ASP-VII/22/Report

Food and Agriculture Organization of the United Nations

GLOBAL SOIL PARTNERSHIP

Report of the Seventh Meeting of the Asian Soil Partnership

Online meeting, 9-10 March 2022

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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

Rome, 2022

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1. Introduction

The seventh meeting of the Asian Soil Partnership (ASP) took place on 9 and 10 March 2022 (see agenda in Annex I). Due to the ongoing COVID-19 pandemic, the meeting was held virtually on the online platform Zoom. Forty-six participants from 13 countries, including representatives from the Global Soil Partnership (GSP) Secretariat and FAO office for Asia and the Pacific (FAORAP) attended the meeting (see Annex II). The meeting aimed to (i) introduce national focal points to their role, (ii) inform the national focal points of GSPs' activities of regional interest, (iii) update each other on national activities on soil, (iv) define the ASP work plan in the new GSP Action Framework, (V) share progress on the Center of Excellence on Soil Research in Asia (CESRA), and (VI) present the work on the ongoing writing of the Status of the World's Soil Resources report 2025.

Mr Ronald Vargas from the GSP Secretary opened the meeting and highlighted two significant progresses, namely, the institutionalisation of the GSP and the development of a new GSP action framework. First, the GSP is undergoing the evaluation process to be elevated from a voluntary intergovernmental body to an official statutory body of FAO. The decision will be made by the committee of Agriculture of FAO and the member countries in July based on the evaluation of GSP implementation. The second highlight from Mr Vargas was about the GSP action framework being developed to better respond to challenges such as climate change and food insecurity. The framework will be rooted in the current five Pillar system but more action-oriented. The detailed indicators and missions of the framework will be submitted at the next Plenary Assembly (PA), where the national focal points are invited. Mr Vargas reiterated the role of Focal Points in the PA, sharing and stressing their regional interests in context of the new GSP action framework.

Engr. Pablo M. Montalla, the ASP Chair, welcomed all participants in the meeting and expressed gratitude to the GSP secretariat for promoting collaboration between member countries across Asia. The commitment of the member countries to the ASP and the importance of soils in global food production was acknowledged as well.

Ms Hang Thi Thanh Pham from the FAO Regional Office for Asia and the Pacific (FAORAP) highlighted the role of soil in the sustainable agri-food system and the four betters of FAO (better production, better nutrition, a better environment and a better life). Ms. Pham also introduced ongoing sustainable agriculture initiatives from FAORAP in wet, dry and saline land areas. Ultimately, she stressed the advantages of sharing good soil management practices and of collaborating with CESRA to support the implementation of initiatives at the regional level and eventually accessing environment and climate funds for Asian countries.

2. Introduction to the GSP and the role of the national focal points

Due to change of many national focal points in the region, the ASP coordinator, Ms Lucrezia Caon made a brief presentation on the Global Soil Partnership structure, mission and working strategy. In this regard, she emphasized that the GSP is currently shifting from organizing its work around Pillars of Action to organizing it in areas of work and shared that the final decision on this will be made at the 10th GSP Plenary Assembly in May 2022. At present, the GSP has 10 areas of work: awareness raising, capacity building, soil information, soil governance, soil biodiversity, soil erosion, soil fertility, soil pollution, soil salinity and soil organic carbon. The work of the GSP on specific soil threats results from the organization of global symposia. Technical networks like that on soil laboratories (GLOSOLAN), black soils (INBS), fertilizer analysis (INFA), salt-affected soils (INSAS), soil information institutions (INSII), soil biodiversity (NETSOB) and soil pollution (INSOP) support the GSP in achieving its objectives.

Ms Isabelle Verbeke, communication officer at the GSP Secretariat, concluded by introducing participants to the role and responsibilities of the national focal points (NFPs), which are:

- To promote sustainable soil management. As a nominee by the government, NFPs are encouraged to refer to the revised World Soil Charter, which stipulates recommended actions by governments;
- To act as a contact person in the country, through sharing and distributing relevant communications, information material, invitations to symposiums, meetings, webinars among networks in their country;
- To consolidate regional soil partnerships and actively engage in the annual regional assemblies, like the ASP;
- To bring all actors at the national level together and ensure coordination among the different national stakeholders dealing with soils;
- To promote GSP tools, priorities and activities and the wealth of resources available at the country-level;
- To identify potential new partners in their own country and liaise with them;
- To create a soil mailing list in each country to be used by the GSP as a channel to disseminate newsletters;
- To facilitate the GSP implementation and awareness-raising activities/actions/contests. It is important to include all actors in the GSP activities, for example, not only soil scientists but also teachers, students, and children, to celebrate World Soil Day; and
- To promote the inclusion of soils in the national agenda and at international conventions.

In addition, Ms Verbeke explained and advertised the National Soil Partnerships (NSPs) which comprise all interested and active partners in a country willing to contribute to sustainable soil management under the framework of the GSP. National Soil Partnerships already launched in the region are Mongolia, Philippines, and Thailand. She noted NSP's structural governance, main functions, operational tasks, and the way to establish an NPS, which are also available on the GSP website. Given that contents of the webpage were undergoing improvements, a request was made to countries that already established NSPs to update the entry point information such as establishment date, main functions and progress.

3. GSP developments of regional interest

Ms Caon presented GSP activities of regional interest, requesting that NFPs take action to facilitate their implementation at the national level:

- **SoiLEX**
  Is a GSP tool to promote soil governance. It is designed to provide countries with easy access to information on existing soil protection and soil degradation prevention legal instruments. Ms Caon requested NFPs to respond to the SoiLEX questionnaires, contribute to the regional legal analysis, support the update and growth of SoiLEX and to promote the use of SoiLEX at the country level since this tool could encourage countries to improve their legislation systems.

- **Global Soil Doctors Programme**

The programme is a farmer-to-farmer training programme to build the capacity of local farmers on sustainable soil management and support the work of national extension services. The programme relies on the identification of a national promoter to closely work with the GSP on the implementation of the programme at the national level. The promoter supports the GSP in identifying and training champion farmers to become Soil Doctors, who support other farmers on the practice of sustainable soil management by using educational materials and soil testing kits. Additional information on the implementation of the programme in the region is provided in Section 5.

- **International Network on Black Soils (INBS)**
  At present, Mongolia, Nepal, China, Indonesia and Thailand are members of this network, which bases its membership on the presence of black soils. Countries with soils that fall under the following definition were kindly invited and encouraged to register to the INBS:

  "Black Soils are characterized by a thick, dark-colored soil horizon rich in organic matter. Due to their inherent high fertility, these soils remain very sensitive to anthropogenic intervention and are prone to severe degradation. Because of their high soil organic carbon (SOC) content, they are also very sensitive and can be potential large sources of greenhouse gases. Extensively and intensively farmed, they constitute the food basket for many countries. Notwithstanding the relatively small percentage (7%) of the world's ice-free land surface Black Soils cover, it is crucial to promote their conservation and sustainable use to maintain their functioning in order to sustain their supporting food security while protecting the environment and mitigating climate change."

  To note that the distribution of black soils is being reported in the global black soil map.

  NFPs from INBS member countries were kindly invited to support the development and endorsement of an International Agreement on Black Soil Conservation, the International Guidelines on Sustainable Black Soil Management and an international platform of open courses on best available practices in black soil management.

- **Activities on Salt-affected Soils**
  Activities on salt-affected soils fall under the coordination of the International Network on Salt-Affected Soils (INSAS), which is organized in four working groups: (WG1) Assessment: Mapping, assessing and monitoring of salt-affected soils; (WG2) Sustainable management of salt-affected soils (practices, policy); (WG3) SAS and crops: Halophyte agriculture and salt-tolerant crops; (WG4) SAS and Water: Integrated soil and water management under saline/sodic conditions. NFPs were encouraged to share word on this network and to invite their national experts on the topic to join the working groups. They were also invited to complete a questionnaire on the status of monitoring and management of salt-affected soils by contacting the INSAS coordinator, Ms. Maria Konyushkova at maria.konyushkova@fao.org.

  Ultimately, NFPs were reminded that INSAS activities build on the recommendations of the Global Symposium on Salt-Affected Soils, which was held virtually in October 2022. The symposium's forthcoming outcome document was advertised.

- **Digital soil mapping**

The GSP is currently working on the development of the Global Soil Organic Carbon Sequestration Potential Map (GSOCseq v1.1), see figure 1. Among the ASP member countries, Bangladesh, Bhutan, Cambodia, India, the Philippines, Sri Lanka and Vietnam have submitted their national GSOCseq maps. Indonesia, Laos, Mongolia, Myanmar, Nepal, the Republic of Korea and Thailand are generating their GSOCseq maps in the framework of implementing a project financed by the Asian Food and Agriculture Cooperation Initiative (AFACI). National experts and NFPs were asked to reach out to Ms Isabel Luotto (Isabel.Luotto@fao.org) to report on the preparation of the map and to seek technical support.

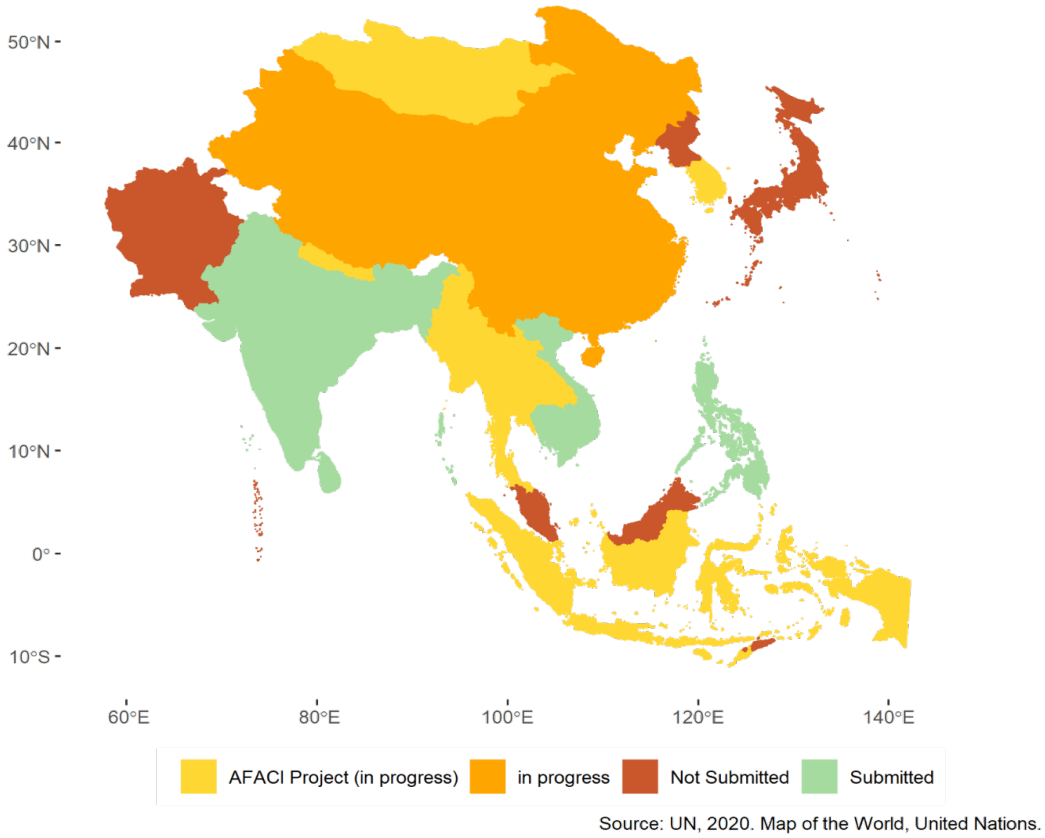

Figure 1. Submission of national maps to the Global Soil Organic Carbon Sequestration Potential Map (GSOCseq v.1.1)

In terms of the Global Salt-Affected Soils Map (GSASmap v1.0), 13 countries submitted their maps before the current meeting, see figure 2. Still, the maps of China, Japan, Vietnam, Malaysia, Singapore, North Korea, South Korea, and Indonesia are missing. National experts and NFPs were asked to reach out to Mr Christian Omuto (Christian.Omuto@fao.org) to report on the preparation of the map and to seek technical support.

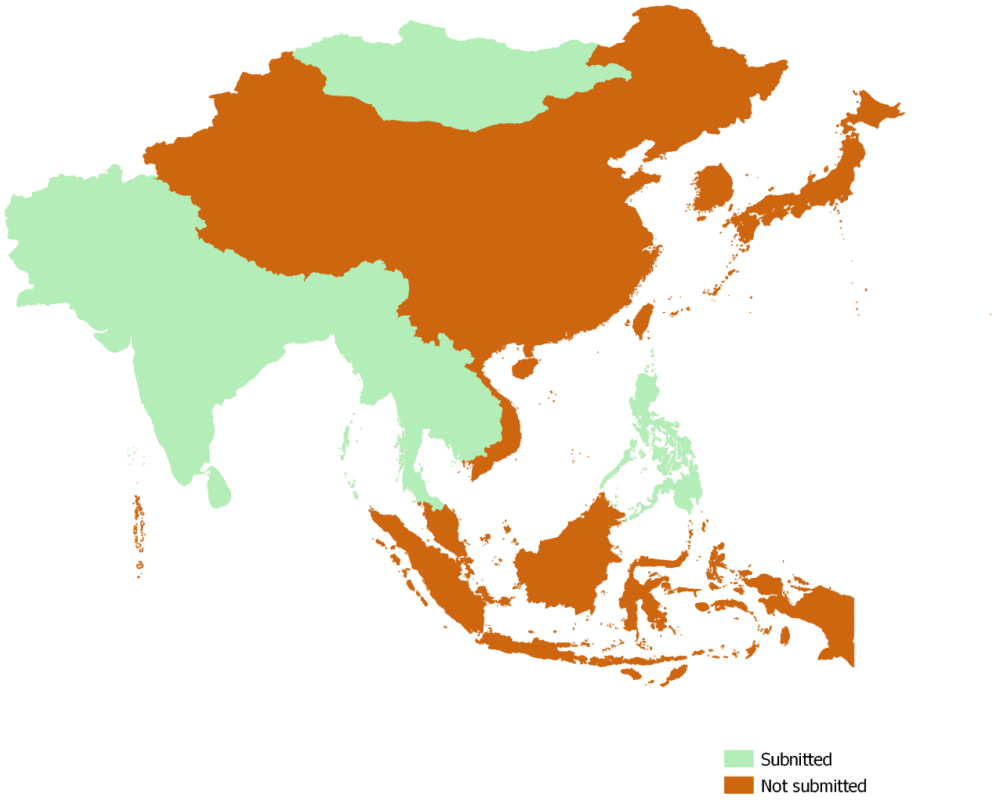

Figure 2. Submission of national maps to the Global Salt-Affected Soils Map (GSAS v.1.0)

Because of the role of the International Network of Soil Information Institutions (INSII) in defining the criteria and technical guidelines for the preparation of global maps, NFPs were kindly asked to update or nominate their experts in INSII. Additional information on the implementation of digital soil mapping activities in the region is provided in Section 5.

- **Global Soil Laboratory Network (GLOSOLAN)**
  The Global Soil Laboratory Network (GLOSOLAN) was established in 2017 to harmonise soil laboratory methods and data and build laboratories' capacity in soil analysis. At present, the network consists of 827 laboratories from 151 countries and focuses its work on internal and external quality control, the harmonisation of Standard Operating Procedures (SOPs), and capacity building on a large number of topics including the purchasing, use and maintenance of laboratory equipment. GLOSOLAN operates through Regional and National Soil Laboratory Networks (RESOLANs and NASOLANs). In Asia, GLOSOLAN operated through the Asian Soil Laboratory Network (SEALNET) that will be better discussed in Section 5.

  Looking at the role of NFPs in this activity, Ms. Caon kindly requested to ensure that they have nominated a National Reference Laboratory to downscale GLOSOLAN activities and to trigger actions in the country, including establishing National Soil Laboratory Networks. NFPs were also asked to motivate laboratories to participate in GLOSOLAN meetings and training sessions, to support the establishment of NASOLANs and to translate GLOSOLAN materials into their local languages as needed.

- **International Network on Fertilizer Analysis (INFA)**
  INFA was established in December 2020 to build and strengthen the capacity of laboratories in fertilizer analysis laboratories and improve quality standards. At present, the network counts on 154 members from 80 countries; only 28 of these labs are from Asia. INFA operates through three working groups on (WG1) the harmonisation of methodologies for fertiliser analysis, (WG2) capacity building of fertiliser laboratories, and (WG3) governance, policy and regulation on fertiliser use.

  INFA kindly requested NFPs to encourage soil laboratories and other key stakeholders in their country to join the network, to facilitate the implementation of activities related to the intercomparison tests to be performed, and to facilitate the search and access to information related with regulatory frameworks regarding fertiliser use, and imports at the national, regional, and global levels.

- **Soil biodiversity**
  Activities on soil biodiversity are coordinated by the International Network of Soil Biodiversity (NETSOB), which is the implementing body of the Global Soil Biodiversity Observatory (GLOSOB). GLOSOB aims to monitor and forecast the condition of soil biodiversity and soil health and will serve as the framework for developing policies, promoting good practices, and developing national capacities on the state-of-art tools and methods on soil biodiversity and soil health assessment and maintenance. NETSOB is connected to the Global Soil Biodiversity Initiative (GSBI) and to the Convention on Biological Diversity (CBD). Its work is organized into four working groups on (WG1) measurement, assessment and monitoring of soil biodiversity, (WG2) policies and legal instruments related to soil biodiversity, (WG3) economics of soil biodiversity, and (WG4) sustainable use, management and conservation of soil biodiversity.

  NFPs were kindly asked to invite their experts to join NETSOB and its working groups, and to attend the first meeting of the joint working group GLOSOLAN/NETSOB on 15 March 2022. The coordinator of NETSOB is Ms Rosa Cuevas Corona (Rosa.CuevasCorona@fao.org).

- **Soil pollution**
  The GSP is currently investing in three activities on soil pollution:
  1. The writing of technical guidelines for assessing, mapping, monitoring and reporting soil pollution. Interested experts were asked to contact Mr Sergejus Ustinov (Sergejus.Ustinov@fao.org)
  2. The launch of the International Network on Soil Pollution (INSOP) in April 2022 to stop soil pollution and achieve the global goal of zero pollution. INSOP will work to improve knowledge on the full cycle of soil pollution, strengthen technical capacities and legislative frameworks for the prevention of soil pollution, and will promote the exchange of experiences and technologies for the sustainable management and remediation of polluted soils. Institutions and individuals can join the network and contribute to its workplan.
  3. The launch of pilot site studies to assess and manage/remediate contaminated agricultural soils. This activity aims at agricultural areas contaminated or that may be contaminated by heavy metals due to agricultural practices. Eventually, this project will support national/local governments in developing a methodology to perform a risk assessment and define which practices can be adopted to reduce the availability of heavy metals in soils and hence reduce the uptake by plants and the contamination of the food

chain. If interested, countries are encouraged to contact Ms Natalia Rodriguez Eugenio (Natalia.rodriguezeugenio@fao.org) with the region's basic information on hydrogeology and agricultural practices.

4. National updates on soil

Countries were invited to share their progress and news on soil.

Bangladesh

Mr Manzurul Hoque and Mr. Md. Taiabur Rahmanupdated reported that fertilizer guidelines and trainings were provided to farmers in 2021. The country also worked on releasing documentaries, articles, and organized award-giving ceremonies as a part of the World Soil Day (WSD) 2021 celebration. The Global Soil Doctors Programme is under implementation in the country with the appointment of fifteen champion farmers (Soil Doctors). Bangladesh representatives prepared and submitted the World Reference Base for Soil Resource (WRB) Soil Classification Map, and Soil Salinity Map to the GSP, and actively worked on soil data/information activities with the support of the AFACI project. Ultimately, the Soil Atlas of Bangladesh, comprising 50 digital soil maps was launched on the WSD 2021.

Bhutan

Mr Tashi Wangdi reported that sustainable land/soil management practices were implemented throughout the country thanks to a project funded by the Green Climate Fund and the Global Environment Facility. Training to youths, on nutrient management were organized as well as institutional capacity building on Digital Soil Mapping thanks to the financial support of AFACH and FAO. The World Soil Day 2021 was celebrated at the local level and a "Low Emission Development Strategy (LEDS) 2021" was developed. Mr Wangdi mentioned that the Bhutan government targeted to shift from synthetic fertiliser to organic fertiliser by reducing the use of synthetic fertiliser by 50% by 2050. Furthermore, the difficulties of utilising collected soil data were reported, and followed by the acknowledgement of the AFACI project that improved national capacity on soil data management and soil mapping. Moreover, the need of receiving support to monitor soil biodiversity (especially earthworms' population) was stressed. To conclude, the participation of Bhutan National Reference Laboratory soil proficiency testing exercise by GLOSOLAN in 2021-2022 was mentioned.

Cambodia

Mr Seng Vang reported that the WRB Soil Map of Cambodia was produced, which depicts the distribution of thirteen different reference soil groups and that a four-year pilot study is under implementation to test the potential of agro-ecological practices in carbon finance systems. These activities are being implemented under the slogan "promote sustainable management of soil resource protection, conservation and sustainable productivity". The implementation of the FAOs' AFACI project increased the institutional capacity on digital soil mapping and soil profile database management. Moreover, the cooperation with the Land Development Department of Thailand under the Lancang-Mekong special fund is allowing for the implementation of the Global Soil Doctors Programme. Mr Vang outlined further activities to be implemented under GSPs' Pillar 4 and 5: (i) the production soil property mapping, (ii) the development of a National Soil Profile database management system, (iii) the harmonisation of WRB soil resource for the development of the Soil Atlas of Asia and the Cambodian National Soil Information System, and (iv) the development of a Soil Survey Handbook for Cambodia.

Japan

Mr Hideo Kubotera briefly presented the status of research institutes studying local agriculture in Japan. Forty-seven prefectures in the nation have their own agricultural research institutes working in corporation with the Japanese government, universities, and the National Agriculture and Food Research Organization. He added that each institute conducts soil monitoring surveys in around 3500 monitoring points in farmers' fields. One of the research outcomes from the institutes in 2021 was to successfully estimate soil organic carbon and Carbon:Nitrogen ratio in Japanese cultivated fields, showing that the volcanic areas in Japan have a high volume of soil organic carbon. The result was published in the peer-reviewed journal *Soil Science and Plant Nutrition*. Reference to the paper was shared.

Malaysia

Ms Khazana Ibrahim reported on the "Site-Specific Nutrient Management (SSNM)" project that started in 2016 with an initial focus on paddy granary areas. However, over the years, the project was developed through the Twelfth Malaysia Plan and expanded to areas beyond the paddy granaries. Ms Ibrahim pointed out the development of a soil fertility map as one of the outcomes. Other activities implemented in the country in 2021 relate to the production of guidelines for Agricultural Development on Sloping Land and the launch of soil awareness campaigns through billboards on the road. The Malaysian government also provided national training on sustainable soil management for agricultural officers to empower national officers, which includes two series of courses held in 2021. In addition, the Center of Excellence Green Agriculture in MARDI Cameron Highlands was launched in 2021 to focus on conducting pest/disease control research in an environmentally friendly manner. Three books titled "Common Soils of Peninsular Malaysia", "Handbook Penyiasatan", and "Handbook Pemuliharaan Tanah" were published, and laboratories in the country are participating on the GLOSOLAN proficiency testing and promoting the implementation of good laboratory practices.

Mongolia

Ms Enkhtuya Bazamadnaa introduced the Atar-4 campaign which aims to develop sustainable agriculture management in Mongolia. The campaign was launched in 2020, and it is expected to provide various sustainable agroecosystems and expand agricultural farming in a way of climate change adaptation, soil protection, and restoration. In 2021, Ms Bazamadnaa participated in the Mongolian national farmers' forum, where she gave a presentation on sustainable soil management and all training sessions organised by GSP and AFACI. While actively engaging in workshops, she also contributed to a research paper about soil pH mapping published in a scientific journal. In addition, Voluntary Guidelines for Sustainable Soil Management were translated into Mongolian to build local farmers' capacity, and the Global Soil Doctors Programme was discussed with the GSP to be implemented in 2022. Moreover, in 2020-2021, existing legacy soil data for black soil mapping, SOC and SOCseq mapping, and the national soil profile database were collected. Laboratory staff joined Ulaanbaatar's capacity-building training sessions, and organic fertiliser analysis standards were developed and approved in 2021.

Pakistan

Mr Waqar Ahmad reported the efforts done in the country to promote sustainable soil management, with a particular link to circular economy. Such activities focused on animal waste and residue management, and conservation tillage aimed at carbon sequestration. Under Pillar 2, Pakistani experts took a leading role in moderating the discussion to develop the soil policy brief for Asia. Moreover, a call to identify potential promoters of the Soil Doctors programme was launched. The Certified Professional Soil Scientist (CPSS) Program implemented in the country allowed experts from other

countries (especially Australia) to visit Pakistan and build the capacity of local institutions. On the other hand, Pakistani soil experts got the chance to visit foreign countries as well. Major efforts were done to celebrate the World Soil Day in the country, and this was advertised through national media. Several technical documents were developed in the framework of Pillar 3, covering the main soil-related issues affecting the country. Mr Ahmad also mentioned the recent release of key-studies on micronutrient fertilizer use in the country (the first time a publication of its kind has been developed in the country). The involvement of country experts in INSII and GSP mapping activities was mentioned, alongside the efforts made to reclassify the country's soils according to the WRB system in order to submit the data needed for the Soil Atlas of Asia. Pakistan participation in GLOSOLAN and SEALNET, highlighting the nomination of Mr Muhammad Abbas Aziz as vice-chair for the regional soil laboratory for Asia was mentioned.

The Philippines

Mr Pablo M. Montalla began his contribution recalling the implementation of the National Soil Health Program by the the Filipino government, and scaling up of the recarbonization of soils through RECSOIL under the leadership of the Bureau of Soils and Water Management (BSWM). Other activities included (i) the implementation, monitoring and documenting of appropriate sustainable soil management (SSM) practices in the country, (ii) the development of infographics to promote SSM, and (iii) the advancement of the Philippine National Soil Conservation Roadmap. Mr Montalla listed the various initiatives implemented over the last year in the country under the umbrella of Pillar 2, with particular focus on the World Soil Day celebrations and the reactivation of the Philippine Soil Partnership. The contribution to the database on soil research and development developed in the region as well as the contribution to GSP mapping activities were also mentioned. Lastly, Mr. Montalla reported that the 2nd meeting of the Philippines Soil Laboratory Network (Phil NASOLAN) was successfully implemented in December 2021 and the participation of the country's soil laboratories in GLOSOLAN and SEALNET activities was remarked.

Sri Lanka

Mr H. Kadupitiya reported that a number of participatory activities involving farmers were implemented in 2021. These focused on fertilizer recommendation, soil mapping, land degradation assessment, climate smart agriculture, soil conservation and a reduction of chemical inputs to soil. Mr Kadupitiya spoke about the conversion of local soil units into the WRB systems, in order to ensure country participation in the preparation of the Soil Atlas of Asia and other GSP mapping products. Examples of the maps produced were shared.

Thailand

Mr Pitayakon Limtong listed the sites with degraded soil in which SSM practices were successfully implemented. The World Soil Day was celebrated with huge participation in the many events organized all over the country. In addition , country experts contributed to the policy brief of Asia that is currently under finalization, a celebration for the volunteer soil doctors was organized which counted on more than 80000 participants, and 1000 sets of pH test kits were provided to the GSP for the implementation of the Global Soil Doctors Programme worldwide. The CESRA operation strategy and action plan 2022-2026 was defined, wherein countries from the Lancang-Mekong area were involved in the CESRA network and the regional and national soil research programmes (mainly on soil organic carbon stock and land degradation neutrality) were implemented. Thai experts actively contributed to the Soil Atlas of Asia and to the improvement of the national soil information system (THAISIS), in the framework of implementing the FAO's AFACI project. Thailand's contribution to the

GSP thematic maps was reported as well. Lastly, Mr. Limtong reported about the establishment of the Thai Soil Laboratory Network and the organization of the first national proficiency test in Thailand, which aims to assess the performance of soil laboratories in analyzing soil pH, CEC, electrical conductivity, soil organic carbon, phosphorus and potassium.

5. Asian Soil Partnership work plan for the years 2022-2023

This session aimed to discuss the Asian Soil Partnership work plan for the years 2022-2023. Due to the ongoing work on the new GSP action framework, it was noted that this was likely to be the last time activities were organized and discussed by Pillars of Action.

- **Pillar 1**

  Ms Carolina Cardoso Lisboa (GSP Secretariat) informed participants about the GSP initiative on the recarbonization of global soils (RECSOIL) that aims to scale-up the implementation of SSM practices (SOC-centered) while helping to decarbonize the economy and fostering sustainable development. The initiative will provide technical support and improve the national and regional capacities on SSM while providing financial support to smallholder farmers through payment of annual financial incentives to support the transition and implementation of SSM practices. The implementation of RECSOIL happens in six steps:

  - Step 1 – Identification of priority areas at regional level: supported by GSOCmap, GSOCseq (optional GloSIS maps) coupled with National Soil data information;
  - Step 2 – Identification of Farmers Associations and stakeholders: description of roles and responsibilities;
  - Step 3 – RECSOIL-Terms of Agreement (ToR), bilateral and multilateral agreements with Farmers Associations, Technical and Extension services/advisers;
  - Step 4 – Extension program support: Soil Doctors Program and technical training: MRV Protocols and capacity development: GLOSOLAN
  - Financial incentives, 1st payment: Implementation-Based approach: based on total costs of SSM implementation, X% total cost (annual fees over a period of 4 years, 1st at time 0);
  - Step 5 – Implementation of SSM: supported by VGSSM + Fertilizer Code + RECSOIL Technical Manual + other GSP tools;
  - Step 6 – MRVs: Green Path, SSM Protocol and C-Market Path, MRV Protocol and support from GLOSOLAN for laboratory analysis
  - 2nd payment: Result-Based approach: Green Path: compliance with SSM (4 years after implementation) and C-Market: t CO2e/year.

  The project is currently being implemented in pilot countries like the Philippines in Asia. Based on the existing tools already present in a country or region, RECSOIL can be adapted case to case, involving different actors from soil laboratories to farmers associations. In this regard, Ms Cardoso stressed the important role that RECSOIL might play in facilitating the implementation of SSM by farmers.
  Participants were encouraged to contact Ms Cardoso for further information at Carolina.CardosoLisboa@fao.org.

- **Pillar 2**
  - **Soil Atlas of Asia**

Ms Caon informed participants that due to some delays on the preparation of the regional maps for the Atlas, its publication was postponed to July 2022. A pre-launch event will be organized at the 22nd World Congress of Soil Science (31 July - 5 August 2022, GLASGOW). At the upcoming 5th Editorial Board meeting (from 3 to 5 May 2022), the WRB map of the region will be endorsed together with the related text, the text in the Atlas will be reviewed and the next steps to finalize and launch the Atlas will be discussed. Focal Points were asked to ensure that country representatives in the Editorial Board attend the meeting, and to review the list of contributing authors to be acknowledged in the atlas.

- **Policy brief**

  Mr Munir Zia (ASP Pillar 2 Chair) reported on the writing of the policy brief "the multi-faced role of soil in Asia" recalling that its writing was agreed during the 6th ASP meeting. The document is in its final editing stage, as some sections should be reduced. In this regard, the proposal was to turn some national case-studies into national policy briefs. NFPs well accepted this proposal that will be coordinated by Mr Zia and Mr Waqar Ahmad (Pakistan Focal Point) with each country focal point.

  A call will be launched among ASP Focal Points to collect high-quality pictures relevant to the topics to be included in the policy brief. The document will be likely presented during the webinar on soil governance organized by the Asian Research Institute for Environmental Law (ARIEL) and other institutions dealing with environmental legislation in April 2022.

- **Global Soil Doctors Programme**

  In addition to what was reported by Ms. Caon in Section 3, Ms Silvia Pioli (GSP Secretariat) informed participants that the programme is currently under implementation in:

  - *Bangladesh*: trainings were implemented, posters translated, and 15 Soil Doctors were identified, see figure 3.

Promoting institutions	Ministry of Agriculture; Bangladesh Agricultural Research Council (BARC); Soil Resource Development Institute (SRDI)
Municipalities	Chandina of Cumilla District, Chuadanga Sadar of Chuadanga District and Baliadangi of Thakurgaon District
Period	July- Ongoing
Topic of the training	SSM for nutrition-sensitive agriculture
Module	Soil 4 nutrition
N of trainers	10
N of participants at general meeting	450
N of Soil Doctors selected	15

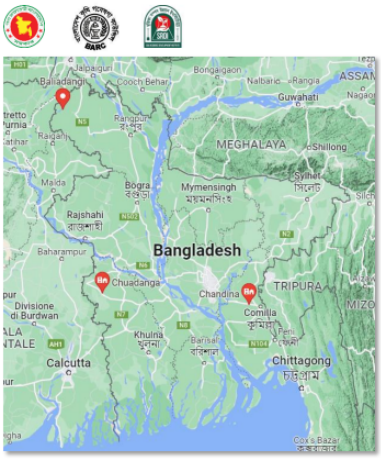

Figure 3. Implementation of the Global Soil Doctors Programme in Bangladesh

- *Thailand:* posters were translated in Thai and the first preliminary meeting to get to know the programme took place. The programme is being implemented in the framework of the Lankang-Mekong project

- *Philippines:* the first preliminary meeting was held with the promoter, who is identifying a pilot area and reviewing the educational material. As a next step, the GSP and the promoter will elaborate a work plan.

  Ultimately, Ms. Pioli invited participants to contact the Soil Doctors programme coordinators (Silvia.Pioli@fao.org, carolina.oliverasanchez@fao.org) to get more information about the possibility to implement the programme in more Asian countries.

- **Webinar on soil governance**
  Mr Filippo Benedetti (GSP Secretariat) informed participants about the webinar on "Soil governance related to food security and land degradation neutrality", which is co-organized by several institutions dealing with environmental legislation in the region under leadership of the Asian Research Institute for Environmental Law (ARIEL) and should be implemented in the second half of April 2022.
  The session aims to bring together interested stakeholders to discuss global, regional and national soil issues, with a focus on food security. The ASP was invited to participate, the ASP Chair to deliver the opening remarks, and Mr Zia and Mr Ahmad to present outcomes of the policy brief that is under finalization. Country Focal Points were kindly asked to attend the session and to share the invitation with their national networks.

- **Pillar 3**
  Mr Benedetti highlighted the efforts made by former ASP Pillar 3 Chair, Mr Kazuyuki Yagi from Japan, in creating a database, compiling information on soil research and development activities in the region. The current database is a good baseline but needs to be enriched by including more details on the type of research performed, the donors that supported each project and other aspects, still to be defined. Mr Pitayakon Limthong (Thailand Focal Point) and the members of the Thai delegation volunteered to take leadership on this activity. Mr Limthong will coordinate with Ms Caon and Mr Benedetti to define which additional information should be included in the database and to start collecting information on each country. Focal Points were asked to kindly support this activity by sharing information upon request.

  Mr. Benedetti informed participants that the NENA Soil Partnership and the African Soil Partnership would also like to contribute to this activity.

- **Pillar 4**
  In addition to what was reported by Ms. Caon in Section 3, Ms Isabel Luotto (GSP Secretariat) presented GSP activities on soil information and data. Ms Luotto reported the involvement of Asian experts in the capacity building sessions organized to support the map submission from each country, and on those implemented under the AFACI project. In this regard, she invited focal points to follow up with national experts who are working or have not yet started

working on the soil thematic maps to report on progress and to seek technical support, by contacting:

- Ms Isabel Luotto (Isabel.Luotto@fao.org) for the Global Soil Organic Carbon Sequestration Potential Map (GSOCseq) v1.1.
- Mr Christian Omuto (Christian.Omuto@fao.org), GSP Secretariat, for the Global Salt-Affected Soils Map (GSASmap) v1.0.
- Mr Marcos Angelini (Marcos.Angelini@fao.org), GSP Secretariat, for the Global Black Soil Distribution Map (GBSmap).

Moreover, Ms Luotto presented the International Network of Soil Information Institutions (INSII), which is composed of nationally mandated institutions and GSP partners developing the Global Soil Information System (GLOSIS). In this regard, Ms Luotto kindly asked Asian Focal Point to confirm that the current contact network for INSII from their countries is up to date and complete (database is accessible here).

- **Pillar 5**

  In addition to what reported by Ms. Caon in Section 3, Ms Gina P. Nino (ASP Pillar 5 Chair), reported on the Asian Soil Laboratory Network (SEALNET), which held its 5th meeting in October 2021. The network currently counts 123 soil laboratories from 21 Asian countries. However, Ms Nilo brought to the attention of participants that there are some countries in the region that have no laboratory registered in SEALNET and in the Global Soil Laboratory Network (GLOSOLAN) yet. These are Brunei Darussalam, Democratic People's Republic of Korea, Maldives, Singapore, and Timor-Leste. Ms Nilo invited the Focal Point of Afghanistan to nominate a National Reference Laboratory to lead the implementation of GLOSOLAN activities in the country, especially in regard to the establishment of the National Soil Laboratory Network (NASOLAN). A regional Steering Committee was established to support the Chair and vice-Chair of SEALNET (Ms Gino P. Nilo from the Philippines and Mr Muhammad Abbas Aziz from Pakistan) in following up the activities implemented within each country (establishment of NASOLAN, monitoring the activities of the National Reference Laboratory), and the implementation of the SEALNET work plan. The latter was endorsed during the last SEALNET meeting and was developed considering the results of an online survey that was launched before the meeting among network members to collect information on the main needs and priorities of Asian soil laboratories. Ms Nilo highlighted the remarkable contribution of Asian laboratories to GLOSOLAN, especially regarding the harmonization of Standard Operating Procedures (SOPs) and capacity building initiatives (shooting training videos and organization of webinars). Finally, Ms Nilo shared a proposal made during the last SEALNET and GLOSOLAN annual meetings: the identification of a Center of Excellence for Regional Laboratories (CERLAB) to lead the harmonization of methods, measurements and indicators for the sustainable management and protection of soil resources, and to support GLOSOLAN and the Regional Networks in conducting capacity building activities by providing training facilities.

6. Updates on the Center of Excellence on Soil Research in Asia (CESRA)

Mr Charlie Navanugraha (director of CESRA) informed participants that CESRA activities have been strengthened by FAO, LDD and SFST at the national and regional level, and that the CESRA operation strategy and action plan has been formulated for further activities. At present, the CESRA network counts on 18 regional partners, 9 national partners and the Asia Hub Network. The form to register in CESRA was advertised.

The next CESRA activities will focus on (i) building the capacity and partnerships on SSM, (ii) establishing the Asian Soil Information Systems, (iii) promoting and assisting the implementation of SEALNET, (iv) supporting the implementation of the Global Soil Doctor Programme in Asia, and (v) further building the CESRA network.

7. Status of the World's Soil Resources (SWSR) report 2025

Mr Ashok K. Patra (Intergovernmental Technical Panel on Soils, ITPS) introduced participants to the Status of the World's Soil Resources (SWSR) report 2025. The report is the continuation of the SWSR 2015 report to update the scientific community on the soil information gathered in the period 2015-2025, and to make such information available to policy makers and other decision makers involved in SSM. The SWRS 2025 report will focus on eight risks to soil functions that are linked to the UN Sustainable Development Goals (SDGs). These are:

- Soil erosion;
- Nutrient mismanagement;
- Salinization and sodification;
- Soil carbon change;
- Pollution;
- Soil sealing and urbanization;
- Soil biodiversity change;
- Physical degradation.

Focal Points will be asked to nominate regional experts to join the Editorial Board, which is currently composed by ITPS members. This should be done by December 2022, according to the proposed timetable. The final report will be published in 2025, during celebrations of the World Soil Day.

8. Conclusions and way forward

The ASP agreed on meeting in June 2022 to align its structure and work plan with the decisions made at the 10th GSP Plenary Assembly. The eighth ASP meeting will take place in February 2023. The meeting will either be in person or virtual depending on the availability of financial resources, the presence of a hosting country, and the COVID-19 situation.

Annex I. Agenda

Food and Agriculture Organization of the United Nations

GLOBAL SOIL PARTNERSHIP

Seventh Asian Soil Partnership Meeting

9 and 10 March 2022

from 7AM to 10AM CET (Rome time)

Virtual meeting

9 March 2022	
7:00 – 7:10	**Welcome and Opening Remarks** Mr Ronald Vargas, GSP Secretary, FAO Engr. Pablo M. Montalla, ASP Chair Ms Hang Thi Thanh Pham, FAORAP
7:10 – 7:15	**Approval of the agenda and group picture** *Ms Lucrezia Caon, GSP Secretariat*
7:15 - 7:45	**Item 1. Introduction to GSP and communication activities** • **GSP focal points clarifications** • **National Soil Partnership webpages** *Ms Isabelle Verbeke, GSP Secretariat* *Ms Lucrezia Caon, GSP Secretariat*
7:45 - 8:10	**Item 2. GSP developments of regional interest** *Ms Lucrezia Caon, GSP Secretariat*
8:10 – 10:00	**Item 3. National updates on soil** • Bangladesh, Mr Md. Taiabur Rahman and Manzurul Hoque • Bhutan, Mr Tashi Wangdi • Cambodia, Mr Seng Vang • Japan, Mr Hideo Kubotera • Malaysia, Ms Khazana Ibrahim • Mongolia, Ms Enkhtuya Bazamadnaa • Pakistan, Mr Waqar Ahmad • Philippines, Mr Pablo M. Montalla • Sri Lanka, Mr H.K Kadupitiya • Thailand, Mr Pitayakon Limtong
10:00	**Closure of the day**

10 March 2022	
7:00 – 9:30	**Item 4: GSP Pillars updates and way forward** • **Pillar 1.** RECSOIL: Recarbonization of global agricultural soils *Ms Carolina Cardoso Lisboa, GSP Secretariat, FAO* • **Pillar 2.** o Soil Atlas of Asia *Ms Lucrezia Caon, GSP Secretariat, FAO* o Policy brief *Mr Munir Zia, ASP Pillar 2 Chair* o Soil Doctors programme *Ms Silvia Pioli, GSP Secretariat, FAO* o ARIEL Webinar on soil governance: "Soil governance related to food security and land degradation neutrality" *Mr Filippo Benedetti, GSP Secretariat, FAO* • **Pillar 3:** o Regional database on Research and Development • **Pillar 4.** o Digital soil mapping *Ms Isabel Luotto, GSP Secretariat, FAO* • **Pillar 5.** o SEALNET updates *Ms Gina Nilo, SEALNET Chair*
9:30 – 9:45	**Item 5: Updates on the Center of Excellence on Soil Research in Asia (CESRA)** *Mr Charlie Navanugraha, CESRA Director General*
9:45 - 10:00	**Item 6. Status of the World's Soil Resources report 2025** *Mr Ashok Patra, Editorial Board*
10:00	**Closure of the meeting**

Annex II. List of participants

Ms Hang Thi Thanh Pham, FAO Regional Office for Asia and the Pacific

Mr Ronald Vargas, Global Soil Partnership, FAO

Ms Lucrezia Caon, Global Soil Partnership, FAO

Mr Sangkyung Lee, Global Soil Partnership, FAO

Mr Filippo Benedetti, Global Soil Partnership, FAO

Ms Isabelle Verbeke, Global Soil Partnership, FAO

Ms Carolina Cardoso Lisboa, Global Soil Partnership, FAO

Ms Silvia Pioli, Global Soil Partnership, FAO

Country	**Full Name**	**Institution**
Bangladesh	Md. Taiabur Rahman	Soil Resource Development Institute (SRDI)
Bangladesh	A. F. M. Manzurul Hoque	Soil Resource Development Institute (SRDI)
Bangladesh	Jalal Uddin Shoaib	Soil Resource Development Institute (SRDI)
Bhutan	Tashi Wangdi	National Soil Services Centre, Department of Agriculture, Ministry of Agriculture & Forests
Cambodia	Seng Vang	Department of Agricultural Land Resources Management
Cambodia	Phy Chhin	Department of Agricultural Land Resources Management
China	Junling Zhang	China Agricultural University
India	Ashok Patra	ITPS
Indonesia	Markus Anda	Indonesian Centre for Agricultural Land Resource Research and Developement
Japan	Hideo Kubotera	NARO
Malaysia	Khazana Ibrahim	Department of Agriculture
Malaysia	Jeyanny Vijayanathan	Forest Research Institute Malaysia (FRIM)
Mongolia	Enkhtuya Bazarradnaa	Institute of Plant and Agricultural Sciences of Mongolian State University of Life Sciences
Pakistan	Waqar Ahmad	NCEG, The University of Peshawar
Pakistan	Munir Zia	Fauji Fertilizer Company Limited
Philippines	Pablo M. Montalla	Department of Agriculture - Bureau of Soils and Water Management
Philippines	Gina P. Nilo	Department of Agriculture - Bureau of Soils and Water Management
Philippines	Evelyn Fernando	Bureau of Soils and Water Management (BSWM)
Philippines	Bergil Bernaldo	Bureau of Soils and Water Management (BSWM)
Philippines	Shirley Buduan	Bureau of Soils and Water Management (BSWM)
Philippines	Marjiorie JEan TAO	Bureau of Soils and Water Management (BSWM)
Philippines	Beatriz Magno	Bureau of Soils and Water Management (BSWM)
Philippines	Florfina Sanchez	Bureau of Soils and Water Management (BSWM)
Sri Lanka	Ajantha de Silva	Ministry of Food and Agriculture
Sri Lanka	H. Kadupitiya	Natural Resources Management Center

Thailand	Pitayakon Limtong	Land Development Department / Soil and Fertilizer Society of Thailand
Thailand	Kreeyaporn Devahastin	Land Development Department
Thailand	Charlie Navanugraha	CESRA
Thailand	Benjaporn Chakranon	Land Development Department (LDD)
Thailand	Pattaraporn Sojayya	Land Development Department (LDD)
Thailand	Chanida	Land Development Department (LDD)
Thailand	Sunsanee Arunyawat	Land Development Department (LDD)
Thailand	Sumitra Watana	Land Development Department (LDD)
Thailand	Jutharat	Land Development Department (LDD)
Thailand	Tanomkwan	Land Development Department (LDD)
Thailand	Saranya Norkaew	Land Development Department (LDD)
Thailand	Arthit	Land Development Department (LDD)
Thailand	Nopmanee Suvannang	Land Development Department (LDD)