

NENA-VII/22/Report



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



Report of the Seventh Meeting of the Near East and North African Soil Partnership

Online meeting, 22-23 March 2022

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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

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1. Introduction

The seventh meeting of the Near East and North African (NENA) Soil Partnership took place on 22 and 23 March 2022 (see agenda in Annex I). Due to the ongoing COVID-19 pandemic, the meeting was held virtually on the online platform Zoom. Nineteen participants from 10 NENA countries, including representatives from the Global Soil Partnership (GSP) Secretariat, attended the meeting (see Annex II). The meeting aimed to (i) remind national focal points about their role, (ii) inform the national focal points on GSP's 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, and (v) present the ongoing work on the Status of the World's Soil Resources report 2025, being written.

Mr Rachid Moussadek, NENA Soil Partnership Chair opened the meeting by informing participants on two ongoing activities within the GSP: 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. Ultimately, a new GSP action framework is under development 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 to the next Plenary Assembly (PA), where the national focal points are invited. Ms Lucrezia Caon, NENA Soil Partnership coordinator reiterated the role of national focal points (NFPs) in the PA, sharing and stressing their regional interests in context of the new GSP action framework.

2. GSP developments of regional interest

Ms Caon presented GSP activities of regional interest, requesting NFPs to 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 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 then 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, Morocco, Iraq and Syria 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 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 NENA member countries, Oman, Palestine, Sudan and the United Arab Emirates have submitted their national GSOCseq maps. Iran, Lebanon, Morocco, Syria, Tunisia and Yemen are generating their GSOCseq maps. 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.

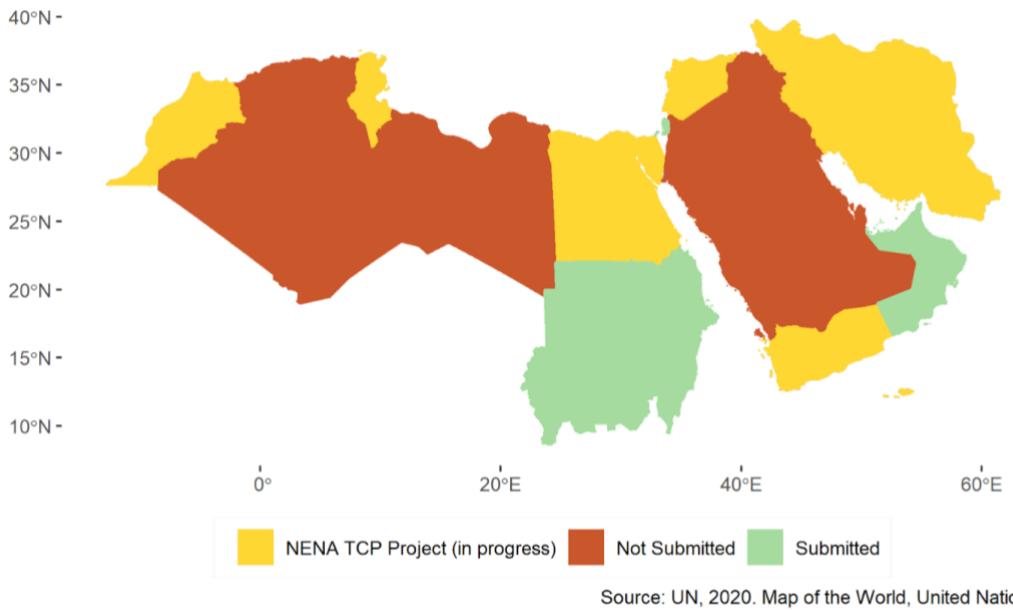


Figure 1. Submission of national maps to the Global Soil Organic Carbon Sequestration Potential Map (GSOCseq v.1.1)

In terms of the Global Salt-Affected Soils Map (GSASmap v1.0), 16 countries submitted their maps before the meeting, see figure 2. Regional training on the preparation of national salt-affected soils maps was held in February 2022 under the framework of the TCP RAB 3802 project. 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.

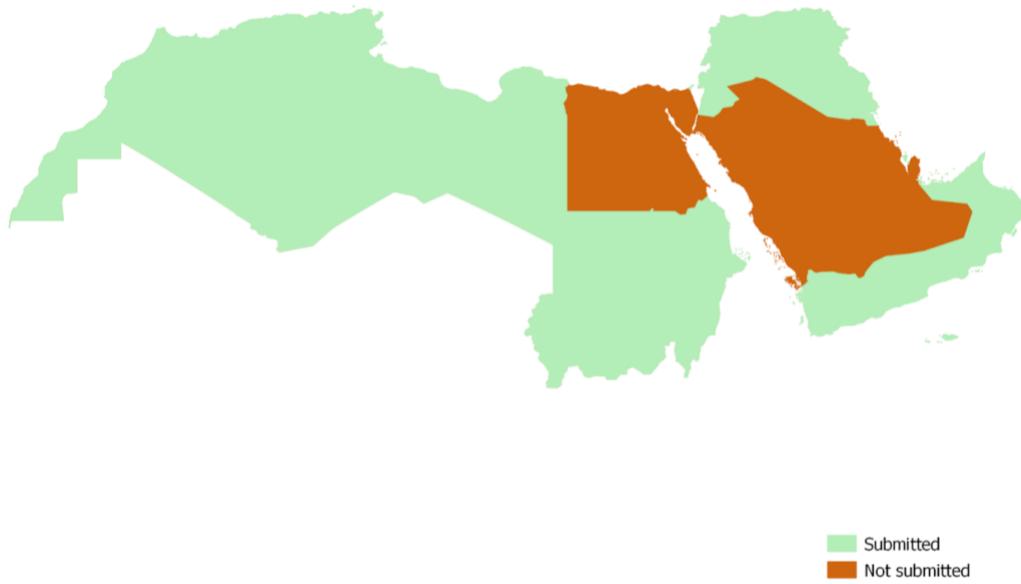


Figure 2. Submission of national maps to the Global Salt-Affected Soils Map (GSAS v.1.0)

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 NENA, GLOSOLAN operates through the NENA Soil Laboratory Network (NENALAB) 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 14 of these labs are from NENA. INFA operates through three working groups on (WG1) the harmonisation of methodologies for fertilisers analysis, (WG2) capacity building of fertiliser laboratories, and (WG3) governance, policy and regulation of 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, (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. 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.

3. National updates on soil

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

Iraq

Ms Iman Sahib Salman reported the participation of national experts to various initiatives, aimed at improving the promotion of sustainable soil management (SSM) within the country. A number of participatory activities involving farmers were implemented in 2021, thanks to the collaboration with the Directorate of Agricultural Extension and Training. These focused on seed production, greenhouse agriculture, water desalination systems and the application of renewable energy to soil management. Ms Salman also informed attendees about the celebrations of the World Soil Day 2021. A survey was launched to get information on fertilizer use and management at the country level. Research on salt-affected soils in the country was presented, which aimed to study the main drivers of salt accumulation in Iraqi soils, and to explore potential practices to boost soil productivity under saline conditions. Lastly, Ms Salman cited the commitment of national experts to the GSP mapping activities and the involvement of soil laboratories in GLOSOLAN and NENALAB activities.

Kuwait

Ms Hana'a A. Burezq informed participants about the greenhouse trials made in the country to assess the benefits of biochar-based biofertilizer in maize crops, both in terms of yield increase and water saving. The awareness on salt-affected soils and their management was raised thanks to the organization of a national training (14 lectures in total) and the development of a salinity training manual. Ms. Burezq also reported a research conducted on bioorganic soil conditioner, which resulted in the patent of an innovative product. Currently the country is facing the need for an increase of food

production with lower application of external inputs to soil. This led to the establishment of the Kuwait Biochar Initiative, which aims to provide a platform to inform on and support the application of biochar, to be used by farmers and other potential stakeholders. Finally, with regard to soil analysis, two manuals on the determination of soil chemical and physical parameters were produced, to be used by country laboratories.

[Lebanon](#)

Ms Fatima Beydoun informed participants about the Technical Cooperation Programme (TCP) that is being implemented in the country to build the capacity on SSM of national soil resources. Training sessions mostly focused on digital soil mapping and soil analysis were undertaken. The former aims to develop a national assessment report based on the soil salinity map, the soil organic carbon map, and the soil carbon sequestration potential map (all under preparation). A national action plan report will be developed contextually, to be used to derive that information (technical aspects, policy, governance) needed to develop SSM practices. The sessions on soil analysis were designed to facilitate the implementation of GLOSOLAN material (Standard Operating Procedures - SOPs, guidelines, best practices, etc.) by the soil laboratories operating in the country.

[Morocco](#)

Mr Rachid Moussadek informed participants that a national program for promoting conservation agriculture was implemented to promote SSM in areas at high risk of soil degradation. Activities to raise the awareness on soils included the translation of GSP publications to local languages, contribution to the development of the new NENA soil policy briefs, the promotion of GSP in the country through social media and the celebration of the World Soil Day. Furthermore, the cooperation among soil research centers operating in the country was strengthened, to establish connections to launch joint research projects and a national database on soil research and development was created. Initiatives on digital soil mapping focused on the finalization of the Moroccan soil information system and the development of the first soil fertility map of oasis areas in the country. Additionally, the participation of national experts in GSP mapping activities (both training sessions and delivery of products) was mentioned. Mr Moussadek closed his contribution by mentioning the efforts made in the country to improve the analytical capacity of soil laboratories by the adoption of the GLOSOLAN SOPs. Moreover, laboratories in the country are working together towards the establishment of the National Soil Laboratory Network of Morocco.

[Oman](#)

Mr Hamad Al-Dhuhli presented the efforts made over last year to build the capacity of country experts to develop several thematic soil maps. This was achieved through the support of a national consultant who is guiding experts to deliver the products (finalization is expected by June 2022). An assessment on the capacity of soil laboratories operating in the country was conducted. This was used to develop an ad-hoc training program which involves 5 institutions located in different parts of the country. A national database for soil laboratory practices and data is under development as well.

[Palestine](#)

Mr Imad Ghanma informed participants about ongoing projects, promoting the implementation of SSM practices in the country. These involved the rehabilitation of agricultural areas to improve land productivity by performing several interventions in the field (among all: stones removing, building terraces in sloping areas, irrigation facilities) and enhancing the adoption of conservation agriculture practices (minimum tillage and crop rotation). Several meetings with farmers and other key stakeholders aimed at improving the awareness and the capacity on soil management and the participation of country experts developing the policy briefs for the NENA region was mentioned as

well. Mr Ghanma reported the studies currently ongoing in the country, on the effects of conservation agriculture practice on soil organic carbon content and the efforts in digital soil mapping, which led to the release of GSP soil thematic maps. Additionally, Mr Ghanma highlighted that a national soil survey is not yet established in the country. However, thanks to the support of external institutions it was possible to convert the existing products into the WRB system. Finally, the participation of Palestinian soil laboratories in GLOSOLAN and NENALAB activities was mentioned.

Syria

Ms Riham Zahalan presented on behalf of Mr Muhammad Manhal Alzoubi, the activities implemented in the country aiming to promote SSM, such as the publication of a manual on fertilizer use and irrigation, the application of raise bed agriculture and land levelling. Ms Zahalan remarked the contribution of Syrian experts to the preparation of policy briefs in the region, as well as other activities implemented in the country to raise the awareness on soils to a wide range of stakeholders. Soil research mainly focused on salt-affected soils, with a particular focus on halophyte agriculture and new methodologies to measure electrical conductivity in soils. A stocktaking exercise was done to identify main gaps in digital soil mapping in the country, in order to develop a roadmap to establish the national information system. The first products (soil classification map and land use map) were already released. Ms Zahalan highlighted the great contribution of Syrian experts to NENALAB and GLOSOLAN in the harmonization of SOPs, the translation of network material in Arabic, and the organization of online training sessions. Lastly, the implementation of a national inter-laboratory comparison programme was mentioned, alongside an update on the current status of the Syrian National Soil Laboratory Network (NASOLAN), whose first meeting will be held soon (under organization).

Tunisia

Ms Leila Ben Dhiab described a series of initiatives implemented in the country to promote SSM. These focused on (i) the improvement of agricultural productivity in irrigated areas, (ii) the rational use of phosphate fertilizers, (iii) development of new strategies for forage legume production in pastoral areas, and (iv) enhancing carbon neutrality and climate change mitigation. Soil awareness activities on salt-affected soils and the use of organic fertilizers were conducted in the north-eastern part of the country. In addition to that, Ms Ben Dhiab informed participants of the World Soil Day celebration that took place in the country in 2021. Some of the soil-related research conducted in the country focused on the use of farm waste in agriculture. More in details, a study explored how wastewater derived from the olive oil production processes might be applied as organic amendment in sandy soils. A TCP project was implemented in the country to build the capacity of experts in digital soil mapping. Lastly, Ms Ben Dhiab presented the involvement of country laboratories in GLOSOLAN and NENALAB activities.

United Arab Emirates

Despite not being able to join the session, Ms Bayan Mahmoud Athamneh shared a video produced by the Environmental Agency of UAE (EAD) on the application of cutting-edge technologies of remote sensing and drones to perform monitoring, assessment and mapping of soil quality. This was done, incorporating the use of artificial intelligence (AI) models to analyse data, find relations and patterns, and to identify and forecast soil quality scenarios. The first phase of this project was completed successfully in 2021 and a technical report was published which can be considered as a reference on using drones and AI in soil quality monitoring. In 2022, the second phase of the Drones project will attempt to build on top of the methodology developed in the first phase and expand on all parameters to scale the scope for the project.

4. National focal points and National Soil Partnerships

Ms Isabelle Verbeke, communication officer from the GSP Secretariat, concluded the first day 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, to share and distribute 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 NENA Soil Partnership;
- 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. At present, there are no National Soil Partnerships in the region. Finally, she touched on NSPs structural governance, main functions, operational tasks, and the way to establish an NPS, which are also available on the [GSP website](#).

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

This session aimed to discuss the NENA 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 the last time that 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. 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 in Asia, Latin America and Africa. 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 (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**

Following up with the three policy briefs published in 2019 (regional needs, salt-affected soils, soil and green water), during the [6th NENA Soil Partnership meeting](#) it was decided to work on more topics. Therefore, a call was launched among regional experts to decide the themes to cover and to establish working groups to develop the documents. Ms Leila Ben Dhiab (Pillar 2 Chair for the NENA region) reported the status of the soil policy briefs under preparation in the region:

- **Life and soil biodiversity**
Manhal Alzoubi (Syria) is currently drafting the document to be shared for review with working group members.
- **Soil pollution in the NENA countries**
A document drafted by Manhal Alzoubi (Syria) is currently with the working group for review.
- **Soil fertility and implementation of sustainable soil management (SSM) to boost soil productivity**
The document prepared by Talal Darwish (Lebanon) was reviewed and endorsed by the working group and is now with GSP for final review.
- **Best practices to prevent soil erosion (including water harvesting)**
The document prepared by Ayda Ben Rhouma (Tunisia) was reviewed and endorsed by the working group and is now with GSP for final review.
- **Conservation agriculture and carbon sequestration**
The document prepared by Rachid Musadak (Morocco), Manhal Alzoubi (Syria) and Leila ben Dhiab (Tunisia) was reviewed and endorsed by the working group and is now with GSP for final review.
- **Soil sealing**
The development of this policy brief was postponed to the 2022 workplan. Meeting participants agreed to include soil crusting in this document as well. A working group will be established to work on these two topics.

Once published, all policy briefs will be translated in both Arabic and French, as done for the previous ones.

- **Global Soil Doctors Programme**

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

- *Morocco*: a first preliminary meeting was held with the promoter, which is identifying a proper location to implement a pilot in harmonization with existing projects. As a next step, the GSP and the promoter will elaborate a work plan and translate the programme material as needed.

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 NENA countries.

- **Pillar 3**

Mr Bahram Taheri (Pillar 3 Chair for the NENA region) recalled the importance of creating a database to group together information on the soil-related research and development programs implemented in the region. This activity, implemented at a preliminary stage by the Asian Soil Partnership, aims to provide a platform where experts might exchange research and development projects and outcomes in an easier way. Mr Taheri remarked the importance of designing an adequate architecture of the database in order to ensure nexuses to inter- and trans-disciplinary research (also across regions) and to develop active collaborations between research centres and other institutions and stakeholders. However, since developing an online

platform requires a rather big investment in terms of time and financial/technical resources, it was agreed to work on a more basic version of the database. Once information is collected from each country, the database will be tested as an offline tool. Depending on the use and interest of countries in the database, this might be converted into an online platform, to be updated on a regular basis. A regional facilitator will put Mr Taheri in contact with the Pillar 3 Chairs of the other regional partnerships interested in the activity (Asia and Africa) in order to discuss its development.

- **Pillar 4**

In addition to what was reported by Ms. Caon in Section 3, Ms Isabel Luotto (GSP Secretariat) presented the GSP activities on soil information and data. Ms Luotto reported about the involvement of NENA experts in the capacity building sessions organized to support the map submission from each country, and on those implemented under the TCP RAB 3802 project. In this regard, she invited focal points to follow up with national experts who are working or have not yet start working on the soil thematic maps to report on progresses 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 by nationally mandated institutions and GSP partners developing the Global Soil Information System (GLOSIS). In this regard, Ms Luotto kindly asked NFPs to confirm that their current country - network contact for INSII is up to date and complete (database is accessible [here](#)).

- **Pillar 5**

In addition to what was reported by Ms. Caon in Section 3, Mr Abdelmjid Zouahri (NENA Pillar 5 Chair), reported on the NENA Soil Laboratory Network (NENALAB), which held its 2nd meeting in October 2021. The network currently counts 89 soil laboratories from 19 NENA countries. Mr Zouahri brought to the attention of participants that all countries in the region have at least one laboratory registered in the network. However, NFPs were asked to continue spreading word of GLOSOLAN in order to encourage more laboratories to join the network. Moreover, NFPs were invited to nominate or reconfirm their National Reference Laboratory to lead the implementation of GLOSOLAN activities in the country, especially in regard to the establishment of their National Soil Laboratory Network (NASOLAN). A regional Steering Committee was established to support the Chair and vice-Chair of NENALAB (Mr Abdelmjid Zouahri from Morocco, Ms. Riham Zahalan from Syria and Ms. Hana Nabil from Morocco) with following up on the activities implemented within each country (establishment of NASOLAN, monitoring the activities of the National Reference Laboratory), and the implementation of the NENALAB work plan. The latter was endorsed during the last NENALAB 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 NENA soil laboratories. Mr. Zouahri highlighted the remarkable contribution of NENA laboratories to GLOSOLAN, especially regarding the harmonization and translation of Standard Operating Procedures (SOPs) in Arabic and capacity building initiatives (organization of webinars).

6. Updates on the implementation of the TCP RAB 3802 project

Ms Caon reminded participants that the project was formulated to address the need to raise awareness on the importance of soils in the region and to conserve and manage them sustainably. Soil degradation is a growing threat in NENA, as recalled by the Arab Ministers of Agriculture and Water who called for “establishing a sustainable regional mechanism to build individual and institutional capacities necessary to plan, design, and implement water and land management programs efficiently”. The project involves 12 countries in NENA: Egypt, Jordan, Iran, Iraq, Morocco, Lebanon, Sudan, Tunisia, Yemen, Palestine, Oman and Syria, and officially started on 21 October 2020 with a budget of USD 400 000. Because of delays on the recruitment of the national consultants to the project, the end date was extended to December 31, 2022.

Laboratory activities:

The project aims to build the capacity of soil laboratories in soil analysis through the assessment of laboratory capacities and needs and the provision of trainings. Needs that cannot be addressed through the project will be included in a second phase project proposal. Beneficiary laboratories to the project are [National Reference Laboratories](#) in GLOSOLAN (see Table 1).

Table 1. Beneficiary laboratories to the project

Country	Laboratory official name	Laboratory short name or acronym	Laboratory full address
Syria	Damascus lab	ANRR-lab1	Rural of Damascus - Karahta
Sudan	Main Soil Laboratory-Land Evaluation Research Section, LWRC-ARC	Main Soil Laboratory-LERS-LWRC-ARC	P.O.Box 126, Land and Water Research Centre, Agricultural Research Corporation, Wad Medani, Sudan
Yemen	Soil, Water and Plant Lab.	SWPL	Renewable Natural Resources Research Center (RNRRC), Agricultural Research & Extension Authority (AREA). Dhamar, Yemen.
Tunisia	Laboratoire Central d'analyses des sols	LCAS	17.rue Hédi Karray Ariana
Iraq	Soil Chemical Analysis Laboratory	SCHAL	Soil Chemical Analysis Lab, Soil and Water Resources Center, Agricultural Researches Directorate, Ministry of Science and Technology.
Palestine	Nablus central laboratory	Nablus central laboratory	Palestine - Nablus city - Askar camp.
Morocco	Lab. des analyses des sols, eaux et plantes	Lab-URECRN	Unité de l'Environnement & Ress.Naturelles Centre Régionale de la Recherche Agronomie de Rabat Avenue Mohamed Belarbi Alaoui B.P 6356-rabat Institut ,10101-Maroc
Iran	Soil and Water Research Institute Laboratory	SWRI-Lab	Soil & Water Research Institute. Imam Khomeini Blvd., Meshkin Dasht , Karaj, I.R.Iran
Oman	Soil and Water Lab	SWL	P O Box 50 PC 121 Seeb
Jordan	Soil Lab	Soil Lab	National Agricultural Research Center (NARC), P.O.Box:639, Baq'a19381 Jordan
Lebanon	Lebanese Agricultural Research Institute - Fanar	LARI – Soil, Fertilizer & Plant department	Fanar, Jdeideh, El Metn, Lebanon, P.O. Box 90-1965
Egypt	Analyses & Studies Component	ASC	9 ElGamhaa St., Soil , Water & Environment Res. Inst.,Agriculture Research Center

However, the number of beneficiary laboratories was expanded (see table 2) to meet the request of the Ministries of Agriculture in beneficiary countries. To note that the project is not under implementation in Iran and Egypt because of the lack of support from the government.

Table 2. Number of beneficiary laboratories in each country

Country	Number of beneficiary laboratories	Trainer
Oman	2	Dr. Dafalla from Sudan
Yemen	2	
Lebanon	2	
Sudan	10	
Jordan	3	
Syria	4	
Iraq	10	
Palestine	4	
Tunisia	1	Dr. Bahri from Tunisia
Morocco	1	Dr. Moughli from Morocco

The implementation of laboratory activities will lead to the following outcomes:

1. Laboratory assessment report. This includes recommendations for the government to include in the National Action Plan under preparation by the national consultants on soil data management and mapping;
2. Training programme;
3. Video recording of the training sessions (for virtual trainings);
4. Recording of training videos (for in person training);
5. Regional report on university laboratories needs and capacities. In the attempt to meet countries' requests to work with university laboratories, these are being invited to complete an online survey to assess their capacities and needs. Questionnaire results will NOT be included in the national assessment reports but will be compiled in a regional report with country specific notes. Information collected through this questionnaire will be used to write a second project proposal with university laboratories as beneficiaries.

An overview on the status of implementation of laboratory activities in each country is provided in Figure 3. Ms Caon invited Sudan, Jordan, Syria, Iraq and Palestine to submit their assessment material to Dr Dafalla by the end of March. Dr Dafalla will work on finalizing their assessment reports and training programmes in April for the trainings to start in May. Countries receiving the training online will be given the opportunity to attend some joined training sessions with other laboratories and countries at the purpose of sharing experience and learn from each other.

Country	Assessment	Status	Training	Modality	Status
Oman	Started on 15 November 2021	Draft assessment report to be endorsed by the lab	Draft training programme to be approved by the lab	In person	On hold – waiting for the lab to approve the assessment report and the training programme
Yemen	Started on 22 November 2021	Assessment report endorsed by the lab	Training programme approved by the lab	Virtual	On hold – waiting budget approval
Lebanon	Started on 29 November 2021	Assessment report endorsed by the lab	Training programme approved by the lab	Virtual	Under implementation
Sudan	Started on 16 December 2021	Ongoing: some questionnaire is still missing		In person	
Jordan	Started on 10 January 2022	Ongoing		In person	
Syria	Started on 17 January 2022	Drafting of the report ongoing		In person	
Iraq	Started on 10 February 2022	Ongoing		Virtual	
Palestine	Started on 17 February 2022	Ongoing		Virtual	
Morocco	Started in March 2022	Draft assessment report ready		In person	To be implemented in March-April 2022
Tunisia	Started in March 2022	Draft assessment report ready		In person	To be implemented in March 2022
Iran	Waiting the clearance of the government to implement project activities in general. However, some activities on digital soil mapping are under implementation.				
Iraq	Waiting for the government to sign the project document. Because we are close to the closure of the project, the country will not participate in it.				

Figure 3. Status of implementation of laboratory activities in each country

Digital soil mapping activities:

The project aims to produce national soil profile databases and national thematic maps on soil organic carbon, soil texture and pH to name a few examples. National Actions Plans will also be submitted to each countries government in order to bring project findings to the attention of policy makers and trigger actions on soil policy. A regional report on the findings of digital soil mapping activities will also be released and presented at the policy workshop that will be organized at the end of the project.

At present, a workshop on GSOC sequestration potential and GSAS mapping was implemented. A workshop on soil data management will be provided to beneficiary countries soon. National consultants on soil data management and mapping were hired in Iran, Lebanon, Oman, Tunisia, Syria, Sudan and Yemen. The recruitment of consultants in Iraq, Jordan, Morocco and Palestine is ongoing. The implementation of the project in Egypt is not possible because the government did not sign the project document.

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

Ms Rafla Attia (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 2015-2025 period, and to make such information available to policy makers and other decision makers involved in SSM. The SWSR 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 the celebrations of the World Soil Day.

8. Conclusions and way forward

The NENA Soil Partnership agreed on meeting in June 2022 to align its structure and work plan to the decisions made at the 10th GSP Plenary Assembly. The eighth NENA Soil Partnership meeting will take place in February 2023. The meeting will be either 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



Seventh NENA Soil Partnership Meeting

22 and 23 March 2022

from 10AM to 1PM CET (Rome time)

Virtual meeting

22 March 2022	
10:00 – 10:10	Welcome and Opening Remarks Mr. Rachid Moussadek, NENA Soil Partnership Chair
10:10 – 10:15	Approval of the agenda and group picture Ms. Lucrezia Caon, GSP Secretariat
10:15 - 10:40	Item 1. GSP developments of regional interest Ms. Lucrezia Caon, GSP Secretariat
10:40 – 12:30	Item 2. National updates on soil <ul style="list-style-type: none">• Iraq, Ms. Iman Sahib Salman• Kuwait, Ms. Hana'a A. Burezq• Lebanon, Mrs. Fatima Beydoun• Morocco, Mr. Rachid Moussadek• Oman, Mr. Hamad Al-Dhuhli• Palestine, Mr. Imad Ghanma• Syria, Ms. Riham Zahalan• Tunisia, Ms. Leila Ben Daya• United Arab Emirates, Ms. Bayan Mahmoud Athamneh

12:30 – 13:00	<p>Item 3. Communication activities</p> <ul style="list-style-type: none"> - GSP focal points clarifications - National Soil Partnership webpages <p><i>Ms. Isabelle Verbeke, GSP Secretariat</i></p>
13:00	Closure of the day

23 March 2022

10:00 – 12:30	<p>Item 4: GSP Pillars updates and way forward</p> <ul style="list-style-type: none"> - Pillar 1. <ul style="list-style-type: none"> RECSOIL: Recarbonization of global agricultural soils <i>Ms. Carolina Cardoso Lisboa, GSP Secretariat, FAO</i> - Pillar 2. <ul style="list-style-type: none"> ○ Policy briefs <i>Ms. Leila Ben Dor, NENA Pillar 2 Chair</i> ○ Soil Doctors programme <i>Ms. Silvia Pioli, GSP Secretariat, FAO</i> ○ Soil Atlas of Asia <i>Ms. Lucrezia Caon, GSP Secretariat, FAO</i> - Pillar 3: <ul style="list-style-type: none"> ○ Regional database on Research and Development <i>Mr. Bahram Taheri, NENA Pillar 3 Chair</i> - Pillar 4. <ul style="list-style-type: none"> ○ Digital soil mapping <i>Ms. Isabel Luotto, GSP Secretariat, FAO</i> - Pillar 5. <ul style="list-style-type: none"> ○ NENALAB updates <i>Mr. Abdelmjid Zouahri, NENALAB Chair</i>
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12:30 – 12:45	Item 5: Updates on the implementation of the TCP/RAB/3802 project <i>Ms. Lucrezia Caon, GSP Secretariat, FAO</i>
12:45 -13:00	Item 6. Status of the World's Soil Resources report 2025 <i>Ms. Attia Raffla, Editorial Board</i>
13:00	Closure of the meeting

Annex II. List of participants

Ms Lucrezia Caon, Global Soil Partnership, FAO

Mr Filippo Benedetti, Global Soil Partnership, FAO

Ms Tasneem Elsiddig, 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

Ms Isabel Luotto, Global Soil Partnership, FAO

Country	Full name	Institution
Iran	Bahram Taheri	Nexus Center, Amir Kabir University
Iraq	Iman Sahib Salman	Ministry of Agriculture
Kuwait	Hana'a A. Burezq	Kuwait Institute for Scientific Research
Kuwait	Shabbir A Shahid	Kuwait Institute for Scientific Research
Lebanon	Fatima Beydoun	Horticulture Department, Ministry of Agriculture
Morocco	Rachid Moussadek	Institut National de la Recherche Agronomique (INRA)/ICARDA
Morocco	Abdelmjid Zouahri	Laboratoire des Analyses des Sols, Eaux et Plantes, Centre Régionale de la Recherche Agronomie de Rabat
Oman	Hamed Al-Dhuhli	Soil and Water Research Center, Ministry of Agriculture and Fisheries
Palestine	Imad Ghanma	Ministry of Agriculture
Syria	Muhammad Manhal Alzoubi	Natural Resources Research Administration (ANRR)
Syria	Riham Zahalan	General Commission for Scientific Agriculture Research (GCSAR)
Tunisia	Leila Ben Dhiab	Department of Soil Resources (DRS), Directorate of Management and Conservation of Agriculture Land (DG ACTA), Ministry of Agriculture
Tunisia	Attia Raffla	Soil Director Ministry of Agriculture Tunisia