

## **Portraying the UNCCD-SPI First Science Day held on 5th September 2019 at the Rio Conventions Pavilion in New Delhi**

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### *Summary:*

The first UNCCD SPI Science Day kept a room of over 100 experts full all day. The diverse and highly-engaged audience included scientists, policy-makers, practitioners, students, journalists and representatives of Civil Society Organisations (CSOs), and development agencies.

Invited speakers emphasised the interconnections between land and climate, and the multiple benefits to nature and humans from Sustainable Land Management (SLM).

Notably, a convergence of evidence has emerged from recent separate global scientific reports that urgent action is required to sustain the health of land. This will require coordinated efforts, engaging all parts of society, especially women and youth, in planning, implementation and monitoring of measures.

The implementation of measures to achieve Land Degradation Neutrality (LDN) was highlighted as a way to support climate change mitigation and adaptation efforts, as well as a means to halt the loss of biodiversity and ecosystem services, thus highlighting the co-benefits emerging from LDN for achieving several Sustainable Development Goals (SDGs).

The audience called on the scientific community for more effective communication, in ways that are clear and accessible to decision-makers, experts and the public.

The inclusive approach used by the UNCCD-SPI Science Day allowed the diverse audience to voice their experiences, their suggestions and their visions in an open atmosphere.

An artist synthesised the information and ideas raised, through his paintings and poetry, providing the group with new perspectives on the intrinsic connections between humans and nature.

A photo gallery reflects the highly dynamic and interactive dialogue throughout the day between SPI members and experts from different disciplines and science-policy institutions.

## Outcomes of the six sessions of the UNCCD SPI First Science Day:

### **Session 1: Overview of Science Day and introduction to LDN**

#### *The intention of this session:*

The first session of the UNCCD-SPI Science Day introduced the objectives, and planned deliverables, and outlined the structure of the full-day event designed to facilitate interactive dialogue on barriers to implementation of Land Degradation Neutrality (LDN), and ways to fast track action at national level.

#### *The structure of this session:*

After welcoming the participants and outlining the structure of the Science Day and the aims of each of the six sessions, SPI co-chair, Mariam Akhtar-Schuster invited the Executive Secretary of the UNCCD, Pradeep Monga, to give his welcome remarks.

Dr Monga drew attention to the programmatic and political relevance of the objectives of the UNCCD-SPI First Science Day, by indicating that addressing the condition of 'land' integrates and accelerates actions to achieve LDN. Therefore, investment in land through the implementation of the LDN measures will substantially support the achievement of the Sustainable Development Goals (SDGs).

Annette Cowie (SPI member and IPCC lead author) introduced the scientific Conceptual Framework of Land Degradation Neutrality. This concept set the scene for discussions in the following sessions of the day on achieving no net loss of healthy and productive land by taking into consideration measures to avoid, reduce and reverse land degradation, safeguarding biodiversity and highlighting the role of land-based climate change adaptation and mitigation measures, and strengthening resilience towards the effects of drought.

### **Session 2: Introducing the IPCC Special Report on Climate Change and Land**

#### *The intention of this session:*

This session was dedicated to the presentation of the [\*Special Report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems\*](#) that had been developed by the Intergovernmental Panel on Climate Change (IPCC), known as the Special Report on Climate Change and Land. This Special Report was approved and accepted at the 50th Session of the IPCC held from 2 to 7 August 2019 in Geneva, Switzerland.

During the two-year development phase of the Special Report the UNCCD-SPI and the IPCC regularly interacted within the framework of their respective mandates. This included nomination of experts on the basis of the IPCC nomination process, participation in the IPCC call for the review of the drafts, and participation in IPCC meetings. As requested by the UNCCD Parties, the UNCCD-SPI also sought pathways to further consolidate cooperation with the IPCC.

### *The structure of the session:*

Professor Jim Skea, co-chair of the IPCC Working Group III for the development of the Sixth Assessment cycle, and co-coordinator of the Special Report on Climate Change and Land was invited by the SPI to present the outcomes of the SRCCL, together with authors of this special report and a representative of the technical support unit (TSU). Jim Skea gave an overview of the development of the report; Minal Pathak from the TSU provided an overview of the major findings, and Alisher Mirzabaev, the coordinating lead author of the chapter on 'desertification' provided specific insight into the findings of his chapter.

To conclude Session 2, the presenters together with other authors of the Special Report, namely Annette Cowie (lead author), Fatima Denton (coordinating lead author), Jagdish Krishnaswamy (coordinating lead author) and Lindsay Stringer (lead author) formed a panel to discuss the findings with the experts attending the Science Day.

SPI member Mariam Akhtar-Schuster coordinated the interactive dialogue between the IPCC experts and the experts attending the Science Day during this panel to allow all seven IPCC experts to interact with the participants.

Questions included:

- What experiences have emerged from coordinating the involvement of different scientific communities in the development of the Special Report, and what opportunities do the IPCC in future for cooperation between the 'climate expert community' and the 'land expert community'?
- Climate change is changing the potential of land's productivity worldwide. Does the Special Report on Climate Change and Land provide information on how knowledge about desertification and land degradation can support *proactive responses* in regions where higher temperatures and water scarcity are changing the potential of land?
- How can we transform agriculture in order to adapt agriculture to changing climates?
- Some land-based options could compete with current land uses. How much land is needed for mitigation? What are the trade-offs, particularly concerning food security?
- What opportunities and challenges emerged from collaboration between natural and social scientists during the development of this IPCC Special Report on Climate Change and Land?

### *Major aspects emerging from this session:*

The IPCC experts highlighted that land degradation is a driver of climate change and greenhouse gas emissions. The combined effects of climate change and land degradation are having an impact on poverty and food security. Currently, nearly 10% of drylands are affected by desertification hotspots, as shown by declining vegetation productivity, affecting 20% of the drylands population. Desertification results from processes including soil erosion, soil salinization, and reduced water availability associated with climate change.

The IPCC experts highlighted that land degradation is often assessed from loss of land cover or plant growth. The Special Report on Climate Change and Land however also shows the social dimensions of the climate change and land degradation interactions, because changes to the status of land affects human wellbeing, economic functions and the productive capacity. In this regard, the importance of Sustainable Land Management (SLM) practices was emphasized as a measure that reduces risk of land degradation and contributes to climate change mitigation and adaptation. The IPCC experts highlighted however that the adoption and implementation of SLM practices and technologies can be hampered by a lack of access to credit and markets. Collective action, climate insurance, extension services and early warning systems are also required to foster SLM to support land-based climate change adaptation and mitigation. Importantly, good governance will be necessary, including a mix of regulatory policies and incentives, land planning instruments and land tenure reform, to facilitate adoption of SLM.

Jim Skea concluded the panel discussions by highlighting that bringing together scientists from different disciplines and also policy-makers during the development of this IPCC special report had been challenging, but also rewarding as it had raised the awareness in the different scientific and policymaking arenas that achieving climate change adaptation and mitigation is not possible without considering ‘land’, and that *vice versa*, striving to manage land degradation and to achieve LDN without considering climate change impacts would also not be possible. The pursuit of LDN can therefore provide incentives to also supporting climate change adaptation and mitigation. He finished by stating that these interdependencies open the door for potential future collaboration between the scientific communities of the UNCCD-SPI and the IPCC.

Addendum: As decided at its fourteenth session of the Conference of the Parties of the UNCCD in New Delhi (Decision 18/COP.14), the SPI has been requested to analyze the key messages of the Special Report on Climate Change and Land for presentation at the fifteenth session of the Committee on Science and Technology of the UNCCD in 2021.

### Session 3 (10:20-11:30) Foundation for a healthy planet: The Enabling Environment for LDN

#### *The intention of this session:*

The overarching objective in this session was to have the audience actively engage in discussion on how to enhance the enabling environment to achieve LDN.

#### *The structure of this session:*

In this session, seven presenters delivered 3-minute overview talks on a wide range of topics related to enhancing the enabling environment for LDN (see below). The presenters delivered key messages and then posed a key question to the audience. The audience was then asked to form groups of 5-6 members. These groups then received one key question on a note card and were asked to discuss and report back on their question. The small groups were so engaged in their discussions and reporting back their results that we

allocated additional time to this session. We were able to give small groups the opportunity to report on their discussion to the broader audience.

#### **SLM for LDN - Jean-Luc Chotte**

- Key message: i) SLM, when deployed appropriately for given location and situation can be used to avoid, reverse land degradation and restore degraded land, ii) Choosing suitable SLM approaches for specific area is supported by information on soil organic carbon stock
- Key question: How could the assessment of multiple benefits of SLM guide innovation in agriculture?

#### **Food security and LDN - Eduardo Mansur**

- Key Message: The key challenge is to reverse declining productivity, degradation, poverty, food insecurity, poor health, and rural migration, which will require attention to driving forces of degradation and vulnerability, and the identification of opportunities and incentives to mobilize the adoption of SLM practices.
- Key Questions: (1) Considering that agriculture is a major land and water user is food security for all (SDG2) compatible with land degradation neutrality (SDG 15.3)?
- (2) To supply food for all, and achieve SDG 2 (Zero hunger), do we need more land to enter into agriculture production worldwide?

#### **Human dimensions of LDN - Lindsay Stringer, University of Leeds**

- Key Message: Striving towards LDN is not about managing the environment, it's about managing people and moving towards good governance to open up options.
- Key Question: How can scientists and policymakers support the development of good governance?

#### **Making LDN inclusive - Marioldy Sanchez Santivanez**

- Key Message: Inclusive LDN is not only about opening up access to participation, but respect and recognition of the broad needs and perspectives of the land stakeholders.
- Key Question: How do we further engage land stakeholders at the local level, in the LDN process under principles of good governance such as legitimacy and public confidence?

#### **The role of CSOs in achieving LDN, Youssef Brahim**

- Key Message: CSOs are one of the key actors for promoting a social-ecological approach to achieve LDN.
- Key Question: Does building partnerships, notably through networks, strengthen the role of CSOs as drivers of change in environmental governance and for a transformative action on the society?

### **The Rural-Urban Nexus and LDN I - Graham von Maltitz**

- Key Message: The dramatic shift to more urban living, especially in Africa with the emergence of mega-cities across the continent will require significant land resources to support these increasing populations.
- Key Question: How can urban dwellers modify consumption patterns so as to enhance rural sustainable land use practices?

### **The Rural-Urban Nexus and LDN II - Poonam Dabas**

- Key Message: If urban societies become aware of the implications of their activities and daily choices on rural lands, this may then support awareness raising and ultimately changes in regulations, consumption, and production patterns.
- Key Question: How can non-state actors play an active role in bringing about desired results in LDN?

### **Governance and policy for LDN - André Francisco Pilon**

- Key Message: Paradigms of growth, power, wealth, work and freedom embedded into the political, technological, economic, social, cultural and educational institutions are significant barriers to change and achieving LDN.
- Key Questions: 1) How do we advance transnational civil society in view of the engagement of political, economic and institutional actors in regulation and governance of natural resources? 2) How can societal needs be provided, controlled and owned, and forests and soils act as 'loci of hope' for achieving an equitable future?

#### *Major aspects emerging from this session:*

The most important aspect to emerge from this session was the value of giving the opportunity for participants to actively engage in small group discussions with participants who have different viewpoints. These interactions allowed participants in the Science Day to more deeply engage in the topic and to network with other meeting participants. It was especially heartening to see youth participants in active discussion with scientists, observers, and CSOs. This provided a unique professional development opportunity for the youth participants.

### **Session 4 (11:30-12:30) Tools and practices to achieve multiple benefits through LDN**

#### *The intention of this session:*

The purpose of Session 4 was to present some technical aids, including tools and guides, that can support countries to plan and achieve LDN. The session emphasised new tools and policy approaches developed and recently published by the SPI.

#### *The structure of this session:*

Professor Jim Skea (*Co-Chair, IPCC Working Group III*) chaired the session that comprised a series of short presentations, followed by a panel discussion to allow audience interaction

with the presenters. The majority of the presenters were SPI members, except where another affiliation is indicated.

*Major aspects emerging from this session:*

Ermias Betemariam described the importance of soil carbon as an indicator for LDN. Eleanor Campbell (University of New Hampshire; consultant to SPI) summarised the guidance on estimation of soil carbon recently published by the SPI, including decision trees to guide policy-makers and land managers on the most suitable tools and approaches for their purpose. See <https://knowledge.unccd.int/publication/realising-carbon-benefits-sustainable-land-management-practices-guidelines-estimation>

Peter Verburg provided a recorded presentation on the use of integrated land use planning to reconcile sustainable use and conservation. His presentation covered land use planning concepts presented in the SPI report on creating an enabling environment for land degradation neutrality (<https://knowledge.unccd.int/publication/creating-enabling-environment-land-degradation-neutrality-and-its-potential>).

Marijana Kapović Solomun summarised her practical experience in planning for LDN, specifically focussed on identifying measures to avoid, reduce and reverse land degradation.

Mark Svoboda presented on “The land-drought nexus and drought-smart solutions”, introducing the concept of drought-smart land management and summarising the recent SPI report on this topic, available at <https://knowledge.unccd.int/publication/land-drought-nexus-enhancing-role-land-based-interventions-drought-mitigation-and-risk>

Nichole Barger discussed technological developments that can assist in connecting consumption and production to create sustainable supply chains.

During the panel session, the presenters responded to comments and questions from the audience and the following questions were considered:

- What new knowledge and tools are available to land managers and policy-makers?
- What technologies and approaches can support transformation to sustainable land use?
- What is required to enable these to be applied?

Key conclusions:

Soil carbon is a key measure of soil health, responsive to land degradation and SLM, and it also reflects the land’s contribution to climate change mitigation. Guidance produced by the SPI will support countries to utilise available tools for estimating soil carbon, and to allocate scarce resources for measuring soil carbon to build knowledge and improve soil carbon models. Local landholders should be involved in identifying effective SLM practices suited to local conditions and likely to be broadly adopted. Engaging all stakeholders across the supply chain, through to consumers, will improve sustainability of land use. Technological developments, new governance advances and new finance approaches can be brought together to improve our capacity to plan, implement and monitor sustainable land management, in support of LDN targets. As climate change is expected to exacerbate

drought in many dryland regions, it is critical to integrate drought planning into LDN planning, to achieve LDN targets.

### Session 5 (13:00-15:00) The diagnosis: Scientific Assessment to inform Policy

#### *The intention of this session:*

This session was dedicated to the presentation of current initiatives tackling land issues, the objective being to share views and priorities in order to emphasize convergence between these initiatives.

#### *The structure of this session*

Ibrahim Thiaw, Executive Secretary of the UNCCD, highlighted the importance of the most recent reports developed by different science-policy interfaces and organizations, which are leading to converging evidence on the need to orchestrate common actions worldwide to tackle land degradation, desertification and drought. Jean-Luc Chotte outlined the objective of this session as part of the whole Science Day, by indicating that representatives of initiatives and organizations relevant for the activities of the UNCCD-SPI had been invited to this session to provide insight into their ongoing work which is relevant for implementing and maintain LDN. The session was chaired by Barron Orr, lead scientist at the UNCCD secretariat.

Jeffrey Herrick, UN Environment International Resource Panel (International Resources Panel of the United Nations Environment Programme (UNEP-IRD)), introduced the recent publication on “Land Restoration for Achieving the SDGs”. Michael Cherlet, EC-Joint Research Centre, stressed the collection of multiple evidences outlined in the World Atlas of Desertification. Josef Settele (UFZ/iDiv/University of Halle), co-chair of the “Global Assessment on Biodiversity and Ecosystem Services” (IPBES) presented its major findings and pointed out the key role of local knowledges in managing biodiversity as a crucial component for safeguarding land ecosystem services. The interconnections between climate and land were detailed by Fatima Denton (coordinating lead author of the IPCC Special Report on Climate Change and Land) while Jagdish Krishnaswamy, coordinating Lead author of the same IPCC Special Report described means to achieve co-benefits through managing land and climate risks. Douglas Cripe (Group on Earth Observations (GEO)), presented the GEO knowledge Hub including SDG 15.3.1 target. Barron Orr shared with the audience general comments to open up the debate.

#### *Major aspects emerging from this session:*

Convergences between these initiatives were obvious, making land a key driver to address climate, biodiversity, livelihood targets. From the debate the following findings emerged

#### Common diagnosis

- Human activities are drawing on land resources faster than we can restore them
- Land is part of the solution, but land can't do it all

- Land and climate cannot be tackled in isolation
- Land and Food systems are interconnected
- Land is impacted by remotely consumption
- Solutions do exist

To strengthen the role of land as a driver for solutions, there is a need

- To share data acquired by each initiative
- To merge Indigenous local knowledges and Scientific knowledges
- To Empower local communities (women and youth)
- To encourage collective actions: government, local communities,
- To focus on the most vulnerable communities (sharing risks)
- To address urban degradation (complementing rural land degradation)

As an overarching message, transparency and evidence-based actions are needed

## Session 6 (15:30-17:00) Regenerating a Liveable Planet

### *The intention of this session:*

This discussion session allowed a panel of invited experts to highlight key findings from preceding sessions, and to bring to attention additional findings, comments and questions from the floor. It was intended to be a participatory space that allowed all attendees to feel they had a chance to contribute should they so wish and sought to provide an inspiring end to the day.

### *The structure of this session:*

The session took a varied approach and began with an overview of what had happened previously. This was necessary because some participants had joined only one or two sessions or were just joining at the start of session 6, and we wanted to avoid repetition of the same issues that had already been discussed earlier on in the day. Panel members spanning a range of different stakeholder groups then gave 3-minute interventions, also taking questions from the audience. We left a vacant seat on the stage to enable audience members to become panellists in a 'fish bowl' participatory approach. This made the session much more dynamic and interactive and allowed a range of different interventions that may not otherwise have been captured, as the person making the intervention or asking the question took the empty seat in order to participate. A journalist then summarised the major highlights and the artist who had been painting during the day talked the audience through his paintings and what they represented.

### *Major aspects emerging from this session:*

Three headlines emerged from the session:

1. **Communication is key.** We need strong messaging and to better communicate complexity, taking into account that in some countries local languages have no word to

describe the problems faced and that the purpose of information provision is to support decisions and actions.

2. ***There is a need to inspire and catalyse action***, using scientific recommendations and economic information to develop concrete action plans that are then implemented. Achieving improved integration requires joint working (breaking down silos between policies and scientific disciplines), dialogue and the development of reproducible information that also meets the needs of those who will use it.
3. ***There are multiple benefits that can be harnessed from improving the quality of land.*** Benefits from addressing land restoration and tackling degradation can be good for human health (both physical and mental health) and wellbeing. These benefits are often overlooked.