



GLOBAL SOIL WEEK 2015: SOIL. THE SUBSTANCE OF TRANSFORMATION.

19-23 APRIL, 2015

The third Global Soil Week (GSW 2015) convened in Berlin, Germany, from Sunday, 19-23 April, under the theme 'Soil. The Substance of Transformation.' Following an opening reception on the evening of Sunday, 19 April, participants attended plenary sessions, interactive dialogue sessions and open space discussions from 20-23 April. Plenary sessions addressed linkages between soils and the Sustainable Development Goals (SDGs), an integrated perspective for implementation, and the way forward, whereas interactive dialogue and open space sessions were loosely organized into five thematic streams. Participants also attended the inauguration of the ONE HECTARE exhibition.

During Wednesday's closing plenary, Institute for Advanced Sustainability Studies (IASS) Executive Director Klaus Töpfer highlighted that the week had shown that a transformation towards sustainable soil management is possible if all actors are integrated in the search for solutions. Stressing that sustainable land management (SLM) can help achieve several SDGs IASS Interim Secretary General Alexander Müller said that the protection and rehabilitation of soils is not only about technologies, but also always about human rights.

GSW 2015 brought together 600 scientists, policy makers, practitioners, artists and young professionals from 80 countries.

The event was organized by the IASS' Global Soil Forum. The IASS is funded by the German Federal Ministry of Education and Research (BMBF); FONA – Research for Sustainable Development and the State of Brandenburg. The IASS' partners of the Global Soil Week are the European Commission; Food and Agricultural Organization of the United Nations (FAO); United Nations Convention to Combat Desertification (UNCCD); United Nations Environment Programme (UNEP); the Federal Ministry for Economic Cooperation and Development (BMZ); the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH; German Federal Environment Agency (UBA) and the International Union of Soil Sciences (IUSS). The Global Soil Week was supported by the European Commission; BMZ; GIZ; German Federal Ministry of Food and Agriculture (BMEL) and the Fachagentur Nachwachsende Rohstoffe (FNR).

This report summarizes the plenary sessions, followed by an overview of the dialogue and open space sessions held throughout the week as well as summaries of selected sessions.

A BRIEF HISTORY OF THE GLOBAL SOIL WEEK

ORIGINS OF GLOBAL SOIL WEEK: The Global Soil Week (GSW) is an initiative of the Global Soil Forum, which was established by IASS in 2011. GSW is also convened within



Participants registering during the opening day

the framework of the Global Soil Partnership (GSP), launched in 2011 by FAO and a group of partners to improve global governance of the world's soil resources to guarantee healthy and productive soils for a food-secure world.

GSW 1/GSW 2012: Convened in Berlin, Germany from 18-22 November 2012 as a forum for interactive exchange and dialogue among stakeholders from science, government, business and civil society regarding their land and soil-related experience and expertise, and to develop plans of action for sustainable land/soil management and governance. The meeting also served to initiate follow-up actions on land and soil-related decisions made at the Rio+20 Conference.

GSW 2/GSW 2013: Convened in Berlin from 27-31 October 2013, on the theme 'Losing Ground.' Discussions were organized around four thematic threads corresponding to key areas of response to global soil loss: transforming

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global material and nutrient cycles; upscaling sustainable land management (SLM) and soil engineering at the landscape level; integrating land and soils in the SDGs debate; and responsible land governance.

FOLLOW-UP INITIATIVES: The Soil Atlas was published in January 2015 and presents the current state of the soils and highlights the threats of land degradation. The Brazilian Soil Governance Conference was held from 25-27 March, 2015 in Brasilia, Brazil, and produced the 'Letter from Brasilia' to provide input for national soil governance. IASS also produced the short animation film titled Better Save Soil to raise awareness of how soil is connected to our daily lives and stimulate public engagement.

GLOBAL SOIL WEEK 2015 REPORT

PLENARY SESSIONS

SOIL THE SUBSTANCE OF TRANSFORMATION:

Kick-off plenary: Global Soil Week 2015 opened was formally kicked-off on Monday, 20 April 2015, in Berlin, Germany. After a screening of the of the animation film 'Better Save Soil,' Klaus Töpfer, Executive Director, IASS, welcomed participants and underlined that soil is at the center of the transformation needed to address a variety of environmental challenges. He noted that while a stand-alone soil target was not included in the SDGs, it has been communicated successfully that it constitutes a cross-cutting issue. He underscored, *inter alia*: the importance of a visionary soil target; the importance of land rehabilitation; and the challenge to use advancing technology in a responsible manner.



Klaus Töpfer, IASS

Panel Discussion: A panel of experts then discussed the role of soils and sustainable soil management in the context of the SDGs. Sirajul Islam, Programme Head, Agriculture and Food Security Programme, Bangladesh Rural Advancement Committee (BRAC), highlighted the role of soil in the food and energy nexus through examples from a country with a growing population challenged by climate change impacts, overexploitation of soil, and shrinking arable land. He called for regional cooperation and a collective voice for soils.

Joseph Ole Simel, Executive Director, Mainyoto Pastoralist Integrated Development Organization, Kenya, lamented that soil is used for short-term interests, and that decision-making that lacks respect for soil has implications for poverty, soil rights for indigenous peoples, and food security. Ole Simel emphasized the absence of secure land tenure means that the resource can be abused. He said GSW 2015 should seek to change attitudes among political elites, industries, policy frameworks, and financial institutions.

Monique Barbut, Executive Secretary, UN Convention to Combat Desertification (UNCCD), stressed that land and soil must emerge with a high profile in 2015. She said that GSW can support the assessment and validation of soil and

land indicators under discussion and help build a practical monitoring framework. Barbut suggested discussing better interactions between the UNCCD's science conference and GSW. She noted that the target to achieve land degradation neutrality (LDN) addresses drivers of land degradation in combination with scaling up sustainable management practices.

Pia Bucella, Director, Directorate Natural Capital, European Commission, underscored the notion of circular economies, where raw materials are not wasted following their use. She noted that soil is specifically mentioned in three SDGs, reflecting soil quality, soil pollution and land degradation, and called for immediate action as almost a quarter of soil resources worldwide are already degraded.

Moujahed Achouri, Director, Land and Water Division, FAO, stressed that soils constitute the basis for food security and nutrition. He described the efforts of the Global Soil Partnership (GSP) to promote sustainable soil management.



Moujahed Achouri, FAO

In the ensuing discussion, participants focused on: younger generations' alienation from agriculture; soil quality deterioration and associated health risks; the importance of soil quality to eradicate hunger and poverty in Africa; monitoring programmes for pesticides; and ways to bridge the gap among soil scientists, policy makers and planners.

Barbut underscored the need for correct pricing mechanisms for soil restoration. Bucella stressed the need for education and public involvement, and stressed the risks of wild pollinator decline. Islam underscored the need for minimal soil disturbance during agricultural production, as well as the importance of passing farming knowledge to younger generations. Töpfer highlighted the importance of link scientific knowledge with emotions.

Minister Aroldo Cedraz, Brazilian Federal Court of Accounts, reported on the outcome of the Brazilian Soil Governance Conference. He presented the 'Letter from Brasilia,' outlining measures and opportunities including: the creation of a permanent forum to share knowledge on soils for advancing soil policies; platforms for improved participation, including the use of new IT tools; and the review and consolidation of soil-related laws to support strategic planning for sustainable development.

TOWARDS AN INTEGRATED PERSPECTIVE ON THE POST-2015 DEVELOPMENT AGENDA: On Tuesday afternoon, a plenary session, moderated by Jes Weigelt, IASS, focused on balancing competing demands placed on a number of scarce resources, including soils. He underscored the need for a human rights-based approach for sustainable soil management.

Keynote Speeches: Sara Scherr, President and CEO, EcoAgriculture Partners, introduced the landscape approach as a way to operationalize integrated management. She

stressed the need for a shift from a technocratic approach to reach multi-stakeholder, multi-objective integrated landscape management (ILM). She underscored the need to transform analysis and design of interventions, systems of landscape governance, and markets and finance.

Klaus Deininger, Lead Economist, Development Economics Group, World Bank said that land interventions often involve risks, using an example of establishing land rights in Rwanda. He stressed that proper land planning and an inclusive and multi-stakeholder approach are indispensable, as mistakes may be fatal.

Dialogue Session Reports: The rapporteurs of the dialogue sessions then provided brief summaries of the sessions held on Monday afternoon and Tuesday morning.

Reporting from a session on food security and sustainable food systems, Maryam Rahmanian, Centre for Sustainable Development, Iran, noted that the discussion of food security had included access, equity, distribution as well as food sovereignty for the first time. She summarized that research and dialogue on climate change and agroecology could benefit from multi-stakeholder, strong local-level organizations, knowledge exchange, trust-building and a link to human emotions.

Reporting from a session on the challenge of biomass in the Post-2015 Development Agenda, Hans Rudolf Herren, Millennium Institute, US, and Biovision, Switzerland, noted that demands on biomass development require reevaluation, calling for multi-stakeholder approaches for defining biomass demand for food, feed and shelter versus energy. He also emphasized the function of markets given natural resource constraints.

Regarding a session on the new urban agenda, Pieter de Vries, Wageningen University, highlighted discussions on *inter alia*: rethinking rural-urban linkages; the need to bring greater creativity to urban planning; and linking methodologies such as spatial analysis with deeper debates on social justice.

On a session on the mitigation of and adaptation to climate change through SLM, Henry Sibanda, UNDP, Malawi, shared examples on mobilizing pathways for SLM governance at the community level as well as discussions on socially inclusive pathways for Greenhouse Gas (GHG) reduction and enhancement of carbon sinks through REDD+.

Reporting on the session linking SLM in both coastal and marine environments, Paul Nathanail, University of Nottingham, UK, stressed the need to focus on integrated governance. He said the session underscored a transdisciplinary approach to link science from mountain to sea.

Reporting from the first joint meeting of the Science Policy Interface of the UNCCD (SPI) and ITPS, Martial Bernoux, SPI, explained that the bodies agreed to establish a coordination mechanism to avoid duplication and maximize synergies. They identified entry points to collaboration, such as linking SDGs with land degradation, indicators, regional implementation, and soil organic carbon.

Presenting outcomes from two sessions on land rehabilitation for food security, Mamadou Abdou Sani, GIZ, Niger, highlighted key messages, *inter alia*: the need for long-term engagement; finding interventions for land rehabilitation at multiple levels from the state to local communities; improving multi-sectoral coordination through the adoption of a more resilient landscape approach; and the need for both strong short-term economic incentives to motivate farmers and for longer-term incentives, such as securing land tenure.

Regarding the session on grounding global soil and land initiatives, Ivonne Lobos Alva, IASS, stressed: the need for multi-stakeholder dialogues in the national implementation of the Post-2015 agenda and the SDGs, as well as the need for appropriate indicators and monitoring tools for national soil policies. Reporting on two sessions on the Economics of Land Degradation (ELD) Initiative and other related initiatives, Mark Schauer, ELD Secretariat, highlighted the need to advance economic arguments to engage political decision makers.

Joerg Frauenstein, German Federal Environment Agency (UBA), reported the core messages from a session on the European initiative on cross-national strategies for soil protection and land-use, emphasizing: the need to link soil protection with spatial planning and land development; shifting the discourse from focusing on the threat of inaction, to opportunities from protection; and facilitating dialogue on “healthy soil.”

Panel Discussion: Rainer Horn, President of the International Union of Soil Sciences, said that understanding the history of soil use is critical to future management strategies. He stressed that ILM’s primary objective is not to enlarge arable land area, but to base soil management upon the properties of soil. He urged greater focus in education on the role of soil properties for development strategies.

Philip Seufert, Food First International Action Network (FIAN), focused on human rights as an overarching framework. He stressed differences between participating stakeholders must be reflected in the quest for balance between competing interests. Austin Tibu, Acting Deputy Director, Malawi Ministry of Agriculture, Water Development and Irrigation, emphasized that while soils are linked to agriculture, SLM requires moving beyond the agriculture silo. Moujahed Achouri, Director, Land and Water Division, FAO, stressed that a direct link between soils and food security may attract policy makers and necessary investment.



Mamadou Abdou Sani, Program
Promotion de l'Agriculture
Productive, GIZ



Jes Weigelt, Global Soil Forum Coordinator, IASS with Johan
Kuylenstierna, Stockholm Environment Institute (SEI)



Thomas Silberhorn, Parliamentary State Secretary, German Federal Ministry for Economic Cooperation and Development (BMZ)

Closing the plenary, Johan Kuylenstierna, Stockholm Environment Institute (SEI), emphasized the need to also consider the broader geopolitical landscape beyond the SDGs. He explored aspects of the

integrative perspective on the Post-2015 Development Agenda, emphasizing that the approach: must be horizontal and lateral; respond to broad societal challenges; reflect ideological dimensions and value systems; offer multiple benefits for multiple actors; and manage both impacts and externalities.

THE WAY FORWARD: The GSW 2015 closing plenary, moderated by Alexander Müller, IASS, convened on Wednesday afternoon.

Keynote Speeches: Thomas Silberhorn, Parliamentary State Secretary, BMZ, highlighted how Germany is supporting efforts to reduce land degradation and improve food security through the One World, No Hunger Initiative and its G7 presidency, through investing more than EUR1 billion annually in partnerships with 13 countries. He stressed “a world without hunger is possible by 2030,” noting that soil protection should be a solid component of the Post-2015 Development Agenda.

Sicily Kanini Kariuki, Principal Secretary for Agriculture, Ministry of Agriculture, Livestock and Fisheries, Kenya, said development in Sub-Saharan Africa is adversely affected by soil degradation, weak institutions, and poor access to technologies. She highlighted four priorities: shifting from top-down to participatory approaches; innovative knowledge-based institutions to inform policy; holistic and collaborative mechanisms anchored in fully accountable policies; and involving political leaders to champion the process.

Chairman's Conclusions: Klaus Töpfer stressed that scientists must collaborate more and link their knowledge to people on the ground. He cited the ONE HECTARE exhibition as a key effort to promote soil concerns. He noted that soil is the substance of the transformation necessary to achieve the right to sustainable development, noting it requires full

integration of the poor and marginalized guided by a focus on human rights. Töpfer further highlighted the importance of secure land tenure, highlighting that ten of the SDGs relate directly or indirectly to soil services.

Moderator Alexander Müller, Interim Secretary General, IASS, summarized the conference's main messages noting: that soil protection and rehabilitation is not only about technologies, but also about human rights; the need to implement the SDGs consistently and take advantage of their transformational potential; and the need to build on the diversity of available knowledge and link it to decisions on the ground.

Panel Discussion: Müller moderated the panel discussion on the way forward. Maria Krautzberger, President, UBA, lamented that while the cross-cutting character of soils is recognized there still is a tendency towards silo thinking. She highlighted that despite the majority of the world's poorest people depending on agricultural livelihoods, interlinkages between soils and poverty remain poorly understood. She recommended considering soil organic carbon as a global indicator of soil health as it also relates to biodiversity, soil water storage and carbon sequestration. She also called for the development of national indicators that address regionally-specific soil threats.

Hubert Ouédraogo, Lead Land Expert, Land Policy Initiative, United Nations Economic Commission for Africa, said that land in Africa is a strategic resource, vital for future global food production. He highlighted the need for policies that protect land rights of local communities, and said that future efforts should incorporate lessons learned and focus on monitoring and evaluation. Gerda Verburg, Chair, UN Committee World Food Security, stressed, *inter alia*: the need for a concrete plan of action to produce tangible results; the need for a new narrative; and the importance of marketing and lobbying. She stated that smallholder and family farmers are the biggest investors in the agricultural sector.

In the ensuing discussion, participants addressed, among others: the coherence of the SDGs; ways to move away from silos towards systems thinking; the need to share success stories, advertise good results and best practices, and turn ideas into laws.

Closing: Noting a perceived gulf between the soil and water policy communities, Ursula Schäfer-Preuss, Chair of the Global Water Partnership, said that “water and soil together are the substance of transformation.” She stressed there are many opportunities to integrate soil and water in the Post-2015 Development Agenda.

Hannah Steenbergen, Common Soil and Sustainable Food Trust, UK, and Siyabonga Myeza, South Africa Environmental Monitoring Group, described their experience with the Young Professionals Programme, supported by IASS, WOCAT and GIZ, highlighting that it has provided momentum and inspiration for projects in their home countries. They urged more youth involvement in future GSWs, stating that “we are dynamic, creative, and want to dig in.” Myeza emphasized that young professionals can be agents of change being well-placed to link global sustainability strategies with grassroots settings.

Töpfer thanked participants and the organizers. The meeting closed at 7pm after a performance of improvisational theatre by Theatersport Berlin, creatively capturing key messages emerging from the Third Global Soil Week.



Corinna Weber with Klaus Töpfer, IASS



PRESS CONFERENCE

A joint IASS-UNEP press conference was held at lunchtime on Monday to launch the report 'The Role of Biomass in the SDGs: A Reality Check and Governance Implications.'

Töpfer explained that consistency and coherence of the goals and targets had not been sufficiently considered during the SDG process. He said that the report

shows that projected demand for biomass under the SDGs will exceed the quantities that can be produced with currently available arable land, which will lead to food-fuel competition, and pressure on soils in other parts of the world.

Michael Obersteiner, International Institute for Applied Systems Analysis, Austria, used the analogy of global resources as a balloon inflated by demographics and consumption patterns that eventually reaches its planetary boundaries and stressed the need for an integrated approach to tackle the SDGs.

Ernst Ulrich von Weizsäcker, World Future Council, focused on sustainable consumption and production patterns, underscoring that while productivity gains may be achieved using existing technologies, this is hindered by perverse incentives.

Mette Wilkie, United Nations Environment Programme (UNEP), Kenya, stressed the need for a systemic approach, noting that the 17 SDGs should be dealt with as a package in an integrated manner incorporating environmental concerns. She emphasized the need for behavioral change, and removal of perverse incentives.

During the discussion, moderated by Jes Weigelt, IASS, Germany, participants addressed ways to exercise pressure to remove subsidies on fossil fuels and water consumption, the feasibility of taxing CO₂ emissions, and the differences among the Millennium Development Goals (MDGs) and the SDGs.

ONE HECTARE EXHIBITION

On Wednesday, at lunchtime, participants attended the opening of the ONE HECTARE exhibition and art installation in the park Gleisdreick – Schöneberger Wiese. The installation aims to make soil and land issues tangible for visitors, using markings and elements on the one hectare of park and exhibition texts on a viewing platform. It includes works from international artists in the form of performances, sculpture, sound installations and videos. To mark the opening, black fabric was unrolled over an area of one hectare by a group of performance artists. The unrolling lasted 20 minutes to symbolize the speed at which soil is being sealed in Germany.

DIALOGUE SESSIONS

Throughout the week participants met in dialogue and open space sessions. Some sessions were specifically allocated to one of five guiding themes: land degradation neutral world; land governance; SLM and soil rehabilitation; transformation through transdisciplinarity; and awareness raising and soil communication. Discussions in other sessions also centered on

one of the guiding themes, which is reflected below. A sixth group of sessions addressed linkages between soil and other issues, such as cities and oceans.

LAND DEGRADATION NEUTRAL WORLD: Sessions in this theme addressed the role of SLM in achieving the target of land degradation neutrality and other internationally agreed objectives. Several sessions also investigated the land use implications of implementing other SDGs. The following of the sessions are summarized below: Joint ITPS-SPI meeting: Land degradation neutrality and its contribution to climate change mitigation and adaptation; Grounding global soil and land initiatives: Working on trickling-down; Economics of land degradation; and Nexus governance Post-2015: Towards collaborative implementation.

Joint ITPS-SPI meeting: land Degradation neutrality and its contribution to climate change mitigation

Moujahed Achouri, FAO, noted that partnerships such as the GSP offer mechanisms that will be essential in implementing the Post-2015 Development Agenda. Victor Castillo, UNCCD, observed that collaboration between SPI and ITPS would help inform political actions on the ground.

Luca Montanarella, ITPS Chair, outlined how ITPS supports the GSP, including through: supporting regional soil partnerships; elaborating voluntary guidelines for sustainable soil management; identifying soil-related criteria for SDGs; and producing the first Status of the World's Soil Resources Report. On finding synergies between ITPS, SPI and UNCCD, he clarified that the ITPS wanted to maintain a strong focus on the issue of soil.

On potential collaboration, Uriel Safriel, SPI Co-Chair, noted that this interface with the UNCCD policy-making process could increase the likelihood of knowledge provided by ITPS being used on the ground. Martial Bernoux, SPI, discussed the interaction between local and global scales in achieving LDN, providing

the example of how SLM practices that improve soil carbon stocks contribute to global mitigation efforts.

Miguel Taboada, ITPS, discussed soil indicators and gaps in assessing their performance. He suggested that measuring GHG emissions could be an area of potential collaboration between ITPS and SPI. German Kust, SPI, noted that LDN is a practical land-based approach that might be considered as an operational platform for overlapping issues among the Rio Conventions. He also noted that LDN can serve as a SLM target, be economically evaluated, and that SPI and ITPS may want to explore the scientific basis behind the concept.

Mariam Akhtar-Schuster, SPI, reported the main outcomes of the UNCCD Third Scientific Conference, including the Impulse Report of the Scientific Advisory Committee. Dan Pennock, ITPS, shared lessons learned from the global and regional assessments conducted through the Status of the World Soil Resources Report.

During a discussion on conclusions and the way forward, Monique Barbut stressed the need to ensure that issues relevant to the two bodies are addressed through cooperation to avoid



Uriel Safriel, Science-Policy Interface (SPI) Co-Chair, Israel

overlap or contradiction, define common denominators between the SPI and the ITPS, and pursue collaboration while respecting the individual mandates of each institution. Participants noted that the meeting helped identify common ground and that they would bring this discussion back to their respective bodies for consideration. In closing, Jes Weigelt offered for IASS to host another joint meeting of SPI and ITPS at the next GSW.

Grounding Global Soil and Initiatives: Working on Trickle Down: Jorge Jurado, Ambassador of Ecuador to Germany, outlined several issues at the center of the session theme: addressing the social, economic, and political roots of soil and land degradation; the need for strong institutions for soil governance; and networking between civil society and national governments.

Olegario Muñiz, Soil Institute, Cuban Ministry of Agriculture, shared experience from the Regional Soil Partnership for Central America, Mexico and the Caribbean, including work on development of national soil legislation and regulations, and regional information-sharing mechanisms.

Wei-Li Zhan, Chinese Academy of Agricultural Sciences, discussed how increasing agrochemical input and poor arable land management have led to: decreased water and nutrient holding capacity; soil salinization and acidification; overconsumption of water for irrigation; and high rates of water pollution.

Ivonne Lobos Alva, IASS, discussed the drafting of soil and land indicators for the SDGs and presented a policy brief on establishing national soil monitoring and accountability initiatives that could feed into regional and global reporting mechanisms.

Junnius Marques Arifa, Brazilian Federal Court of Accounts, presented the national soil governance audit, which calls for: consolidating laws and regulations; integrating water and soil regulations; and bringing efficiency to interagency relations. He also highlighted recommendations to improve the accountability of policies on soil, territorial planning and water.

Michael Brander, Biovision Foundation, offered examples from Biovision partnerships in Kenya, Ethiopia and Senegal that employed multi-stakeholder dialogues to support national assessments on sustainable food production and food security.

In a dialogue moderated by Oscar Schmidt, IASS, several key points emerged, including the role that local governments should play in the implementation of global initiatives such as the Green Climate Fund.

Luc Gnacadja, Special Representative to the UN Capital Development Fund Local Climate Adaptive Living Facility Programme Board, described the Board's innovative approach to communicating with multilateral financial mechanisms to advance concrete action. Gulchehra Khasankhanova, Central Asian Countries Initiative for Land Management, Uzbekistan, shared experience in establishing multi-country and multi-institutional coordination mechanisms.



Ivonne Lobos Alva, IASS with Maren Lönz, Germany

In the second part of the session, participants divided into four groups to discuss: how SDGs might be implemented in a way that protects soil and land resources; land governance and ways to improve collaboration between soil science initiatives, civil society, land users and rights holders; implementation of SLM through engaging local governments and ways in which monitoring can move beyond indicators; and how the results of soil policy and governance audits can jumpstart changes in national policies.

Participants underscored the role of local governments and that the necessity to facilitate both “trickle down” and “trickle up” processes for implementing global soil and land initiatives.

Hans Herren, Biovision Foundation and Millennium Institute, offered closing observations, including: the role of local authorities; that SDGs offer a unique opportunity to shift towards a systems approach; and that paradigm change and long-term thinking are required to meet the SDGs.

Economics of Land Degradation – How to Integrate Economic Arguments into Decision-making Processes?:

Anneke Trux, GIZ, explained that the session intended to address capacity development and education. Stacey Noel, SEI, summarized key messages of the first session addressing research updates including: the possibility to reduce land degradation through improved access to markets, increased government effectiveness, and local community involvement.

Tobias Gerhartsreiter, ELD Secretariat, presented a Massive Open Online Course (MOOC), developed by ELD, the UN University Institute for Water, Environment and Health, and GIZ, noting that it provides a free interactive platform for participants to access information, complete a course on ELD or share information and experiences related to ELD.

Alexandru Marchis, UNCCD, reported on the Soil Leadership Academy (SLA), which aims to support policy makers in scaling up implementation of sustainable soil management. He explained that SLA facilitates sharing of knowledge and experience and provides visualization models to evaluate decision scenarios.

Mark Schauer, ELD Secretariat, provided an overview of the Land Materiality Screening Tool, which he said enables businesses to estimate their exposure to land degradation, noting that degraded land is an underperforming asset.

Alexander Müller, IASS, reported on a follow-up to The Economics of Ecosystems and Biodiversity (TEEB) study aiming to assess economic interdependences between agriculture and natural ecosystems. He said the study would identify underlying value providing systems.



Monique Barbut, UNCCD

Via video conferencing, Willem Ferwerda, Commonland, presented a 20-year business model for investments in landscape restoration involving all stakeholders. He said overcoming obstacles to business involvement projects requires long-term investment, pilot projects, and a “one language model” for communication.

Oleg Guchgeldiyev, ELD, presented outcomes of a project in central Asia, which underlined the importance of on-the-job-training, regular learning and review, building the capacity of regional experts and creating synergies with existing efforts.

Lindsay Stringer, University of Leeds, presented outcomes of several projects and stakeholder consultations around the world that demonstrated; the need for multi-criteria analysis of economic values; limited uptake despite previous experience because of persisting lack of capacity; and benefits of regional networks for collaboration and exchange of experiences.

Stacey Noel, SEI, said the upcoming ELD synthesis report aims to raise awareness, improve policy, and feed into ongoing processes. She also emphasized the need for enhanced resilience to address increasing food demand and climate change impacts.

Pushpam Kumar, UNEP, presented on the value of ecosystems for Africa, noting the potential for Africa to lose 105 million hectares of land and approximately US\$5 billion in crop value annually. He said that given these values, SLM had the potential to lift up to 6.6% of the marginalized poor out of poverty every year.

In the ensuing discussion, participants focused on balancing the need for standardization with the specific demands, data availability and objectives of different projects. One participant suggested developing standard sets of ecosystem services, such as those presented in the Status of World Soils Report. Noting that sustainability issues are often disregarded by decision makers because they don't convey a sense of urgency, several participants suggested developing models of decision making that address this issue.

Schauer summarized the conclusions of the two sessions, noting the need to capitalize on the political momentum generated by the International Year of Soils (IYS 2015) and the SDG process. He stressed the need to ensure that ELD provides economic arguments that can be integrated in the decision making process.

Nexus Governance Post-2015: Towards Collaborative Implementation: This session, moderated by Ivonne Lobos Alva and Oscar Schmidt, IASS, addressed the nexus heuristic, which offers ways to address complex interdependencies of social-ecological systems.

Sara Scherr, EcoAgriculture Partners, focused on new approaches for integrated landscape management to operationalize the nexus. She listed lessons learned from ILM implementation, namely: development of multi-stakeholder platforms; landscape governance improvement; ILM incorporation within green growth strategies; and strengthening capacities of landscape leaders.



Alexander Müller, IASS

Manfred Konukiewitz, IASS and Fritz Holzwarth, Berlin Wasser e.V., Germany, addressed the historic development of the nexus concept. Konukiewitz underscored major security gaps concerning energy, water and food, noting that soil constitutes their foundation. He stressed the need to move away from a silo towards a system culture. Holzwarth highlighted that the nexus constitutes the basis for a politically driven and scientifically enriched process.

Sirajul Islam, BRAC, presented on the challenges of putting integrated approaches into practice. Drawing from the Bangladeshi experience, he highlighted: mobilizing youth in agriculture; small-scale farm mechanization; and agricultural credit for marginalized farmers.

In the ensuing discussion, participants addressed *inter alia*: entry points for ILM; ways to transform governance; the role of individual leaders; and whether the nexus concept is driven by the water community.

Manohar Rao, Arghyam, India, shared experiences from India, focusing on water issues. Leisa Perch, RIO+ Centre, World Centre for Sustainable Development, Brazil, noted that gender issues and climate-smart agriculture mean that multiple issues have to be considered simultaneously. Junnius Marques Arifa, Brazilian Federal Court of Accounts, focused, among other issues, on: the lack of performance indicators; standardizing ways to access soil databases; and the complexity of often contradictory regulations.

Summarizing the discussion, Jes Weigelt, IASS, underscored the need to include the nexus heuristic in the discussion around the SDGs.

The second part of the session, moderated by Weigelt, addressed opportunities presented by the SDG agenda to move forward with the nexus. Ines Dombrowsky, German Development Institute (DIE), stressed that the design of the 17 SDGs as standalone goals ensures that sectorial security issues are seriously tackled, but poses challenges regarding their interconnectedness. Sébastien Treyer, Institute for Sustainable Development and International Relations, noted that integrative processes create winners and losers, underscoring the need to change the political balance at the national level. Sybille Röhrkasten, IASS, highlighted the difficulty of anchoring the nexus concept in the energy community, stating that integration is easy when inputs are concerned, but challenging when it involves externalities. Perch questioned whether the SDGs constitute goals in themselves or a path towards transformation. Falk Schmidt, IASS, said that if the main drivers of the water crisis are outside the sector, the need to “step out of the water box” is evident.

During the ensuing discussion, participants focused on, *inter alia*: ways to connect the dots in different sectors while preserving benefits from specialization; ways to combine vested interests; connecting natural processes to social systems; and the balance between sustainability and economic development goals.



Sirajul Islam, BRAC, Bangladesh



Paul-Munro Faure, FAO

Other sessions: Other sessions not covered in detail included: Competing visions for a sustainable future: The challenge of biomass within the post-2015 Development Agenda; Soil and land information: how to support decision making; and Soil and land indicators for the international policy agenda: Towards joint action.

LAND GOVERNANCE: This theme was addressed in a session on experiences and strategies for implementation and monitoring of the FAO Voluntary Guidelines on the Responsible Governance of Land Tenure (VGGT) and also surfaced in a session on food security and sustainable food systems. The following summary covers the first of these two sessions mentioned.

Three years of VGGT – Experiences and Strategies for Implementation and Monitoring: Paul Munro-Faure, FAO, provided an overview of FAO's activities on the VGGTs. He underscored that tenure is one of the most politically sensitive and challenging issues, and noted that the guidelines set out principles and standards for secure tenure for all rights holders. Munro-Faure said that tenure security is a necessary, but not a sufficient requirement for sustainable soil management. Henry Pacis, Department of Environment and Natural Resources, Philippines, described efforts to raise awareness among legislators on the socioeconomic benefits of good tenure governance and associated legislative reform. He presented a land sector development framework with a 20-year implementation timeline and identified entry points for mainstreaming the VGGTs.

Philip Seufert, FIAN, underscored that the VGGTs are grounded in human rights and should put the most marginalized food producers at their core. He offered an example from Mali, where the national peasants platform has been using the VGGTs as a tool to negotiate with governments on land grabbing and in efforts to develop a new land law.

Ramesh Sharma, Ekta Parishad, India, illustrated how the guidelines were being used to inform amendments to legislation on recording land rights, and will hopefully be fed

into the mines and minerals act and regulations at sub-national levels. He also announced the publication of the VGGTs in Hindi.

Claudia Eckhardt, KfW Bankengruppe, and Christiane Rudolph, German Investment and Development Company stressed the need to better link VGGT with development cooperation and lending requirements. Rudolph noted an opportunity to strengthen International Finance Corporation performance standards by including the VGGTs, and that an open source database on good practice and land laws would be useful.

During a discussion moderated by Alexander Müller, IASS, and Michael Windfuhr, the German Institute for Human Rights, participants shared diverse examples including: mainstreaming the VGGTs into Dutch international cooperation; informing a new land policy in Madagascar; increasing accessibility to information through abridged versions of the guidelines and translated into local languages; and analyzing the VGGTs from a gender perspective.

Breaking into groups, participants brainstormed strategies, incentives and solutions for operationalizing the implementation and monitoring of the VGGTs with: government actors, civil society organizations, financial institutions and private-sector actors.

Drawing on feedback from the breakout groups, Müller underscored main messages, including: focusing on added value when the VGGTs are taken into consideration; establishing a long-term process for implementation; monitoring and review through a participatory approach; linking VGGTs to soil science; communicating and adapting the guidelines; and developing a structured platform to share information on both best and bad practices. He stressed that VGGT swill be critical in implementing the Post-2015 Development Agenda coherently.

SLM AND SOIL REHABILITATION: This theme focused on SLM and soil rehabilitation as major tools to prevent soil degradation and maintain productive soils in the long term, and was discussed in ten sessions. The following summaries cover five of the sessions: Mitigation and adaptation to climate change through SLM: Global and national perspectives on challenges and opportunities; Two sessions on Land rehabilitation for food security; European initiative on land as a resource: Cross national strategies for soil protection and land use; and Soil quality and agricultural sustainability indicators for the environmental performance index.



Room view during a dialogue session

Mitigation and Adaptation to Climate Change through SLM: Global and National Perspectives on Challenges and Opportunities: This session, moderated by Judith Rosendahl, IASS, focused on the interplay of soils and climate at the global, national and local level.

Rattan Lal, Ohio State University, addressed measurement of soil organic carbon (SOC) for agronomic purposes and for trading carbon credits. He underscored that while soil carbon sequestration cannot mitigate climate change as its carbon sink capacity is finite, it offers numerous co-benefits. Sergio Alejandro Zelaya-Bonilla, UNCCD, presented on, *inter alia*, land-based climate change adaptation and mitigation, SLM practices and the LDN notion. He emphasized that the UNCCD



Sergio Zelaya, UNCCD, Germany

addresses drought, land degradation and desertification through an integrated approach. Katia Simeonova, UNFCCC, underscored that land use can make a significant contribution to climate change mitigation and adaptation, but must also fulfil other roles vis-à-vis food security. She addressed ongoing considerations, including REDD+ and agriculture, and stressed the role of adequate financing.

In the ensuing deliberations, participants discussed, among others, anthropogenic versus non-anthropogenic emissions.

The second part of the session, focused on land management in the context of climate change at the national and local level, drawing on experiences from Burundi and Malawi. Thorsten Huber, GIZ, provided background information on Burundi, emphasizing that adaptation does not only include technical methods but also research and capacity building.

Stefan Schneiderbauer, European Academy of Bozen/Bolzano, reported on the national vulnerability assessment (VA) in Burundi, noting its objectives to: identify rural areas vulnerable to climate change; build awareness; and develop a standard approach to allow for monitoring. Christina Bollin, Adelphi Consult, described a three-step participatory approach in Burundi and highlighted potential adaptation measures identified by local actors, namely access to subsistence resources, adaptation technologies, agricultural inputs and knowledge.

Providing insights from the Malawian experience, Henry Sibanda, UNDP, Malawi, stressed that in local governance, traditional and local governmental structures operate parallel to each other and highlighted the advantages of traditional systems. Esther Mweso, Concern Universal, stressed that lessons from Malawi reveal, *inter alia*, that: policies are often disjointed and send confusing messages; a shortage of agricultural extension staff; and short-term benefits are prioritized as a result of inadequate knowledge.

In the ensuing discussion, participants focused on: the importance of intended nationally determined contributions; technical details of the VA; and the scale dependence of SLM. Neto Nengomasha, Southern African Research and Documentation Centre, presented on land stabilization using locally available resources, drawing from the case of gully

reclamation in Zimbabwe. He analyzed the utilization of bamboo and banana plantations in rehabilitation programmes to stabilize and control erosion.

Participants discussed: provisions under the UNFCCC to prevent unwanted mitigation activities under REDD+; traditional knowledge vis-à-vis technical solutions; benefits and shortcomings of conservation agriculture; and payments to farmers for providing ecosystem services.

Tim Beringer, IASS, summarized discussions highlighting the necessity of integrated practices given the existence of different perspectives at the global, national and local level.

Land rehabilitation for food security: Keynote speaker Regina Birner, University of Hohenheim, identified several challenges to ensure future food security, including population increase, climate change, the rise of the global bio-economy and large-scale land acquisitions.

Mario Coto, Ministry of Environment and Energy, Costa Rica, provided examples of his country's success in combating



Mario Coto, Ministry of Environment and Energy, Costa Rica

land degradation, including the establishment of payments for environmental services (PES) to support farmers for SLM, carbon neutrality through certification schemes, and the prioritization of corridors for connecting biodiversity.

Tekalign Mamo Assefa, Advisor to the Ethiopian Minister of Agriculture, explained that soil rehabilitation and farmer empowerment to prioritize

their own problems has improved in the country in recent years through substantial national investment in agricultural extension and soil fertility mapping targeted to farmers' needs.

Thorunn Petursdottir, Soil Conservation Service, Iceland, explained how a participatory collaboration with sheep farmers was established through cost-share soil restoration and information sharing. She emphasized how improved rangeland management evolved out of trust and a unique social culture for improved grazing practices.

Christian Andriamanantseho, Energy Coordination Office, GIZ, emphasized mechanisms securing land-tenure in Antsiranana, Madagascar, have motivated farmers to promote soil rehabilitation. Mary Allen, Practical Action, described how farmers in Mali responded to national land-use policies through their own locally-constructed initiatives for natural revegetation. Andreas Gransee, K+S KALI GmbH, and Hillary Rugema, Sasakawa Africa Association, outlined a mobile farmer learning centre for knowledge exchange on soil nutrient management and value chain enhancement for increased market access in northern Uganda.

Mamadou Abdou Sani, GIZ Niger, explained how soil rehabilitation improved both nutritional requirements and annual household income over a 25 year period in Niger. Eyasu Elias Fantahun, Ethiopian Society of Soil Sciences, highlighted the need for community mobilization in determining the right mix of interventions for long-term food security and soil management. Gustavo Jiménez, GIZ, presented Costa Rica's

Nationally Appropriate Mitigation Action (NAMA) for the first carbon-neutral coffee in the world. Hassen Chourabi, Agricultural Ministry of Tunisia, outlined an integrated national strategy, which has resulted in significant reduction of soil erosion on sloping lands within critical watershed zones.

Success factors cutting across each of these initiatives with implications for upscaling included: knowledge exchange between farmers and technical experts; local ownership of outcomes; improved market access; and transdisciplinarity. Hindrance factors that were raised included: poor intersectoral coordination; long-term versus short-term durability of donor-driven initiatives; and difficulties to implement transdisciplinary approaches in practice. Political processes influencing implementation included the role of land security for SLM, partnerships between civil society and local communities streamlined within national policies, and strong donor interest in agro-ecological resilience.

In the ensuing discussion, participants stressed that local experience of land rehabilitation can trickle-up to decision makers at the national level to develop strategic policy narratives, which also influence international discourse. For short-term versus long-term strategies, they emphasized that ownership of solutions at the local level and appropriate institutional arrangements at the national level will ensure long-term cooperation.

Sergio Alejandro Zelaya-Bonilla, UNCCD, lamented that local projects have not been adequately linked to national policies, budgets or established financial mechanisms for implementation. He stressed that a soil footprint indicator associated with local or national projects would: promote policy coherence at the national scale; be consistent with the three Rio Conventions at the international scale; and increase support for a land chapter within the GEF. Ronald Vargas, GSP, noted that awareness raising for sustainable soil management is critical, not only for farmers, but also for national decision makers. He also urged that approaches focus on maintaining yields through application of SLM.

Christina Seeberg-Elverfeldt, BMZ, Germany, stressed that capacity building and agricultural extension services serve as the linchpins for translating LDN from an international priority into national action plans and local realities. Marita Wiggerthale, Oxfam, Germany, stressed the need to prioritize an ecosystem approach over a technically-focused paradigm since it has failed to achieve progress for both food security and soil protection. In response to this argument, Jeremy Dyson, Syngenta, underscored the need to balance ecosystem

services and technological approaches, underscoring the need to work more productively with sustainable soil management for value-added techniques and products.

In the ensuing discussion, participants underscored that all funding will be short-term and that long-term solutions require observing behavioral change of both farmers and government agencies. Additionally, they suggested that greater accountability of national policies be reflected in the Rio Conventions, given that targets have evolved towards a more voluntary approach with few safeguards or enforcement mechanisms in place.

Walter Engelberg, GIZ, concluded by stating some lessons to be shared with global partners including the benefits of: streamlining SLM within national agricultural policies; investing in capacity development and agricultural extension services with small-holders; and leveraging soil organic matter as a key indicator for measuring SLM in achieving LDN.

European Initiative on Land as a Resource: Cross-national Strategies for Soil Protection and Land Use:

This session, moderated by Marcos Lana, Leibniz Centre for Agricultural Landscape Research (ZALF), discussed new ideas regarding cross-national strategies for soil protection and land use.

Josiane Masson and Thomas Strassburger, Environment Directorate-General, European Commission, presented on the EU's soil thematic strategy. Strassburger said soil policy is a missing link under the network of EU policies, and stressed that land loss driven by infrastructure development is largely underestimated. Masson listed relevant policies, including the Resource Efficiency Road Map and the 7th Environmental Action Programme 2014-2020.

Margot de Cleen, Ministry of Infrastructure and the Environment, the Netherlands, and Liselotte Unseld, German League for Nature, Animal Protection and Environment, addressed expectations from a regulatory and civil society perspective. De Cleen provided background information on the Common Forum on Contaminated Land. Unseld



Thomas Strassburger, European Commission Specialist, World Bank



Room view during session

underscored that while soils are under national jurisdiction, land degradation consequences are transboundary, estimating the cost of inaction to be EUR38 billion per year.

Geertrui Louwagie, European Environment Agency (EEA), Denmark, discussed methods and measures to establish land-use efficiency noting that land-resource efficiency can be evaluated biophysically and socioeconomically.

In interview format, Bettina Rudloff, German Institute for International and Security Affairs (SWP), posed a series of questions to Stefan Sieber and Marcos Lana, ZALF. On the relation between soils and food security, Sieber underscored the need for an integrated, participatory approach, including access to capital and cultural acceptance. Lana stressed that land use changes may jeopardize food security and underscored the social aspects of small-scale farming.

During the second part of the session, moderated by Sigbert Huber, Environment Agency Austria (EAA), Austria, six small groups were formed to discuss emerging issues. The group on a future EU land strategy emphasized the need for flexibility and a simple action plan. The group analyzing the strengths and weaknesses for soil regeneration highlighted cross-cutting and mainstreaming approaches. The group on methods to measure land use efficiency underscored the need for clear definitions and data availability. The group on implementation of monitoring of land use efficiency pointed to the lack of a systematic approach to monitor land efficiency. The group on soil degradation and food insecurity highlighted driving forces, pressures, impacts and responses regarding food insecurity. The group on financial and political pathways for food security stressed financial incentives and sanctions, including conditionalization of subsidies.

Joerg Frauenstein, UBA, moderated the final part of the discussion on the way forward. Some participants underscored that engaging farmers should involve more incentives and less legal obligations. They underscored that while soil does not constitute a common good and is privately owned, ecosystem services are common goods and policies should reflect that.

Summarizing the session, Rudloff emphasized the importance of political frameworks and incentives, noting that since agricultural subsidies are a reality, they could be linked to environmental requirements.

Soil Quality and Agricultural Sustainability Indicators for the Environmental Performance Index (EPI): Angel Hsu, Yale University and EPI, provided an overview of EPI 2014, which uses complex scientific data sets to evaluate environmental health and ecosystem vitality using over 70 weighted indicators. She said the purpose is to present global and regional rankings, as well as country scorecards, in a format that can be used by policy makers. She noted their intention to revise the current indicators on pesticides and subsidies as they neither accurately reflect practices on the ground nor differentiate between subsidies that drive poor land management or conversely support SLM. Therefore, Hsu said

the purpose of the session was to seek advice on better proxy indicators for agricultural environmental performance.

Daphne Yin, Yale University and EPI, noted the challenge of finding strong third-party data sets. She presented potential agriculture indicators on: nutrient-use efficiency; nutrient excess; water contamination due to insecticides; and agricultural water intensity based on water withdrawals. She asked participants for opinions on these as well as possible indicators for soil health, food safety, soil quality, biodiversity, chemicals, water and climate change.

Ephraim Nkonya, International Food Policy Research Institute, presented an assessment on economics of land degradation that looks at total economic value and equivalent provisioning services for tropical forest, temperate forest, grasslands, and woodlands. He explained that the assessment looked at both benefits of land restoration and costs of land degradation on-farm and off-farm. He noted that the data was stored in the Harvard Dataverse Network.

Knut Ehlers, UBA, explained that the German Sustainability Strategy would provide an overarching policy framework for national implementation of the SDGs, but would require some reassessment. He noted the lack of current indicators on soil quality and outlined proposals for indicators on: land cover, land use change, soil organic content and land productivity change. Ehlers recognized that cross-border leakage of environmental degradation is not currently addressed by the Strategy.

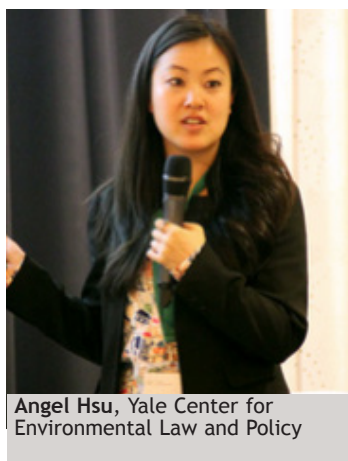
Participants reconvened and examined the potential agriculture indicators for the 2016 EPI. Hsu and Yin requested feedback on whether these raised red flags, reflected environmental performance, and whether other potential indicators were missing. Participants discussed *inter alia*: the need for time-series data; how to take into account nutrient fluxes, soil mining and soil chemistry; phosphorous as an indicator; realistic thresholds for nitrogen and phosphorous use; and challenges in using soil biodiversity as an indicator. Participants debated creating targets and indicators based on “realistic” conditions versus ambitions and rigorous targets. They also discussed the costs of data collection and monitoring versus investing in implementation.

Other Sessions: Other sessions not covered included: Financing soil and land rehabilitation; Sustainable land use and human habitats: the role of cities and rural development in achieving global sustainable land use; Vulnerable landscapes – vulnerable societies: the role of grass and grazing livestock in building resilience to climate change; Soil fertility management – towards a joint paradigm; and Soil management – it’s about livelihoods.

TRANSFORMATION THROUGH TRANSDISCIPLINARITY?: Contributions under this theme addressed the need to develop collective processes and inclusive platforms to enable long-term exchange and cooperation among stakeholders. This theme was covered by three sessions, one of which is summarized below.



Knut Ehlers, Federal Environment Agency (UBA)



Angel Hsu, Yale Center for Environmental Law and Policy

Sprouting new Ideas, Rooted in Old Wisdom:

Intergenerational Dialogue on SLM: This session brought together young professionals and senior experts to share



Lindsay Stringer, University of Leeds

their thoughts on SLM and responsible land governance.

Session co-moderator Lindsay Stringer, University of Leeds, highlighted challenges emerging when SLM theory is translated into practice. Co-moderator Christian Schneider, GIZ, provided an overview of the activities performed during the GSW under the young professionals programme. Noel Oettlé, Drynet Programme,

underscored that young people are migrating away from the land, and that knowledge evolved over numerous generations is at risk. Hanspeter Liniger, World Overview of Conservation Approaches and Technologies, addressed the theoretical orientation of educational systems.

Four roundtables were then formed to discuss issues related to SLM and the GSW. On morphing knowledge towards SLM, participants underscored that every knowledge system is nested in its own value structure. They stressed the need for: a common goal; story-telling narratives; and integration of different types of knowledge. Regarding ways to inspire people to love soil, participants proposed, among others: education; art and installations; awareness-raising activities; and connection of soil quality to food quality.

On ways to recognize SLM, participants identified ecological, social and economic indicators. They stressed the notion of inclusiveness in terms of gender and marginalized groups, allowing for cultural and geographical variety in representation. Reflecting on key issues and insights from GSW, participants listed a variety of proposals, *inter alia*: regional meetings as smaller versions of the GSW; information for and from the various actors; interdisciplinary and transdisciplinary presentations; and turning GSW into a process.

In closing remarks Oettlé underscored that “the real essence of the transformation process is to transform ourselves.”

Other Sessions: Other sessions not covered included: Sustaining our soils and societies: the challenge of doing transdisciplinary research; and Brave farmers, green belts and wrong debates.

AWARENESS RAISING AND SOIL

COMMUNICATION: Contributions under this theme aimed to seize the momentum generated by the IYS 2015, to enhance communication and awareness of soil issues to policy makers and to exchange views and experiences of different approaches to improve long-term decision making on soil issues. This theme was addressed by five sessions, two of which are summarized below: Giving living soil a voice: Approaches and tools; and Building a knowledge and innovation platform on diffuse and point soil contamination as a base for (inter) national soil policies.

Giving Living Soil a Voice: Approaches and Tools: Arwyn Jones, Joint Research Centre of the European Commission (JRC), emphasized that investment in raising public awareness is one of the foundations of implementing Pillar 2 (encourage investment, technical cooperation, policy, education awareness



Arwyn Jones, European Commission

and extension in soil) of the GSP, and that this could be achieved through outreach with youth, policy-makers, and food retailers. Juliet Braslow, International Center for Tropical Agriculture (CIAT), Kenya, presented on the skill required in crafting and distilling key messages for pitching convincing messages to appropriate audiences.

Nikola Patzel and Birgit Wilhelm, WWF-Germany,

stressed that: “there is no motion without emotion” and called for consciously crafting supportive cultural orientations to link technical facts and emotions for soil protection. Fransjan de Waard, De Waard Edible Landscapes, suggested that we must share stories of good practice from farmers as individuals who made positive choices for specific reasons to inspire other farmers and consumers. He urged that soil organic matter be heralded as the key for sustaining life both above and below ground.

Lessons for communicating soil protection revealed the need to consider diverse methods for improving soil literacy ranging from the arts, sciences and more social or cultural approaches. On improving “pitches,” participants emphasized that the audience to whom specific messages are targeted must be clearly identified as well as what is being asked of the audience. Participants suggested methods for strengthening the awareness raising potential of GSP Pillar 2 by: increasing funding for science communication strategies at the grassroots level; enhancing political lobbying efforts; integrating soil issues early in school curricula; and crafting messages about soil ecosystem services and functions. Participants argued that improving the emotional connection to soil issues requires understanding the gaps between knowledge, emotion and behavior, and suggested that potential entry points be based on storylines that reflect local meanings and cultural diversity.

Building a Knowledge and Innovation Platform on Diffuse and Point Soil Contamination as a Base for (Inter) National Soil Policies: Bernd Bussian, UBA, explained: the properties of diffuse and point source pollution; how they affect soils; current market trends for important chemical threats to soils; and the paucity of regulatory mechanisms for guidance values on soil contamination.

Caroline Newton, Public Waste Agency of Flanders, Belgium, highlighted the potential for innovative ways of remediating soils in urban areas while creating novel opportunities for small entrepreneurs in re-developing brownfield sites. Florence Carré, French National Institute for Industrial Environment and Risks (INERIS), stressed the importance of linking urban citizens, urban planners, the public and private sectors for strategic communication in restoring contaminated lands. Julien Caudeville, INERIS, detailed monitoring approaches linked to the physical and chemical characteristics of soil in a particular context to determine risks to both human health and the environment.

Ricardo Barra, Scientific and Technical Advisory Panel of the GEF, emphasized that international chemicals governance should not follow a chemical-by-chemical approach given the enormity of chemicals used and uncertainties associated

with climate change. He suggested that progress be made towards international cooperation for improved production and consumption patterns in chemical application.

Four proposals emerged from participants for developing a plan of action to serve as a basis for alleviating soil contamination: increasing awareness among the public; a soil rating for agrochemical products; private sector involvement; and improving scientific knowledge about point and diffuse sources of pollution. Participants agreed to propose a plan of action including a set of indicators that respond to soil properties for diverse soil data.

Other Sessions: Other sessions that were not covered included: Soils and societal commitment: moving towards healthy soils; celebrating the IYS 2015 at GSW: Healthy soils for a healthy life; and discussion on a European soil data base update in light of the revision of the Soil Atlas of Europe: Examples from Finland and Central European countries.

OTHER ISSUES: Several sessions at Global Soil Week addressed issues going beyond soil, focusing on linkages with other ecosystems, cities, or trade. These issues were addressed in four sessions, two of which are summarized below. The new urban agenda “on the ground” – overriding the urban / non-urban divide; and Tools and approaches to increasing supply-chain sustainability of land-based commodities: What works on paper and what works in practice?

The New Urban Agenda “on the Ground” – Overriding the Urban/Non-urban Divide: Katleen De Flander, IASS, explained that this session was the first of a series of dialogues on implementing the “new urban agenda,” discussed under the third UN Conference on Housing and Sustainable Urban Development (HABITAT III). Áine Ryan, Aedes Metropolitan Laboratory, underlined the importance of an on-the-ground perspective to operationalize concepts of urban planning and design.

Pushpa Arabindoo, University College of London, discussed concepts embodied in the theory of planetary urbanization based on research in Chennai, India. She noted that urban planning requires using multiple scales beyond the bird’s eye view to fully capture the city’s practical realities.

Carolina Chica Builes, Secretariat of Planning of Bogota, Colombia, described Bogota’s regional integration strategy, which she presented as a system that generates sustainable development conditions for urban and peri-urban areas, while building on existing networks of cities. The institutional

structure allows consultation and joint decision-making on issues that transcend administrative boundaries, such as: water provision, transportation, and food security.

Based on experiences in Jakarta, Indonesia, AbdouMaliq Simone, Max Planck Institute for Social and Ethnic Diversity, described urbanization as a poorly understood force that leads to the consolidation of space through processes of auto-production and the viral ability of urban spaces to replicate. He explained that urban spaces allow people to solve problems collaboratively, noting that many of their interactions are not regulated.

In the subsequent panel discussion, moderated by Peter de Vries, Wageningen University, Chica Builes said that international processes can facilitate coordination among actors on the ground. Arabindoo commented that top-down approaches have led to the application of neoliberal and unrealistic policy concepts and favored exclusion of the poor in consultation processes.

With regard to planning, Arabindoo suggested integrating social science data, noting that planners should “envision” rather than “visualize” future developments. Simone described the complexity of auto-constructed markets noting that planned markets often fail to provide the same services. On planning and governing land use, Chica Builes reported that legal restrictions are necessary to safeguard the provision of ecosystem services. Arabindoo advocated using a holistic ecological conceptualization of “urban nature.”

With regard to the session’s theme, Chica Builes proposed to exchange experiences on mechanisms that can compensate non-urban areas for the cost of urbanization, while Arabindoo suggested clarifying the definitions underlying the concept of planetary urbanization.

Tools and Approaches to Increasing Supply-chain Sustainability of Land-based Commodities: What Works on Paper and What Works in Practice?: Daniel Moran, Norwegian University of Science and Technology, presented approaches of mapping global trade flows and associated environmental impacts, including shifts among countries caused by trade, based on multi-region input-output databases. Nicole Grunewald, Global Footprint Network, presented a method to account for virtual land imports measuring the amount of biologically productive land and water a population requires for goods consumed.



L-R: AbdouMaliq Simone, Max Planck Institute for Social and Ethnic Diversity, Germany; Pieter de Vries, Wageningen University, The Netherlands; Carolina Chica Builes, Secretariat of Planning, Colombia; Pushpa Arabindoo, University College London, UK



Toby Gardner, SEI

Toby Gardner, SEI, presented an advanced Environmental Footprint model, which analyzes trade flows between regions or individual producers, thereby improving its accuracy and policy relevance. Maria Cristina Rulli, Politecnico di Milano, reported on a tool to assess the appropriation of water and crops related to

large-scale land acquisitions. She said water appropriation on current contract areas could feed approximately 300 million people. Sabine Henders, Linköping University, presented on assessments of indirect land use change effects, stressing the need to include such assessments in life-cycle and footprint analyses.

Elena Dawkins, SEI, reported on efforts to provide regular consumption-based accounts to monitor environmental impacts and inform policy making, noting that such efforts are challenged by high data demands and time-lags in evaluating policy impact. Jonathan Green, Cambridge Institute for Sustainability Leadership, recognized that business must respond to multiple stakeholder needs and suggested timely and solution-focused advice in engaging business with academia.

Leonie Lawrence, Global Canopy Programme, introduced an initiative that tracks 500 governments, companies and



Maria Osbeck, SEI

financial institutions that together could eradicate deforestation. She emphasized the need to identify hidden actors and develop coherent engagement approaches and regulatory policies. Based on experience in sustainability consulting, Thibault Gravier, Transitions, said embracing the complexity of supply

chains through inclusion of all stakeholders is essential to develop long-term sourcing relationships that can drive sustainability transformations. Using the example of palm oil, Maria Osbeck, SEI, highlighted equity concerns in supply-chain governance, noting challenges, such as ambiguity of land classification and contradictions in regulatory schemes.

A panel discussion focused on obstacles to policy design and communicating supply-chain science to policy makers. Jan Börner, Bonn University, said that knowing the national system of science advice and contacts within policy-making institutions is essential to ensure adequate timing of advice. Noting the growing number of diverse stakeholders, Benno Pokorny, Freiburg University, advocated for transdisciplinary research methods. Ulrich Hoffmann, UN Conference on Trade

and Development (UNCTAD) underscored that transformation processes must accelerate dramatically as decoupling is currently insufficient.

Participants suggested analyzing the policy cycle to determine entry points for policy uptake, with some noting that, all too often, catastrophic events provide such opportunities. Others suggested that research framing should include research on alternative ways to address commodity demand.

Other sessions: Other sessions that were not covered included: Soils and seas in the nexus: linking sustainable land management and the coastal and marine environments; and Soil-atmosphere exchange.

MAIN MESSAGES: The main messages of the dialogue sessions were reported back to the plenary.

UPCOMING MEETINGS

2015 Global Land Forum: The 2015 Global Land Forum, organized by the International Land Coalition (ILC), will take place under the theme “Land governance for inclusive development, justice and sustainability: ‘time for action.’” The event will bring together practitioners, land users, activists, policy makers and researchers from around the world to debate and plan joint action on people-centered land governance with the aim of contributing to broader goals of poverty reduction, food security, environmental sustainability and human well-being within the context of the Post-2015 Development Agenda. **dates:** 11-17 May 2015 **location:** Dakar, Senegal **contact:** ILC Secretariat **phone:** +39-06-5459-2445 **email:** dakar2015@landcoalition.org **www:** <http://www.landcoalition.org/en/node/2490>

International High-Level Event: Follow-Up and Review Mechanisms for Natural Resources in the Post-2015 Development Agenda: Jointly organized by ASS, Biovision Foundation and Millennium Institute, this event will explore possibilities for cross-cutting follow-up and review mechanisms of the SDGs at local, national and global levels, discuss trade-offs and synergies among different SDGs, and be applicable to other thematic areas of the Post-2015 Development Agenda. **dates:** 12-13 May, 2015 **location:** New York **contact:** Ivonne Lobos Alva **email:** ivonne.lobosalva@iass-potsdam.de **www:** <http://globalsoilweek.org/thematic-areas/sustainable-development-goals/sustainable-production-of-biomass/high-level-event>

Regional Soil Partnership Workers for the International Year of Soils (IYS) 2015: A series of workshops around the world are being convened to commemorate IYS 2015 under the auspices of the JGSP to consolidate collaboration among Focal Points to the GSP. Activities during the workshops will include: establishing steering committees where unavailable, appointing chairs for working groups’ pillars, and finalizing regional implementation plans. **dates:** 12 May – 17 June, 2015 **location:** worldwide **contact:** FAO of the United Nations **email:** soils-2015@fao.org **www:** <http://www.fao.org/globalsoilpartnership/en/>

18th International Soil Conservation Organization Conference: The International Soil Conservation Organization (ISCO) is comprised of conservation professionals from around the world who meet biennially to share latest research and is returning to North America to discuss soil conservation for mitigation and adaptation to climate change, sustainable

intensification of food production, and soil conservation in non-agricultural settings among other topics. **dates:** May 31-June 5, 2015 **location:** El Paso, Texas, USA **contact:** Chair of the Organizing committee **email:** Scott.vanpelt@ars.usda.gov **www:** <http://www.tucson.ars.ag.gov/isco/>

Responding to the Global Food Security Challenge through Coordinated Land and Water Governance Workshop: Jointly organized by the Global Water Partnership (GWP), International Land Coalition Secretariat, the International Water Management Institute (IWMI-Africa), and the Southern African Regional Water Partnership, the workshop is intended to share positive and negative experiences of (un)coordinated land and water governance and practice, from different geographical settings and levels **dates:** 15-16 June **location:** Pretoria, South Africa **contact:** GWP Technical Committee **email:** danka.thalmeinerova@gwp.org **www:** <http://www.gwp.org/Global/Activities/News/March%202015/Call%20for%20workshop%20with%20logos.pdf>

2015 World Day to Combat Desertification: The UNCCD Secretariat has announced that the slogan for the 2015 World Day to Combat Desertification is: 'No such thing as a free lunch. Invest in healthy soils.' National and global observances will convene under the theme, 'Attainment of Food Security for All Through Sustainable Food Systems.' A global observance event will take place in Milan, Italy, during the UN Expo Milano 2015. **date:** 17 June 2015 **contact:** UNCCD Secretariat **phone:** +49-228-815-2800 **fax:** +49-228-815-2898/99 **email:** secretariat@unccd.int **www:** <http://www.unccd.int/en/programmes/Event-and-campaigns/WDCD/wdcd%202015/Pages/default.aspx>

Intergovernmental Negotiations on the Post-2015 Development Agenda: The intergovernmental negotiations on the Post-2015 Development Agenda, which will prepare for the UN Summit, will hold the following sessions: 18-22 May (follow-up and review); and 22-25 June, 20-24 July, and 27-31 July (intergovernmental negotiations on the outcome document). **location:** UN Headquarters, New York **contact:** UN Division for Sustainable Development **phone:** +1-212-963-8102 **fax:** +1-212-963-4260 **email:** dsd@un.org **www:** <https://sustainabledevelopment.un.org/post2015>

UN Summit to Adopt the Post-2015 Development Agenda: The summit is expected to adopt the Post-2015 Development Agenda, including: a declaration; a set of SDGs, targets, and indicators; their means of implementation and a new Global Partnership for Development; and a framework for follow-up and review of implementation. **dates:** 25-27 September 2015 **location:** UN Headquarters, New York



Broken (2010-2013). Earthen materials from different parts of the world, collected by Verena Reinmann

contact: UN Division for Sustainable Development **fax:** +1-212-963-4260 **email:** dsd@un.org **www:** <https://sustainabledevelopment.un.org/post2015/summit>

UNCCD COP 12: The 12th session of the Conference of the Parties (COP 12) to the UNCCD will take place over two weeks in Ankara, Turkey, to take decisions regarding the Convention's implementation. **dates:** 12-23 October 2015 **location:** Ankara, Turkey **contact:** UNCCD Secretariat **phone:** +49-228-815-2800 **fax:** +49-228-815-2898/99 **email:** secretariat@unccd.int **www:** <http://www.unccd.int>

Fourth meeting of the European Network on Soil Awareness (ENSA): The European Network on Soil Awareness will hold its fourth meeting at the EXPO in Milan, Italy and is open to both soil specialists interested in raising awareness of soils as well as other interest groups involved in understanding specific aspects of soil, including planners, teachers and local authorities. **dates:** 21-22 October 2015 **location:** Milan, Italy **contact:** European Land and Soil Alliance (ELSA) **phone:** +49-541-323-15-2000 **fax:** +49-541-323-15-2000 **email:** mail@soil-alliance.org **www:** <http://www.bodenbuendnis.org/ensa/>



Earthen materials from different parts of the world, collected by Verena Reinmann

GLOSSARY

BMZ	German Federal Ministry for Economic Cooperation and Development
CIAT	International Centre for Tropical Agriculture
ELD	Economics of Land Degradation
FAO	Food and Agriculture Organization of the UN
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
GSP	Global Soil Partnership
GSW	Global Soil Week
IASS	Institute for Advanced Sustainability Studies
ITPS	Intergovernmental Technical Panel on Soils
LDN	Land Degradation Neutrality
REDD+	Reducing Emissions from Deforestation and Forest Degradation
PES	Payments for Ecosystem Services
SDGs	Sustainable Development Goals
SLM	Sustainable Land Management
SPI	Science-Policy Interface of the UNCCD
UBA	German Federal Environment Agency
UNCCD	UN Convention to Combat Desertification
VGGTs	FAO Voluntary Guidelines on the Responsible Governance of Land Tenure