL PARTNERSHIP

11th Plenary Assembly

12-14 July 2023

Thank you for your kind attention

GLOBAL SOIL PARTNERSHIP