

MEETING OF THE EDITORIAL BOARD STATUS OF WORLD SOIL RESOURCES REPORT

Rome, 2-5th December, 2014

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Food and Agriculture
Organization of the
United Nations



Opening the Meeting and Introduction

The Second Editorial Board Meeting of the Status of the World Soil Resources report took place at FAO HQ in Rome, Italy, December 2-5, 2014.

The meeting was opened by Mr. Moujahed Achouri, Director NRL, who welcomed the participants and highlighted the great expectations raised by this report in the international soil community and within FAO.

Mr. Luca Montaneralla, the chair of the Editorial Board, confirmed the importance of the report which should be the main output of the Intergovernmental Technical Panel on Soils (ITPS) for 2015, the International Year of the Soil.

The draft agenda was reviewed and slightly changed to give more time for discussion of the Synthesis Report. The revised Agenda was adopted by the Editorial Board (List of Participants in Annex 1, Agenda in Annex 2).

1. Progress Report

Mr. Freddy Nachtergaele, Managing Editor, was then requested to present a progress report on the activities undertaken and the outputs achieved since the Board last met in April 2014. The Progress report (Annex 2) highlighted the fact that more than 160 scientists contributed to the first draft that now runs to 400 pages text and an additional 100 pages of references. The draft report is complete for ninety five percent, 7 months after initiation. The still missing 5 % will be submitted within the next two months and if not, can be easily compiled by the managing editor. Overall the report was written by 167 scientists representing 50 different nationalities working mainly in universities (50%), research institutes (24%) and government agencies (21%). The remaining contributors were from international organizations (FAO and JRC). About 20 % of contributors were women scientists.

Parts of the report that are still incomplete include the descriptions/pictures of some soil groups, sections on global salinization, global acidification, soil carbon trends and soil moisture. The regional assessment for Asia was considered not complete yet by its Coordinator. The whole report runs to many more pages than originally planned (nearly 500 pages when reference pages are included, while only 300 were planned for).

It was recognized that it is difficult to make a general statement about the quality of the report or its contributors, but an analysis based on the number of contributors by section and the number and date of references used in each section indicated that the regional assessment for Africa for instance had few contributors and used relatively dated references. Also in the Europe and Eurasia assessment the number of contributors appeared to be lower than average. Some Coordinating Lead Authors apparently could not draw on a large scientific network, which was reflected in the lower quality (in the managing editor's opinion) in the sections they produced.

The Managing Editor expressed concern that no consistent regional mapped output of soil change was achieved. On the other hand, a large body of referenced scientific literature has been collected on the subject.

On the timeline until 5 December 2015 when the report needs to be presented, a number of issues were raised concerning:

- (i) How to organize the peer review and finalization of the main report
- (ii) How to prepare the Synthesis report for policy makers and what are the requirements for approval within the GSP framework.
- (iii) How to deal with practical production issues including the need for translations, the time needed for printing preparation, the lead time needed for GSP Plenary submission, the format and cover page etc.

Mr. Luca Montanarella congratulated the Managing Editor for his comprehensive overview of the report and on progress achieved so far, and he then opened the floor for comments.

Comments focused on the three main points raised on the way forward as given above. (Other comments made during this general discussion on specific sections in the report are discussed within those sections further on, for reasons of clarity).

- (i) Peer Review and finalization of the main report

The Chair stated that the ITPS is responsible for the production of this report and therefore it should be its members that will ultimately finalize the report and bear the full responsibility of its content. The Editorial Board members are each responsible for the finalization of the assessment report of their own region, but are also first in line to assist the finalization with sections of the main report in which they are experts. Consequently peer reviewing will be assured by the ITPS members, since they are the only responsible of its content, and also because of the time constraint and the fact that specific subjects run throughout the report and need harmonization (e.g. there is a section on the Carbon cycle, a section on global SOC status and trends and several sections on SOC decline in the regional assessments; all of these would need to be harmonized and finalized by the same ITPS expert). Only when there is no obvious expertise within the ITPS, outside experts will be asked to assist with the finalization. All ITPS members would be requested by the Regional Coordinators to contribute to the finalization of their region (See Annex 5).

The Managing Editor suggested that the Coordinating Lead Authors (CLA) of each section in the main report would be consulted during its finalization, which was accepted.

It was also agreed that the names of the CLAs, contributing authors and reviewers would appear collectively at the beginning of the full report and in the beginning of each chapter and not be associated with a specific sub-section.

A timeline for finalization would be decided later during the meeting (See Annex 3).

- (ii) The Synthesis Report for Policy makers and the GSP approval process.

The Chair highlighted the importance of the Synthesis report for policy makers and said the initial aim was to produce a 50 page report. The Managing Editor suggested that a more concise report could be desirable and be based on the Executive Summaries already prepared for Part I, II and III that could be complemented with the Exec Summaries of the Regional Assessment Reports. The Chair postponed the discussion of the details of the Synthesis report to the last day of the meeting.

The Chair explained that there might be two approvals required for this report, one by the ITPS on a date to be decided during this meeting (see below (iii)), and one by the GSP Plenary that will be held in Rome on 22 June 2015. Mr. Dan Pennock proposed to submit only the Synthesis Report for Policy Makers to the GSP Plenary, in order to avoid a long approval process for a bulky technical report which was bound to contain one or more statements not agreeable to particular member states. This was welcomed as an excellent way to deal with this matter.

- (iii) Practical considerations associated with the editing and printing of the report.

Mr. Ronald Vargas, Secretary of the GSP, explained that contacts have been made with the SPI of the UNCCD who expressed interest to organize a joint meeting back-to-back with the Organization of the Soil Week to be held at Berlin starting on Sunday 19th of April. This arrangement would be confirmed the next day. In regards to editing, he indicated that within FAO there is a competent team of graphical and grammar editors that can be mobilized for the task. He also warned that any report to be officially considered by the GSP plenary needs to be received by its members 45 (30 minimum) days in advance already translated in the 6 UN languages.

A change in title was proposed because the original title was considered too long and grammatically incorrect, and was therefore accepted for the report: Global Soil Report 2015. However upon further consultation with the GSP secretariat it was learned that any change in title would need GSP Plenary approval, which probably means that the actual title will remain unchanged (i.e. Status of World Soil Resources Report).

Dan Pennock made a comment on the lack of flow of the report and the need to lighten the text by using more “boxes” of information. The ME proposed to swap Chapters 2 and 3. Neil McKenzie suggested using the information contained in slide 1 as general introduction on the general objectives of the report.

2. PART I: Global Soil Resources

3.1 Chapters 1 (Introduction) and 3 (Global Soil Resources)

The Managing Editor (ME) presented a brief summary of the progress achieved in these two chapters, which were mainly led by two CLA's: Thomas Reinsch (USA) and Maria

Gerasimova (Russia). Both encountered apparent problems to mobilize contributors and had written some sections themselves. Because of this, several descriptions (and photographs) of soil groups were still missing in Chapter 3, while Chapter 1 on the “Soil as skin of the earth” was not written in an ideal manner and therefore requires complete rewrite.

Dan Pennock and Luca Montanarella agreed with the last statement on the need to redraft Chapter 1, and suggested that in a rewrite a clear link should be made with the World Soil Charter which was just approved by the FAO Council. Dan Pennock volunteered to undertake this task.

Several members of the board (Neil McKenzie, Luca Montanarella and Pavel Krasilnikov) questioned the relevance in Chapter 3 of the description of soil groups (with their properties, distribution and ecosystem services). It was suggested that this section should be completed soonest by the ME and the CLA’s and as a whole be put in an Annex. The Chapter itself should instead focus on vital soil properties that support ecosystem processes: soil carbon, soil nutrients and soil fertility, soil moisture, holding capacity etc... This chapter should also contain a section on past soil change assessments, while it would also be important to point to other sources of information on soils such as those collected in research stations.

The ME agreed to consult with the CLA’s to complete the soil description section as an annex and to prepare himself the overview of past assessments and the soil property maps. An introduction to the chapter also needs to be prepared by the CLA’s.

2.2 Chapter 2: Ecosystem Services of Soils

The Managing Editor presented a summary of the contents of this chapter, which was largely guided by Pete Smith as CLA. The CLA had managed to mobilize a large number of high level scientists to discuss the role of soils in ecosystem processes, mainly the Carbon Cycle, the Nutrient Cycle, the Water Cycle and Soils as a biotic pool. The ME suggested that the title of the chapter be changed to: “The role of soils in ecosystem processes, which was accepted. Manuela da Silva commented on the lack of reference to modeling in the C-cycle. The Chair concluded that specific ITPS members should review and finalize these sections in relation with other sections on the same subject. A provisional division of tasks is given in Box 1.

2.3 Chapter 4: Pressures on soils

The ME presented a summary of contents of this chapter that was guided by Pete Smith as CLA. Sections on actual and historical land use were prepared by Thomas Reinsch. Pavel Krasilnikov noted that the title of the chapter had changed from the original agreed one (Soils and Humans) and suggested this was re-established. The proposal was accepted but implied the merging the section on natural pressures with the section on natural hazards in Chapter 6. The section now called off-site land use pressures should be renamed “Atmospheric Deposition”. Dan Pennock noted that the focus on crop land and the USA could be changed to a more general discussion of land cover and land use in

general and use could be made of material contained in the State of the World's Land and Water Resources for Food and Agriculture (SOLAW) report. The meeting agreed and the ME committed himself to prepare a rewrite of these two sections. The Board also suggested adding a specific section on: "Herbicides pesticides fertilizers and agricultural inputs" - ME to identify a writer as soon as feasibly possible.

2.4 Chapter 5: Conclusion

This chapter had not been prepared yet and in fact it made no sense to draw conclusions at this point in the report. Therefore this chapter could be deleted.

3. PART II Global Soil Change

4.1 Chapter 6: Drivers of Soil Change

The chapter was guided by André Bationo and Srimathie Indraratne as CLA.

The ME presented an overview of the chapter that focused on socio-economic conditions that are often the underlying causes of pressures/changes of land use that influence soil change. He noted that no contribution was received on land tenure conditions which was a major determinant for land use and soil management. Neil McKenzie confirmed the importance of land tenure with an example of West Africa.

It was also noted that there should be some debate around free markets for governments making decisions about investment policies and land-use. There was also commentary that information regarding contemporary trends in land grabbing (also set in the greater historical context) and the subsequent impact on food security should be included.

The ME noted that in the section on market access no mention was made of the importance of physical distance of markets. Luca Montanarella and Neil McKenzie (citing New Zealand as an example) were interested to improve the whole chapter and this section in particular.

Mr. Sayed Alavi remarked that civil strife and war conditions are important determinants of land use and soil conditions. This was confirmed by Luca Montanarella who evoked the situation in Bosnia Herzegovina where a significant part of the cultivable land has buried land mines (Laos and Mozambique are other examples of countries affected). A map documenting the occurrence of civil strife is available on the USDA web site (see http://www.nrcs.usda.gov/wps/portal/nrcs/detail/vt/soils/?cid=nrcs142p2_054030) and at UNCCD

(http://www.unccd.int/Lists/SiteDocumentLibrary/Publications/Final_Security_second_issue_7_march_14%20low%20res.pdf).

It was explained by the ME that the author of the section on climate change as a driver of land use changes (Professor Rattan Lal) considered that this subject was already treated comprehensively by the IPCC reports and therefore had submitted a section on soil

climate change, which was original and interesting but did not fit the original intention. Dan Pennock and others stated it was vital a summary be made of the IPCC findings on the subject and more general on the IPCC statements that affect soils. Kazuyuki Yagi was asked to prepare this. The Chair would also like to request that Miguel Taboada in assisting Mr. Sayed Alavipanah by contributing a paragraph on the importance of soil temperature.

Manuela da Silva remarked that women were listed under the category “cultural value”. One would need to amend and expand this reflection and include topics such as youth, elders, and rural-urban migration patterns. Luca and Manuela will work together to improve this section. Pavel Krasilnikov mentioned that studies in Russia showed that the influence of women on land use decisions and outcomes are context specific and no generalizations should be made.

An overall criticism on this section was the lack of maps and graphs that could lighten the text..

Manuela da Silva commented that a glossary of terms would be needed, but this proposal was not supported by Maria de Lourdes Mendonca.

3.2 Chapter 7: Global Soil Status, Processes and Trends.

The ME presented the chapter that would discuss in more detail the ten soil threats retained by the Editorial Board in its first meeting. The ME noted that two identified CLA’s had withdrawn from their task without notice, which explained why certain sections are still under preparation or lacking. He also thought some soil threats were not included for discussion (eutrophication, crusting), while geological erosion and positive effects of soil erosion were little highlighted.

- 3.2.1 **Soil erosion:** the section could start with a number of positive points and then highlight the negative effects. It is also important for policy makers to discuss the issue when soil erosion becomes a problem (Luca Montanarella). Dan Pennock would review the chapter and recontact the authors.

From here onwards the meeting was chaired by Neil McKenzie (Luca Montanarella, Pavel Krasilnikov and Ronald Vargas had to attend the European GSP group meeting).

- 3.2.2 **Soil Organic Carbon:** the ME considers this an original contribution, but it lacks a section on SOC trends which was promised by Professor Rattan Lal by the end of the month. Professor Lal should be provided with regional analyses in order to strengthen the overall meta-analysis. In the event that Lal is unable to contribute, Mrs. Maria Loudres Mendonca or Mr. Neil McKenzie should be contacted. The ME would follow-up the finalization of this section. It would be reviewed and finalized by the same ITPS member responsible for the reviewing the C-Cycle and the SOC decline in regional assessments (Dominique Arrouays).

- 3.2.3 **Soil Contamination:** According to the ME the section is treated comprehensively. It was noted that contamination is a very sensitive issue politically. Some examples are presented in the regional assessments (e.g. Cd in Australia and New Zealand). The China situation where 18% of soils are contaminated by some reports. Latin America has more information than what is given here. Maria Lourdes Mendonca offered to provide additional text or resource person. The whole section should be reviewed by Marta Camps who could look into sections on contamination and industrial effects throughout the report. Ms. Camps would also be requested to include information regarding positive solutions and recommendations (e.g. remediation and reclamation) and information regarding technosols.
- 3.2.4 **Soil Acidification:** the ME clarified that the author contacted (Tran Tien, Vietnam) misunderstood the assignment and contributed a reflection on soil acidification in Vietnam, not globally. His contribution has been incorporated in the Asia Assessment of the problem. The ME proposed to write a draft for this section based on the available material. The proposal was accepted.
- 3.2.5 **Soil Salinization and Sodification:** the section is missing because the author contacted (Dr. Mapfuno) did not deliver his contribution yet. Pavel Krasilnikov gave three options for immediate follow-up. Final decision was to ask Abdullah the ITPS member to assure the drafting of this section.
- 3.2.6 **Soil Biodiversity:** the ME clarified that Diana Wall had been approached to review this section and had already indicated she thought the actual contribution “outdated”. Neil McKenzie noted that a broader view of landscape diversity should be incorporated throughout and it’s missing here. Dan Pennock noted that special attention should be paid to pesticides that kill off soil organisms. He noted that the use of fertilizers is not really treated in the report, although it is of obvious importance (Perhaps to be included under contamination with the positive effects also highlighted). It was agreed that all sections related to biodiversity (e.g. soil as a genetic pool in Chapter 2 and the regional assessments of soil biodiversity change) would have to be reviewed and finalized by an ITPS member (Helaina Black possible in consultation with Diana Wall.)
- 3.2.7 **Soil Surface trends:** this was considered by the ME and the meeting as a very weak section, illustrated with very poor pictures. The ME proposed that Ciro Gardi, an expert on land take who had already volunteered for the section on soil sealing, should be contacted to finalize this section. The subject could also be expanded to soil crusting.
- 3.2.8 **Soil Nutrients:** the ME considered this section quite good, albeit incomplete. One would need to reduce the first pages as it now looks like taken from a text book (Manuela da Silva). Nutrient management would need more emphasis.

Finalization in consultation with the author could be done by ITPS members with a good background in nutrient management (Victor Chude, Badraoui, etc.).

3.2.9 **Soil Compaction:** the section is quite good. It needs to be checked with the regional assessments report. The ME would assure this and possibly include a global map of soil compaction risk based on tractor use and livestock density.

3.2.10 **Soil Moisture:** the ME explained that the section is still incomplete because the authors were identified late in the day (after a CLA withdrew without notice). The three authors identified have promised to deliver text by the end of January 2015. The meeting considered this for the ME to follow up on.

General Discussion on follow up emphasized the idea is to improve the clarity, reduce the size, and to highlight new insights in the report. This was taken into account when the meeting drafted terms of reference for the ITPS experts that would be asked to review and finalize the report (Annex 4).

4. REGIONAL ASSESSMENTS

Each Regional Coordinating Author presented an overview of the assessment in his/her region including the stratification used, the status and trends of the major and minor soil threats present and included one or more country case studies of soil change in the region. Each assessment ended with conclusions, and recommendations.

As a general principle the meeting retained that the Regional Coordinator will be responsible for the review and finalization of the report for his region. For review and comments all ITPS members of the region will need to be contacted by the regional coordinator and therefore they will need access to the report or at least to the regional section. This can be arranged by FAO via ftp (the report should be marked draft, not for citation). Outside reviewers may be needed, particularly in the case of North America and the Southwest Pacific where all ITPS members already participated in the preparation of the text. Additional reviewers may be asked if and when particular gaps are noted that require specific expertise. Neil McKenzie stressed the importance to include a ranking of issues characteristic for each region which will be a useful inclusion in the Synthesis report.

Although no general consensus was reached on the proposal, it was suggested by Neil McKenzie (supported by Maria Lourdes Mendonca) to start the assessment with a soil map of the region.

General comments made applicable to all regional reports were that (1) one should try to link more closely the findings on soil threats with the biophysical units used in the stratification and (2) it should be explained why the 4 major soil threats are considered of major importance for the region and (3) that discussion of the region should enumerate the countries concerned.

7.1 Africa, South of the Sahara.

Mr. Victor Chude presented the findings of this regional assessment that was compiled by Professor Ayo, from Nigeria. He highlighted the fact that no regional assessments were undertaken since the GLASOD one and that other figures often contradict themselves.

It was recommended that this statement (which is also true for other regions, particularly the Near East and North Africa, South America and parts of Europe and Asia) should lead to the recommendation that new data are urgently needed.

Other recommendations for improving the assessment were to: (1) Ask André Bationo and Liesl Wiese to contribute, the former with findings from his book (Bationo et al. (2012) Lessons learned from long-term soil fertility management experiments in Africa (Springer)), the latter with a review and possible case study of South Africa. (The ME would contact both and seek their cooperation) (2) Include activities and findings of the AfSiS programme (3) include other relevant major initiatives in the region – Terrafrica, the Green Wall, World Bank Fertility initiative etc...(4) include elements of two GSP organized workshops in the region. (5) Neil McKenzie stated that there isn't a good analysis in the assessment on of poverty traps (i.e. situations where smallholders cannot escape poverty even if they improve agricultural production) (6) there should be increased integration of stratification with threats in regard to soil quality (7) efforts should be made to include more country case studies where available.

Mr. Victor Chude would seek assistance from the other African members in the ITPS.

5.2 Asia

Mr. Kazuyuki Yagi presented the findings of the regional assessment for Asia, which were still incomplete, as some of the promised contributions had not yet been received. The most recent assessment of soil degradation dates from 1997 (ASSOD) and is a variant of the (outdated) global GLASOD methodology. The India case study was considered a good example and should be retained. It was suggested by Dan Pennock to use Indonesia as a case study as there are contributions from Indonesia throughout the present text. The other case studies if not submitted soon should not be pursued, except for China, which is of huge importance. In this respect Luca Montanarella will contact Mr. Zhang for a contribution of a China case study. The meeting agreed that the actual section on the soil nutrient balance in Asia is superfluous and could be omitted. As time is short one must work to the maximum with the existing material. The regional coordinator should contact the regional ITPS members to improve the present text.

5.3 Europe and Eurasia

Luca Montanarella took over as Chair of the meeting.

A discussion on the name of the region (Europe, Europe and the Former Soviet Union or Europe and Eurasia) took place earlier. Advice of FAO or the GSP plenary may be required on the issue, but the ME and the regional coordinator agreed that Europe and Eurasia was probably the best option for now.

Mr. Pavel Krasilnikov presented the findings of the Regional Assessment for the region. There is a lot of information but it needs harmonization for western and eastern part of the region. At least one common map for one soil threat (salinization?) for the whole region should be prepared, and one which shows the geographic position of the three country case studies would also be of interest. Mr. Sayed remarked on the need to harmonize methodologies for salinity measurement. Digital Soil Mapping was also mentioned as one important tool to achieve harmonization. The regional coordinator will contact the regional ITPS members to improve on the present text.

5.4 Latin America and the Caribbean

Mrs. Maria Lourdes Mendonca presented the findings of the regional assessment, which was compiled by Juan Comerma with the contributions of various other authors. In addition she had added several slides with examples and ideas of how the present assessment could be improved. The general threats to soils could be made more explicit (they are now described within the stratification units) and soil biodiversity losses and natural degradation of soils are not mentioned. The regional coordinator thought that (i) the soil map of the region should be included up-front. (ii) The effects of climate change on soils should be more highlighted. (iii) The country case studies could be expanded (e.g. the Argentina one lacks conclusion). (iv) The section on recommendations should draw the attention to good practices in soil use and management, deforestation, shifting cultivation, irrigation, drainage and soil conservation, no tillage cultivation, networking for researching on critical areas.

The board commented on the need for a more documented description of soil compaction, to check the Cuba map on pg. 85 for correction, and change the contamination paragraph under SOC to another place. There is also a need for more emphasis on the Amazon region. The Table from FAO: « Cambios anuales en el area de bosque por subregion y mundial » could be included to document forest changes. A figure and a map documenting the increase of soil temperature (North of Mexico, Central Amazon, North of Colombia and in Argentina could also be included (with a reference/source, possibly from the Atlas of Latin America). The copyright status for the figure (8.4) should be checked.

The regional coordinator would finalize the assessment herself based on the above suggestions and after considering the comments of the regional ITPS members.

5.5 Near East and North Africa

Mr. Sayed Alavi, the Regional Coordinator for the NENA region, presented the findings of the regional assessment compiled by Mr. Mubarak. He noted a problem that arose early on, concerning the use of politically sensitive terms to describe geographic features which was now solved.

The main issues raised are related to drought and the climatic conditions in the region (wind erosion, soil salinization, dust storms) but most of these problems are exacerbated by mismanagement of the land. The ME will request Mr. Mubarak to include information on the rate of dust storms in the region. The Editorial Board requests more detailed information regarding government interventions to address mismanagement of land (e.g. what mechanisms are in place to address issues such as increasing dust storm activity?). The Editorial Board also recommended looking into distinguishing human from natural causes that result in soil change. Editing may also be needed for instance on pg. 102-103 (action: ME).

The Regional Coordinator would finalize the report after consultation with the regional ITPS members and the ME.

5.6 North America

Mr. Dan Pennock presented the North America Assessment and indicated that the approach taken was to contact national soil science societies to identify authors which was not always successful. He drew the attention to the fact that no regional assessment exists, moreover both countries of the region use a different soil classification system. Nevertheless a good description of soil threats was achieved and notable improvements (soil acidification and soil contamination tackled by legal measures, decrease of salinization in Canada, soil erosion decreased). Some problems were encountered in describing the status of soil sealing (not seen as a threat in the USA, even if it occurs on the best soils) and on soil biodiversity (no data) and water logging which in the region should focus rather upon the protection of wetlands. A number of editorial issues were noted in the present text, for action by the ME and some rearrangement of the text (putting major soil threats before minor ones).

For future reporting, Mr. Dan Pennock noted that there is a need for a special category of soil threat related to resource extraction (not well captured by contamination nor sealing) and, radioactive contamination and pesticide use. Water quality in the USA could be discussed in relation to phosphorous.

The Regional Coordinator will finalize the assessment after requesting (non-ITPS) experts to review it.

5.7 South West Pacific

Mr. Neil McKenzie presented the South West Pacific Assessment that was quite challenging because of the diverse geography of the region and the uneven distribution of soil expertise. A regional workshop funded by Australia through FAO was organized to discuss inputs for the assessment. A number of comments were made that could be more highlighted in the report (land clearing effects, linkages with EU policies that may trigger indirect land use change in the region (biofuel demand results in forest destruction for oil palm), the high sensitivity of the region to climate change effects particularly sea level

rise). On the other hand the discussion on carbon and nutrient balance and the different land types in the region could considerably be shortened.

There is a plethora of choice for the case studies: (1) New Zealand dramatic increase in Nitrogen use, (2) Climate change effects on soils in South West Australia, (3) the atoll islands unsustainable resource use, (4) Dustwatch results (5) Cadmium in soils and (6) Globalization effects in Fiji.

Some results are surprising: lack of impact of no-till practices after 20 years and the dramatic reduction in funding for soil related activities in spite of the growing soil-related problems.

A number of editing issues remain in the present text, which the Regional Coordinator will correct. He will also seek additional reviewers as both ITPS members contributed to the report.

5.8 Antarctica

The regional assessment was considered of high quality and contained as many pages of text as of references. It was noted that Russia may have additional information (Pavel Krasilnikov will chase it) and that Diana Wall could be contacted to add something on soil biodiversity in the region.

5.9 General Discussion Regional Assessments

Neil McKenzie recommended that each region prepare a ranking of soil threats with a description as done for Western Australia. This would be an ideal harmonized input to the Synthesis report. The Board endorsed this approach and Neil McKenzie agreed to provide a draft template by the 19th of December 2014.

In addition there is a need for a one page Executive Summary for each regional assessment that also would be an input for the Synthesis Report.

On the graphical side there is a need for a standardization of maps and a definite input of a graphics designer from FAO to assure the attractiveness of the report. All graphs and maps in the report should be free from copyright. All Coordinators will be asked to confirm this (action ME).

5. PART III: IMPACTS ON ECOSYSTEMS AND RESPONSES

6.1 Chapters 9, 10 and 11: Impacts of global soil change on ecosystem services

This part of the report was guided by Dave Robinson and Miguel Taboada (for Food provisioning).

Most of the sections written are considered of good standard with extensive updated references, but it is recommended to move Chapter 10 (environmental accounting) to the response Chapter (Chapter 12).

A main issue that is recognized by the Board is the need to revise in depth the section on the Food Provisioning function of soils.

With full support of the Editorial Board, Mr. Dan Pennock volunteers to work on rewriting the food section with further inputs by Miguel Taboada and Pavel Krasilnikov. Mr. Luca Montanarella drew the attention to the fact that material from NL conference: Global Food Security in the Journal of Global Food Security could be very useful as background material (see <http://www.sciencedirect.com/science/journal/22119124/3/3-4>)

Other suggestions to improve the chapter were less drastic, but would require rewriting and time: Neil McKenzie for instance suggested using Mass Balance as a guiding principle to use throughout the report for instance in the nutrient balances, soil acidification, and water issues. The soil and human health section would also benefit from an extra input. Mr. Neil McKenzie would approach an expert in Australia in this respect.

6.2 Chapter 12: Government and Land User Responses to Soil Change.

The Chapter on responses was led by Miguel Taboada (Government responses) and Chencho Norbu (Development historical background and Land user's responses both written by Sally Bunning and Will Critchley).

The Board recognizes the importance of the historical overview prepared and considered it could be usefully complemented with information on other parallel developments for instance the collective agricultural development as applied in the Former Soviet Union, the cultural revolution in China and its effect on agriculture etc..)

On the Government and Global actions that drive soil change there is a lot missing in what is described now and the Board indicated that it would be best if the report would flag this section to be in need for a special working group so that in five years' time when the issue comes up there are answers on the table. This concerns for instance: the issue of land valuation and evaluation, private property rights versus public goods, the role of markets, the effect of globalization etc...

The Chair comments that this chapter is highly political sensitive. For instance considering conservation agriculture a win-win situation is debatable and not acceptable in many parts of the world, for example in Europe. Mr. Victor Chude states that this may be true for Europe, but not necessarily so in other continents where conservation agriculture has met with success.

The whole chapter could end with a link back to the World Soil Charter, which would be a fitting end as the report starts out like that too.

Mr. Montanarella volunteers to review the whole of Chapter 12 with assistance from Mr Neil McKenzie.

6. Synthesis Report for Policy Makers

The synthesis report would follow the example/template of the IPCC Assessments reports. It would be partly based on the Executive Summaries prepared for the main report and the ones to be prepared for each of the regional assessments. This would be complemented with a priority list of what are the most important challenges and constraints, then rank these (e.g. 1. soil erosion, 2. salinization), in each region and globally, and make a good cause and effect a linkage with how it affects the population. This in turn could be extracted into the conclusion through a ranking process to see what actions need to be taken. The report should also contain success stories: hope and good news.

Data and their uncertainty should be well documented. We also need to make sure that it is understood that the data sets are much more lacking than climate change data sets, we need to highlight that we're blind on certain issues. It will be required to highlight areas where significant research needs to be done and where working groups should be set up (soil biodiversity...)

Graphics used should be of the highest quality. Front page should give credit (make a completion of editorial board, ITPS members (by regions?) coordinating lead authors (by parts, alphabetical), etc.) (nationalities in brackets) (alphabetically). Take an example on the IPCC reports.

7. Timeline

A time line, identifying dates, actions and responsible actors is presented in Annex 3. **It differs in detail from what was discussed during the meeting** because the exact dates for the ITPS meeting was not 100% sure at that time, nor were all GSP and editorial considerations known. This is the current circumstance at the time of writing of these minutes.

The GSP secretariat in consultation with the Chair of the ITPS decided that the next ITPS meeting, that will have to fully review the Status of World Soil Resources report and eventually endorse it for submission to the GSP Plenary, would take place from the 13th to the 18th of April 2015. It would be followed by a joint session on the first day of the Global Soil Week on the 20th of April with the SPI. After that, ITPS members could then opt out or stay on for the week.

Given the need for an edited and translated Synthesis document for policy makers 45 days before the GSP Plenary, it is imperative that the whole document be finalized at the end of the ITPS meeting, in case the ITPS decides to forward it to the GSP Plenary for final approval.

As the document is very long and complex it will require editorial (graphical as well as grammatical) revision as early as possible. A starting date for editorial inputs is therefore set at the 1st of March 2015.

Because one can only start the writing of the Synthesis report for Policy Makers when the main revised document including the regional priority list of soil threats is received, the end date for submitting any section of the main report is to be set at the end of February 2015.

The first draft of the Synthesis report will be produced/circulated by the Chair on or about the 15th of March 2015. Comments of all EB members should be received by the 25th and the Report should be finalized by the 30th of March. Editing can take place early April.

After discussion and finalization of the Synthesis and the Main report at the ITPS during 3 days *and its eventual approval*, final editing and translation can take place to have it ready for dispatch to the GSP Plenary members on or around the 8th of May.

The GSP Plenary will discuss the Synthesis report on the 22nd of June 2015 and probable changes would be incorporated after the meeting. From then on translations and printing will move according to FAO rules and procedures. The report should be ready by end October (printed, on-line as 2 volumes (Synthesis report and Technical Report) and 3 pdf files (Synthesis – Main Report and Regional Assessment).

Actions still to be undertaken this month include the approval of these minutes (by 19 December 2014) and the production of the executive summaries for the regional assessments (by 31st of December 2014).

Ranking of problems per region should be received by Luca at the end of January 2015.

8. Other Matters

The editorial board attended the World Soil Day celebration at FAO.

The editorial board discussed the agenda of the upcoming ITPS meeting including actions to be undertaken on Pillar 3.

The editorial board suggested subjects to be discussed during the joint meeting with the Science-Policy Interface (SPI) of the UNCCD.

ANNEXES:

1. List of Participants

2. Agenda of the Meeting
3. Powerpoint presentation on progress (separate attachment)
4. Timeline
5. Draft TOR for the ITPS members to assist with finalization of the report.
6. Draft Letter of appreciation to Coordinating Lead Authors.

Annex 1: List of Participants

Luca Montanarella	Chair Editorial Board
Victor Chude	Editorial Board member for Africa
Kazuyuki Yagi	Editorial Board member for Asia
Pavel Krasilnikov	Editorial Board member for Europe
Seyed Kazem Alavipanah	Editorial Board member for Near East and N. Africa
Maria Lourdes Mendonca	Editorial Board member for Latin America
Dan Pennock	Editorial Board member for N. America
Neil James McKenzie	Editorial Board member for SW Pacific
Ronald Vargas	GSP Secretariat
Freddy Nachtergaele	Managing Editor SWSR report
Manuela Ravina da Silva	Trainee at DG JRC supporting the ITPS Chair (European Commission)
Cori Keene	Intern FAO

Annex 2: Agenda of the meeting

Tuesday 2 December

09:00 - 09:20 Welcome (Director NRL)
 09:20 - 10:00 Introduction (Luca Montanarella)
 10:00 – 10:30 Coffee break
 10:30 – 11:00 Progress SWSR report (Freddy Nachtergaele)
 11:00 – 12:30 General Discussion
 12:30 - 13:30 Lunch

Part I Global Soil Resources (presentation and discussion)

14:00 – 15:00 Ecosystem Services of Soils
 15:00 – 15:20 Global Distribution Soil Resources
 15:20 – 15:40 Coffee Break
 15:40 – 16:10 Cont.
 16:10 – 17:10 Pressures on soils
 17:10 – 17:30 Conclusions and Recommendations Part I

Wednesday 3 December

Part IIa Global Soil Change (presentation and discussion)

08:30 - 09:30 Drivers: Population Density, Market access etc.

09:30 - 10:30 Soil erosion, contamination and sealing
 10:30 – 11:00 Coffee break
 11:00 – 12:00 Salinization, Compaction, Biodiversity, and nutrient loss
 12:00 – 13:00 Soil Organic Carbon and Water Status
 13:00 - 14:00 Lunch

Part IIb Regional Assessments

14:00 - 15:00 Sub-Saharan Africa (Victor Chude)
 15:00 – 16:00 Asia (Kazuyuki Yagi)
 16:00 – 16:30 Coffee break
 16:30 – 17:30 Europe (Pavel Krasilnikov) Cont.
 17:30 – 17:45 Conclusions and Recommendations

Thursday 4 December

Part IIb Regional Assessments (Continued)

08:30 - 09:30 Latin America and the Caribbean (Lourdes Mendonca)
 09:30 - 10:30 Near East and North Africa (Seyed Alavi)
 10:30 – 11:00 Coffee break
 11:00 – 12:00 North America (Dan Pennock)
 12:00 – 13:00 South West Pacific and Antarctica (Neil McKenzie)
 13:00 - 14:00 Lunch
 14:00 - 15:30 Impacts
 15:30 – 16:00 Coffee break
 16:00 – 17:15 Responses
 17:15 – 17:45 Conclusions and Recommendations

Friday 5 December

Part III Impacts on Ecosystems and Responses (presentation and discussion)

08:30 - 12:00 Synthesis Report for Policy Makers/Preparation ITPS meeting.
 12:00 Closure
 12:45 – 14:00 World Soil Day celebration

Annex 3: Progress Report

See attached

Annex 4: Timeline

TIMELINE		
Date	Action	Who
NOW	Agree on TOR/Timing prepared	EB
	ME to send Exec Summary to Luca/copied	
	EB	ME
11-Dec	Sent first draft Minutes meeting to Editorial Board	Cori/Freddy Each EB Board
16-Dec	Sent comments back to ME	Member
18-Dec	Submit to Luca/EB members revised draft minutes	Cori/Freddy

19-Dec	Luca sent minutes of the meeting to ITPS including TOR Tasks to be done by individual ITPS members	Luca
19-Dec	ME to send appreciation/informative note to CLS-s ME to send TOR to Ciro Gardi	ME
19-Dec	ftp on-line document site for Luca to inform ITPS members and ask for additional comments	ME/Luca
19-Dec	Neil to send example Ranking to EB members	Neil
19-Dec	Comments/Notations on each section report send to ME and send on to ITPS members concerned.	All EB members +Manuela+ ME Each EB Board Member
End Jan 07-Feb	Ranking regions sent to Luca Table of contents Synthesis report sent to EB	Luca Dominique, Helaina, Marta, Jon, Abdullah, Ciro, EB regional coordinators ME + Edit Team
End Feb	All rewrites main report and regional assessments received by ME	FAO
March	Grammar and Graphics Editing Main Report	Luca
15-Mar	Luca to prepare first draft Synthesis Report	Each EB Board Member
25-Mar	Each EB member comments on draft Synthesis report	Luca ME + Edit Team FAO
30-Mar	Luca to finalize Synthesis report	Each ITPS member
First half April	Finalize first round editing full report + Put on line	ME + Edit Team FAO
Week 13 Apr	ITPS meeting - 3 day discussion/Approval/Finalization IF APPROVED BY ITPS	ME + Edit Team FAO ME + Edit Team FAO
From 20 April onwards	Edit and Translate Synthesis report (HIGH PRIORITY)	GSP secretariat
08-May	Finalize Editing Main report Synthesis report despatched to GPS Plenary members in 6 languages	Luca/GSP Plenary
22-Jun	GSP Plenary : Synthesis report submitted by ITPS for approval IF APPROVED BY GSP PLENARY	GSP secretariat + FAO edit team
From 29 Jun onwards	Finalize editing Synthesis report (include comments GSP Plenary) - Translations and printing procedures at FAO started of full report	GSP Secretariat + FAO edit team
01-Nov	5000 (?)copies printed and ready for dispatch	ITPS/GSP
05-Dec	Presentation Report at UN New York	

Annex 5: Responsible ITPS members and outside experts to assure the finalization of the report

Soil Carbon: Dominique Arrouays

Soil Biodiversity: Helaina Black (Diana Wall)

Soil Moisture: Neil McKenzie

Soil Nutrients: Jon Hempel (coordinating V. Chude, M. Badraoui, T. Mamo, M.S. Aulakh)

Soil Salinity: Abdullah Al Shankiti

Soil Contamination: Marta Camps

Soil Sealing: Ciro Gardi

Soil Resources: Freddy Nachtergaele

Land use: Dan Pennock/Freddy Nachtergaele

Soil erosion: Dan Pennock

Chapter 11: Soils and provisioning food: Dan Pennock

Chapter 12: Policy issues and Responses: Luca Montanarella and Neil McKenzie

Africa: Victor Chude coordinating I. Baptista Costa, T. Mamo, M. Yemefack.

Asia: Kazuyuki Yagi coordinating M. Aulakh, P. Vijarnsorn, Suk Young Hong, Ganlin Zhang.

Europe and Eurasia: Pavel Krasilnikov coordinating D. Arrouays, H. Black, J. Socbocka.

NENA: Sayed Kazem Alavi coordinating A. Alshankiti, E. ElSheikh.

North America: Dan Pennock coordinating outside reviewer

Latin America: Maria de Lourdes Mendonca coordinating J. Alegre, D. Victoria, C. Henriquez.

Southwest Pacific: Neil McKenzie coordinating outside reviewer

Synthesis Report: Luca Montanarella and Neil McKenzie

Annex 6. DRAFT TOR for the ITPS members to assist with finalization of the report.

The Global Soil Report 2015 is a major product of the ITPS to be released on the 5th of December 2015. As a member of the panel we are asking you to contribute to the production of this report. Your contribution will be fully recognized in the report.

Terms of Reference

In order to improve the clarity, reduce the size of the draft report and to highlight new insights:

Each ITPS member will, in consultation with the CLA of the sections, harmonize and finalize the sections concerned with soil organic carbon in the Global Soil Report-2015, more specifically section:

Ensure the consistency between the global/main sections and the regional assessments, particularly pay attention to:

- a) No contradictions especially in quantitative data and
- b) no duplication and
- c) ensure that the main concepts are defined in the initial sections and not repeated in the regional ones and
- d) add referenced material/information to improve the chapter if required

Please feel free to move sections and to move materials between sections and to remove redundant material (the report is too long at this stage). You are encouraged to add figures or maps. Existing statements of substance need citations, if absent the author needs to be consulted and the CLA copied. If possible an uncertainty notion should be associated with older data. If you add figures or maps you need to give the source and assure they are free of copyright.

The specific comments for the sections concerned are attached in the highlights of the minutes of the EB meeting and in some cases as individual track comments.

It is not part of this assignment to correct grammar and typos or to check for references, but if you are able to, please do.

Please note that this will be part of the final version of the report to be approved by the ITPS in the week of 13 April 2015. Therefore the Editorial Board would appreciate to receive your contribution by **28 of February 2015¹**. If part of the work is done earlier please do not hesitate to submit it in advance.

Annex 7: DRAFT LETTER OF APPRECIATION - FOR APPROVAL

Dear Coordinating Lead Author (Pete, Thomas, Maria, Dave, Miguel, Chencho, Srimathie, André, Ayo, Mubarak, Comerma),

The editorial board meeting on the SWSR report took place in Rome between the 2nd and the 5th of December.

It is with pleasure that I transmit the board's great appreciation for your effort and the contributions of all the authors you managed to mobilize. I am sure that you will inform the contributors accordingly.

The draft report now runs to nearly 500 pages (of which 100 pages of references) and benefited from inputs of more than 160 scientists. There is still need to correct overlaps and repetitions in specific subjects throughout the main report and the regional assessments. Some sections do need a more in depth review or rewrite.

The follow-up will include this review and finalization of the report and will be undertaken before the end of March 2015 by selected members of the Intergovernmental Technical Panel on Soils (ITPS), in consultation with you directly, or through me as editorial manager.

Thanks again.

Sincerely,

Freddy Nachtergaele

Managing Editor Status World Soil Resources Report

¹ Changed from the 30th of March 2015 agreed during the meeting in order for Luca to have full information when preparing the synthesis report and allow editing to start in time.

