



Food and Agriculture
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Report of the Soil Fertility Working Group 14th Working Session of the Intergovernmental Technical Panel on Soils

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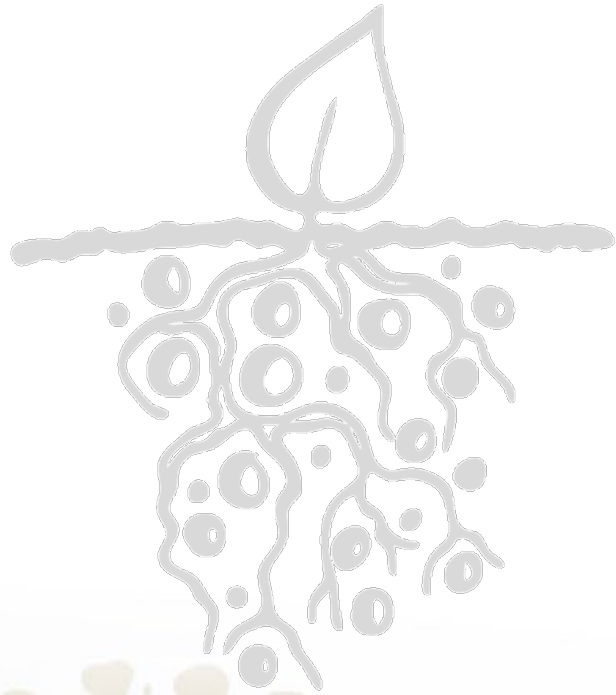
INTERGOVERNMENTAL
TECHNICAL PANEL ON SOILS

11 - 13 May 2021 | Virtual meeting





Food and Agriculture
Organization of the
United Nations



Soils 4 nutrition Global Symposium

Implementation of The International Code of Conduct for
the Sustainable Use and Management of Fertilizers

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14th Working Session of the **Intergovernmental Technical Panel on Soils (ITPS)**

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Soils 4 Nutrition Global Symposium

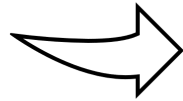


- Objective: To fill some critical knowledge gaps and promote discussion among:



Target audience

- ✓ Policy makers
- ✓ Food producers
- ✓ Scientists
- ✓ Practitioners
- ✓ Farmers
- ✓ Technicians
- ✓ Other stakeholders



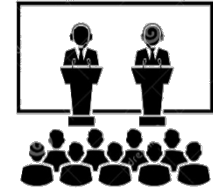
- ✓ Production
- ✓ **Nutrition**
- ✓ Environment
- ✓ Life



Solutions to provide sufficient food and live in harmony with nature, through the achievement of the SDGs on zero hunger, and the sustainable use of soil fertility (SDG2, SDG 6, SDG 14, SDG 11).



Soils 4 Nutrition Global Symposium



Specific objectives



1. **Examine the current** scientific, technical, indigenous and traditional **knowledge** on the role of soil fertility on food production, human health, malnutrition, mitigating climate change, and on sustaining fertility management;
2. **Identify knowledge state gaps** in macro and micronutrients and explore opportunities for collaborative research, capacity building and technical cooperation;
3. Identify gaps and **policy options to improve soil fertility.**
4. Present **effective and replicable methodologies, techniques, technologies and practices** that promote sustainable production, with a view to upscale those approaches to promote sustainable management of soil fertility, the sustainable use of its resources and equitable participation in productive landscapes;
5. **Identify policy options** to maintain/improve soil fertility and encourage the adoption of innovation practices that enhance it;
6. Understand the role of soil fertility in the fight against **soil micronutrient deficiency and malnutrition** and the synergy with sustainable soil management.



Proposed themes

- **Innovation on soil fertility**

Including new knowledge, new technology and new management practices (physical, chemical and biological). Data driven more precise soil nutrition solution and innovations in recommendations for fertilization (Strategies for different farmers and scales).

- **Improving soil fertility for smallholders**

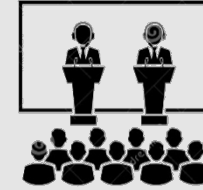
Improve feasible management practice and policy on soils for food security and ecosystem services towards smallholders.

- **Soils 4 nutrition: a nutrition sensitive approach.**

Promoting soil nutrition approach for overcoming malnutrition, micronutrient deficiencies and a long-term strategy for the conservation of the soil nutrition resources. (Specific action plan for each country).

- **The pollution problem: how to improve nutrient and fertilizers use efficiency?**

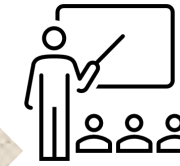
Nature-based solutions and technology-oriented strategies to improve fertilizers use efficiency. Conservation of fertilizers resources: State of knowledge on non-renewable nutrient resources, and innovations of supply.



Soils 4 Nutrition Global Symposium

Sustainable soil management for nutrition-sensitive agriculture in Sub-Saharan Africa and Southeast Asia. German Government support

1. The link between sustainable soil management for nutrition-sensitive agriculture and micronutrient deficiencies **knowledge is assessed and promoted.**



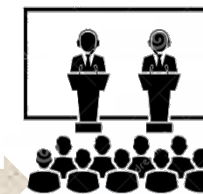
Experts consultation,
Literature review

2. **National capacities are developed** to strengthen technical and local extension services to implement sustainable soil management practices



Field trials,
Soil Doctors

3. The policy environment for investment and technical cooperation is strengthened and supported by related **Soils4nutrition guidelines**



National workshops
Global symposium

Capacity Development on Sustainable Soil Management for Africa _ Uganda and Rwanda. South- South Cooperation Assistance Fund (SSCAF)

OUTPUT 1: Scientific and technical cooperation promoted

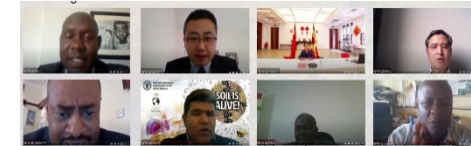
- 1.1 Provide equipment for efficient laboratory soil testing and for efficient fertilizer testing
- 1.2 Support staff in performing soil sampling, collection, and analysis, as well as on fertilizer use and recommendations on site.
- 1.3 Conduct fertilizer quality assessment.
- 1.4 Conduct field experiments and demonstrations of fertilizer use to evaluate the effects of fertilization on crop yields
- 1.5 Establish a fertilizer service.

OUTPUT 2: National capacities on sustainable soil management practices are enhanced

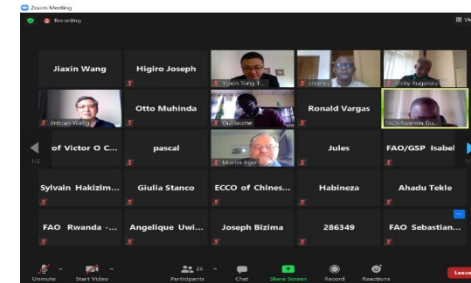
- 2.1 Develop 1 courses
- 2.2 Establish EduSOILS
- 2.3 Support the organization of at least one training session on a given soil module
- 2.4 Organize dissemination workshops for universities to demonstrate the availability of the EduSOILS platform

OUTPUT 3: Knowledge sharing between global and regional partnerships is promoted

- 3.1 Global implementation of the International Code of Conduct for the Sustainable Use and Management of Fertilizers according to the result of this project.
- 3.2 Organize interregional workshops to share the experience.



Online inception workshops for Uganda and Rwanda



Plan Meeting



FERTILIZER CODE - ACTION PLAN ENDORSED BY THE GSP PLENARY ASSEMBLY IN JUNE 2020

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INTERGOVERNMENTAL
TECHNICAL PANEL ON SOILS

1

Disseminate the Fertilizer Code at the global level and raise awareness on the issues and principles mentioned in the Code.



AWARENESS

2

National capacities development (modules and steps) for the implementation of the sustainable management of fertilizers.



CAPACITY
DEVELOPMENT

3

Holistic approach to sustainable soil management and nutrient management (focus on ecosystem services as per the SSM definition).



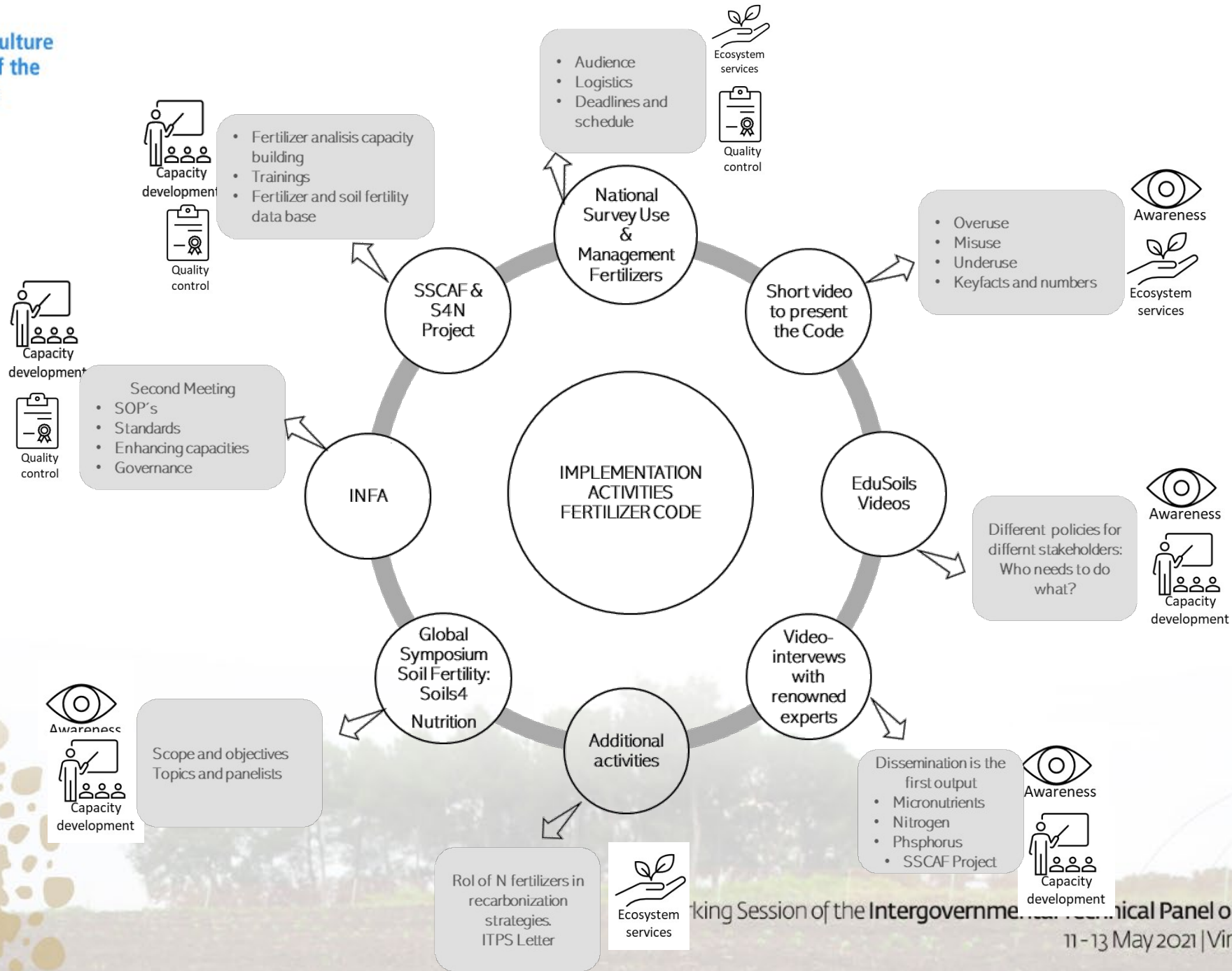
ECOSYSTEM
SERVICES

4

Strengthening of policy environment through regular frameworks aligned to the principles of the Fertilizer Code.



QUALITY
CONTROL



National Survey on the Use and Management of Fertilizers



Objective:

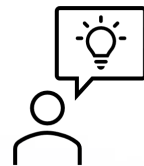
A starting point to identify priority opportunity areas for The Fertilizer Code implementation, gaps and main obstacles to sustainable fertilizer management.

The survey will be associated with a video to present The Fertilizer Code, so the effort can be optimized!

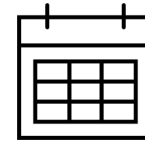


Target audience:

- ✓ Regional Partnerships
- ✓ Focal Points
- ✓ FAO Offices
- ✓ Other key actors
- ✓ Participants of the launching of the Code
- ✓ Extension agents
- ✓ Technicians
- ✓ Researchers



Appointed
by focal
points



Logistics and Timeframe

May:

- Prepare the channels for dissemination.
- Send it along with the short video.

June

- Feedback form audiences.
- Results from survey.

July

- Analysis of the results

 <https://drive.google.com/file/d/1IA8xmZcPlzRFloqkvGYH4ix5u-q9XXbv/view?usp=sharing>



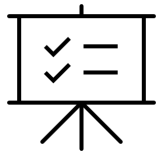
Short video to present the Code



Objective:

Short, concise, direct, simple.

To engage people and disseminate the Code in a visual-friendly way.

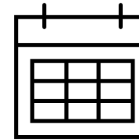


Content:

Present the three main issues related with fertilizer use and management across world:

- ✓ Underuse
- ✓ Overuse
- ✓ Misuse
- ✓ The consequences
- ✓ The solutions
- ✓ Interactions among stakeholders

Animations
under
development



Logistics and Timeframe

April:

- Meeting with Communication team / consultant to execute dissemination activities of the fertility group.



Communication team:

- Isabelle Verbeke
- Matteo Sala
- Julia Mosquer

May:

- Production of video.
- Send it along with Survey.

 https://drive.google.com/file/d/1jan9qv2b_0MRcH577FjxhaHK6JhLbUwn/view?usp=sharing



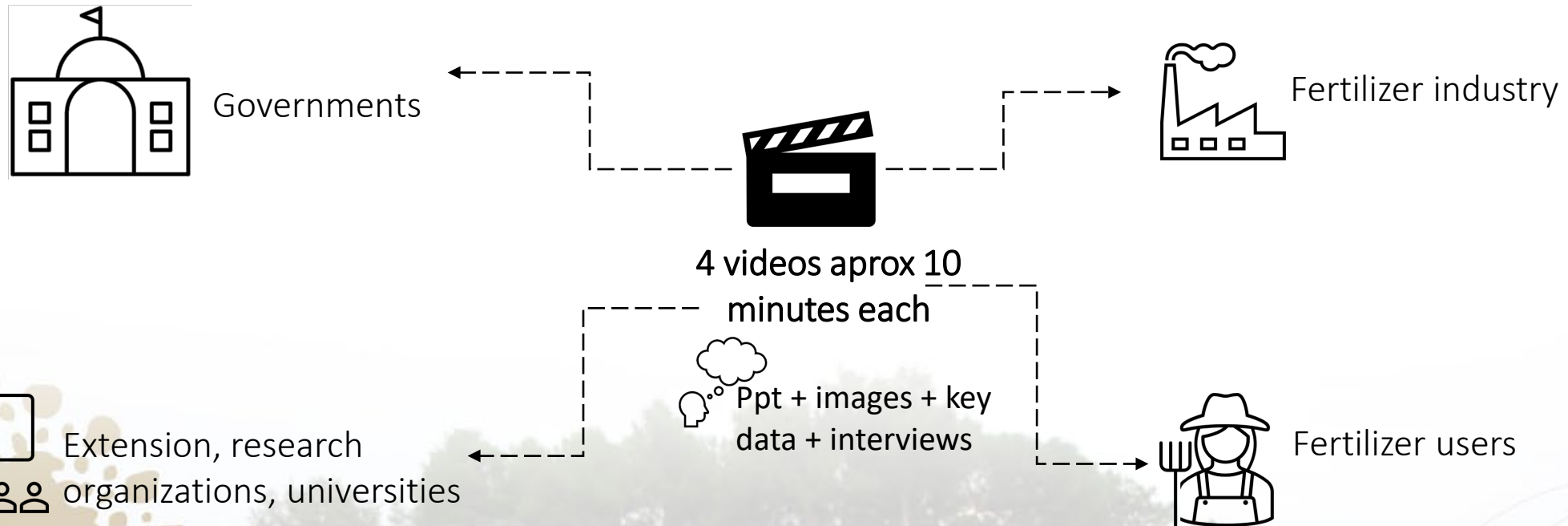
EduSoils Platform videos (promoted by the SSCAF project)



Objective:

Explanation of one of the best features of the Code: different policies for different sectors
Who needs to do what? Some people is unaware of the Code exists!

The Code provides specific guidance and recommendations to **four groups of stakeholders**:





Dissemination of the Fertilizer Code: video-interviews

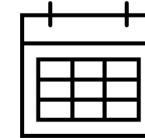


Objective: Address specific topics of the Code with an emphasis on practical aspects and actions aimed at the sustainability use of fertilizers without affecting and even enhancing crop production. For website and social media.

The Video-interviews will have the following features:



- ✓ Format: Video interviews guided by key questions and references from The Code and highlights from the projects.
- ✓ Duration: approx 5 minutes each.
- ✓ Frequency of publication: One video-interview released every two weeks or once a month.
- ✓ Participants: Renowned experts in different topics.



Logistics and Timeframe

April:

- Propose the content.

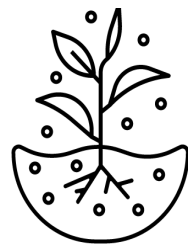
May:

- Develop and review the content.

June:

- Editing and recording.

Proposed topics for the Video-interviews



Micronutrients

Topic: The rol of micronutrients on soil fertility and crop production.



Nitrogen fertilizers

Topic: Nitrogen use efficiency improvement with technology-oriented solutions: the N Index.

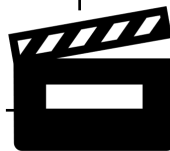


Nutrient reuse and recycling

Topic: Biosolids, urban wastes, sewage sludge, digestates.

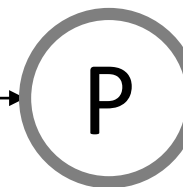
SSCAF Project

Expert in agricultural green development or fertilization formula



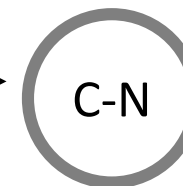
Nature-based solutions

Topic: Biofertilizers
Legume crops



Phosphorus fertilizers

Topic: Global phosphorus stocks. Phosphorus use efficiency. Global phosphorus and soil erosion.



Role of N fertilizers on recarbonization strategies

Topic: GHG emissions offset from N fertilizers in agriculture



Regulation

Topic: Permissible limits
Norms

International Network on Fertilizer Analysis



INFA
International Network
on Fertilizers Analysis



Why was INFA
created?

- 1 To **standardize methods** and protocols for the analysis of fertilizers.
- 2 To **strengthen the performance** of fertilizer laboratories.
- 3 To **harmonize fertilizer quality standards**.

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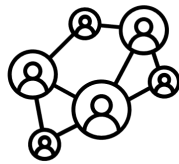
Launched in December 2020.

Includes almost 100 laboratories worldwide that are doing or interested to do fertilizer analysis.



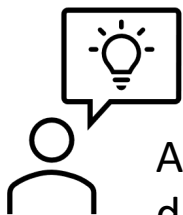
Investing in harmonized fertilizer quality standards for Sustainable Soil Management

Second meeting: June 2021.



- Election of the INFA Chair and vice-Chair.
- Endorsement of INFA objectives and indicators of performance.
- Definition of the INFA work plan for the period June 2021-June 2022 (link to the development of a business plan and financial resource mobilization).
- The Survey will also provide key information for INFA.
- Activities from Chinese project can support the INFA such as funding equipment and fertilizer database.

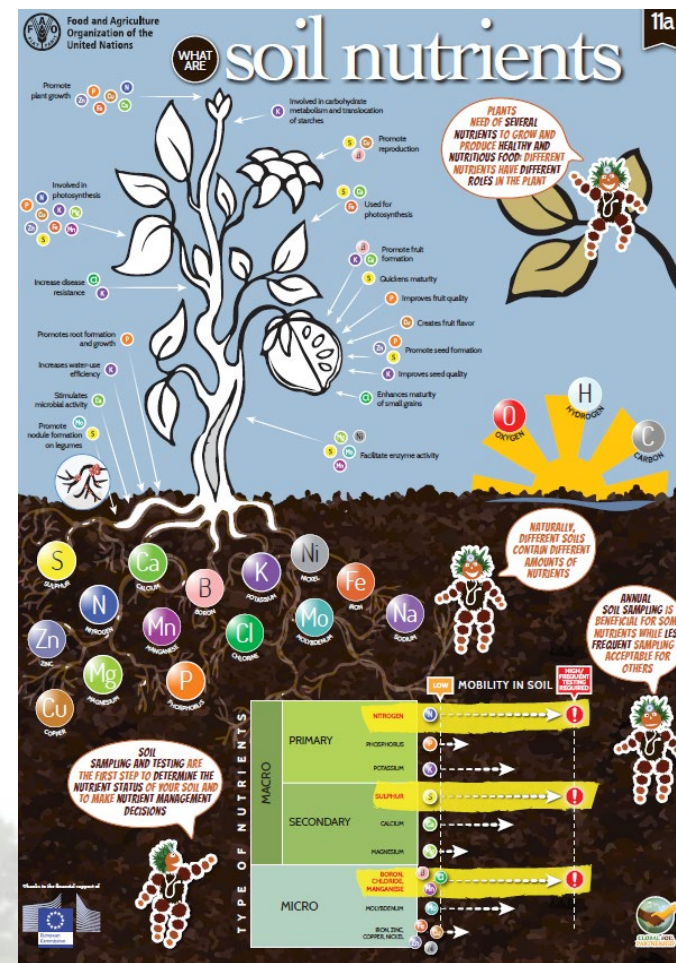
Future ideas: Encyclopedia of micronutrients



A compendium of short, simple and updated information on the different micronutrients that it will include:

- ✓ Sources (where are the main deposits, stock information).
- ✓ Role in soil and crop
- ✓ Concentration in soils (general ranges)
- ✓ Concentration in plants (ranges in main crops)
- ✓ Deficiency symptoms
- ✓ Soil forms and processes
- ✓ Relevant information per element: **main factors in soil management that affect the plant nutrient uptake and how to improve it.**
- ✓ It can be used for infographics and new posters

Following the same structure of Soil Doctors material, one page per nutrient.





Future ideas: Nitrogen use efficiency webinar



Objective:

Update the N fertilizers use addressing it as a crosscutting issue that affects several aspects of environment.

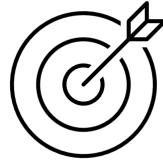
Identify and propose nitrogen tools and strategies to improve use efficiency, reduce GHG emissions and strenght crop production.

Identify:

- Nature-based solutions
- Technology-oriented solutions

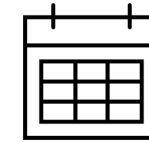


Organize it before the Global Symposium to be able to present the results and the way forward during the event.



Target audience:

- ✓ Regional Partnerships
- ✓ Focal Points
- ✓ FAO Offices
- ✓ Other key actors
- ✓ Participants of the launching of the Code
- ✓ Extension agents
- ✓ Technitians
- ✓ Researchers
- ✓ Students
- ✓ Industry
- ✓ Other UN Agencies



Logistics and Timeframe

May:

- Define and review the content.
- Contact panelists.

August:

- Organize the webinar



Proposed Topics

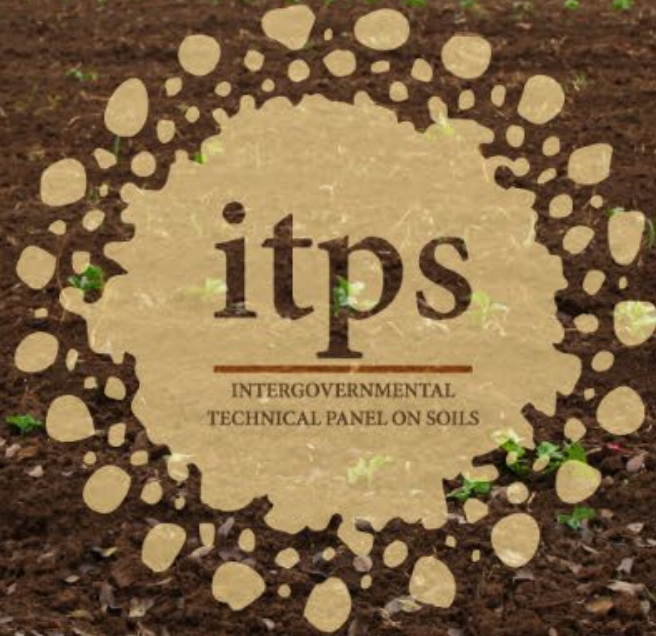
- ✓ Environmental effects of unsustainable nitrogen management in agriculture.
- ✓ Technology oriented solutions: Nitrogen/Soil Fertility Indexes.
- ✓ Technology oriented solutions: The use of sensors to improve fertilizer recommendations.
- ✓ Improving the effectiveness and efficiency of nitrogen management in the field.
- ✓ Impact of nitrogen management on GHG emissions and mitigation in agriculture .
- ✓ Impact of nitrogen management, N₂O emissions in agriculture and the synergies with carbon sequestration.
- ✓ Nature based solutions. Biofertilizers and eco-friendly fertilizers to improve phosphorous and nitrogen use efficiency.
- ✓ The use of models to improve nitrogen use efficiency.
- ✓ Emission factors and the nitrogen market.
- ✓ C:N global map: what for?

Building





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GLOBAL SOIL
PARTNERSHIP