

**ITPS-I/13/Report**

# **First Meeting of the Intergovernmental Technical Panel on Soils**

**Rome, Italy, 22 - 26 July 2013**



Food and Agriculture Organization of the United Nations

**REPORT OF THE  
INTERGOVERNMENTAL TECHNICAL PANELS ON SOILS**

**DRAFT**

**Rome, 22 – 26 July 2013**

**FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS  
Rome, 2013**

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## List of Acronyms

|        |   |
|--------|---|
| CGRFA  | Commission on Genetic Resources for Food and Agriculture of FAO |
| COP    | Conference of the Parties                                       |
| CST    | Committee on Science and Technology of UNCCD                    |
| FAO    | Food and Agriculture Organization of the United Nations         |
| GLADIS | Global Land Degradation Information System                      |
| GSP    | Global Soil Partnership of FAO                                  |
| IPBES  | Intergovernmental Panel on Biodiversity and Ecosystem Services  |
| IPCC   | Intergovernmental Panel on Climate Change of UNFCCC             |
| ITPS   | Intergovernmental Panel on Soils                                |
| IYS    | International Year of Soils                                     |
| SDGs   | Sustainable Development Goals (Post 2015)                       |
| UN     | United Nations  |
| UNCCD  | United Nations Convention to Combat Desertification             |
| WCSS   | World Congress of Soil Science                                  |
| WSSR   | World Soil Resources Report                                     |

## OPENING OF THE SESSION

- The first meeting of the Intergovernmental Panel on Soils (ITPS) of the Global Soil Partnership (GSP) was held at FAO Headquarters (Rome) on 22-26 July 2013.
- Ms. Fernanda Guerrieri, Directeur de Cabinet, welcomed the Panel on behalf of the FAO's Director General and the entire Secretariat. Mr. Rapibhat Chandarasrivongs, Permanent Representative of Thailand and current Chairperson of the GSP Plenary Assembly also addressed the meeting.

### I. Participants

- The list of participants is provided in Annex 1.
- It may be noted that the Biopics of Panel members are accessible from the GSP section of the FAO website: <http://www.fao.org/globalsoilpartnership/intergovernmental-technical-panel-on-soils/itps-experts/en/>; E-mail contacts of Panel members will also be provided on this site.

### II. Election of Officers

- The Panel elected Dr Luca Montanarella as Chairperson to serve for a period of two years.
- Dr Helaina Black was appointed Rapporteur for this meeting.

### III. Agenda and timetable

The provisional agenda and timetable were adopted without changes.

## GENERAL INTRODUCTIONS

- Several presentations were made by the Secretariat to facilitate the work of the Panel and are made available on the GSP website.
- It bears recalling that the duties and functions of the ITPS are specified in the Rules of Procedure of the GSP.

### **I. Item 7: Outline of the ITPS tasks, expected outputs, and follow up activities including timing, responsible ITPS members and lead role, and key partners**

#### **Item 7.1: Soils and the post Rio+20 Sustainable Development Goals (SDGs)**

1. The Panel recognized the opportunities for the soil community to contribute to the Post-2015 Development Agenda. In effect, the Plenary Assembly expected a proactive ITPS role in the provision of scientific guidance to the SDG process, and eventual subsequent implementation and impact assessment.
2. The Panel recognized in particular that new targets and indicators would be prepared early in 2014 with a view to announcing the Goals at the UN General Assembly in September 2015 (cf. presentation by Dr Michael Clark, FAO Special adviser on International Governance, on GSP website). Soils would need to be seen as contributing to one or more of the major Goals.
3. A draft Issue brief on soils prepared by the GSP Secretariat was tabled to initiate discussion of soil-related contributions to the Post 2015 Development Agenda and SDGs. An Issues Brief on “Desertification, Land Degradation and Drought” prepared by UN was also tabled for information, cf. Annex 2.
4. The Panel designated a working group on the SDGs to review the draft issues brief during the meeting, finalise the document by the end of August and continue to work with the GSP Secretariat on Post-2015 matters.
5. The Panel identified key points in the process, as follows:
  - strong need for a well focused soil brief
  - stressing the importance of soils in the context of ecosystems, including a short introduction on the relationships between soil and land
  - soils’ contributions to be promoted for both present as well as future goals for food security
  - indicators and targets to be in simple language, reflecting global to local applicability, and based on sound scientific evidence
  - required coverage of new issues such as soil biodiversity, climate change, loss of soils and scarcity / vulnerability of soils.

*Summary outcomes:*

- a) Membership of the SDG working group: Dr. Maria de Lourdes Mendonca Santos (Chair), Dr Neil McKenzie, Dr. Martin Yemefack, Dr. Miguel Taboada, Prof. Elsiddig Ahmed El Mustafa ElSheikh, Dr. Marta Camps Arbestain, Dr Helaina Black.
- b) The Issue Brief on “Soil and Land resources- Soil as a critical component of sustainable development” was developed by the WG and the approach was accepted in principle, cf. Annex 3.
- c) The Working Group to continue to work with the GSP Secretariat to complete the soils’ brief relating to the ongoing Post 2015 process with due recognition of the urgency of the task.

*Related documents on GSP website:*

- a) Presentation from Dr Michael Clark on Status of the Post 2015 Development Agenda and SDGs
- b) Draft Issue Brief on “Status of the Post-2015 Development Agenda and SDGs”

## **Item 7.2: Support to the GSP Pillars of Action**

1. The ITPS recalled that it was expected: *“to guide and support, from the technical point of view, the formulation of the GSP Plans of Action with a view to, when finalized, submitting them for endorsement by the Plenary Assembly”*. (cf. GSSP/1/13/report).
2. At this meeting, a draft Plan of Action for Pillar 4 prepared by a regionally balanced working group was tabled for endorsement, while work on the remaining Pillars is in preliminary stages. For Pillars 2, 3 and 5 there was still a need to hold workshops, and to identify working groups to draft the related Action Plans. A workshop for Pillar 1 was held in December 2012, whereas the GSP Secretariat was now enlisting regional support for a working group to draft the Action Plan.
3. To assist with the development of draft Plans of Action for Pillars 1, 2, 3 and 5, it was proposed that sub-groups of Panel members work with the Secretariat to launch the related Workshops or Working Groups, identify technical and regional experts and guide the drafting process. The aim was to have documents ready for submission to the Plenary Assembly in June 2014. The ITPS would need to meet in early 2014 to review draft Plans in order to meet this timeline.
4. The Panel commended the members of the Working Group which had prepared the draft Plan of Action for Pillar 4 [*Enhance the quantity and quality of soil data and information: data collection (generation), analysis, validation, reporting, monitoring and integration with other disciplines*] and particularly the working group Chair, for the high level of effort put into this document and the careful consideration of issues. Significant useful lessons have been learnt in this process, including maintaining consistent effort in communication and ensuring inclusiveness across the soil science community so as to get the most from the many efforts in soil mapping and data generation through effective networking and common goals.
5. The Panel provided detailed feedback to the Chair of the Working Group on the 20 recommendations presented in the draft. Main points requiring changes included: the full scope of priorities for Pillar 4; the links and dependencies with Pillar 5, and other Pillars; the establishment of country data where none exists to be highlighted as a priority; details on which countries have insufficient data; opportunities of linking to existing initiatives e.g. GEOSS; no inclusion of trademarks and need to be, where possible, organisation neutral; a decentralised approach that would provide soil mapping from 1km to 100m; need to reflect

parallel short and longer term actions, with, among the short term ones, the update of the existing FAO database and, among the longer term, taking advantage of new opportunities in soil mapping.

6. The Panel considered that the resulting edits were relatively minor, so that the WG Chair and his team were requested to recast the document for further consideration during the meeting.

*Summary outcomes:*

- a) Membership of the sub-groups to support work on Action Plans (absent panel members to be invited to also support this process):
  - Pillar 1: Prof. Daniel Pennock (Chair), Dr. Kazuyuki Yagi;
  - Pillar 2: Dr. Pavel Krasilnikov (Chair), Dr. Jaroslava Sobocká, Dr. Maria de Lourdes Mendonca Santos, Dr. Carlos Roberto Henríquez, Prof. Milkha Singh Aulakh, Dr. Pisoot Vijarnsor;
  - Pillar 3: Dr. Mohamed Badraoui (Chair) Dr. Marta Camps Arbestain, Dr. Miguel Taboada, Dr. Isaurinda Dos Santos Baptista Costa;
  - Pillar 5: Dr. Marta Camps Arbestain (Chair), Dr. Helaina Black, Dr. Suk Young Hong, Dr. Martin Yemefack.
- b) Consensus that there should be a separate Plan of Action for Pillar 5, with clear identification of links to Pillar 4 and other Pillars.
- c) Need for an ITPS meeting in early 2014 to meet timelines for approval of outstanding draft Plans of Action for submission to the Plenary Assembly in 2014.
- d) Endorsement of a revised draft Action Plan for Pillar 4 for submission to the Plenary Assembly in 2014 for final approval, and swift implementation thereafter.
- e) The Secretariat was requested to engage with Panel pillar subgroups to move forward the process of developing and submitting pillar plans of action to the next ITPS meeting

*Related document on GSP website*

- Endorsed draft Plan of Action for Pillar 4

### **Item 7.3: Preparation of a work plan and timetable for updating of the “World Soil Charter”**

1. The Panel recognized that the World Soil Charter, endorsed by FAO in 1981, was a legally binding instrument for member states, and that the GSP was duty-bound to promote its principles. It behove the ITPS to determine whether the Charter needed updating and, if so, what a new Charter should contain, with due attention to its different language versions, since problems in translation of technical terms could contribute to confusion.
2. A process by which a new Charter could be developed, would entail the following somewhat lengthy sequence: endorsement first by the ITPS, then by the GPS Plenary Assembly and subsequently by the FAO Council, and ultimate approval given by the FAO Conference. Hence, ideally a revised Charter would have to be endorsed by the ITPS in early 2014 so as to be finalised for the International Year of Soils in 2015.

3. Although there had been many instances where it has had an impact, it was agreed that a comprehensive evaluation of the Charter would be invaluable to the ITPS, the GSP and wider audiences. Therefore, the Secretariat was requested to carry out this evaluation, whereas other reviews of soil governance at global, regional and national level could also be identified and made available.
4. The Panel agreed that the Charter needed rewriting to reflect contemporary issues. A number of areas where the Charter required updating were identified, including: the adoption of a multi-functional approach to soils; the use of “land” diluting too much the soil message; global soil information to address all functions and ecosystem goods and services associated with soils, i.e. not only food production; considering the wide range of pressures affecting soils, in particular climate change, sealing and other losses, e.g. mining; addressing the significance of soils to global cycles; reflecting soil biodiversity; linkages beyond FAO to be made clear; definitions that can be understood by non-experts; recognition of soil degradation as a global issue; need to refer to the GSP and its five Pillars. Most importantly, the Charter should be policy relevant and not policy prescriptive, with a strong message to governments for developing effective soil policy and establishing guidelines for sustainable soil use and management.
5. The Panel agreed that it should prepare a new Charter for ultimate approval by the FAO Conference in 2015. In this light, it requested the Secretariat to check the legal implications with the FAO legal office. The ITPS would seek to draft a revised document, while the Secretariat would inform governing bodies on progress. In parallel, the wider soil science community should be made aware of proposed changes, e.g. *via* a presentation at the 20<sup>th</sup> World Congress of Soil Science (WCSS) in 2014 in South Korea. The Panel agreed to ask a Working Group of members to follow up on issues arising and work towards a revised document for the next ITPS meeting.

*Summary outcomes:*

- a) Consensus that the revision of the World Soil Charter would be appropriate, aiming at submission of a suitably revised text to the FAO Conference of 2015.
- b) Working Group established: Prof. Milkha Singh Aulakh (chair), Prof. Daniel Pennock, Dr. Pavel Krasilnikov, Dr. Jaroslava Sobocká; Dr. Maria de Lourdes Mendonca Santos, Dr. Pisoot Vijarnsor, Dr. Mohamed Badraoui, Dr. Miguel Taboada, Dr. Isaurinda Dos Santos Baptista Costa, Prof. Tekalign Mamo, Prof. Gan Lin Zhang, Dr. Julio Alegre, Dr. Suk Young Hong, Dr. David Espinosa Victoria, Dr Neil McKenzie.
- c) Working group to prepare a first draft of the revised Charter by the end of August 2013 (through the Chair and Prof. Pennock), and then use, with the assistance of the Secretariat, an e-forum for more inclusive discussion and preparation of a draft ready for the next ITPS Meeting.
- d) FAO to carry out a full evaluation of the existing World Soil Charter.
- e) Secretariat to consult with the FAO Legal Office to check the appropriate process for updating the World Soil Charter.
- f) Both the Secretariat and Panel members to arrange for a presentation at the WCSS June 2014.

*Related document in Annex 4*

- World Soil Charter (present text)

#### Item 7.4: Links between the ITPS and existing technical and scientific advisory bodies like the IPCC, IPBES and the CST of UNCCD

1. The ITPS agreed that it could provide valuable scientific and technical evidence and advice to the CBD, UNCCD, UNFCCC and other relevant conventions, and associated activities and in the context of the sustainable development agenda. In fact, this should also serve to establish its credibility at international level, with the added strength of the FAO-GSP intergovernmental setting, therefore seeking to fill the current vacuum in soils-related advice.
2. A presentation from Mr. Damiano Luchetti, Secretariat of the Commission on Genetic Resources for Food and Agriculture (CGRFA) regarding the preparation of the “The state of the World’s Biodiversity for Food and Agriculture” noted the Commissions’ consideration of microbial biodiversity and ecosystem dimensions. Mr. Dan Leskien, CGRFA Secretariat, then presented the work plan for the International Panel on Biodiversity and Ecosystem Services (IPBES) and FAO proposed collaboration. The Panel highlighted that it could provide some input to the IPBES, particularly as the development of IPBES work plan was still on-going. A key link would be to contribute to the assessment on degradation and restoration of land planned for March 2016. Other areas of interest included soil biodiversity and soil related ecosystem goods and services. Clearly, the ITPS can provide relevant expertise on these issues and the planned 2015 World Soil Resources Report could make a significant contribution to IPBES activities.
3. To support engagement with other equivalent Intergovernmental panels, letters should also be sent as a matter of priority to the concerned organisations to establish formal relations, including details on the ITPS membership. Moreover, each ITPS member has a role to play in raising awareness in other organisations of the remit, activities and expertise of the ITPS. Accordingly, a set of ITPS slides should be made available for use by Panel members.
4. In the light of an existing proposal to have a GSP side-event at the upcoming UNCCD COP 11 in Namibia in September 2013, it was agreed that further such events should be used wherever feasible to publicise the activities and work of the ITPS and GSP. The Secretariat would provide a timetable of relevant meetings over the next 2 years and work with the Chair in order to establish which of these meetings can be attended by the Chair or delegated ITPS members (which may require FAO accreditation). In this context, Dr. Kazuyuki Yagi offered to attend the IPCC General Assembly on behalf of the ITPS Chair, with due support from the Secretariat.
5. Dr Neil McKenzie drew attention to Future Earth ([www.futureearth.info](http://www.futureearth.info)), a new 10-year international research initiative relating to global environmental change and sustainability. It was proposed that the Secretariat approach Future Earth to seek its engagement with the GSP, in particular with the Working Group on Pillar 3. ITPS should also consider links with the CGIAR Centres and their Comprehensive Research Programmes building on existing informal links to GSP activities and priorities.

#### *Summary outcomes:*

- a) Dr McKenzie to provide Future Earth contact details to the Secretariat.
- b) The Secretariat to:
  - write to all relevant organisations to introduce the ITPS Panel and its members (and more generally the inception of the GSP).

- provide a timetable of relevant meetings and, with the Chair, agree on meetings worthy of ITPS engagement and attendance.
- communicate with Future Earth to invite their engagement with Pillar 3.
- prepare a short set of presentation slides on the GSP / ITPS for use by panel members.
- support , as required, ITPS attendance at COP11, Namibia and IPCC General Assembly 2014 Japan.

*Related document on GSP website*

Presentations on: “The state of the World’s Biodiversity for Food and Agriculture” and the Process and work plan for the International Panel on Biodiversity and Ecosystem Services (IPBES)

### **Item 7.5: Status of the World Soil Resources Report**

1. The Panel noted that the production of a “World Soil Resources Report” (WSSR) was expected to build on the implementation of various GSP activities, including the formulation of Plans of Action. As this report was aimed at influencing various important international processes, it should be well elaborated and win wide appreciation for both pertinent contents and quality. The design should take into careful account the requirements of different actors playing a role in soils.
2. A presentation by Riccardo Biancalani, FAO consultant on land degradation and climate change, provided an overview of GLADIS (Global Land Degradation Information System) to facilitate understanding of available global datasets on natural resources, including soils, and how these can be used. While the potential use of GLADIS in preparing the first version of the Status of World Soil Resources Report was not supported, the Chair invited ITPS members to provide feedback on GLADIS directly to the pertinent FAO staff, after evaluating it online. It was also proposed that the product be sent to country representatives to obtain comments from a national perspective.
3. The Panel agreed that the aim should be to have the first WSRR released during the International Year of Soils 2015, possibly at World Soils Day on 5<sup>th</sup> December 2015. This short timeframe implied that the first report would not be able to reflect comprehensive country-level reporting but rather that it could set out the process for future reporting and engaging with FAO statistical work, e.g. SOILSTATS. The first report would constitute a major reference point on soils from both a scientific and policy point of view, using published literature since 2001 and available data. A working title of “Soils for Sustainable Development” was proposed. The reporting cycle was envisaged as every 5 years, while this would still require consideration by the Plenary Assembly.
4. It was further agreed that the WSRR would be produced with the help of the world’s top scientists, so that the ITPS would need to identify key experts from each region and for each chapter and they could be contracted for contributions. This effort would also include engagement with other relevant activities, e.g. the Global Soil Biodiversity Initiative. The Panel identified a preliminary structure for the WSRR (cf. Annex 5).

*Summary outcomes*

- a) Online access to GLADIS to be provided for ITPS members to obtain feedback.
- b) The first WSRR would not use GLADIS as a foundation

- c) A draft structure of the first WSRR was prepared
- d) GSP Secretariat to facilitate further development and production of the WSRR, including a timetable to inform the ITPS and wider GSP audiences on how they can help.

*Related documents on GSP website*

- a) Presentation on: "GLADIS - Global Land Degradation Information System"
- b) Draft structure for the World Soil Resources Report

## **II. Item 8: Date and venue of next meeting**

ITPS members were requested to ensure availability during the week of 26<sup>th</sup> January 2014, provisional date for the second meeting of the ITPS, at the FAO Headquarters, Rome. Date will be confirmed after consultation with all ITPS members

## **III. Item 9: Any other business**

The Chair would finalise the meeting report with the Rapporteur and GSP Secretariat.

### **Communication Strategy for the ITPS**

The GSP Secretariat will support communications regarding the ITPS through various activities including:

- contacting the FAO experts on the issue to initiate a communications forum for ITPS
- collating Skype contacts to aid communication
- preparing powerpoint slides on ITPS
- preparing a short leaflet on ITPS and GSP
- making available workshop reports and draft action plans on the GSP Pillars and other information through the website [www.fao.org/globalsoilpartnership](http://www.fao.org/globalsoilpartnership)

ITPS members will also contact the Chairperson to arrange for delegated ITPS involvement where relevant.

## ANNEX I

### List of Participants

#### Africa

Dr. Mohamed Badraoui – Morocco  
Prof. Dr. Victor Chude - Nigeria  
Dr. Martin Yemefack – Cameroon  
Dr. Isaurinda Dos Santos Baptista Costa - Cape Verde  
Prof. Dr. Tekalign Mamo - Ethiopia

#### Near East

Prof. Dr. Seyed Kazem Alavi Panah – Iran  
Prof. Dr. Elsiddig Ahmed El Mustafa ElSheikh – Sudan

#### Latin America and Caribbean

Dr. Julio Alegre - Peru  
Dr. David Espinosa Victoria - Mexico  
Dr. Carlos Roberto Henríquez - Costa Rica  
Dr. Miguel Taboada - Argentina  
Dr. Maria de Lourdes Mendonca Santos -Brazil

#### North America

Prof. Daniel John Pennock - Canada

#### South West Pacific

Dr. Marta Camps Arbestain - New Zealand  
Dr. Neil McKenzie - Australia

#### Asia

Prof. Dr. Milkha Singh Aulakh – India  
Dr. Pisoot Vijarnsorn – Thailand  
Prof. Dr. Gan Lin Zhang – China  
Dr. Kazuyuki Yagi – Japan  
Dr. Suk Young Hong – Republic of Korea

#### Europe

Dr. Helaina Black - United Kingdom  
Dr. Pavel Krasilnikov – Russia  
Dr. Sobocká Jaroslava - Slovak Republic  
Dr. Luca Montanarella - Italy

#### Apologies

Dr. Cheryl Ann Palm - United States of America  
Dr. Abdullah Al Shankiti – Saudi Arabia  
Dr. Dominique Arrouays – France

## ANNEX II

### Issues Brief on Desertification, Land Degradation and Drought (DLDD)



Annex2.pdf

## ANNEX III

### Draft on Soil and Land Resources - Friday 26 July<sup>1</sup> - Soil as a critical component of sustainable development

Soil is a core component of land resources and the foundation of agricultural development and ecological sustainability. Soil is the basis for food, feed, fuel and fibre production and for many critical ecological services. Soils are complex, dynamic systems and their suitability varies from place to place. The area of productive soil is limited in relation to current technologies and is under increasing pressure of intensification and competing uses for cropping, forestry and pasture/rangeland, and to satisfy demands of the growing population for food and, energy production, settlement and infrastructure, raw materials extraction, and so forth. Soil formation takes a very long time; and if soils are lost or severely damaged they are difficult and costly to renew in a human time frame.

Soil degradation is a real and escalating threat and includes a number of degradation processes, including: erosion by wind and water and tillage, compaction, sealing, nutrient imbalance, acidification, salinization and pollution. Soil degradation is caused by unsustainable land uses and management practices that result from various social, economic and governance drivers, and it impacts negatively on livelihoods, ecosystem functions, food security and human wellbeing. Soils are being depleted at a rate that will compromise the capacity of future generations to meet their needs, unless we adopt a new approach to the management of these vital resources.

Since soil resources play a vital role for food security, environmental sustainability, climate change response and human wellbeing in general, it is imperative that the sustainable use and management of soils is incorporated into all of the sustainable development goals. As defined in the Rio+20 document "The World we Want" particular attention is drawn to outcomes 1, 5, 6, 7, 8, 9 and 10 and the UN "Zero Hunger" and the "Zero net land degradation" global goals.

**End Extreme Poverty including Hunger (Goal 1):** Given the current population trends and forecasted global population by 2050, and estimated 60% increase in demand for food, feed and fiber by 2050 (FAO SOFI), sustainable use and management of the world's fertile soils and sustainable production intensification have become an imperative for food security. The goal of improving global food security and nutrition, in the context of population growth, land degradation and climate change, cannot be attained unless soils are placed at the very top of the development agenda. There are well recognized links between soils and poverty. xx % of the population depend on Natural Resources for their livelihoods, % of global food comes from smallholders so efficient use of soils is essential to sustain and increase production and alleviate poverty. Soils also need to be managed in large scale, commercial production through sustainable intensification. Food security is no longer only an issue of national sovereignty but requires global commitment.

**Secure Ecosystem services and biodiversity and ensure good management of water and other natural resources (Goal 9)** Soils need to be recognized and valued not only for their productive capacities but for the contributions they provide to the maintenance of key ecosystem services. Soil is a reservoir for at least a quarter of global biodiversity and therefore requires the same attention as above ground biodiversity. Soils play a key role in the supply of clean water and resilience to flood and drought. Plant and animal life depends on primary nutrient cycling through soil processes. Soils provide the largest store of terrestrial carbon, and their management is important to preserve and enhance carbon sequestration. The soil also serves as a platform and source for construction and raw material.

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<sup>1</sup> Helaina, Marta, Lou (Chair), Miguel, Elsheikh, Martin supported by Sally and Carlos completed

**Curb Human Induced climate change and ensure clean energy for All (Goal 8)** Soil is both affected by, and may contribute to, climate change. Sustainable management of soil contributes effectively to mitigation of climate change through carbon sequestration and reduction of GHG emissions. It is imperative to promote management practices for climate change adaptation and resilience to changing weather patterns and extremes. Protection and management of organic carbon rich soils, notably peatlands and permafrost areas are of particular concern. Soils have a role in achieving integrated production systems and have the benefit of contributing to climate change mitigation and bioenergy supply and helping to address the food, water, and energy nexus. The cost of no action today will compromise the benefits of future generations.

**Goal 5 (Achieve health and wellbeing at all ages) and Goal 7 (Empower inclusive, productive and resilient cities)** - If soils are managed and used sustainably they will contribute to human wellbeing. However, soils may threaten human health and wellbeing when potentially toxic elements, radionuclides, organic persistent pollutants, and human pathogens are transported from soils to the human food chain. These contaminants can either be of natural or anthropogenic origin. Soil acidification typically promotes bioavailability of many trace elements and heavy metals that could cause phytotoxicity and human toxicity. Strong regulations and effective control by governments should be put in place in order to limit the accumulation of contaminants beyond established thresholds for human health and wellbeing and eventually to remediate contaminated soils.

**Goal 6 (Improve agriculture systems and raise rural prosperity):** Efforts are needed worldwide to: 1) increase the area under sustainable soil management practices (e.g. through protective vegetation, minimum/zero tillage cultivation, conservation agriculture and organic agriculture systems, integrated agro-silvo-pastoral systems, integrated plant nutrient management; rotational grazing systems, watershed/territorial management); 2) enhance the restoration of degraded soils; and 3) promote “sustainable production intensification” through adapted biological resources, increasing soil fertility, water use efficiency, ensuring sustainable use of inputs (genetic resources, fertilizers, pesticides, etc.) and recycling of agricultural by-products.

**Goal 10 (Transform Governance for sustainable development):** Support is needed for: 1) the development of national soil information systems and their use for informed decision making on sustainable land use and natural resources/ecosystems; 2) the development and application of adequate regulation, legislation and policy on soil protection, conservation and rehabilitation including loss of productive soils for non-agricultural purposes (e.g., urban expansion and mining); 3) the use of information systems and policy for identifying and resolving conflicts arising from competing options for land use and management; 4) strengthening of education and capacity building on soil and sustainable soil management; and, 5) increasing investment in sustainable soil management through overcoming obstacles including tenure security and user rights, access to knowledge, technical advice and financial services and innovation.

In developing soil policy and implementation plans and actions, the management of soils should include protection, conservation/sustainable use and the rehabilitation of degraded soils. In turn, decisions affecting land use should respect the characteristics, qualities and resilience of soil, as a key component of land suitability. Attention is drawn to some core soil related targets and indicators for inclusion in the ongoing process for developing and prioritizing sustainable development goals towards 2050.

Need for clear Target on soils

## ANNEX IV

### World Soil Charter



Annex4 (2).pdf

## ANNEX V

### Initial drafts of content for the first World Soil Resources Report

#### **Aim: Overview situation of soil resources of the world**

- Use of scientific data for advice
- Use of soil atlas from various parts of the world (illustrative)
- Informative, scientific and technical (not what is soil, etc.)
- Well established sequence
- Information quality: Tier 1, tier 2....
- Provide topics for decision making and policy makers (Identify what is needed?)
- Follow IPCC process- first report identify gaps, then orient work to fill gaps, then present data on trends for decision making
- Summary for policy makers
- Need to back up by a marketing /communications strategy to disseminate outputs of GSP
- Process: WG on pillars; experts contributing to chapters

Two options were discussed.

#### **OPTION 1**

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- (1) Soil Resources-status and trends (past, present, future):
  - Baseline data 2001 (soil millennium assessment)
  - Assessment period (literature last 10 years, also reflect longer term trends 50 years where important?, )
  - RS data- map; short time span can reflect importance of soil changes (see GLADIS but only soil), time series for certain areas of the world (Java etc)
  - Frequency- 2015 first report
- (2) Soil Properties
  - Soil organic carbon, nutrients, soil water links, etc.
- (3) Soil functions:
  - carbon ,
  - erosion,
  - nutrient balance
  - sealing,
  - acidification, etc
  - filtering buffering transforming
- (4) Soils status and trends:
  - Food, fibre, Fodder,Energy/fuel etc.
  - Water quality + availability
  - Climate change

- Biodiversity conservation and sustainable use
- Human health
- Sustainability of soil resources

(5) Status of research and identification of gaps

## **OPTION 2**

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**What is ultimate objective of improving soil data and information? Follow objectives of the GSP and its Pillars which aim to develop capacity based on best science available in order to promote sustainable soil management**

(1) Information and Data (pillar 4)

- Status of soils- available knowledge , gaps
- Indicators, harmonization, monitoring, etc (pillar 5)

(2) Sustainable soil management (pillar 1)

- Best practices what where
- Failures
- What is needed to bring about change

(3) Targeted research (pillar 3)

(4) Education, awareness, capacity, innovation etc (pillar 2)

(5) Policy, governance, etc. (pillar 2)

- Major challenges
- Scenarios: what will happen if don't manage soils sustainably
- Clear messages on what is needed policy, research, information, etc.