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Eighth session

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Report on Regional Soil Partnerships (GSPPA:VIII/2020/10)

Executive Summary

- An effective network of Regional Soil Partnerships (RSPs) is key to the achievement of the GSP mandate and objectives, as specified in its Terms of Reference. To date, all regions and in some cases sub-regions, have established RSPs.
- The Secretariat has continued to make use of all available funds to facilitate the functioning of viable RSPs, and especially the execution of Regional Implementation Plans (RIPs).
- On 27 April 2020, a virtual meeting of the Chairpersons of all Regional Soil Partnerships was organized. Regional Chairpersons briefed each other on respective challenges, stressed the need for adequate support in overcoming them and discussed proposals on how to promote horizontal, inter-regional cooperation. It was agreed that meetings would be held at regular intervals, depending on the urgency of matters to be addressed.

Suggested action by the GSP Plenary Assembly

The Plenary Assembly may wish to:

- Reiterate the need for strong support to the RSPs by mobilizing resources (financial, expertise, hosting of meetings, etc.) and also facilitating main regional activities, including active networks and soil information systems.
- Further encourage full involvement of the focal points in regional activities and the establishment of strong networks of experts in each region.

Summary of activities of the RSPs

Regional specific initiatives and progress are herewith reported generally in telegraphic form.

10.1 African Soil Partnership (AfSP)

1. The AfSP has sought to promote the programme “Afrisoils: Boosting soil productivity for a food and nutrition secure Africa” to potential donors. Regrettably, none has been forthcoming until now, and a restructuring of the initiative is being done in order to attract more interest.
2. Various countries organized awareness raising activities as part of the celebrations for World Soil Day 2019 under the theme: Stop Soil Erosion, save our Future. These ranged from workshops to specific events organized by FAO country offices and the national ministries of agriculture to stress the major soil erosion threats in the region.
3. Focal points from several countries within the region have contributed to the Global Assessment of Soil Biodiversity, by responding to the questionnaire circulated by the GSP Secretariat. National experts were nominated to take part in a consultation on the development of indicators for the assessment of sustainable soil management. The indicators will be included in an upcoming published protocol.
4. Due attention was paid to disseminating the International Code of Conduct for the Sustainable Use and Management of Fertilizers, including via FAO country offices.
5. A project on nutrition-sensitive agriculture was launched in 2019 involving two AfSP countries: Burkina Faso and Malawi. Implementation included field trials associated with the project as well as meetings and workshops.
6. An online training took place on the mapping of soil salinity for the upcoming Global Soil Salinity map, to be launched by the GSP by December 2020.
7. A policy brief has been prepared and will be disseminated on the main challenges that African soils are facing, as well as on what needs to be done to address these issues.
8. The fourth AfSP meeting is planned to be held online in 2020 to discuss the progress made in the 2018 – 2019 period, introduce the new working groups and way forward, and agree on activities for the 2020 – 2022 period.

10.2 Asian Soil Partnership (ASP)

9. In March 2019, the ASP agreed to hold its 6th Plenary meeting at the beginning of 2021 in Mongolia or Indonesia.
10. Under Pillar 1, the International Code of Conduct for the Sustainable Use and Management of Fertilizers was disseminated at the 2019 Global Phosphate and Compound Fertilizer Industry Development Conference in China. Collaboration on promoting integrated agricultural systems for sustainable soil management in Greater Mekong countries was supported by the Lancang Mekong Cooperation special fund (China). Regional experts participated in second meeting of the international network of Black Soils. The ASP Secretariat selected the experts to join the editorial board of the Global Assessment of Soil Pollution report.
11. Under Pillar 2, The Ayeyawady - Chao Phraya - Mekong Economic Cooperation Strategy (ACMECS) project has been implemented in the Greater Mekong sub-region to promote sustainable soil and land management. The ASP Secretariat also developed a project on ‘the development of volunteer soil doctor programmes in the Greater Mekong Sub-region’ also funded by the Lancang Mekong Cooperation special fund. ASP countries also contributed to the development of SoilLex.

12. Under Pillar 3, a research project was developed in cooperation with Japan, Thailand and Indonesia and submitted to suitable donors. The ASP Secretariat appointed Prof. Dr. Charlie Navanugraha as Director General of CESRA, and also assigned staff to each department to pursue CESRA's implementation.
13. As part of Pillar 4, ASP countries continued to improve their national soil organic carbon maps and training was carried out on the preparation of national soil salinity maps on 24 March -3 April 2020. Progress on the Soil Atlas of Asia was also made: national soil classification systems were harmonized and maps and text contributions were collected. The Soil Atlas of Asia also attracted the attention of the Asian Food and Agriculture Cooperation Initiative (AFACI) that is financially contributing to the establishment and strengthening of national soil information systems and to the production of the maps to be included in the Atlas. Inter-regional cooperation (i.e. Russia, Myanmar and Thailand) took place to develop expert systems based on large - scale soil databases with funding from the ASEAN-Russia Dialogue Partnership Financial Fund (DPFF). Indonesia has been actively participating in the International Network of Black Soils (INBS) and its national black soil map has been incorporated in the global map.
14. As part of Pillar 5, the third meeting of the Asian Soil Laboratory Network (SEALNET) was organized in September 2019 in the Philippines. The regional Standard Operational Procedures (SOPs) for soil moisture, electrical conductivity and available phosphorous by Bray I and II were endorsed, the establishment of national soil laboratory networks in the region was reviewed, participants were trained in QA/QC building on the results of the 2019 GLOSOLAN proficiency test, and the position of SEALNET in GLOSOLAN was reviewed. All national reference laboratories from the region are participating in the 2020 GLOSOLAN proficiency test.

10.3 Near East and North African Soil Partnership (NENA)

15. The International Network on Salt-Affected Soils (INSAS) was launched during ICBA's Global Forum on Innovations for Marginal Environment in November 2019. The network was established in response to the request from the NENA Soil Partnership to the 7th GSP Plenary Assembly and is already involving Iran and Morocco
16. Focal points from countries within the region have contributed to the Global Assessment on Soil Biodiversity, by presenting scientific communications to the Biodiversity symposium organized by the GSP Secretariat.
17. Under Pillar 1, Morocco offered to be a pilot country to implement the International Code of Conduct for the Sustainable Use and Management of Fertilizers in 2020. This experience will be shared with other NENA and African countries.
18. Under Pillar 2, the NENA Soil Partnership produced three policy briefs on the multi-faced role of soils in the region, which are available in English, French and Arabic on the Partnership webpage. Policy briefs were also launched at key regional events like the Near East and North Africa Land and Water Days 2019 (April 2019), ICBA's Global Forum on Innovations for Marginal Environment Countries (November 2019) and the Conference on improving water productivity in the NENA region (December 2019). Ultimately, these policy briefs were used for raising awareness and mobilizing financial resources. Countries also contributed to the development of SoilLex by replying to the questionnaire sent out by the GSP Secretariat.
19. Under Pillar 3, the ASP Secretariat selected the experts to join the editorial board for the Global Assessment of Soil Pollution report. Near East countries also appointed experts to

contribute to the Soil Atlas of Asia by harmonizing their national soil classification systems and by sending maps and text contributions to the editorial board.

20. As part of Pillar 4, countries continued to improve their national soil organic carbon maps and training was organized on the preparation of national soil salinity maps. Countries were also advised that activities on mapping soil erosion and the soil organic carbon sequestration potential would need to start soon.
21. As part of Pillar 5, the three most active laboratories from the region participated in the 2019 GLOSOLAN proficiency test while all others should do it during 2020. The virtual launch meeting of the NENA Soil Laboratory Network (NENALAB) was organized in May 2020.

10.4 European Soil Partnership (ESP)

22. As the first ESP Implementation Plan is ending in 2020, ESP partners and the steering committee held several meetings to take stock of what was accomplished during the last 5 years. The next ESP Implementation Plan (post 2020) will seek to take into account the activities of such important stakeholders as the European Commission and those already established national soil partnerships (e.g. Portugal, Slovenia, Italy) or regional partners (e.g. Alpine Soil Partnership). Due to the Covid-19 outbreak, the ESP plenary meeting had to be postponed to a future date.
23. The National Focal Points and the ESP secretariat participated in, or nominated experts to participate in several surveys launched by the GSP secretariat (Global Assessment of Soil Pollution report, Protocol for the assessment of SSM, Assessment of the global status of soil biodiversity).
24. In order to develop the SoiLEX platform, synergy has been sought with the existing similar EU platform (that provides an inventory of soil-relevant policies and soil protection legislation at EU level and in the 28 Member States).
25. Under Pillar 1, the compilation and geographical mapping of (mostly) EU soil projects (sponsored by DG ENV) related to SSM was completed and a report written. It is foreseen to collect more examples at national level. The database will be released by ESDAC during the course of 2020, while it should be maintained and populated over time with new examples. In addition, the VGSSM have been translated into Portuguese. This constitutes a useful outcome to other Portuguese-speaking countries belonging to other regional soil partnerships.
26. Under Pillar 2, the main achievement was the organization of, and participation in a conference held in conjunction with the European Network for Soil Awareness.
27. Under Pillar 3, part of the study on trends in soil research in Europe was taken on board by a PhD student, employed by the University of Pannonia. The ESDAC was invited to host the Pillar 3 'web platform' while avoiding duplication with similar platforms at global scale.
28. The Pillar 4 regional activities are fully dependent on GSP global work and should be related to the development of the various global maps (erosion, etc.) and GLOSIS.
29. As part of the ESP, the Eurasian Soil Partnership (EASP) has participated in ESP activities as well as implemented its own Implementation plan.
30. The 5th Plenary Meeting of the EASP took place 'n September 30 – October 1 2019 in Chisinau, Republic of Moldova. The event was attended by representatives of Armenia, Belarus, the Republic of Kyrgyzstan, Moldova, the Russian Federation, Tajikistan, Turkey, Ukraine and Uzbekistan, in total 28 participants.
31. The Regional Implementation Plan (RIP) for 2020-2023 was adopted, in line with current and planned global activities. Special attention was paid to an effective strategy of financial resource mobilization. It was decided to participate in the preparation of a regional project

proposal to be submitted to the Global Environment Facility (GEF, stage 7) to maintain a balance between the conservation and use of soil resources in the Eurasian region. EASP interaction with other international organizations and programmes was duly factored in the RIP.

32. Progress on the five pillars is reported below:

- Pillar 1: The Voluntary Guidelines for Sustainable Soil Management have been translated into local languages by Ukrainian and Turkish partners. Further dissemination and implementation will be carried out from 2020 onwards. Country studies on agricultural and food systems transformation for food security and nutrition were published.
- Pillar 2: the website of the ECFS was updated. A stocktaking exercise to identify human capital in soil science in Eurasia was conducted. An exhibition called Soil science is chemical science took place in Russia, with the participation of over 5 000 visitors.
- Pillar 3: calls for small research projects on sustainable soil management have been made within the Eurasian region, to be funded mainly by the Russian Federation.
- Pillar 4: seminars on creation and operation of national soil data centres were held in EASP countries (Moldova, Uzbekistan). The Seminar on "Practical Issues of Creation and Development of the Eurasian Soil Information System" was organized on 3-8 June 2019 in Bishkek, Kyrgyzstan. The Soil and Geographic Database of Russia (SoGDBMS) was proposed to serve as a prototype for National Soil Data Center. A proposal was submitted to the Kyrgyz Government to develop a national Soil Information System. A 6-day regional training session for the preparation and updating of national soil information of salt-affected soils has been carried out in Izmir, Turkey, from 2 to 7 March 2020, to support countries under the Eurasian Soil Partnership to develop national soil salinity maps in contribution to the Global Soil Salinity Map (GSSmap) initiative.
- Pillar 5: an adapted and harmonized soil sampling and analysis manual, including guidelines on the terminology, classification of soils, methods, indicators and procedures for salt-affected soils is under preparation at the Eurasian scale. The manual will facilitate the production of harmonized indicators for saline and sodic soils, also used for the development of sampling standards. It promotes the use and transfer of information through a transboundary soil information system and data exchange between regions and countries. The European and Eurasian Soil Laboratory Network (EUROSOLAN) was established on 2 October 2019 in Chisinau, Moldova.

10.6 Latin American and the Caribbean Soil Partnership (ASLAC)

33. First Ordinary Meeting of the Latin American and the Caribbean Soil Partnership (ASLAC): In order to ensure better operation and performance, the Central America, Mexico and Caribbean Soil Partnership and South American Soil Partnership have been merged. This decision was taken in May 2019 in Quito, Ecuador, within the framework of the regional meeting of these Partnerships. At that meeting, decisions were made such as the appointment of ASLAC's Chair and three Vice Chairs for each subregion: South America, Mesoamerica and the Caribbean as well as assignments by Pillar. The ASLAC regulations and the role of the focal points were discussed, as well as issues of communication and implementation of key activities (such as SISLAC, LATSOLAN, etc.). The main activities from 2012 to 2018 are available [here](#).

34. LATSOLAN: In the framework of Pillar 5 harmonization activities, LATSOLAN will hold its third meeting remotely in September 2020. The main activities will be the preparation of soil samples for the global ring test, harmonization of SOPs for 2020, continuous implementation of QA / QC process and alignment of work plans with GLOSOLAN's objectives.
35. Training and workshops : in relation to Pillar 4 training workshops addressed the generation of global maps such as on erosion (GSER), salinity (GSS) and carbon sequestration potential (GSOCseq). In the second half of 2020, further training workshops will be held remotely due to the COVID19 pandemic, i.e. on the global salinity map, and for the carbon sequestration potential map. Both workshops will follow technical specifications generated by experts in digital soil mapping and modelling.
36. SISLAC: The [Soil Information System of Latin America and the Caribbean](#) was activated with 48.255 soil data elements and includes a tutorial to load the data. SISLAC is now available to incorporate soil data from national institutions such as universities, producers and research centers.
37. GEF "SOILCARE": the Caribbean Small Island Developing States (SIDS) are formulating a multi-country soil management initiative for integrated landscape restoration and sustainable food systems.
38. Other main achievements and results: Pillar 1: a survey was conducted to evaluate the most relevant aspects for the implementation of VGSSM in the region. Pillar 2: educational activities and initiatives of the Latin American network of education and teaching of soil science were carried out; the regional land management master's degree will be taught in Guatemala, to benefit experts from Costa Rica, Guatemala and Panama. An exchange of students for laboratory techniques between Argentina and Colombia has been initiated. The countries interested in the soil doctors program were registered, such as: Bolivia, Paraguay, Argentina, Uruguay, Nicaragua and Costa Rica. For SOILEX: an update of the legal framework in the region is ongoing. Active participation during the XXII Latin American Congress of Soil Science through the organization of symposia, keynote presentations and workshops related to soil analysis, soil organic carbon and soil mapping. Pillar 4: 3 scientific publications were made within the framework of the regional soil data project in South America and another 4 publications are planned. A [video](#) was also produced about capacity building in soil information for sustainable natural resources.
39. National Soil Partnerships were established in Brazil, Nicaragua, Cuba, Costa Rica and Colombia.

10.7 Pacific Soil Partnership (PSP)

40. The Pacific Implementation Plan was finalized and presented at the Pacific Week of Agriculture in Samoa Oct 2019 for the purpose of raising the awareness of policy makers on the importance of promoting sustainable soil management in the region.
41. Regional Chairs for the five Pillars of Action of the GSP were appointed.

42. Under Pillar 2, countries contributed to the development of SoilLex by replying a questionnaire sent out by the GSP Secretariat. Still, more effort is needed to assess the interest in Soil Science in the PICTs' (Pacific Island Countries & Territories') education systems; and to develop and offer Introductory Soils Courses on the FAO online platform.
43. Under Pillar 3, work continued on the planned inventory of soil research capacities (soil sciences, users of soil information), research priorities, research resourcing for different institutions in Pacific Island Countries. Dr Ramakrishna Akkinapally from PNG confirmed his interest to be the global representative for Pillar 3. The Australian Soil Science Society received funding from the Australian Government to undertake a review of soil science courses.
44. As part of Pillar 4, countries continued to improve their national soil organic carbon maps and were trained on the preparation national soil salinity maps. The new regional implementation plan for Pillar 4 is with all national focal points for review.
45. The ACIAR funded Pacific Soil project released the first stage of the new [Pacific Soil Portal](#) which aims to bring together historic soils data from countries across the Pacific, initially Fiji, Kiribati, Samoa, Tong and Tuvalu. Other countries, including Australia and New Zealand may also contribute with the development of a PSP Portal as part of the Global Soil Information System.
46. An ACIAR funded project in PNG will seek, when approved, to re-vitalise the national Resource Information System (PNGRIS) which holds existing legacy soil data. The system will eventually be supplemented with new soil data and mapping undertaken through the 4 year project to demonstrate the usefulness of soil information at National, Provincial/District and local farm levels.
47. As part of Pillar 5, three laboratories from the region participated in the 2019 GLOSOLAN proficiency test. In 2020, all national reference laboratories are participating in the GLOSOLAN proficiency test. The launch meeting of the Pacific Soil Laboratory Network (ASPAC) was organized in October 2019. Lab managers: (i) reviewed the strengths and weaknesses of their laboratories, (ii) identified priorities and (iii) reviewed their regional position in GLOSOLAN.
48. Experts from New Zealand and Australia have been actively involved in the Pillar 5 data exchange model development activity.

10.8 North American Soil Partnership (NSP)

49. Pillar 1: In collaboration with regional, national and global partners, the North America Soil Partnership continued exploring innovative technologies and strategies to improve resource inventory and assessment and the dissemination of information needed to make informed decisions. New tools and trainings are continually developed to enhance customer satisfaction. Tracking systems are used to identify number of users and obtain feedback for improvements.
50. The US recently embarked on an ambitious program to revise all Practice Standards used in their conservation delivery tool and conducted cross-trainings or specialized trainings to promote a more unified sustainable management of soils and other natural resources to achieve the highest level of customer service and satisfaction. At the National Soil Survey Center alone, over 52 webinars are conducted annually on diverse topics including the use of proximal sensors, such as g MIR and XRF for soil analyses.
51. The NSP also engaged many employees in improving soils inventories and the assessment and management of healthy living soils locally, nationally and globally. Participation was ensured

to many meetings; e.g the GSP meeting involving “Discussion of the Global Soil Information Network (GLOSIS) and 5th INSII workshop; the GLOSOLAN workshop in Lincoln NE and in Phoenix, Arizona; the CocoaSoils Project Workshop in Cameroon; the Soil Sampling for the Cacao for Peace Project in Colombia, South America; the Digital Soil Mapping conference in Brazil; the Lake Champlain Basin Program Steering Committee Meeting, in Canada; the Soil Health Principles Regenerative Agriculture conference in the he Manitoba and the Climate SMART Agriculture Workshop in Japan.

52. Both the US and Canada participated in the second International Network of Black Soils (INBS) workshop in Chisinau, Moldova, October 4-5, 2019. At the workshop, Canada introduced their national soil database system (CanSIS) and highlighted the important role of Black Soils in the agriculture of Canada. The significant impact of climate change on black soils was highlighted, as were the methods used for mapping soil properties. Canada has also proposed that an existing AAFC research location to serve as part of the Black Soil Monitoring Network of the INBS.
53. Pillar 2: This year NRCS organized three Envirothons across the US to improve public awareness on the role and value of soils information. It collaborated with ARS and NASA in creating awareness among high school students to consider future careers in agricultural professions. The agency also organized outreach events, including World Soil Day Exhibits in the Washington DC area, and many more universities and conservation organizations were active at various locations across the country.
54. Pillar 3: The Agricultural Research Service (ARS) has recently established a National Program Leader for Soil Biology to ensure research advances in soil ecosystems address gaps, are strategic and innovative and impactful. Furthermore, ARS in its Natural Resources and Sustainable Agricultural Systems program area addresses research needs for improving the management of soil resources, reducing soil degradation, reducing greenhouse gas generation, increasing agroecosystem sustainability, and improving rural economies.
55. The Agriculture and Agri-Food Canada (AAFC) has developed the Agro-Ecosystem Resilience Science Strategy which provides strategic direction for research, development, and knowledge transfer activities that support agricultural production by improving agriculture’s use of natural resources in a way that enhances the resiliency of the sector, fosters new economic opportunities, and supports long-term sector competitiveness.
56. The North American Soil Partnership is also participating in the editorial board for the FAO report for the Global assessment of soil pollution and is contributing to assess the status of soils and soil biodiversity knowledge. An ad hoc research needs input group comprised of representatives from government agencies, non-governmental organizations, industry, university and education groups, and other stakeholders is being established from both countries. This ad hoc group will provide their perceptions of research and development gaps pertinent to Pillar 3 - and the information will be coalesced and communicated to the GSP.
57. Pillar 4: As the focus of the National Cooperative Soil Survey (NCSS) is shifting from producing static printed soil survey reports to providing a dynamic resource of soils information for a wide range of needs, the National Soil Information System is advancing data collection and management systems with multiple interrelated soil applications that enhance the collection, storage, manipulation and dissemination of soil information.
58. The National Soil Information System (NASIS) application and database is a robust component of the overall National Soil Information System of the National Cooperative Soil Survey (NCSS). NASIS training was conducted several times during the year to accommodate the diverse regions and employees who serve its customers. Training (April 15 -17, 2019 in Ardmore, Oklahoma) was also conducted using another tool - the Land Potential-Knowledge

System (LandPKS)(a mobile phone app connected to global databases and models used for storing and sharing data, information and knowledge) The tool is also being tested in developing countries. California Polytechnic State University, San Luis Obispo (Cal Poly) hosted the 2019 National Collegiate Soils Judging Competition from April 14 to 19, 2019. This competition was supported by NRCS Soil and Plant Science Division as a recruitment tool for future employees. The work of the GSP provides international benchmarks for demonstrating the progress of Canada in the adoption of SSM over the past 30 years and provides steps toward a continental level monitoring system to support regional, continental and global soil modeling. In this context, Canada has continued to encourage continuous improvement in methodology to develop a product that can be used in an authoritative manner to assess future changes in land sustainability and has worked to develop better methods and technologies for improving the accuracy and scale of presentation of SOCmap data for Canada. Through the Digital Soil Mapping Working Group, Canada completed its first iteration of the Global Soil Organic Carbon Map (GSOC). This was a collaborative effort between academia, provinces, and other federal departments with AAFC playing a lead role and contributing data. Canada, through AAFC (CanSIS) is working on making this data available through the CanSIS website and Canada's Open Data platform.

59. Pillar 5: From Nov 6-9, 2019, a GLOSOLAN team met at NSSC to discuss standardizing mid infrared (MIR) predictive analysis. A follow-up meeting was held at the tri-societies meeting in San Antonio on Nov 1. In addition to identifying activities to resolve key technical issues (e.g. calibration transfer, etc.), a vision was conceived to designate a single reference laboratory for the collection of data used to calibrate models. To improve model accuracies, the team proposed designating a single facility to serve spectral and reference data for increased model accuracies. Based on its demonstrated capacity to produce quality measured data and on the USDA open data policy, the KSSL was suggested to serve as a world hub for collecting measured and spectral data that would serve global efforts to predict soil properties from MIR spectra. This proposal was included in the GLOSOLAN concept note on spectroscopy that is currently under implementation.
60. On April 9th and 10th, 2019 nearly 70 people gathered for the proceedings of the 2nd Technical Planning Workshop focused on the soil survey of the future. Some of the highlights included: the vision for soil survey's next generation including a transition to raster-based products using digital soil mapping techniques and products. There was renewed emphasis on the need for and importance of communication in fostering collaboration to achieve visions for the NRCS of the Future.
61. The US National Cooperative Soil Survey (NCSS) continued working with university cooperators to remain on the cutting edge of soil information acquisition, management and delivery. With higher resolution maps, for example, even small areas within map units will be depicted on soil maps; additional data collection on selected key soil properties to assure science-based information will be provided; augmenting to the database to address emerging regional and national issues including: soil carbon stocks, soil health; nutrient management; drought mitigation, mapping of coastal and even aqueous soil to reclaim hydrocarbon contaminated soils and other emerging environmental issues will be more readily addressed.