



**Food and Agriculture  
Organization of the  
United Nations**



# **Report of the Second meeting of the Eurasian and European Soil Laboratory Network (EUROSOLAN)**

Virtual meeting, 30 September – 2 October 2020

**EUROSOLAN-II/20/Report**

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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

Rome, 2020



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## 1. Introduction

Due to COVID-19, the second meeting of the Eurasian and European Soil Laboratory Network (EUROSOLAN) was organized virtually using the Zoom Video Communications© platform. The meeting lasted four hours per day from 30 September to 2 October 2020 (see the agenda in Annex II). It was attended by seventy-eight participants from twenty six Eurasian and European countries (Austria, Belgium, Croatia, Czech Republic, Estonia, Georgia, Germany, Hungary, Israel, Italy, Kosovo, Latvia, Netherlands, Portugal, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Spain, Switzerland, The Former Yugoslav Republic of Macedonia, Turkey, United Kingdom, Ukraine and Uzbekistan). See the list of participants in Annex I.

The meeting was opened by Mr. Giorgi Ghambashidze, EUROSOLAN Chair, who recalled the objectives of the meeting: (i) to inform Eurasian and European laboratories on GLOSOLAN progresses and activities, including the establishment of the National Soil Laboratory Networks, (ii) to discuss the downscaling of GLOSOLAN Proficiency Testing (PT) in the European and Eurasian regions, (iii) to train soil laboratories on equipment purchasing, use and maintenance, and (iv) to define the position of EUROSOLAN in GLOSOLAN. The training sessions on 30 September and 1 October were also attended by participants from English-speaking African countries. Indeed, GLOSOLAN had to organize two meetings for the African Soil Laboratory Network (AFRILAB), due to the need to have training sessions in English and French.

## 2. Highlights and conclusions

Thanks to the presence of participants from AFRILAB and EUROSOLAN, the first two days of the meeting allowed to identify common and different inter-regional challenges and needs in terms of training and laboratory operations.

### 2.1. External quality control (or proficiency testing - PT)

This training session took place on 30 September. Great attention was paid to the actions taken by the laboratories that participated in the GLOSOLAN PT 2019 to improve their performance. Malawi and Nigeria reported on their experience while Mr. Christian Hartmann (IRD France) and Mr. Michael Watts (British Geological Survey, United Kingdom) provided general guidelines and moderated the discussion on how laboratories should react to a PT (training material available [here](#)). Ultimately, Ethiopia and Belgium shared their experience in organizing national PTs. In this regard, GLOSOLAN encourages national reference laboratories especially to organize national PTs to allow all laboratories registered in GLOSOLAN to be tested. This also refers to the current impossibility of GLOSOLAN to involve all its member laboratories in global PTs.

On 2 October, participants could once again discuss external quality control, focusing on the possibility and need to organize a EUROSOLAN PT. Mr. Christian Hartmann reported on GLOSOLAN's experience in organizing a PT, while Mr. Luca Montanarella reported on the experience of the Joint Research Centre, European Commission. Consequently, the participants actively discussed the main challenges related to the success of a PT. These include:

- The importance for laboratories participating in a PT to use the same standard operating procedures. This is linked to the need for laboratories to provide metadata (also reporting the equipment and consumables used) to the PT evaluator.

- The need to develop ad-hoc projects to improve cooperation among laboratories participating in a PT. The projects should promote inter-laboratory exchanges of personnel, in particular between laboratories with different performances in PT.
- The need to organize other global PTs to better assess the proficiency of laboratories in soil analysis and to develop strategies to improve their performances. Please note that GLOSOLAN's PT 2020 was cancelled due to COVID-19.
- The challenge of finding a provider of reference sample material. In this regard, EUROSOLAN proposed to establish a working group on certified reference sample material.
- The issue of sampling errors (and other types of systematic errors) which are a much more important source of error than laboratory procedures. This refers to the need to develop a harmonized procedure on soil samples collection by the Global Soil Partnership Pillar 5 working group. This request will be brought to the attention of the International Network of Soil Information Institutions (INSII) and the Pillar 5 working group who are currently discussing the updating of FAO's Guidelines for Soil Description.

In conclusion, the importance of implementing internal quality control (QC) procedures was stressed as well. In this regard, it was proposed to prepare a list of the analysis performed by each laboratory routinely with the corresponding methodology. This list can be used to identify laboratories using the same analytical methods, which can exchange in-house QC standards. This procedure can be implemented at national, regional and global level and allow laboratories to have more confidence in the results of their QC samples. In addition, it might serve to encourage laboratories to organize PTs independently.

## 2.2. National Soil Laboratory Networks

Mr. Filippo Benedetti (GSP Secretariat) presented how National Soil Laboratory Networks (NASOLAN) can be established and their role in GLOSOLAN. The following countries presented their experiences and plans: Mozambique, Hungary, Zimbabwe, Ukraine, Nigeria and Belgium. The establishment of NASOLANs is important for:

1. Enabling all soil laboratories in the same country to interact with each other, to overcome common challenges and to help each other in building their soil analysis capacity;
2. Promoting the harmonization processes of soil analysis at the national level;
3. Facilitate the transfer of knowledge acquired by laboratories participating in GLOSOLAN activities at the national level. Indeed, laboratories benefitting from GLOSOLAN training should transfer the acquired knowledge to other laboratories in their country. This process is also essential to overcome language and cultural barriers.

The main obstacles to the establishment of NASOLANs in the European and Eurasian region are related to:

- Communication challenges: especially in countries where laboratories are far apart, where the exchange of soil samples and the organization of trainings and meetings may be an issue. It is useful for different laboratories to participate in a single monitoring system, or to cooperate in a joint research or policy-support activity – which requires comparable results. Small countries with few soil laboratories may have difficulties in establishing a proper network. In this case, they could cooperate with networks in neighboring countries;
- COVID-19: it has seriously affected the establishment of national networks since many countries have planned their first NASOLAN meeting in 2020. Even by using virtual meeting tools, some countries have stated that the establishment and organization of the launch meeting of the network has been delayed;

- Availability of financial resources: it represents a common challenge since all activities implemented at the national level have a cost. In this regard, it was suggested to seek donors and projects. By advertising NASOLANs' needs and challenges, GLOSOLAN can help NASOLANs to attract donors and mobilize national governments, which should play a key role in sustaining their national laboratories;
- Agreement on priorities: it is necessary to develop a NASOLAN work plan and to ensure that all member laboratories coordinate their actions and move in the same direction. The work plan should be endorsed at the annual NASOLAN meetings and should foresee the necessary human and financial resources required to cope with the workload.

In order to support laboratories in establishing their NASOLAN, GLOSOLAN has prepared Terms of Reference and guidelines on how to establish a NASOLAN. These documents have been sent to all GLOSOLAN members for review and will be endorsed at the fourth GLOSOLAN meeting on 11-13 November 2020. Please note that the national reference laboratories play a key role in establishing and enlarging their NASOLAN, and in implementing NASOLAN's work plans (see the [Terms of Reference of soil laboratories in GLOSOLAN](#)).

Nevertheless, GLOSOLAN is supporting the establishment of NASOLANs by creating a dedicated webpage per each country. The information presented on these webpages are the following:

- Status of the establishment of the network. Established/under establishment/not established
- Name of the network and number of members in the network
- Brief history on the network with a focus on the steps undertaken by the laboratories to establish it, the obstacles faced and the potential supporters.
- Information on the activities implemented and the meetings organized by the network. In this section, meetings material and outcome documents of the activities implemented by the NASOLAN will be published.
- Main needs and challenges of the network
- Main needs and challenges of the laboratories in the network
- Information on the National Reference Laboratory
- Information on the soil laboratories belonging to the NASOLAN

The NASOLAN webpages offer multiple advantages:

- They increase the visibility of the national network at the national, regional and global level;
- They ensure that all soil laboratories have access to their NASOLAN information;
- They allow projects and initiatives to connect to NASOLAN and its members. In this regard, soil laboratories can be easily contacted and involved in projects and initiatives independent of GLOSOLAN and the GSP;
- They draw the attention of donors to the needs of NASOLAN and the soil laboratories.

Therefore, it is essential that soil laboratories work on the development and updating of their NASOLAN webpage.



### 2.3. Laboratory equipment purchasing, use and maintenance

Ms. Lesego Mooketsi-Selepe, AFRILAB vice-Chair, opened the training session on soil laboratory equipment by presenting [GLOSOLAN's good practices on purchasing and operating laboratory equipment](#). Building on GLOSOLAN's experience in equipment purchasing, Ms. Caon reported that laboratories receiving equipment from GLOSOLAN in 2020 (i) know what they want but do not know how to request it, (ii) provide rather vague or incomplete technical specifications, and (iii) do not know what to put as quality control criteria. In this regard, she reported on GLOSOLAN's experience in procurement with reference to the guidelines presented by Ms. Mooketsi-Selepe. The answers of the participants to the survey on procurement are presented in Annex III.

Ms. Estefania Perez-Fernandez and Mr. Leonardo Ramirez-Lopez from BUCHI Labortechnik AG, Switzerland, closed the session by training participants in equipment installation, use and maintenance. Their intervention was particularly appreciated by participants (see [here](#) link to the presentation and the training material).

### 2.4. Harmonization of standard operating procedures (SOPs)

Ms. Elena Shamrikova from the Institute of Biology of Komi Scientific Center of the Ural Branch, Russian Federation, shared her experience in harmonizing the GLOSOLAN SOP on the Tyurin method for the determination of soil organic carbon. Due to the large difference in the procedure used by the laboratories applying this method, Ms. Shamrikova and her team developed a procedure that automatically ensures the comparability of the results obtained using the Tyurin, Walkley and Black and dry combustion methods. The latter was used in this work as a reference (control). Based on this success, Ms. Shamrikova proposed that all GLOSOLAN SOPs be developed in this way. Thus, all GLOSOLAN SOPs will by default produce comparable results. This proposal will be brought to the attention of the fourth GLOSOLAN meeting by the EUROSOLAN Chair, Mr. Giorgi Ghambashidze.

It should be noted that laboratories in EUROSOLAN can contribute greatly to the harmonization of GLOSOLAN SOPs and laboratory data as described above, because of their high proficiency and competence in soil analysis.

## 3. Position of EUROSOLAN in GLOSOLAN

Ms. Caon introduced the participants to the agenda of the Fourth GLOSOLAN meeting and asked for their opinion on:

- The SOPs GLOSOLAN should work towards harmonization in 2020-2021, which was followed by the identification of regional leaders. The SOPs EUROSOLAN will propose GLOSOLAN to work on in 2020-2021 are reported in Table 1

Table 1 - SOP to harmonize in 2021, proposed by EUROSOLAN

Parameters and method	Regional leaders (country)
Total elements (this includes HM and micro- and macronutrients) by hydrofluoric acid/nitric acid/perchloric acid, and XRF	- Total elements by HF/HNO <sub>3</sub> /HCl: Kristof Tirez (Belgium) and Michael Watts (UK) - Total elements by XRF: Beata Tomczyk (Netherlands)
Quasi-total elements by digestion using aqua regia, HNO <sub>3</sub> /H <sub>2</sub> O <sub>2</sub> (AAS, ICP-MS, ICP-OES)	Giorgi Ghambashidze (Georgia)
Microbial biomass C and N by chloroform fumigation-extraction	Oguz Can Turgay (Turkey) and João Coutinho (Portugal)
Exchangable bases and CEC, by cobalhexamine methods	Beata Tomczyk (Netherlands) and Alan Evans (Portugal)
Available micronutrients (Fe Zn Cu Mn Mo) – extraction using DTPA and EDTA	Olena Gavrylenko (Ukraine) and Lauris Leitāns (Latvia)
Soil moisture - gravimetric	Špela Velikonja Bolta (Slovenia)
Available phosphate by Truog method	Valmire Havolli (Kosovo)

- The need to review [FAO Soils Bulletin 74 – “Guidelines for Quality Management in Soil and Plant Laboratories”](#). Thirty-eight percent of participants declared that they were not aware of this document. About 40 percent of participants who were aware of this document stated that they do not use it in their laboratory routine because it contains good information, but it is outdated. In this regard, participants expressed the need to update the document. Therefore, someone proposed using this document as a starting point and dividing it into smaller thematic documents as needed.

In conclusion, Ms. Caon reminded participants that anyone who is interested and has the capacity to prepare large amounts of homogeneous soil samples could become a PT samples provider for GLOSOLAN (consult the [GLOSOLAN materials on this topic](#)). Furthermore, participants were invited to review the material to be discussed and endorsed at the fourth GLOSOLAN meeting (11-13 November 2020) and to contribute to the development of their NASOLAN webpages. Participants should pay special attention to reviewing their country profiles in the “global assessment on soil laboratories capacities and needs 2020”. Lastly, Ms. Caon reminded participants that the launch meeting of the International Network on Fertilizers Analysis (INFA) will take place in December 2020. All laboratories performing or interested wishing to perform soil fertilizers analysis are invited to join this GLOSOLAN sub-network and contribute to the implementation of its work plan. Ms. Caon will soon send additional information on this meeting by email. In the meantime, participants are invited to complete a short survey aimed at collecting information to open the discussion at the launch meeting.

#### 4. Venue and time of the next meeting

COVID-19 gave the opportunity to test new virtual meeting tools such as Zoom. Virtual meetings can engage many more laboratories, laboratory staff and countries than in-person meetings because there are no travel costs. Moreover, virtual meetings allow available financial resources to be allocated to other activities such as trainings, purchasing equipment to laboratories in need and improving laboratory facilities. On the

other hand, virtual meetings do not allow for informal conversations and brainstorming that can lead to more and better opportunities for cooperation between laboratories, institutions and countries.

On this basis, participants were invited to give their opinion on the organization of future EUROSOLAN meetings. Forty-two percent of the participants proposed to continue organizing the EUROSOLAN meetings online every year, 32 percent expressed their willingness to return to in-person meetings as soon as possible, and the remaining 26 percent proposed to alternate in-person and virtual meetings.

## Annex I. List of participants

Ms. Lucrezia Caon, Global Soil Partnership Secretariat, FAO HQ

Mr. Filippo Benedetti, Global Soil Partnership Secretariat, FAO HQ

Ms. Nopmanee Suvannang, GLOSOLAN Chair

Mr. Christian Hartmann, IRD France

Ms. Hanane Aroui, IRD France

Mr. Luca Montanarella, JRC European Commission

Mr. Leonardo Ramirez-Lopez, BUCHI Labortechnik AG, Switzerland

Ms. Estefania Perez-Fernandez, BUCHI Labortechnik AG, Switzerland

Mr. Michael Watts, British Geological Survey

Mr. Rainer Baritz, European Environment Agency (EEA), Chair European Soil Partnership (ESP)

<b>Participant</b>	<b>Laboratory Official Name</b>	<b>Country</b>
Andreas Baumgarten	Department for Soil Health and Plant Nutrition Institute for Sustainable Plant Production Division for Food Security AGES - Austrian Agency for Health and Food Safety	Austria
Wolfgang Friesl-Hanl	Environment Agency Austria	Austria
Aurore Degré	Soil physics lab of University of Liège - Gembloux Agro-Bio Tech	Belgium
Kristof Tirez	VITO	Belgium
Clémence Mariage	Axe Echanges Eau-Sol-Plante, GxABT – Liège University	Belgium
Gilles Colinet	Axe Echanges Eau-Sol-Plante, GxABT – Liège University	Belgium
Marija Romić	University of Zagreb Faculty of Agriculture Analytical laboratory MELILAB	Croatia
Jiri Zbiral	National Reference Laboratory/ Central Institute for Supervising and Testing in Agriculture	Czech Republic
Ülis Sõukand	Estonian Environmental Research Centre	Estonia
Gerd Dercon	Soil and Water Management & Crop Nutrition Laboratory, Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture. International Atomic Energy Agency	FAO/IAEA
Christian Resch	Soil and Water Management & Crop Nutrition Laboratory, Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture. International Atomic Energy Agency	FAO/IAEA
Tetsuya Eguchi	Soil and Water Management & Crop Nutrition Laboratory, Joint FAO/IAEA Division of Nuclear	FAO/IAEA

	Techniques in Food and Agriculture. International Atomic Energy Agency	
Franck Albinet	Soil and Water Management & Crop Nutrition Laboratory, Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture. International Atomic Energy Agency	FAO/IAEA
Giorgi Ghambashidze	Laboratory of Soil Research named after Prof. Ivane Sarishvili, Soil Fertility Research Service, Scientific-Research Centre of Agriculture (SRCA)	Georgia
Tamar Jolokhava	Laboratory of Soil Fertility Research Service, Scientific-Research Centre of Agriculture	Georgia
Naira Kenchiashvili	Laboratory of Soil Fertility Research Service, Scientific-Research Centre of Agriculture	Georgia
Maia Tarkhnishvili	Laboratory of Soil Fertility Research Service, Scientific-Research Centre of Agriculture	Georgia
Tea Meskhi	Laboratory of Soil Fertility Research Service, Scientific-Research Centre of Agriculture	Georgia
Elene Mgaloblishvili	Laboratory of Soil Fertility Research Service, Scientific-Research Centre of Agriculture	Georgia
Guliza Zardiashvili	Laboratory of Soil Fertility Research Service, Scientific-Research Centre of Agriculture	Georgia
Anna Jacobs	Thünen	Germany
Ágnes Nagy	Food Chain Safety Centre Non-profit Ltd. Soil Conservatory Laboratory, Velence	Hungary
Eyal Ben Dor	RSL-TAU	Israel
Nicolas Franco	RSL-TAU	Israel
Jacki Zaluda	RSL-TAU	Israel
Adele Muscolo	Mediterranea University Reggio Calabria	Italy
Valmire Havolli	Soil, Fertilizer and Water irrigation/ Kosovo Institute of Agriculture	Kosovo
Lauris Leitāns	Agrochemical Laboratory / State Plant Protection Service	Latvia
Sanita Vucāne	Agrochemical Laboratory / State Plant Protection Service	Latvia
Aldis Butlers	Laboratory of Forest Environment/Latvian State Forest Research Institute "Silava"	Latvia
Winnie van Vark	Wageningen University	Netherlands
Paolo Di Lonardo	Wageningen University & Research - Soil Biology Group	Netherlands
Beata Tomczyk	Agrocares Golden Standard Laboratory	Netherlands
João Coutinho	Lab Solos - UTAD	Portugal
Alan Evans	A2 Analises Químicas Lda	Portugal
Ângela Mendes	A2 Análises Químicas Lda	Portugal
Raquel Mano	Laboratorio Quimico Agricola Rebelo da Silva (INIAV/SAFSV/LQARS)	Portugal
Carmo Horta	Laboratório de Solos e Fertilidade (Lab-Solos/ESACB) / Escola Superior Agrária de Castelo Branco	Portugal

Nicoleta Vrinceanu	LPM/RISSA	Romania
Mihaela Preda	LAFC/RISSA	Romania
Veronica Tanase	LAFC / RISSA	Romania
Shamrikova Elena	Eco-analytical Laboratory, Department of Soil Science / Institute of Biology of Komi Scientific Center of the Ural Branch	Russian Federation
Olga Yakimenko	Moscow State University	Russian Federation
Stanko Milic	Laboratory for soil and agroecology, Institute of field and vegetable crops, Novi Sad	Serbia
Oskar Šajgalík	UKSUP (CCTIA) Central Control and Testing Institute in Agriculture, TESTING LABORATORY OF SOIL AND FERTILIZER ANALYSIS	Slovakia
Milan Kališ	Department of Laboratory Methods of Soil Science and Conservation Research Institute in Bratislava	Slovakia
Špela Velikonja Bolta	Agricultural institute of Slovenia	Slovenia
Tjasa Cencic Predikaka	IKEMA d.o.o.	Slovenia
Peguy Neboue Sob	Geditec	Spain
Sara Alcalde-Aparicio	Soil Science Area / University of León	Spain
Miguel Aran	Institut Sociedad Española de Ciencia del Suelo	Spain
Pablo Villán	Biome Makers Inc.	Spain
Adrian Ferrero	Biome Makers Inc.	Spain
Daniel Almonacid	Biome Makers Inc.	Spain
Remigio Paradelo Núñez	Departamento de Edafología e Química Agrícola Universidade de Santiago de Compostela	Spain
Stephen Thomas	Crowther Lab, ETH Zurich	Switzerland
Biljana Jordanoska Shishkoska	Laboratory for quality control of soil, water, fertilizers and plant material-L02/ University "St. Kliment Ohridski"-Bitola Scientific Tobacco Institute - Prilep	The former Yugoslav Republic of Macedonia
Oguz Can Turgay	SOFREL-TR /Faculty of Agriculture, Ankara University	Turkey
Sevinc MADENOGLU	Ministry of Agriculture and Forestry GD of Agricultural Research and Policies (TAGEM)	Turkey

Atila POLAT	Soil Quality and Fertility Analysis Laboratory. Republic of Turkey Ministry of Agriculture and Forestry Soil, Fertilizer and Water Resources Central Research Institute	Turkey
Tacettin Öztürk	Lita Analytical	Turkey
Onur İşcan	Lita Analytical	Turkey
Dr. Zubeyde Albayram Dogan	International Agricultural Research and Training Center Laboratory (IARTC)	Turkey
Huriye Bayram	International Agricultural Research and Training Center Laboratory (IARTC)	Turkey
Onder Ozal	International Agricultural Research and Training Center Laboratory (IARTC)	Turkey
Stephan Haefele	Rothamsted Research	UK
Gifty Acquah	Dry Spectral Lab / Rothamsted Research	UK
Olena Gavrylenko	Laboratory of Chemical and Biological Factors (LCBF)	Ukraine
Oleksandr Zaslavskiy	Laboratory of Chemical and Biological Factors (LCBF)	Ukraine
Shovkat Kholdorov	“SOIL COMPOSITION AND REPOSITORY, QUALITY ANALYSIS CENTER” The state Unitary Company	Uzbekistan
Odil Jabborov	“SOIL COMPOSITION AND REPOSITORY, QUALITY ANALYSIS CENTER” The state Unitary Company	Uzbekistan

## Annex II. Agenda

### Wednesday, 30 September 2020

11:00 – 11:15AM CET **Opening, endorsement of the agenda and group picture**  
*Mr. Giorgi Ghambashidze, EUROSOLAN Chair*  
*Mr. Joseph Uponi, AFRILAB Chair*  
*Ms. Lucrezia Caon, GLOSOLAN Coordinator, GSP Secretariat*

11:15 – 11:40AM CET **Item 1. Global Soil Laboratory Network updates**  
*Ms. Nopmanee Suvannang, GLOSOLAN Chair*

### Training session 1: External quality control

11:40AM – 12:20PM CET **Item 2. How to take action after participating in a PT**  
10 minutes presentation per country

- Introduction to the GLOSOLAN PT  
*Mr. Christian Hartmann, IRD France*
- The case of **Malawi**  
*Mr. Wesley Feldmann, FES – Agricultural Laboratory, Malawi*
- The case of **Nigeria**  
*Mr. Egbe Williams, National Soil Laboratory, Federal Ministry Of Agriculture And Rural Development Kaduna, Nigeria*
- Open discussion

*Moderators: Mr. Christian Hartmann, IRD France and Mr. Michael Watts, British Geological Survey*

12:20 – 1:00PM CET **Item 3. Downscaling GLOSOLAN PTs**  
10 minutes presentation per country

- The case of **Ethiopia**  
*Mr. Musefa Redi Abegaz, Holeta Agricultural Research Center, Ethiopian Institute of Agricultural Research, Ethiopia*
- The case of **Belgium**  
*Ms. Clémence Mariage, Axe Echanges Eau-Sol-Plantes, GxABT, Liege University, Belgium*

*Moderator: Mr. Christian Hartmann, IRD France and Ms. Lucrezia Caon, GSP Secretariat*

1:00 – 2:00PM CET **Lunch break**



2:00 – 2:20PM CET

**Item 4. Establishment of the National Soil Laboratory Networks (NASOLAN)**

*Mr. Filippo Benedetti, GSP Secretariat*

2:20 – 3:40PM CET

**Item 5. Case studies on the establishment of NASOLAN**

10 minutes presentation per country

- **Mozambique Soil Laboratory Network**

*Mr. Arlindo Manhica, Institute of Agricultural Research of Mozambique, Central Soil and Plant tissue testing Laboratory, Mozambique*

- **Hungarian Soil Laboratory Network**

*Ms. Agnes Nagy, Food Chain Safety Centre Non-profit Ltd., Soil Conservatory Laboratory, Velence, Hungary*

- **Zimbabwe Soil Laboratory Network**

*Mr. Washington Mutatu, Zimbabwe Sugar Association Experiment Station, Agricultural Chemistry & Soil Laboratory, Zimbabwe*

- **Ukrainian Soil Laboratory Network**

*Mr. Maksym Solokha, Laboratory of Instrumental Soil Research Methods of the National Scientific Center "Institute for Soil Science and Agrochemistry Research named after O.N. Sokolovsky", Kharkiv, Ukraine*

- **Nigerian Soil Laboratory Network**

*Mr. Egbe Williams, National Soil Laboratory, Federal Ministry Of Agriculture And Rural Development Kaduna, Nigeria*

- **Walloon laboratory network**

*Mr. Clémence Mariage, Axe Echanges Eau-Sol-Plantes, GxABT, Liege University, Belgium*

*Moderator: Mr. Filippo Benedetti, GSP Secretariat*

3:40 - 4:00PM CET

**Item 6. A small fish in a small sea – The perspective of a private soil testing laboratory in Portugal**

*Mr. Alan Evans, A2 Análises Químicas, Portugal*

Thursday, 1 October 2020

### Training Session 2: Equipment purchasing, use and maintenance

11:00 – 11:20AM CET **Item 7. Good practices on purchasing and operating laboratory equipment**  
*Ms. Lesego Mooketsi-Selepe, AFRILAB Vice-Chair*

11:20AM – 1:00PM CET **Item 8. Procurement of laboratory equipment**

- Presentation of the survey's results
- GLOSOLAN experience on procurement  
*Ms. Lucrezia Caon, GSP Secretariat*

*Moderator: Ms. Špela Velikonja Boltat, EUROSOLAN vice-Chair*

1:00 – 2:00PM CET **Lunch break**

2:00 – 4:00PM CET **Item 9. Equipment installation, use a maintenance – good practices**  
*Ms. Estefania Perez-Fernandez, Ms. Jessical Oliver and Mr. Leonardo Ramirez-Lopez, BUCHI Labortechnik AG, Switzerland*

Friday, 2 October 2020

11:00AM - 12:00PM CET **Item 10. Organization of EUROSOLAN inter-laboratory comparison exercises**

- **GLOSOLAN inter-laboratory comparison procedure**  
*Mr. Christian Hartmann, IRD France*
- **The experience of the Joint Research Centre**  
*Mr. Luca Montanarella, Joint Research Centre, European Commission*
- Open discussion

### Session 3: SOP harmonization

12:00 : 1:00 PM CET **Item 11. An innovative approach to the harmonization of the SOPs in GLOSOLAN – the case of the SOP on OC by Tyurin**  
*Ms. Shamrikova Elena, Eco-analytical Laboratory, Department of Soil Science, Institute of Biology of Komi Scientific Center of the Ural Branch, Russian Federation*

1:00 – 2:00 PM CET **Lunch break**

## Session 4: Decision making session

2:00 – 4:00 PM CET

### Item 12. EUROSOLAN position in GLOSOLAN

- Decision on the SOPs to harmonize in 2021 and identification of regional leaders
- Opinion on the need to update the FAO Soils Bulletin 74 – “Guidelines for Quality Management in Soil and Plant Laboratories” - (<http://www.fao.org/3/W7295E/W7295E00.htm>)
- Other

*Moderators: Ms. Lucrezia Caon, FAO and Mr. Giorgi Ghambashidze, EUROSOLAN Chair*

4:00 PM CET

### Closure of the meeting

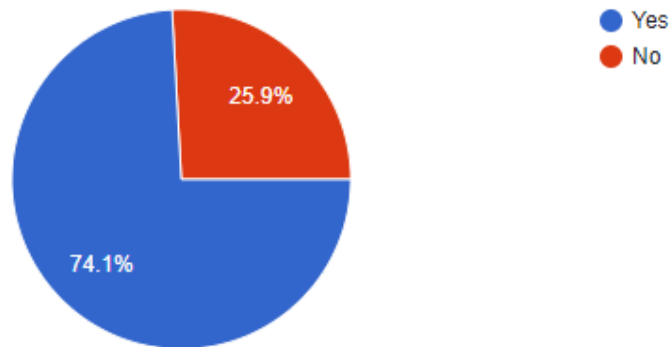
## Annex III. Survey on procurement

Participants to the meeting were asked to complete an online survey on procurement to enrich the discussion on equipment purchasing, use and maintenance. Please note that respondents were from EUROSOLAN and English speaking countries in Africa. In total, 58 responses were submitted.

The main questions in the survey and answers by participants are herewith reported:

**Is your laboratory directly responsible for procuring the equipment and consumables it needs?**

58 responses



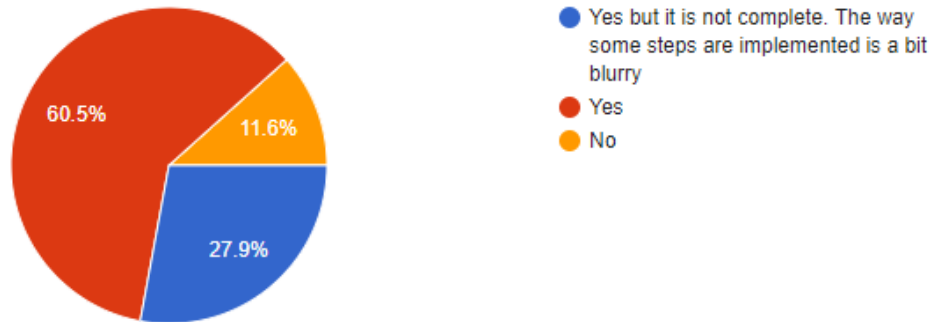
**How do you procure the equipment and consumables you need of?**

15 responses



Do you have a transparent and well organized procurement procedure (for example a written document reporting how the items to procure should be identified, technical specifications prepared, the bid launched and the offers evaluated)?

43 responses



How does your procurement work?

43 responses



When do you do a procurement for equipment and consumables?

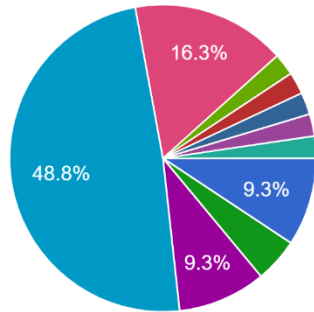
43 responses



▲ 1/2 ▼

### When do you do a procurement for equipment and consumables?

43 responses



● When i see a need to improve the analytical capacity of my laboratory (new equipment to replace obsolete one or add new tests) and when my consumables are running out

● 1, 4, 5, 6, 7

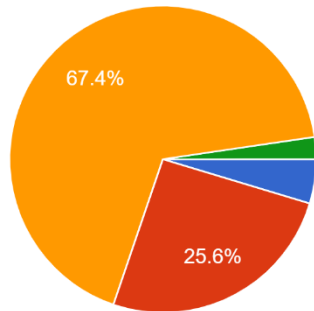
● Every time it is needed before running out consumables, when equipment needs to be repaired or when i get an order

● Answers 1, 5, 6, 7

▲ 2/2 ▼

### On what basis do you decide what vendor to rely on?

43 responses



● I go for the cheapest offer

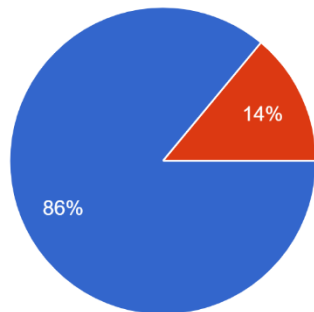
● I go for the best quality equipment/consumable

● I look for a compromise between the price and the quality of the equipment/consumable

● Some consumables have been traditionally purchased from certain vendors by my Institute so I go to them for such. Some consumables for some other vendors

### Do you have any evaluation criteria to evaluate the offers you receive from vendors (e.g. if the vendor offers any warranty, training and in person/remote support, etc.)?

43 responses



● Yes

● No

Thirty-five respondents reported the following evaluation criteria they adopt:

- We consider establishing contract repairs for continued maintenance
- Quality, Prize, Service
- Depends on the instrument
- Price, quality, delivery, payment terms
- Quality, interviewing present users, known examples to be checked
- Check with vendor where the equipment etc. has been supplied before and guarantee
- The supplier whose material is cheap and to a large extent of fairly good material. Some decisions will be taken into consideration, like if it is equipment, I will consider if a supplier put in name of the equipment, description of the material include in this are catalogue number, and other way of identification of the material reagent. This should include the name of the material, expiry date. Otherwise, before the usage of the product it might have expired thereby rendering it useless. Other important feature is storage. These are majorly consumables that we make use of in the laboratory, just like reagent too so if you watch out for quality in the material features like heat capacity of glassware.
- Availability of the product at time - reliability of the acquisition process - quality of the technical support of the vendor
- Call for suppliers quotations, Check the quotation if the quotes contain adequate information like Catalogue number, description and all of that Check for Price although the cheapest price does not mean the best , check for date of manufacturing at times especially if the materials to be purchased are reagent .
- Good technical backstopping
- Payment on delivery
- Dependability of the vendor
- The main criteria is technical specifications, then price
- Warranty, training and in person/remote support, spare parts
- Compliance to supply of required documents, technical specification and cost evaluations
- Reliability on the manufacturer and on the vendor
- Credibility-have they supplied before
- Price, service, quality, specifications (detection limit), speed, software
- Availability of the certificate of analysis
- Price, cost of analysis, warranty period, cost of spare parts and repairs, extra training for personnel, customer service options, user- and environment friendliness
- Quality
- His financial capacity, training, technical back up in case of breakdowns
- Warranty; Training and person/remote support; knowledge about the quality certification of the enterprise.
- After sales service and support, price, prompt delivery
- Warranty and safety when handling the product, training personnel,
- Experience of interaction with suppliers (their reliability). 2. Recommendations from colleagues from other institutions. 3. Stable image of the supplier company.
- Price and quality

- Vendor trained/certified by instrument manufacturer; Vendor is able to set up the instrument and ensure training of personnel; possibilities to react on warranty requirements in defined time range;
- The brand and make of the equipment, cost and after sale service ie training, and maintenance availability of spare parts electricity/power conformity
- Maintenance, reliable delivery, recurrence
- Technical maintenance
- It depends on the products: price, past experience, performance/price
- The availability of service, number of service personnel, response time