

# INSOILFER-I/23/Working Group Meetings Report

## REPORT OF THE FIRST WORKING GROUP MEETINGS OF THE INTERNATIONAL NETWORK ON SOIL FERTILITY AND FERTILIZERS (INSOILFER)



Virtual meeting, 27 -29 November 2023  
FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS  
Rome, 2024

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## Acronyms

GLOSOLAN	Global Soil Laboratory Network
GSOIL4N	Global Symposium on Soil for Nutrition
GSP	Global Soil Partnership
INFA	International Network on Fertilizer Analysis
INSOILFER	International Network on Soil Fertility and Fertilizers
INSOP	International Network on Soil Pollution
ITPS	Intergovernmental Technical Panel on Soils
SSM	sustainable Soil Management
WG1	Working Group 1
WG2	Working Group 1
WG3	Working Group 1

## 1. Introduction

The International Network on Soil Fertility and Fertilizers (INSOILFER) is one of the [seven technical networks](#) coordinated by the FAO [Global Soil Partnership](#) (GSP). INSOILFER aims to adopt and implement sustainable soil fertility management, avoid the underuse, misuse and overuse of fertilizers, and reduce fertilizer use's environmental and health impacts. INSOILFER also represents a platform to bring stakeholders working on the technical aspects of soil fertility and fertilizers together to implement the [Outcome Document](#) of the [Global Symposium on Soils for Nutrition](#) (GSOIL4N) recommendations. The network supports the implementation of the [International Code of Conduct for the Sustainable Use and Management of Fertilizers](#) (Fertilizer Code) (FAO, 2019) and the [Voluntary Guidelines for Sustainable Soil Management](#) (FAO, 2017). At the network launch, held on July 2023 in a virtual event (details of the launch available [HERE](#)), the following steps were established to make the network operational:

- Formation of the three thematic working groups:
- Organizing the first meeting of the working groups to establish goals and a general work plan.
- Website construction.
- Increasing the number of members

🔗 Details about the objectives and activities of the three working groups are available for consultation [HERE](#).

Following up on the actions indicated in the launching of the network, the first meeting of the INSOILFER working groups was held from November 27 to 29, 2023.

This document reports the activities carried out during the meetings of the three working groups. The INSOILFER Working Group Meetings were organized virtually using the Zoom Video Communications© platform. The agenda of the event is available [HERE](#). The meeting was held in a virtual format to allow more people to attend the event. More than 260 participants registered for the meeting (see list of participants in Annex 1. List of participants registered for the meeting).

## 2. Objectives of the meetings

The objectives of the meetings were:

1. To establish and approve initial work plans for each working group.

2. Establish the network governance and appoint the network Chair and the three network Vice-Chairs (leading each one of the working groups).
3. Establish the Technical Committee for each of the working groups.
4. Establish the reference institutions for each of the working groups.

### 3. First Meeting of the INSOILFER Working Group 1. Establishment of a soil fertility and nutrient monitoring system

The Working Group 1 (WG1) "Establishment of a soil nutrient monitoring system" mainly focuses on supporting decision-making on soil nutrient management at national and local scales, which is helpful for investment planning and science-based recommendations for sustainable fertilizer use. The formation of WG1 responds to recommendations of the GSOIL4N Outcome Document, including "Monitor soil nutrients and soil fertility and deepen the knowledge about soil nutrient budget."

#### 3.1. Opening of the meeting and endorsement of the agenda

The First Meeting of the INSOILFER WG1 was held virtually on November 27, 2023. INSOILFER Co-Coordinator, GSP Secretariat, FAO Mr Yuxin Tong moderated the meeting. Mr Tong welcomed the attendees, endorsed the [agenda](#) (see Annex 2. Agenda of the Working Groups Meetings), and the group picture was taken (Figure 1).



Figure 1. Group picture of INSOILFER Working Group 1 participants.

#### 3.2. Introduction to the meeting: setting the scene.

Ms Vinisa Saynes Santillán, INSOILFER Co-Coordinator, GSP Secretariat, initiated her presentation by delineating the central focus of WG1, which revolves around advancing knowledge, building capacities, and supporting decision-making on monitoring and managing nutrients in the soil-plant system without triggering undesirable externalities. Ms. Saynes explained that this goal is rooted in the recommendations from the GSOIL4N, which highlight the critical role of mapping soil fertility in (1) establishing reliable nutrient budgets; (2)

understanding the spatial distribution of nutrients in soils with different properties; and (3) improving the design of soil nutrient management programs, including those focused on crop nutritional fortification. Ms. Saynes underscored the challenges and gaps in developing a global soil monitoring system. These challenges include but are not limited to non-harmonized and unavailable data (some time data exist but not available) on soil fertility as well as funding limitations. She also emphasized specific recommended actions to address these issues.

### 3.3. The importance of soil monitoring and connection to mapping

Mr Luis Rodriguez-Lado, GSP Secretariat, presented comprehensively on soil nutrient and nutrient budget maps. He covered the process of developing nutrient maps, including methodology, capacity development programs, and the process of maps delivery to recipient countries. The focus is currently on mapping soil total nitrogen, available phosphorus and potassium, and soil properties such as cation exchange capacity and texture. Mr Rodriguez explained that 98 countries are participating in developing the global soil nutrient map (GSNmap) and six regional interactive online trainings based on real soil data have been conducted. The GSNmap version 1.0 will be launched at the 12<sup>th</sup> GSP Plenary Assembly in June 2024. Mr Rodriguez finalized the presentation explaining that one of the main challenges for developing the GSNmap is the lack of updated and available data. During the discussion, the participants pointed out that academic institutions and laboratories are essential data repositories. Data collecting process should be developed (software & application) contributing to database. However, communication with the national focal points must be strengthened to harness collaboration with academic institutions and laboratories. More information about the GSNmap is available [HERE](#).

### 3.4. WG1 initial work plan and main activities

Ms. Saynes presented the initial WG1 work plan, which is summarized as follows:

1. Improve the knowledge and enhance/build capacities on soil fertility monitoring and soil nutrition plan development and evaluation.
  - Organize capacity development (webinars and training) to enhance capacities on the dynamic changes of soil nutrients: fluxes, stocks, inputs, and outputs at local, regional, and global scales.
  - Identify and simplify the key indicators to define soil fertility status at local, regional, and global scales.
  - Support for the development of national and global soil nutrient budgets and soil fertility maps.
2. Supporting the decision-making on soil nutrient and fertility management, soil nutrient budget, and monitoring systems at global, national, and local scales.
  - Calibrate and test practical field tools to evaluate soil fertility status and provide sustainable fertilizer recommendations to farmers and technicians.

### 3. Establishment of a global soil nutrient monitoring system and promote a data-sharing partnership

Participants unanimously endorsed the work plan through a subsequent poll.

## 3.5. Governance of the WG1

One of the most important objectives of the WG1 meeting was to define governance. A call for candidates to fill the Vice-Chair, Technical Committee and Reference Institutions positions was conducted before the meeting. The terms of reference with the description of the above-mentioned positions were disseminated to the network members. The details of the election process and the terms of reference considered for the elections of the Vice-Chair, Technical Committee and Reference Institutions are described in Annex 3. INSOILFER Governance Election Process.

### 3.5.1. Election of INSOILFER Vice Chair leading WG1

To establish the governance framework of the WG1, Ms Saynes proceeded to outline the roles and responsibilities associated with the Vice-Chair position. The functions of the Vice-Chair include leading the corresponding technical WG1 meetings, ensure its work objectives and deliverables are met on time, and updating the WG1 work plan when necessary. The Vice-Chair maintains active communication between each technical WG and the INSOILFER's Chair and the GSP Secretariat concerning the execution of the technical WG activities. Ms Saynes facilitated the election process by introducing Dr. Ranjan Bhattacharyya from India as candidate to the position of Vice Chair. The election was then conducted through a poll. With the majority of the members's votes, Dr. Ranjan Bhattacharyya was elected as leader of WG1, who automatically became Vice-Chair of INSOILFER.

### 3.5.2. Election of the WG1 Technical Committee

The principal functions of the Technical Committee are reviewing proposals made by the network to decide in their approval or rejection, writing technical documents and communication materials, and advising the working group on how to write the technical documents. The candidates comprising the Technical Committee are listed in Table 1. The candidates introduced themselves and explained their motivation to be part of the Technical Committee. The nominated renowned experts were endorsed unanimously by the INSOILFER members to form the Technical Committee (Table 1).

Table 1. Endorsed WG1 Technical Committee.

Name	Country
Ranjan Bhattacharyya	India

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Nouira Mohamed Salah	Tunisia
Boukari Garba Seydou	Nigeria
Masango Solomon Sone	Cameroon
Adewale Moses Sedara	United States
Johan Leenaars	Netherlands

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### 3.5.3. Reference Institutions

The Reference Institutions are essential to the INSOILFER framework since they support the implementation of WG1 activities. The roles of the Reference Institutions include attending INSOILFER meetings to contribute to regional and global decision-making, attending regional and global training and webinars, and implementing INSOILFER standards and decisions. Mr Tong encouraged the WG1 members to nominate Reference Institutions to support the work plan.

🔗 The agenda, presentations, and recordings of the WG1 Meeting are available for consultation [HERE](#).

## 4. First Meeting of the INSOILFER Working Group 2. Soil fertility and fertilizer management

The Working Group 2 (WG2) "Soil fertility and fertilizer management" promotes sustainable soil management (SSM) and sustainable fertilization practices, and advocates for their identification, dissemination at the farm scale, emphasizing innovations that optimize nutrient use efficiency. The objective of WG2 is to promote and disseminate sustainable management of inorganic and organic fertilizers and other nutrient sources through integrated soil fertility management approaches, increasing fertilizer use efficiency, and implementing nature-based solutions, technological tools, and innovations.

### 4.1. Opening of the meeting and endorsement of the agenda

The First Meeting of the INSOILFER WG2 was held virtually on November 28, 2023. The meeting was moderated by Mr Tong. The [agenda](#) was endorsed (see Annex 2. Agenda of the Working Groups Meetings) and the group picture was taken (Figure 2).





Figure 2. Group picture of INSOILFER Working Group 2 participants.

## 4.2. Introduction to the meeting: setting the scene

Ms Saynes presented an introduction to the meeting. Ms Saynes explained that INSOILFER originates in the recommendations that emerged during GSOIL4N, available in the [Outcome Document](#). She also recapitulated the reasons for the creation of the network and briefly explained the topics to be addressed by the three working groups of the network. Ms Saynes gave a brief report on the regional and sectoral balance of the network members and concluded her presentation by explaining the network structure.

## 4.3. WG2 initial work plan and main activities

Ms Saynes presented the objectives of the WG2, the rationale behind the activities proposed for WG2, and the potential collaborations with other GSP technical networks and other initiatives and institutions (Figure 3)

Ms Saynes explained to the participants that based on the recommendations and challenges identified in the GSOIL4N, the proposed activities to be carried out by WG2 are as follows:

- i) Identification, description, and compilation of locally adapted sustainable soil management practices (for each context and crop type) oriented to improve soil fertility, crop nutrition, and nutrient use efficiency.
  - Monitoring system for soil management practices implementation and fertilizer use impact on nutrient stocks.
  - Compilation of successful field-proven practices oriented to improve soil fertility, crop nutrition, and efficiency of nutrient use.
  - Develop a Manual for SSM and fertilization practices.
- ii) Contribute to avoid the underuse, misuse, and overuse of fertilizers through the optimization of nutrient use efficiency and fertilizer recommendations.

- Develop a Manual of sustainable fertilization recommendations.
- Launch of a Fertilizer recommendation system.



Figure 3. Objectives, areas of work, motivations for creating the WG2, and potential collaborations. ITPS-Intergovernmental Technical Panel on Soils, INSOP-International Network on Soil Pollution, NETSOB-International Network on Soil Biodiversity, INBS-International Network on Black Soils, GLOSOLAN-Global Soil Laboratory Network.

After the presentation, an open discussion session was conducted. The participants suggested to include the following topics to the work plan:

- The economic aspect of practices.
- Optimize fertilizer use efficiency and promote innovations pursuing this goal.
- Activities will be conducted with a participatory approach (bottom-up) to represent different soils, climates, and crop conditions. Build a knowledge hub/database.
- Inclusive network with different stakeholders and types of farmers.
- Fertilization recommendations using the global soil nutrient map as a basis (WG1), but it is necessary to develop new projects to downscale the recommendations to a local scale and raise funds for establishing fertilizer recommendation systems in different countries.
- Key point: WG1 (facilitate data-sharing and the communication of focal points with the institutions interested in participating in the world soil nutrient map) and WG2 must work together. Organize joint working group meetings in 2024.

After the discussion, a poll was launched, and the general work plan was unanimously endorsed.

## 4.4. Governance of the WG2

A call for candidates to fill the Vice-Chair, Technical Committee and Reference Institutions positions was conducted before the meeting. The details of the election process and the terms of reference considered for the elections of the Vice-Chair, Technical Committee and Reference Institutions are described in Annex 3. INSOILFER Governance Election Process

### 4.4.1. Election of INSOILFER Vice Chair leading WG2

The candidates Dr Surya Narayana Reddy from India and Dr Noura Mohamed Salah from Tunisia, introduced themselves and explained their motivation to lead WG2. With 67 percent of the votes, the members elected Dr. Noura Mohamed Salah as leader of WG2, who automatically became Vice-Chair of INSOILFER.

### 4.4.2. Election of the WG2 Technical Committee

The candidates introduced themselves and explained their motivation to be part of the Technical Committee. The unanimously endorsed Technical Committee is listed in Table 2.

Table 2. Endorsed members of the WG2 Technical Committee.

Name	Country
Masango Solomon Sone	Cameroon
Karina Batista	Brazil
Gerardo Ojeda	Colombia
Attia Rafla	Tunisia
Armando Tasistro	United States
Roger Kogge Enang	Cameroon
Milton Ferreira de Moraes	Brazil
Ranjan Bathacharayya	India
Haitao Xiang	China

### 4.4.3. Presentation of the Reference Institutions

The nominated Reference Institutions were presented by their representatives and subsequently endorsed by the WG2 members. The Reference Institutions supporting WG2 are shown in Table 3.

Table 3. The reference institutions selected for supporting WG2 activities.

Institution name	Country
Council for Scientific and Industrial Research-Soil Research Institute (CSIR-SRI)	Ghana

📌 The agenda, presentations, and recordings of the WG2 Meeting are available for consultation [HERE](#).

## 5. Annual Meeting of the INSOILFER Working Group 3. Fertilizer safety and quality assessment (formerly INFA)

The objective of Working Group 3 (WG3)- Fertilizer safety and quality assessment is to monitor and improve the quality and safety of traditional (organic and inorganic) and innovative nutrient sources (biofertilizers, biostimulants, and recycled sources). The formerly International Network on Fertilizer Analysis (INFA) merged INSOILFER, becoming the WG3 of this new network. WG3 focuses on harmonizing methodologies and protocols for the quality and safety assessment of fertilizers and alternative nutrient sources and building and strengthening the national capacities of laboratories.

### 5.1. Opening of the meeting and endorsement of the agenda

The INSOILFER WG3 Annual Meeting was held virtually on November 29, 2023. Ms Saynes endorsed the [agenda](#) (see Annex 2. Agenda of the Working Groups Meetings), and the group picture was taken.

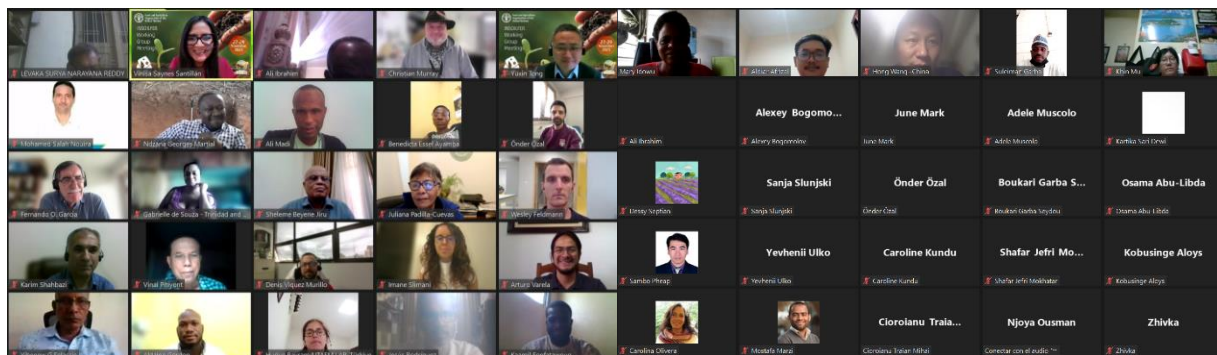


Figure 4. Group picture of INSOILFER Working Group 3 participants.

### 5.2. Introduction to the meeting: setting the scene and the INFA transition to INSOILFER WG3

In her introduction to the meeting, Ms Saynes explained that INSOILFER originates in the recommendations that emerged during GSOIL4N, available in the [Outcome Document](#). She also

recapitulated the reasons for the creation of the network and briefly explained the topics to be addressed by the three working groups of the network. Ms Saynes gave a brief report on the regional and sectoral balance of the network members and concluded her presentation by explaining the structure of the network.

#### 5.2.1. INFA merged with INSOILFER-WG3

The International Network on Fertilizer Analysis (INFA), a GSP technical network became INSOILFER WG3 since it performs the actions corresponding to fertilizers' safety and quality assessment. Ms Saynes explained that the work, activities, and operability of the new INSOILFER WG3 will continue with INFA's activities. However, the designation is now INSOILFER-WG3- Fertilizer safety and quality assessment (not INFA anymore). Ms Saynes informed the audience that the website is under restructuration, and it is estimated that it will be available in the first quarter of 2024.

#### 5.2.2. INSOILFER WG3 workplan

Ms Saynes concluded her presentation by presenting the work plan that the members of the WG3 unanimously approved. The work plan included the following activities:

- i) Harmonization of laboratory analytical protocols for the safety and quality assessment of fertilizers
  - Sample preparation
  - NPK
  - Heavy metals
  - Biofertilizers
- ii) Capacity development for quality assurance of analytical procedures and laboratory staff performance
  - Ring test 2024 (NPK)
  - Webinar series and trainings on quality assurance
- iii) Regulations and policies on the safety and quality of fertilizers
  - Customs procedures
  - Regulations and permissible limits for heavy metals

### 5.3. Report on the harmonization of Standard Operating Procedures

Dr Wesley Feldmann, formerly INFA Chair, presented an update on the activities of the report on the Standard Operational Procedure (SOP) harmonization. Mr Feldmann informed that the WG3 is made up of 186 laboratories operating in more than 80 countries (Figure 5).

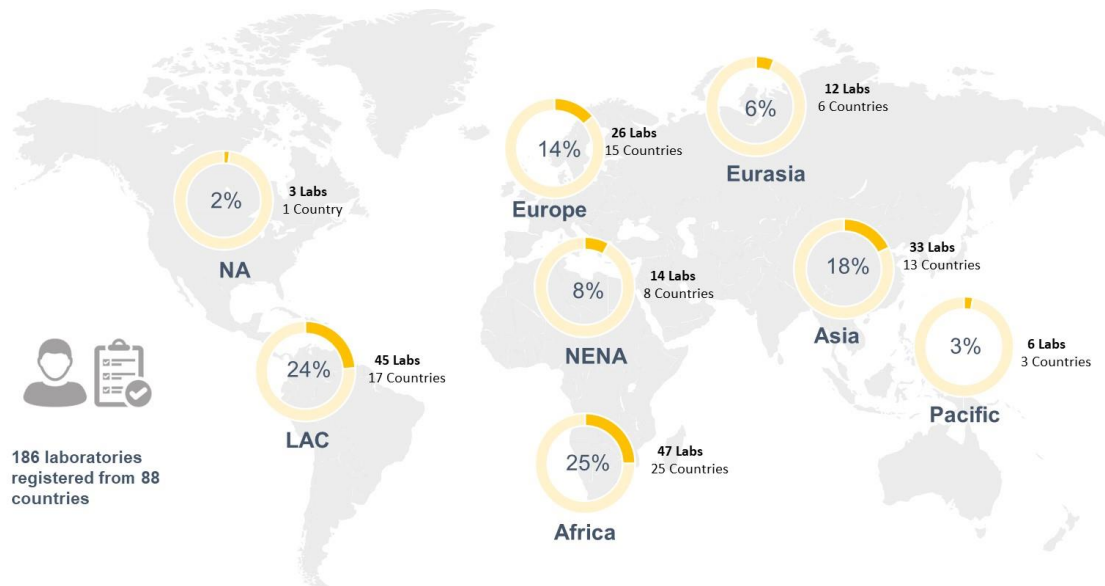


Figure 5. Laboratories registered in the WG3.

Dr. Feldmann explained the SOP harmonization process and summarized its status.

The SOPs currently being harmonized are:

- Nitrogen: Kjeldahl method – Complete, in edition process.
- Nitrogen: Combustion (Dumas) method – Final draft ready to be sent to review by the Technical Committee.
- Phosphorus: Water soluble – Preliminary draft
- Phosphorus: Acid soluble – Preliminary draft
- Potassium: Water soluble – Preliminary draft
- Heavy metals: Acid digestion – Final review (INSOP collaboration)

Dr Feldmann finalized his presentation by highlighting that harmonized SOPs are the first step in leading to quality results, which can be used for effective decision-making.

#### 5.4. Other activities of INFA: quality control, policies, and regulation

Dr Gerardo Ojeda, formerly INFA Vice-Chair, presented a report on capacity-building activities. Dr. Ojeda presented the reports of two surveys of INFA member laboratories to learn about standard practices in sample preparation and quality assurance of analyses. Dr Ojeda presented the most outstanding results and indicated that the drafts will be sent to the Technical Committee for review.

Dr Ojeda indicated that regarding regulations and policies, it is necessary to continue gathering information on customs procedures for importing and exporting fertilizer samples. This information is key for WG3 as it is the basis for one of the critical activities to be developed in 2024: the intercomparison exercise or Ring Test. Countries wishing to participate in this



exercise will need to be aware of the regulations and requirements to be met to import and export the fertilizer reference samples that the participating laboratories will analyze.

## 5.5. Governance of WG3

A call for candidates to fill the Vice-Chair, Technical Committee and Reference Institutions positions was conducted before the meeting. The details of the election process and the terms of reference considered for the elections of the Vice-Chair, Technical Committee and Reference Institutions are described in Annex 3. INSOILFER Governance Election Process

### 5.5.1. Election of INSOILFER Vice Chair leading WG3

Since the establishment of INFA –and now WG3–, Dr Wesley Feldman and Dr Gerardo Ojeda served as Chair and Vice Chair, respectively. In 2023, the GW3 had to appoint a new leader (automatically becoming one of the three INSOILFER Vice-Chairs) for another two-year term. Although a previous call was issued for interested members to nominate themselves to serve as Vice-Chairs, no nominations were received. Dr. Feldmann was unanimously reelected as the WG3 Vice-Chair for another two-year term.

### 5.5.2. Election of the WG3 Technical Committee

The candidates introduced themselves and explained their motivation to be part of the Technical Committee. The WG3 members unanimously endorsed the Technical Committee (Table 4).

Table 4. Endorsed members of the WG3 Technical Committee.

Name	Country
Adele Muscolo	Italy
Kobusinge Aloys Nyabwisho	Tanzania
Gerardo Ojeda	Colombia
Ranjan Bathacharayya	India

### 5.5.3. Presentation of the Reference Institutions

Due to the fact that no candidacies were presented to be elected as Reference Institutions, Ms Saynes invited the members to submit their nominations of the Reference Institutions to support the WG3 activities. The terms of reference describing the roles of the Reference Institutions can be consulted in Annex 3. INSOILFER Governance Election Process.

📌 The agenda, presentations, and recordings of the WG3 Meeting are available for consultation [HERE](#).

## 6. INSOILFER debriefing meeting

At the end of the meetings of the three INSOILFER working groups, a report meeting was held to inform all members about the governance and general work plans of the working groups, as well as the election of the INSOILFER's Chair. INSOILFER Co-Coordinator, GSP Secretariat, FAO Mr Yuxin Tongs moderated the meeting. Mr Tong welcomed the attendees and endorsed the [agenda](#) (see Annex 2. Agenda of the Working Groups Meetings).

### 6.1. Conclusions of the Working Group Meetings

Mr Tong informed the audience about the endorsed work plan, and the Vice-Chairs and Technical Committees elected by each working group.

The governance and general work plan corresponding to WG1 are shown in Figure 6.

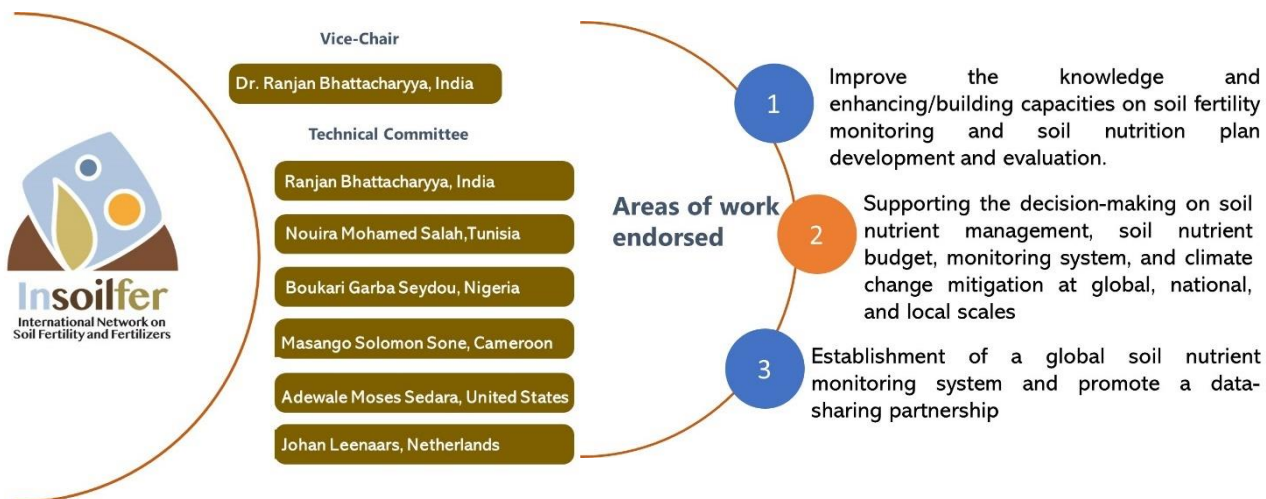


Figure 6. Vice-Chair and Technical Committee elected and endorsed workplan of WG1- Soil fertility and nutrient monitoring system.

Mr Tong also presented the key outcomes of the expert discussion on WG1, which include:

- There are concerns among the audience regarding data availability for creating nutrient budget maps at the country level. Questions have been raised about acceptable data sources, such as whether data should come exclusively from the government or include data from other sources.



- There was a proposal to consider data from small islands, which often exhibit significant variations in soil types and conditions. Additionally, there is limited funding available to support research in small islands.
- Call into collaboration between WG1 will support the activities of WG2.

The governance and general work plan corresponding to WG2 are shown in Figure 7.

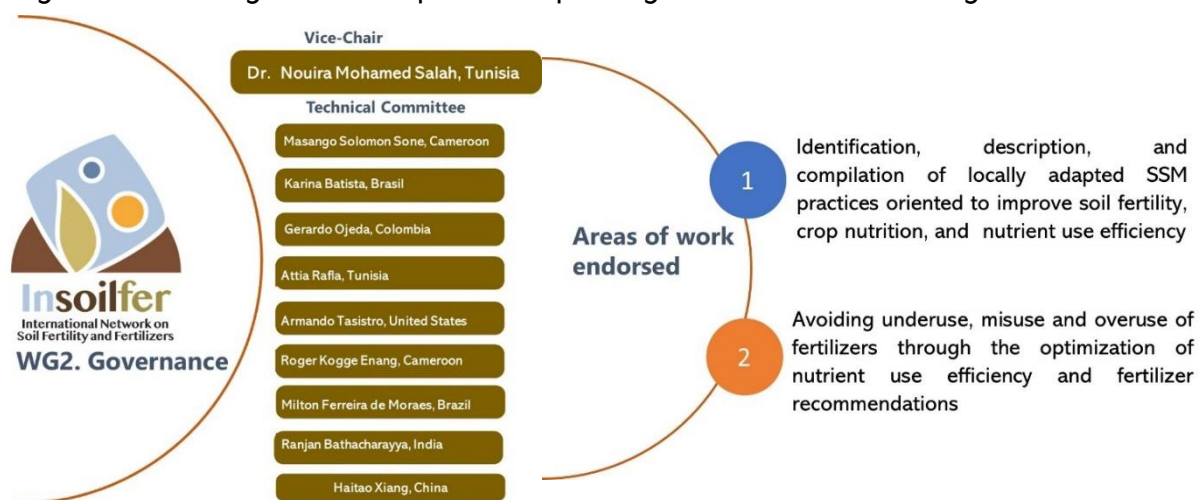


Figure 7. Vice-Chair and Technical Committee elected and endorsed workplan of WG2- Soil fertility and fertilizers management.

The key outcomes of expert discussion on WG2 are summarized as follows:

- A proposition to consider the economic aspects of management practices due to observed conflict between profitability and sustainability in existing research.
- A plan will be created to create a comprehensive global database on management practices. This database will capture regional variations in climate, soil, and crop types and will include input from diverse stakeholders, including both small and corporate farmers.
- Fertilizer recommendations will be formulated based on the global soil nutrient maps.
- Call for collaboration between two groups, with WG1 supporting the activities of WG2. This support will particularly focus on tasks such as data collection, sharing, and communication with institutions holding relevant data.
- The goal is to optimize the use of fertilizers to enhance nutrient use efficiency.

The governance and general work plan corresponding to WG3 are shown in Figure 8.

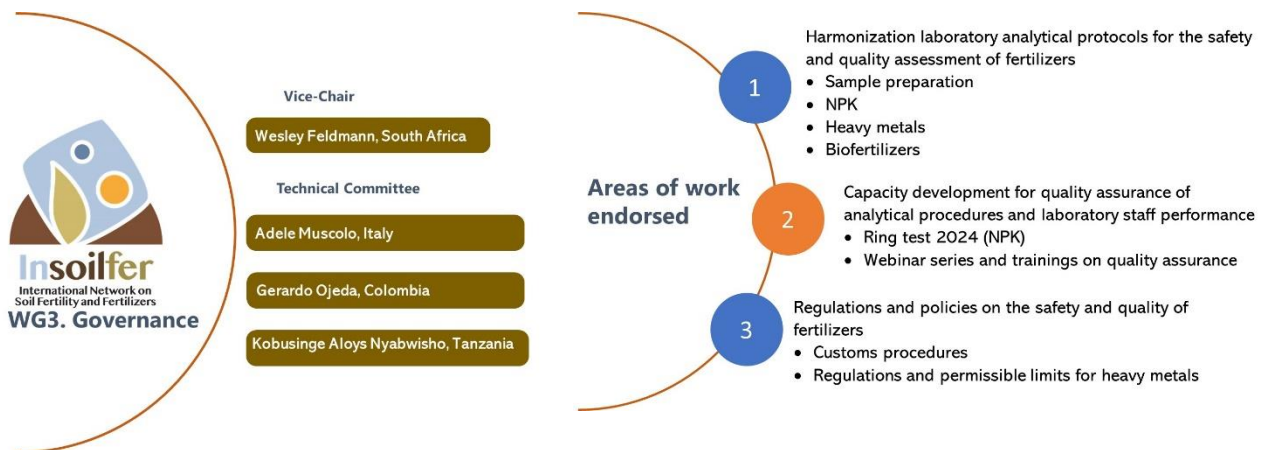


Figure 8. Vice-Chair and Technical Committee elected and endorsed workplan of WG3- Fertilizer safety and quality assessment.

### 6.2. Governance. Election of INSOILFER Chair

The INSOILFER Chair was elected during the meeting. Previous to the election, a call for candidates was conducted. The terms of reference with the description of the Chair's functions were disseminated to the network members. The functions of the Chair include ensuring that the recommendations of the GSOIL4N Outcome Document, maintaining active communication between INSOILFER and the GSP Secretariat concerning the execution of the network activities, leading the INSOILFER meetings, supporting the activities of each one of the technical working groups and maintaining close communication and collaboration with the Vice-Chairs, overseeing progress and link between INSOILFER and other Networks, and reporting to the GSP Plenary Assembly about the INSOILFER progress among other responsibilities. The details of the Chair roles are described in the terms of reference available for consultation Annex 3. INSOILFER Governance Election Process.

The candidates for the network's Chair were Dr Ndzana Georges Martial from Cameroon and Dr Santiago Mahimairaja, from Fiji. Dr Ndzana introduced himself and explained his motivation to lead INSOILFER. The members unanimously elected Dr. Ndzana as the INSOILFER Chair.

INSOILFER governance is summarized in Figure 9.



Figure 9. INSOILFER governance indicating the Chair, Vice-Chairs, GSP Coordinators and Reference institutions of the three working groups.

### 6.3. Conclusions and Way Forward

Mr Tong concluded the meeting by outlining the network's next steps:

- Developing documents of the three working groups, including the objectives, work plan and way forward (including comments and suggestions made by the members during the meetings)
- Organizing the WG annual meetings in 2024.
- Updating the INSOILFER website.
- Working to grow the network.

## Annex 1. List of participants registered for the meeting

From the Global Soil Partnership (FAO):

Yuxin Tong  
 Imane Slimani  
 Vinisa Saynes Santillán  
 Luis Rodriguez Lado  
 Filippo Benedetti

First Name	Last Name	Region
Bikila	Takala	Africa
Bright Fafali	Dogbey	Africa
Ogutu	Omori	Africa
Mohamed Salah	Nouira	Africa
Rolf	MABICKA OBAME	Africa
Ali	Ibrahim	Africa
Samuel Kwasi	Benefo	Africa
ATUTAMBIIRE	JONATHAN	Africa
Masango	Sone	Africa
Ibrahim	Mosaad	Africa
Adil	Awal	Africa
Suleiman	Garba	Africa
Nelson	Mbawala	Africa
Samuel	Bereket	Africa
Wesley	Feldmann	Africa
FELIX	ATAMBA	Africa
Joseph	Uponi	Africa
Arlindo	Manhica	Africa
Cedrick	NGUEMEZI	Africa
Lankondjoa	Kolani	Africa
Dadirai	Chinamo	Africa
Gunsham	Seeborun	Africa
Jean Baptiste	Biloa	Africa
Stephen	Ahenda	Africa
Vincent	Aduramigba	Africa
Basil	Nwangwu	Africa
Kedir Abate	Fentaw	Africa
Hassan	MOHAMED ABDI	Africa
Miriam	Makungwe	Africa
Rose	Ndango	Africa
Jacques	BAZEMON	Africa
Salifou	GOUBE MAIROUA	Africa
Ashim	Batya	Africa

Benedicta Essel	Ayamba	Africa
Caroline	Kundu	Africa
Alassane	KOUSSOUBE	Africa
Mary	Idowu	Africa
Sadia	ILIASOU	Africa
Kenias	Simbi	Africa
Macoumba	LOUM	Africa
Cynthia	Nnabuike	Africa
Sheleme Beyene	Jiru	Africa
Senzo	Ntshakala	Africa
Teboho	Lekoala	Africa
Nyambilila	Amuri	Africa
Joël Jordan	Dzokou Kontchou	Africa
JORAM	TAPFUMA	Africa
Naven	Naicker	Africa
Innocent	Mujyambere	Africa
Gabriel Adebawale	Adebawale	Africa
Never	Mujere	Africa
Isaboke	Job	Africa
Amos	Owusu	Africa
COLLINS	MAJENGO	Africa
ILIASO	ABOUBACAR DAN KASSOUA	Africa
Enyew	Adgo	Africa
Nkole	Mwamba	Africa
Nandesora	Matundu	Africa
Kobusinge	Aloys	Africa
Oyeoussi charles	Balogoun	Africa
Samson	Mang'oka	Africa
Knowledge	Mushonga	Africa
Germaine	Akeza N.	Africa
Richard	Erecu	Africa
jean	Moreira	Africa
Souleymane	DAMBE	Africa
Beatrice	Sadina	Africa
Theophilus	Isimikalu	Africa
Rebecca	Yegon	Africa
Alassane	Traore	Africa
Malefetsane	Khesuoe	Africa
Jean-Martial	Johnson	Africa
Charity	Akao	Africa
Godwin	Tanda	Africa
Williams	Egbe	Africa
Godson	Urassa	Africa
MAIDAGI	Maman	Africa
Charles	Komba	Africa

Georges	Ndzana	Africa
Moses	Nkhana	Africa
Roger Kogge	Enang	Africa
Michael	Madumba	Africa
washington	mutatu	Africa
YVETTE CLARISSE	MFOPOU MEWOOU	Africa
Zing Zing	Bertrand	Africa
Antonia	dos santos Neto	Africa
Kaamil	Fonfatawouo	Africa
Halimatou	Fonfatawouo	Africa
Chahir	Njoya	Africa
Fonfatawouo	Mohamed	Africa
Ousman	Njoya	Africa
Mfopain	Emeraude	Africa
Gaétan	Akoulou	Africa
Rovany Donald	NJATCHABOU MBEUNTCHA	Africa
Gaetan	NGASSAM	Africa
Junior Fabrice	NKOUASSI SANGUE	Africa
Fatima	Nchare	Africa
Mounirat	NZIE LAMARE	Africa
Anisatou	Makouat	Africa
Pangweh	Aliyou	Africa
Claude	Steve	Africa
Roukaya	Fonfatawouo	Africa
Yonas Muleta	Gejea	Africa
MUOEDU	UZONDU	Africa
Yihenew	G.Selassie	Africa
Neil-Yohan	MUSADJI	Africa
Godwin	Sabah	Africa
Joann	Whalen	Africa
Brandon	Ousseni	Africa
Tonderai	Chihota	Africa
Silverius	Tu.ukuratire	Africa
Pradip	Dey	Asia
Paul Kristian	Berjuega	Asia
Bella	Anis	Asia
Yiyi	Sulaeman	Asia
Jakhongir	Uljabaev	Asia
Sanjeeb Kumar	Tripathy	Asia
Dr. Muhammad	Bilal	Asia
Olivia Klarina	Paraoan	Asia
ISAM HANI	HAMEED	Asia
Radhika	Sharma	Asia
Mohammad Rafi	Salihzada	Asia
Yuxin	Tong	Asia

Noura	Alkaabi	Asia
Sanjay	Swami	Asia
Bimal Bahadur	Kunwar	Asia
Oslan	Jumadi	Asia
Vinai	Pitiyont	Asia
Muhammad Tayyab	Mehmood	Asia
Sunil	Manandhar	Asia
Weifeng	Zhang	Asia
JOSHUA MIKHEL	REYES	Asia
Chomar	Htwe	Asia
Sambo	Pheap	Asia
Emma	Tayad	Asia
Ambar Fitri	Rochyati	Asia
MARLO	DEBLOIS	Asia
HAITAO	XIANG	Asia
Suchit	Shrestha	Asia
SIGFRED	BENDIJO	Asia
Govindaraj Kamalam	Dinesh	Asia
Aldiar	Afrizal	Asia
Hong	Wang	Asia
Kartika Sari	Dewi	Asia
Dessy	Septian	Asia
Dedeh	Nurmahmudah	Asia
Rajan	Reddy	Asia
Ranjan	Bhattacharyya	Asia
Syed Waqar Ali	Shah	Asia
Shahid	Ahmed	Asia
Khin	Mu	Asia
GRACE GLEND	GABISAY	Asia
Shafar Jefri	Mokhatar	Asia
Jerolet	Sahagun	Asia
LEVAKA SURYA NARAYANA	REDDY	Asia
umar	Rahman	Asia
Rini	Prihatini	Asia
Noura Salem Amer	Ameri	Asia
DR PRAMOD KUMAR	SHARMA	Asia
Mohammad Iqbal	Bhat	Asia
NENITA	DELA CRUZ	Asia
Hammad	.	Asia
Ahmad	Suriadi	Asia
Amit	Kumar	Asia
shirish	patel	Asia
Jeyanny	Vijayanathan	Asia
JEYANNY	VIJAYANATHAN	Asia
Suriya	S G	Asia

Grace Glend	Gabisay	Asia
Amitava	Rakshit	Asia
Abraham	Oljira	Europe and Eurasia
Mohamed	Eida	Europe and Eurasia
Fuat	Kaya	Europe and Eurasia
Huriye	Bayram	Europe and Eurasia
JUANA MARIA	HALLAT SANCHEZ	Europe and Eurasia
Adele	Muscolo	Europe and Eurasia
Achim	Dobermann	Europe and Eurasia
Chiara	Cassinari	Europe and Eurasia
Cioroianu	Traian Mihai	Europe and Eurasia
Carmo	Horta	Europe and Eurasia
sergejus	ustinov	Europe and Eurasia
Florjana	Cela	Europe and Eurasia
Tõnu	Tõnutare	Europe and Eurasia
Hristina	Poposka	Europe and Eurasia
Sanja	Slunjski	Europe and Eurasia
Birthe	Lappe	Europe and Eurasia
Christian	Murray	Europe and Eurasia
Sara	Di Lonardo	Europe and Eurasia
Zhivka	Gancheva	Europe and Eurasia
Giacomo	Rocchegiani	Europe and Eurasia
Antonietta	La Terza	Europe and Eurasia
Dora	Bošnjak	Europe and Eurasia
Johan	Leenaars	Europe and Eurasia
Mile	Markoski	Europe and Eurasia
Johan	Leenaars	Europe and Eurasia
Luis	Rodriguez Lado	Europe and Eurasia
Tihomir	Predic	Europe and Eurasia
Yevhenii	Ulko	Europe and Eurasia
Alexey	Bogomolov	Europe and Eurasia
Önder	Özal	Europe and Eurasia
Vinisa	Saynes Santillán	Latin America and the Caribbean
Gabrielle	de Souza	Latin America and the Caribbean
Mónica	Avilés	Latin America and the Caribbean
ROSA	MARTINEZ	Latin America and the Caribbean
Gaius	Eudoxie	Latin America and the Caribbean
Denis	Viquez Murillo	Latin America and the Caribbean
Marnus	Cherry	Latin America and the Caribbean
Veda	Obando	Latin America and the Caribbean
David	Silgado Salcedo	Latin America and the Caribbean
Juliana	Padilla-Cuevas	Latin America and the Caribbean
Grecia Lídice	Henríquez de Chávez	Latin America and the Caribbean
Fernando O.	García	Latin America and the Caribbean
José Manuel	Cena Velázquez	Latin America and the Caribbean



Guillermo	Peralta	Latin America and the Caribbean
Karina	Batista	Latin America and the Caribbean
Ricardo Alexander	Peña Venegas	Latin America and the Caribbean
Jesús	Rodríguez	Latin America and the Caribbean
Flor	Sosa de Mendoza	Latin America and the Caribbean
ANA MARÍA	VILLALTA NOVOA	Latin America and the Caribbean
Rafael	Jaco	Latin America and the Caribbean
Claudia	Teixeira Siqueira	Latin America and the Caribbean
Estefania	Chaves	Latin America and the Caribbean
Francisca	Sosa Cortez	Latin America and the Caribbean
Claudia	Hidalgo	Latin America and the Caribbean
Gerardo	Ojeda	Latin America and the Caribbean
Milton	Moraes	Latin America and the Caribbean
Aldaine	Gordon	Latin America and the Caribbean
Silvia	Aguero	Latin America and the Caribbean
Flavia	Consolini	Latin America and the Caribbean
Carolina	Olivera	Latin America and the Caribbean
José Francisco	Preciado Guzmán	Latin America and the Caribbean
ROSALINA	GONZALEZ	Latin America and the Caribbean
Yara	Khairallah	Near East and North Africa
Fatma	Béjaoui	Near East and North Africa
Boukari Garba	Seydou	Near East and North Africa
Dany	Romanos	Near East and North Africa
SEIF EDDINE	YOUCEF KHODJA	Near East and North Africa
SIMON	MAFABI	Near East and North Africa
Hamada	Abdelrahman	Near East and North Africa
khalid	benzhir	Near East and North Africa
Rafla	Attia	Near East and North Africa
saeed	saadat	Near East and North Africa
Karim	Shahbazi	Near East and North Africa
Ali	Madi	Near East and North Africa
Mostafa	Marzi	Near East and North Africa
Memouna	Njapndounke	Near East and North Africa
Osama	Abu-Libda	Near East and North Africa
Dany	Romanos	Near East and North Africa
Hugh	Rodrigues	North America
Adewale	Sedara	North America
Job	Fugice	North America
Tiequan	Zhang	North America
Baoluo	Ma	North America
Andrew	Levin	North America
Armando	Tasistro	North America
Mumtaz	Cheema	North America
Imane	Slimani	North America
John	Wen	North America

Sofia	Banu-Shah	Pacific
Rupantri	Raju	Pacific
June	Mark	Pacific
Ravi	Naidu	Pacific
Merald	Ajo	Pacific
Robin	Boom	Pacific

## Annex 2. Agenda of the Working Groups Meetings



**International Network on Soil Fertility and Fertilizers-INSOILFER Working Group  
Meetings  
27 – 29 November 2023, 14:00 CET  
A G E N D A**

**Monday, November 27 2023**

**First Meeting of the INSOILFER Working Group 1. Improving the knowledge of the dynamics of the soil nutrient budget**

**14:00-16:00 CET**

Working Group 1 Meeting	
<i>Moderator of the session: Ms Vinisa Saynes Santillán, GSP Secretariat, FAO</i>	
14:00-14:10	Present the agenda and group picture <i>Mr Yuxin Tong, GSP Secretariat, FAO</i>
14:10-14:20	Introduction to the meeting: setting the scene. <i>Ms Vinisa Saynes Santillán, GSP Secretariat, FAO</i>
14:20-14:35	The importance of soil monitoring and connection to mapping <i>TBC</i>
14:35-14:50	Objectives of WG1 and main activities <ul style="list-style-type: none"> <li>• Open discussion: topics to be addressed by the WG1 and endorsement of goals and activities <i>All participants</i></li> <li>• Poll launch and endorsement</li> </ul>
14:50-15:15	Governance. Election of INSOILFER Vice Chair leading WG1 <ul style="list-style-type: none"> <li>• Presentation of the roles</li> <li>• Presentation of the candidates</li> <li>• Poll launch and endorsement</li> </ul>
15:15-15:35	Election of the Technical Committee of WG1 <ul style="list-style-type: none"> <li>• Presentation of the roles</li> <li>• Presentation of the candidates</li> <li>• Poll launch and endorsement</li> </ul>
15:35-15:45	Presentation of Reference Institutions for WG1 <ul style="list-style-type: none"> <li>• Poll launch and endorsement</li> </ul>
15:45-16:00	Conclusions and the way forward Closure of the meeting

**Tuesday, November 28 2023**

**First Meeting of the INSOILFER Working Group 2. Supporting the decision-making on soil nutrient management, nutrient budget, food security, and climate change mitigation at global, national, and local scales**

**14:00-16:00 CET**

<b>Working Group 2 Meeting</b>	
<i>Moderators of the session: Mr Yuxin Tong, GSP Secretariat, FAO</i>	
14:00-14:10	Present the agenda and group picture <i>Ms Vinisa Saynes Santillán, GSP Secretariat, FAO</i>
14:10-14:20	Introduction to the meeting: setting the scene <i>Mr Yuxin Tong, GSP Secretariat, FAO</i>
14:20-14:35	Objectives of WG2 and main activities <ul style="list-style-type: none"> <li>• Open discussion: topics to be addressed by the WG2 and endorsement of goals and activities <i>All participants</i></li> <li>• Poll launch and endorsement</li> </ul>
14:35-15:00	Governance. Election of INSOILFER Vice Chair leading WG2 <ul style="list-style-type: none"> <li>• Presentation of the roles</li> <li>• Presentation of the candidates</li> <li>• Poll launch and endorsement</li> </ul>
15:00-15:20	Election of the Technical Committee of WG2 <ul style="list-style-type: none"> <li>• Presentation of the roles</li> <li>• Presentation of the candidates</li> <li>• Poll launch and endorsement</li> </ul>
15:20-15:40	Presentation of Reference Institutions for WG2 <ul style="list-style-type: none"> <li>• Poll launch and endorsement</li> </ul>
15:40-16:00	Conclusions and the way forward Closure of the meeting

**Wednesday, November 29 2023**

**Annual Meeting of the INSOILFER Working Group 3. Fertilizer safety and quality assessment and INSOILFER Debriefing meeting**

**14:00-17:00 CET**

<b>Working Group 3 Annual Meeting</b>	
<i>Moderator of the session: Ms Vinisa Saynes Santillán, GSP Secretariat, FAO</i>	
14:00-14:15	Present the agenda and group picture Introduction to the meeting: setting the scene The transition from INFA to INSOILFER WG3 <i>Ms Vinisa Saynes Santillán, GSP Secretariat, FAO</i>
14:15-14:40	Report on SOP harmonization <i>Mr Wesley Feldmann, INFA Chair</i> <ul style="list-style-type: none"> <li>• Total nitrogen by the Kjeldahl method</li> <li>• Heavy metals: the joint working group with INSOP</li> <li>• Total nitrogen by the combustion method</li> <li>• Total Total Phosphorus- Acid digestion</li> </ul>

	<ul style="list-style-type: none"> <li>• Total Potassium - Water-Soluble</li> </ul>
14:40-14:55	Other activities of INFA: quality control, policies, and regulation Mr Gerardo Ojeda, INFA Vice-Chair
14:55-15:20	Governance. Election of INSOILFER Vice Chair leading WG3 <ul style="list-style-type: none"> <li>• Presentation of the roles</li> <li>• Presentation of the candidates</li> <li>• Poll launch and endorsement</li> </ul>
15:20-15:35	Election of the Technical Committee of WG3 <ul style="list-style-type: none"> <li>• Presentation of the roles</li> <li>• Presentation of the candidates</li> <li>• Poll launch and endorsement</li> </ul>
15:35-15:50	Presentation of Reference Institutions for WG3 <ul style="list-style-type: none"> <li>• Poll launch and endorsement</li> </ul>
15:50-16:00	Conclusions and the way forward Closure of the meeting
<b>INSOILFER Debriefing meeting</b> <i>Moderator of the session: Mr Yuxin Tong, GSP Secretariat, FAO</i>	
16:00-16:10	Opening remarks <i>Dr. Lifeng Li, Director of the Land and Water Division, FAO</i>
16:10-16:20	Conclusions of the Working Group Meetings <i>Mr Yuxin Tong, GSP Secretariat</i>
16:20-16:45	Governance of INSOILFER: Election of the Chair <ul style="list-style-type: none"> <li>• Presentation of the roles</li> <li>• Presentation of the candidates</li> <li>• Poll launch and endorsement</li> </ul>
16:45-17:00	Next steps and closure of the meeting

## Annex 3. INSOILFER Governance Election Process

A call for candidates was conducted before the First Working Group Meetings, and the terms of reference with the description of the Chair, Vice-Chair's, Technical Committees and Reference Institutions functions were disseminated to the network members. The roles of Chair, Vice-Chair's, Technical Committees and Reference Institutions are described in the terms of reference included in this annex.

### Terms of Reference

#### Chair and Vice-Chairs

#### International Network on Soil Fertility and Fertilizers-INSOILFER

The Chairperson of INSOILFER will:

1. Ensure that the [GSOIL4N Outcome Document](#) is executed and the INSOILFER is established with the full support of the Global Soil Partnership (GSP) Secretariat.
2. Maintain active communication between INSOILFER and the GSP Secretariat concerning the execution of the network activities.
3. Chair the INSOILFER meetings, ensure its work objectives and deliverables are met on time, and update the work plan when necessary.
4. Support the activities of each one of the technical working groups and maintain close communication and collaboration with the Vice-Chairs.
5. Oversee progress and link between INSOILFER and other Networks (including maintaining active communication).
6. Oversee progress on downscaling INSOILFER activities to the regional and national context.
7. Report (jointly with the GSP Secretariat and ITPS Chair) to the GSP Plenary Assembly about the INSOILFER progress.
8. Attend meetings of other relevant networks and events of interest to the success and visibility of INSOILFER
9. Advocate for the mobilization of resources to execute the activities as foreseen INSOILFER work plan.

10. The INSOILFER will meet once a year to review and agree on the workplan.

The Vice-Chairs of each technical working group (WG) of the INSOILFER will:

1. Chair the corresponding technical WG meetings, ensure its work objectives and deliverables are met on time, and update the WG work plan when necessary.
2. Maintain active communication between each technical WG and the INSOILFER's Chair and the GSP Secretariat concerning the execution of the technical WG activities as documented in the work plan agreed upon at the launch of the technical WG.
3. Oversee progress and link between the INSOILFER technical WG and other Networks (including maintaining active communication).
4. Report regularly about each technical WG progress to the INSOILFER Chair.
5. Report the progress and changes in the work plan at the yearly INSOILFER meetings.
6. Support the INSOILFER Chair in attending other relevant network meetings and events of interest when the chairperson cannot participate.
7. WGs can meet regularly to advance the different activities as needed.

The mandate of the INSOILFER governing team (Chair and Vice-chairs) shall be valid for a period of two years..Open election by the INSOILFER governing team will be performed at the INSOILFER meeting on the second year. Chair and vice Chairs can be re-elected for a second term of two years, but shall not serve more than two terms. As the case may be, the Chair may be supported/represented by any of the Vice-chairs in his/her activities and tasks.

### **Technical Committees**

#### **International Network on Soil Fertility and Fertilizers-INSOILFER**

Anyone interested in joining the Technical Committee can submit an expression of interest to the INSOILFER coordinators ([Yuxin.Tong@fao.org](mailto:Yuxin.Tong@fao.org); [Vinisa.saynessantillan@fao.org](mailto:Vinisa.saynessantillan@fao.org); [imane.slimani@fao.org](mailto:imane.slimani@fao.org)). Please send your executive CV (no longer than one page) and a letter of application explaining your reasons for applying for the position.

- A Technical Committee will be established for each working group and shall be composed considering regional, gender, and age balance. The term of the members of the Technical Committee is two years, renewable to a second term.
- Candidates will be proposed and selected by the members of INSOILFER on the basis of their knowledge, experience and technical competence (on INSOILFER areas of work) as well as their commitment to INSOILFER and the time they can devote to the work.

- Members of the Technical Committee who would not be able to carry out their mandate for any reason, will be replaced by another person, maintaining the regional and expertise balance. A member of the Intergovernmental Technical Panel on Soils (ITPS) will be invited to be part of the INSOILFER Technical Committee.

The main roles of the Technical Committee are:

- Reviewing the proposals made by the network, writing of technical documents, communication materials, and the harmonization of SOP.
- Approving or rejecting the proposals. The decisions will be reported to all the members by the INSOILFER coordinators.
- Advising the working groups on how to write the technical documents approved by the Steering Committee.

## **Reference Institutions**

### **International Network on Soil Fertility and Fertilizers-INSOILFER**

All public and private institutions are welcome to join INSOILFER. National Reference Institutions will support the downscaling of the implementation of activities at the national level.

#### **Reference Institutions**

The registration of National Reference Institutions in INSOILFER should be channeled to the INSOILFER Coordinators ([yuxin.tong@fao.org](mailto:yuxin.tong@fao.org); [Vinisa.saynessantillan@fao.org](mailto:Vinisa.saynessantillan@fao.org); [imane.slimani@fao.org](mailto:imane.slimani@fao.org)).

Suggested criteria for the National Reference Institutions are:

- Perform outstanding activities related to the topics addressed by the INSOILFER working groups.
- Contain qualified, trained, and experienced staff relevant for the topics addressed by the three INSOILFER working groups.

The main roles of National Reference Institutions are:

- Attend the meetings of INSOILFER in order to contribute to regional and global decision-making.
- Representatives of National Reference Institutions can count on the financial support of the GSP/FAO to attend INSOILFER meetings. However, the GSP/FAO encourages them to include



their participation in these meetings in the budget plan of their institution. This could ultimately allow institutions to have more than one representative attending the meetings. Please note that due to available limited financial resources, the GSP/FAO cannot financially support the participation of institutions from all countries in the world in the annual INSOILFER meetings. In this regard, only a few representatives from each region will receive the financial support of the GSP/FAO to attend the annual INSOILFER meetings. Beneficiaries will be selected based on their contribution to INSOILFER activities, working groups, gender and geographic balance.

- Attend regional and global trainings and webinars.
- Implement INSOILFER standards and decisions.
- Timely reply to INSOILFER emails, providing information including regulation procedures, laws, and public policies.
- Promote INSOILFER, motivating other institutions/laboratories in their country and region to join the network.
- Lead the organization of national trainings and meetings to transfer the knowledge and skills acquired in INSOILFER to other institutions/laboratories.
- Report the activities related with INSOILFER to the Coordinators as needed. Please note that National Reference Institutions/Laboratories are asked to report on the activities they implement at the country level annually. In case National Reference Institutions/Laboratories do not demonstrate willingness or try to down-scale the INSOILFER activities, the INSOILFER Coordinator can nominate another institution/laboratory to serve as National Reference Institution/Laboratory.
- The Reference Institutions will benefit from priorities to be invited to the meetings, to be funding with the equipment, to be invited to develop field projects, to be the lead authors of publications and standards.
- Activities by National Reference Institutions will be evaluated against criteria such as the number of new members and laboratories registering in INSOILFER and the proven organization of national trainings, and meetings or forums for discussion.