Food and Agriculture Organization of the United Nations

Report of the third Workshop of the International Network of Black Soils (INBS)

REPORT OF THE 3rd WORKSHOP OF THE INTERNATIONAL NETWORK OF BLACK SOILS

Teleconference, 13-14 December 2021

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Opening of the Session

The 3rd Workshop of the International Network of Black Soils (INBS) took place over two days, from 13 to 14 December 2021, from 13 to 16 CET, in a virtual format via the Zoom platform.

Mr. Lifeng Li, the Director of the Land and Water Division (NSL) of FAO opened the workshop and greeted all participants, highlighting the fundamental role of black soils in safeguarding global food security and mitigating climate change. He raised the issue of black soil degradation and their vulnerability due to human interventions. Li also stressed the expected outcomes of the workshop in terms of summarizing the progress and experiences of previous activities, including the design of a concrete workplans for the Network, strengthening technical cooperation among INBS members. He thanked INBS members for the great work carried out and wished all participants a productive workshop.

Mr. Ronald Vargas, Secretary of the Global Soil Partnership (GSP), welcomed participants to the 3rd workshop of the INBS and highlighted the need to forge solid cooperation among members to strengthen knowledge and technical exchange. He pointed out that the People's Government of Heilongjiang Province of China proposed establishing an International Research Institution on Black Soil (IRIBS) under the INBS during the 9th Plenary Assembly (PA) of the GSP to provide support on the implementation of the INBS's activities. Vargas also highlighted that this workshop was a good opportunity to discuss the role and mandate of the IRIBS and how to perform its activities under the workplan of the INBS. Finally, Mr. Vargas encouraged Member States to develop a concrete action plan for the INBS and to continue to position the subject of black soils to promote ongoing scientific research and policy development.

Item 1: Progress and challenges of the INBS activities implementation

Mr. Yuxin Tong, coordinator of the INBS, welcomed participants to the 3rd workshop of the INBS. He mentioned that INBS members had increased to 32 countries and one union since the establishment of the network in 2017. He highlighted the fundamental need to establish a definition of black soils that was widely recognized by the Network and by the Intergovernmental Technical Panel on Soils (ITPS), which helped to develop and approve the black soil definition, in 2019. He described the progress and the methodology of the Global Black Soils Distribution Map (GBSmap) and the report on the Global Status of Black Soils. The report, together with GBSmap, is expected to be launched in 2022. The challenges of completing the Black Soil Report and the GBSmap next year were debated, mainly in terms of the outreach of the Network globally, the mobilization of resources as well as the need for concrete field actions. Mr. Markus Anda, from Indonesia, raised questions about the inclusion of Andosols and Vertisols in the definition of black soils. Tong explained that any soil types that met the properties listed in the endorsed definition of black soils would be included, i.e. Andosols and Vertisols could be considered as black soils.

Item 2: INBS Work plan 2021-2022

Mr. Ivan Vasenev, the Chair of the INBS, mentioned that the INBS had made progress in its activities over the last two years. The INBS is expected to complete the Black Soil Report and the GBSmap by July 2022 and to launch them on World Soil Day (WSD). He stressed the need to develop a concept note and approach for the implementation of the International Black Soil Monitoring Network to unify the methodology of monitoring black soils. Producing data by using the same monitoring methodology will provide useful evidence and information for sustainable black soil management. He proposed new activities for the INBS's workplan, to be developed from 2022-2023, including:

- Global Black Soil Monoliths Collection (GBSMC);
- International Guidelines on Sustainable Black Soil Management;
- International Database of Best Available Practices in Black Soil Management;
- International Platform of Open Courses on BAP in Black Soil Management.

He also pointed out that the actions of the International Research Institution of Black Soils (IRIBS) will include aligning INBS activities and indicated that the establishment of the Institution held the potential to strengthen and promote the field activities of the INBS. He highlighted the importance of Resource Mobilization (RM) and introduced potential donors of the network especially those involved in the application procedure of the Technical Cooperation Project (TCP) project of FAO. At the end of the session, participants voted in a poll to decide on the INBS's priority activities of next year. The results of the votes showed that the International Guidelines on Sustainable Black Soil Management and International Platform of Open Courses on BAP in Black Soil Management were the top two priorities for the INBS in 2022.

Item 3: Cooperation opportunities between the Global Soil Laboratory Network (GLOSOLAN) and the INBS.

Mr. Filippo Benedetti, from the GSP Secretariat, presented the activities and field actions that were implemented in the GLOSOLAN network, bringing to attention the potential of collaboration with INBS activities. The major areas of the GLOSLAN include the execution of external quality control, harmonization of Standard Operation Procedures and training on the use of equipment, maintenance and purchasing. He proposed strengthening cooperation between the GLOSOLAN and the INBS to harmonize sustainable methods for black soil analysis, specifically, to motivate laboratories working on black soil analysis to join the GLOSOLAN, in writing, reviewing, and updating the GLOSOLAN Standard Operation Procedures (SOPs) and training materials, and to develop more sustainable methods on Soil Organic Carbon (SOC) analysis of black soils.

Item 4: Proposal for the establishment of the International Research Institution of Black Soils (IRIBS)

Mr. Guiqing Han, Former Chair of the INBS, from the Heilongjiang Academy of Agricultural Science, presented the background of the establishment of the IRIBS and explained that the Institution would be established by the Heilongjiang Academy of Agricultural Sciences (CAAS) under the framework of the INBS. He emphasized the urgent needs for sustainable black soil management and potential contribution of the IRIBS to global black soil knowledge exchange and capacity building. He

introduced the goals, mandate, rules, structure, and function of the IRIBS to members of the INBS and invited the institutions of the INBS members to join the Institution's activities. At the end of the session, he presented the IRIBS workplan and participants voted in a poll to decide the priority activities of the IRIBS in 2022. The result of the votes showed that priority activities were the development of a black soil information system, organizing at least one workshop or webinar per year on the sustainable management of black soils, and building capacities for soil laboratories and monitoring stations, following this order. There was no opposition towards the establishment of the IRIBS.

Mr. Luca Montanarella, from the Joint Research Centre (JRC) of the European Commission (EC) applauded the establishment of the IRIBS and expressed his willing to help to strengthen the collaboration among black soil countries, for example the cooperation between the European Union (EU) and China.

Item 5: Progress and challenges of the report of the Global State of Black Soils.

Ms. Lúcia H. C dos Anjos, the lead of Black Soil Working Group of the ITPS, introduced the general progress of the Black Soil Report as well as countries and experts that contributed to the Report. She proposed a new agenda and deadlines for the Report development ending next year. In here concluding statements, she called on member countries to support the assistance in supervising experts to complete the manuscripts and for their participating in the Editorial Board to review the Report. She was followed by a short presentation from each Chair of the Black Soil Report chapters.

Mr. Ivan Vasenev, the Chair of the INBS, presented the progress of chapter 1. The draft version of the chapter 1 has been developed, including the role of Black Soils, main challenges for sustainable black soil management, definition of Black Soils and the structure of the Report. Also, as an example to explain the challenges of sustainable black soil management, he illustrated the scientific research of Russia on the Black Soils.

Mr. Marcos Esteban Angelini, from the GSP Secretariat, presented the progress of the chapter 2. There were 14 countries that contributed to the chapter by sending their Black Soil portraits. He explained that according to the products already generated on the mapping the 1st category of the Black Soil Definition, it did not necessarily represent more productive soils than 2nd category, and that probability maps were deemed more informative that categorical maps.

Mr. Alexey Sorokin, from the Lomonosov Moscow State University, represented Mr. Pavel Krasilnikov, introduced the progress of the chapter 3. He explained that 29 co-authors had sent their contributions to the chapter. The draft version of the chapter will be developed by early 2022. He requested the support of INBS members to review and harmonize the texts from Latin America and the Caribbean and to find more contributions from Pacific region. Mr. Marcos Esteban Angelini and Ms. Lúcia H. C dos Anjos expressed their support to review and harmonize the texts from Latin America.

Mr. William May, from Agriculture and Agri-Food Canada, presented the progress and outlined the contents of chapter 4, the challenges to black soils and the ways/practices to overcome them. He highlighted that 95 percent of the chapter had been developed and would soon be finalized. He raised questions regarding missing information that was needed for the chapter such as a lack of good

management practices in tropical regions. Ms. Lúcia Helena Cunha dos Anjos expressed her support in funding global experts on black soil management in the tropical region of South American.

Mr. Luca Montanarella, presented the progress of chapter 5 and informed said that 10 national contributions reported national legislation related to Black Soils. However, no specific national legislation exists explicitly addressing Black Soils as a non-renewable natural resource to be protected. There is a need for a specific global governance instrument for Black Soils, given the fundamental role they play in safeguarding food security. He proposed that a specific global governance initiative addressing Black Soils should be submitted for consideration at the 10th Plenary Assembly of Global Soil Partnership.

Item 6: Progress and challenges of the GBSmap.

Mr. Yusuf Yigini, from the GSP secretariat, introduced the structure and products of the Global Soil Information System (GloSIS). The approach of GBSmap development will follow the same model as other soil information products of the GSP, adopting a county driven methodology. The technical guidelines and technical menu have been developed. Until now, 14 black soil countries sent their national black soil maps to the INBS, but not all of them using the INBS's methodology. He pointed out that according to member countries the soil color is the main limitation for obtaining data to develop the black soil map.

Mr. Marcos Esteban Angelini, from the GSP Secretariat, presented the methodology of the GBSmap including mapping framework, soil data, environmental covariates, models, and their validation. Mr. Angelini introduced the current stage of the black soil map that was sent to INBS by member countries. He concluded that missing data is the main constraint in obtaining information for the GBSmap, soil-type map disaggregation might be an alternative approach and sharing data between countries could improve development of national maps.

At the end of the session, Mr. Yuxin Tong opened a poll to participants to vote on the main constraints for producing national maps. The results of the votes showed that priority constraints are the lack of soil profiles and capacity.

Mr. Ivan Vasenev suggested adopting flexibility in producing the first version of GBSmap with multiple approaches such as soil classification methodologies for some member countries which do not have adequate capacities and a full set of the key soil profiles at this stage.

Mr. Yusuf Yigini commented on the voting result, stating that the INBS could organize training sessions for capacity development of mapping GBSmap or specific individual training with each country if necessary.

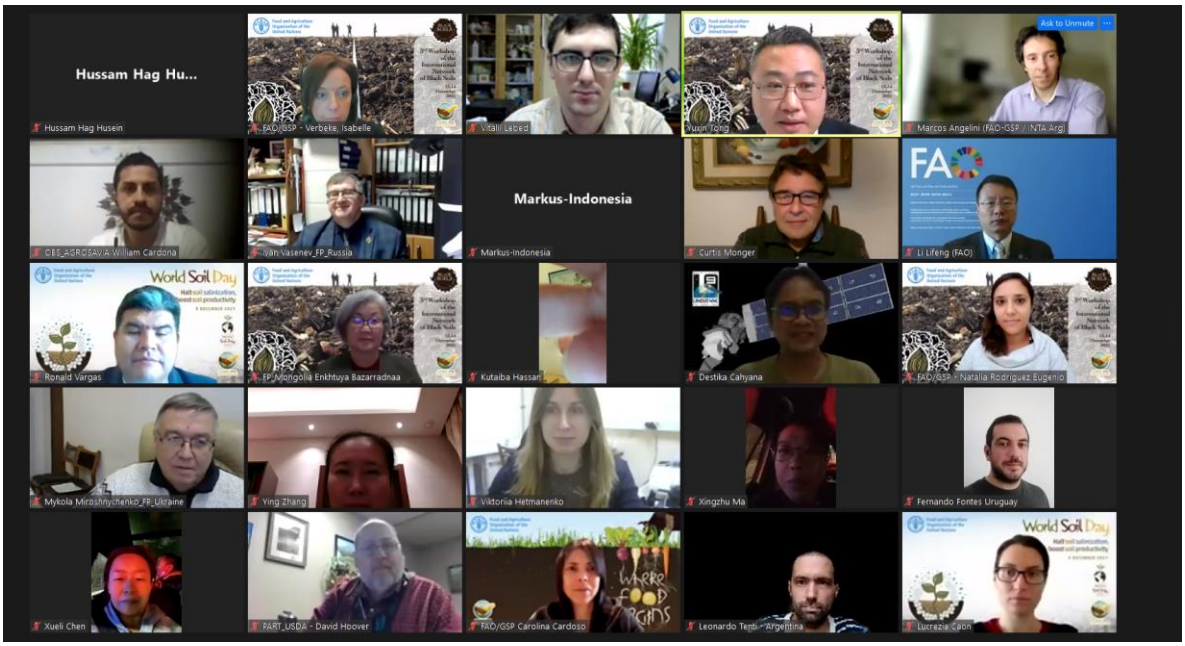
Closure of the meeting

Ms Lúcia H. C dos Anjos ended the session by thanking all INBS and GSP/FAO members and contributors to the Black Soil Report for participating and for being active in the discussions.

Mr. Yuxin Tong, coordinator of the INBS, highlighted the decisions made in this workshop in terms of INBS priorities for 2022, such as the establishment of the IRIBS, and the agenda for developing the Black Soil Report and the GBSmap.

Mr. Ivan Vasenev concluded the session by thanking all IBNS members for supporting the activities of the INBS and noted that he anticipated good outputs by the INBS in 2022.

ANNEX I - List of Participants



First Name	Country	Institution
Xiaoyuan Geng	Canada	Agriculture & Agri-Food Canada,
William May	Canada	Agriculture & Agri-Food Canada,
Lady Marcela Rodriguez Jimenez	Colombia	Profesional Universitario, Subdirección de Agrología
William Cardona	Colombia	Corporación Colombiana de Investigación Agropecuaria
Luca Montanarella	European Commission	JRC, EU
Lifeng Li	FAO	NSL, FAO
Ronald Vargas	FAO	GSP, FAO
Natalia Rodríguez Eugenio	FAO	GSP, FAO
Yuxin Tong	FAO	GSP, FAO
Filippo Benedetti	FAO	GSP, FAO
Lucrezia Caon	FAO	GSP, FAO
Konyushkova Maria	FAO	GSP, FAO
Yusuf Yigini	FAO	GSP, FAO
Marcos Angelini	FAO	GSP, FAO
Giorgi Ghambashidze	Georgia	Laboratory of the Scientific-Research Center of MEPA
Enkhtuya Bazarradnaa	Mongolia	Agroecology and business school of Mongolian Univeristy of Life sciences Darkham
Jun Ren	People's Republic of China	Jilin Academy of Agricultural Sciences
Dan Wei	People's Republic of China	Beijing Academy of Agriculture and Forestry Sciences
Guiqing Han	People's Republic of China	Heilongjiang Academy of Agricultural Sciences

Jingkuan Wang	People's Republic of China	Shenyang Agricultural University
Ying Zhang	People's Republic of China	Northeast Agricultural University
Liang Jin	People's Republic of China	Beijing Academy of Agriculture and Forestry Sciences
Jiubo Pei	People's Republic of China	Shenyang Agricultural University
Yang Gao	People's Republic of China	Cultivated Land Quality Monitoring and Protection Center of the Ministry of Agriculture and Rural Affairs
Xiaodan Wang	People's Republic of China	Beijing Academy of Agriculture and Forestry Sciences
Meng Wang	People's Republic of China	Jilin Academy of Agricultural Sciences
Jie Liu	People's Republic of China	Heilongjiang Academy of Agricultural Sciences
Yan Li	People's Republic of China	Beijing Academy of Agriculture and Forestry Sciences
Jiuming Zhang	People's Republic of China	Heilongjiang Academy of Agricultural Sciences
Xingzhu Ma	People's Republic of China	Heilongjiang Academy of Agricultural Sciences
Xueli Chen	People's Republic of China	Heilongjiang Academy of Agricultural Sciences
Hongguang Cai	People's Republic of China	Jilin Academy of Agricultural Sciences
Minggang Xu	People's Republic of China	Shanxi Agricultural University
Fan Yang	People's Republic of China	Cultivated Land Quality Monitoring and Protection Center of the Ministry of Agriculture and Rural Affairs
Bożena Smreczak	Poland	Institute of Soil Science and Plant Cultivation, State Research Institute
Cornie van Huyssteen	South Africa	Soil- and Crop- and Climate Sciences, University of the Free State
Leonardo Tenti	Argentine Republic	Soils Institute, Natural Resources Research Centre
Héctor Morrás	Argentine Republic	Soils Institute, Natural Resources Research Centre
Patricia Carfagno	Argentine Republic	Soils Institute, Natural Resources Research Centre
Miguel Angel Taboada	Argentine Republic	Soils Institute, Natural Resources Research Centre
Carlos Clerici	Eastern Republic of Uruguay	Natural Resources (DGRN) of the Ministry of Livestock, Agriculture and Fisheries (MGAP) for Uruguay
Fernando Fontes	Eastern Republic of Uruguay	Natural Resources (DGRN) of the Ministry of Livestock, Agriculture and Fisheries (MGAP) for Uruguay
Marcos Gervasio Pereira	Federative Republic of Brazil	Federal Rural University of Rio de Janeiro (UFRRJ)
Gustavo Vasques	Federative Republic of Brazil	Embrapa Soils
Lucia Helena Cunha dos Anjos	Federative Republic of Brazil	Federal Rural University of Rio de Janeiro (UFRRJ)
Ricardo Bergamo Schenato	Federative Republic of Brazil	Federal University of Santa Maria (UFSM)
Rachid Moussadek	Kingdom of Morocco	INRA- Morocco
Ermek Baibagyshov	Kyrgyz Republic	Society of Soil Scientists of Kyrgyzstan
Roza Orozakunova	Kyrgyz Republic	Chairman of the teaching methods Commission
Albert Markosyan	Republic of Armenia	Armenian Scientific Center of Soil Science, Agrochemistry and Melioration after H. Petrosyan
Toma Shishkov	Republic of Bulgaria	Institute of Soil Science, Agrotechnology and Plant Protection
Jorge Ivelic	Republic of Chile	Chilean Agricultural Research Institute
Destika Cahyana	Republic of Indonesia	Indonesian Center for Agricultural Land Resource Research and Development.
Markus Anda	Republic of Indonesia	Indonesian Center for Agricultural Land Resource Research and Development.

Yiyi Sulaeman	Republic of Indonesia	Indonesian Center for Agricultural Land Resource Research and Development.
Kutaiba Totonchi	Republic of Iraq	Office of Planning and Follow-up
Jorge Rafael Francisco	Republic of Mozambique	Mozambique Agricultural Research Institute (IIAM)
Ivan Vasenev	Russian Federation	Russian State Agrarian University - Moscow Timiryazev Agricultural Academy
Alexey Sorokin,	Russian Federation	the Lomonosov Moscow State University
Hussam Hag Husein	Syrian Arab Republic	Syria/Institute of Geography, FAU Erlangen Nurnberg University
Veronica Reynoso	the United Mexican States	Geosciences Center - National Autonomous University of Mexico Campus Juriquilla
Skye Wills	United States of America	USDA-NRCS-National Soil Survey Center
Curtis Monger	United States of America	USDA-NRCS-National Soil Survey Center
Stephen Roecker	United States of America	USDA-NRCS-National Soil Survey Center
Arkadiy Levin	Ukraine	National Scientific Center, Institute for Soil Science and Agrochemistry Research named after O.N. Sokolovsk
Viktoriia Hetmanenko	Ukraine	National Scientific Center, Institute for Soil Science and Agrochemistry Research named after O.N. Sokolovsk
Lyudmila Vorotyntseva	Ukraine	National Scientific Center, Institute for Soil Science and Agrochemistry Research named after O.N. Sokolovsk
Mykola Miroshnychenko	Ukraine	National Scientific Center, Institute for Soil Science and Agrochemistry Research named after O.N. Sokolovsk
Vitalii Lebed	Ukraine	National Scientific Center, Institute for Soil Science and Agrochemistry Research named after O.N. Sokolovsk
Vasyl Cherlinka	Ukraine	National Scientific Center, Institute for Soil Science and Agrochemistry Research named after O.N. Sokolovsk