IASS POTSDAM

Global Soil Forum

Institute for Advanced Sustainability Studies e.V.

First GLOBAL SOIL WEEK | SOILS FOR LIFE

Global Soil Week 2012

Rapporteurs' Reports

IASS POTSDAM Global Soil Forum
Institute for Advanced Sustainability Studies e.V.

First GLOBAL SOIL WEEK | SOILS FOR LIFE

Disclaimer: *The contents of this report do not necessarily reflect the views or opinions of the Institute for Advanced Sustainability Studies, The Global Soil Forum or the Global Soil Week sponsors and partners.*

Table of Contents

I. Platform Sessions

II. 8-hours Dialogue Sessions

III. 4-hours Dialogue Sessions

IASS POTSDAM Global Soil Forum
Institute for Advanced Sustainability Studies e.V.

First GLOBAL SOIL WEEK | SOILS FOR LIFE

The Soil and Water Nexus for Sustainable Livelihoods

Date:	**19th November2012**
Name of the rapporteur:	**Carolin Möller**
Moderator / commentator:	**Dr. Sergio Zelaya**
Facilitator:	**Dr. Fabrice Renaud, Dr. Hans-Jörg Vogel**

Why is this session topic important:

Soil as the currency of life cannot be assessed solely due to the interdependency of driving factors in environmental challenges. Soil and water systems are inseparably connected and should be managed under the umbrella of the combined approach of Hydropedology to get the highest efficiency in mitigating and/or avoiding land degradation. This will aim for a sustainable base of livelihood establishment and holistic global health.

Objectives of the session:

- Understanding the nexus of water and soil needs
- Assessing access points to enhance physical, cultural, socio-economic, political as well as environmental conditions
- Highlighting needs of action to overcome knowledge gaps between research and goal oriented implementation
- Potential of soil science to inform conservation

- Create capacity building in self regulation of managing surrounding environmental challenges caused by threatening water and soil development
- Evaluating basic concept support by tackling water-soil challenges on local and regional levels and by scaling related decision making
- Understanding farm management practises for eco-efficiency and farmers as key stakeholders to mitigate environmental challenges

Key discussion Points:

Key concerns/challenges:

Managing the concerns on water and soil depends strongly on the engagement of various stakeholder groups and on the combination of the various knowledge approaches and scales of action to achieve sustainable management of these natural resources. The integration of soil and water research (transferring science into the decision making processes) in each and every scale should be fostered, based on an efficient nested approach on soil (soil functions and bio-physical properties).

The priority challenge to overcome is to address the existing communication gap among research results from scientists and practice implemented by users and other stakeholders aiming for an interdisciplinary and holistic decision making environment. The focus of innovative integrative research therefore should also be guided by real local priority needs and participatory mechanisms according to the local and national priorities on sustainable development; the action approach should include balancing local and global (data research and use) concepts for relevant policy development. The complex system of impacts and their interdependencies (e.g. upstream downstream, interest groups and short-to-long-term dimensions) needs to be emphasized for clear and effective understanding and resulting action .

Debate/counter arguments:

The clear consensus of the meeting was on the communication gap between research and implementation among water and soils research and practice. This gap is defined and shaped especially by the difficulties in setting integrative scales of action, research accomplishments and decision making that is more holistic. For this, the interdisciplinary approach proposed in the session helps in the understanding of the level of impact and may create an opportunity for stakeholder groups participation while acting on various impact-driving aspects that possess potential capacities and abilities to address water and soil in such integrative manner.

Solutions/examples/case studies:

Establishing the connection on the various aspects related with the soil-water nexus requires the identification of integrative solutions. One efficient and essential step is the understanding of the priority needs of communities directly affected by land, soil and water degradation and the direct and indirect consequences of dynamic changes of the environmental conditions; this should be an understanding not only of those responsible for the decision making but also of those involved in the assessment processes . Environmental degradation has to be addressed at the various scales to recognize the extent of research needed for more efficient operations, which can be emphasised by establishing Joint Learning Process schemes (globally and locally) between the researchers, the decision makers, the supporters and partners of local communities, and by the affected communities themselves . This kind of cooperation will enable a paradigm change in old unilateral threaded environmental management approaches (multifaceted drivers). Direct and real measures for an interdisciplinary approach based on modelling approaches for global and local impacts and solution-oriented policies and taking into account the local concerns are required.There is also a need to understand the level of scaling needed. Therefore education, communication and cooperation should be the fundamental concepts for managing and assessing the dynamics and fast evolving inter-relationship and nexus between water and soil. However it has also to be understood that this is a long-term solution; short term projects as well as a decrease of agricultural extension services will not lead to sustainable development that focus on local issues.

Key conclusions of the session:

The key conclusion was that there is a s need to continue research based on applying existing knowledge (traditional , scientific) and establishing strategic options that can be fed thematically by research and practical solutions found at the different areas: soil, water, biodiversity, climate, etc., and especially by highlighting their interdependencies. This can be realised merely on the inter-sectoral, interdisciplinary and cross-sectoral cooperative collaboration. Furthermore the knowledge gap that exists among these different thematic issues can be overcome by providing sustainable Knowledge Management (sharing via several communication schemes) and implement Integrated and Goal Orientated Resource/Soil Management. Not only the identification and the crucial participation of the end users and the clear understanding of their needs but also the qualitative and quantitative assessment / outcome combination are relevant for efficient integrative concepts that will have to be

promoted.

Key general recommendations of the session:

For guaranteeing the efficiency of the development approaches in the soil-water nexus debate, research and relevant policies/measures proposed based on such research, should be based on socio-economic and environmental conditions, including successful economic options (business models) that directly aim at tackling environmental (soil and water) degradation.

This condition may be enabled only with the establishment of a reliable operative framework environment based on scaled governmental support; e.g. voluntary vs. regulated incentives.

A project and management assessment should go beyond the level of the farm, it must be ensured thast an all-sector participatory process in a specific region must be based on agreed upon SLM strategic plans.

For long term sustainable operation needs also to be defined by the enhancement of extension services such as empowerment in a regulated reliable management environment. Also supporting public and private sector investment and general fiscal supporting system will create a reliable management approach.

The pathways to eco-efficient farming, whether small or large scale as well as the establishing of measuring and monitoring appropriately for problem assessment and solution finding should be aimed for.

New questions arising –ways forward:

The issue of governance: All measures taken and decisions made should be determined by the wish of local users (especially in developing countries) working its way up, from the field to the corridors of the national and international political power; this is a prerequisite for real sustainable development to be realized.

IASS POTSDAM Global Soil Forum
Institute for Advanced Sustainability Studies e.V.

First GLOBAL SOIL WEEK | SOILS FOR LIFE

Ecosystems services for soils: competitions and synergies

Date:	**19th November 2012**
Name of the rapporteur:	**Evelyn Asante-Yeboah**
Moderator / commentator:	**Prof. Dr. Diana H. Wall, Prof. Dr. Hubert Wiggering**
Panel:	**Dr. Katarina Hedlund, Dr. Braulio Ferreira de Souza Dias, Dr. Katharina Helming, Stephan Bartke, and Anne Glover**

Why is this session topic important?

Soils and soil biodiversity provide multiple ecosystem services. Knowledge on the role of soil ecosystem services and soil natural capital can be used in decisions on land use and promote a sustainable use of soils

How can soils be made more attractive to support ecosystem services?

Objectives of the session:

- To provide information on how soils supply ecosystem services in the sense of supporting, provisioning, regulating, and for cultural purposes.
- To use the opportunity to make soils more attractive for supplying ecosystem services.

- To offer a more efficient science/policy interface for the ecosystem services of soils.

Key discussion Points:

- How do soils supply ecosystem services? Synergies vs. competition of particular services.
- Necessity to distinguish between soil ecosystem services and soil functions.
- Biodiversity as one important ecosystem service offered by soils.
- Increase of sustainable agricultural production as component of ecosystem service supply.
- Supply of ecosystem service to protect/improve soil biodiversity?
- Lack of implementation procedures.
- Awareness creation of soils policy and ecosystem services in civil society.
- Stakeholder involvement (land users like farmer etc.) in decision making on various levels (property rights).
- To design a new policy/science interface.
- Additional, new incentives for soil conservation and valuation of ecosystem services of soils.
- New inter- and trans disciplinary research approaches to embrace sustainability objectives. To adapt management practices to make soil ecosystem services available.
- Installing adequate extension services to strengthen the interaction between policy makers, researchers, and land users.

Key concerns/challenges:

- To make the broad knowledge on soils and ecosystem services available (e.g. concerning soil biodiversity) for the scientific community, the policy makers, land users and land interest groups.
- Systematic failure in giving scientific advice to the policy makers. Policy makers' can´t handle uncertainties and need consensual recommendations.
- Scientists do not dare make decisions. They offer options for action.
- The discussion about soil biodiversity exemplifies how to generate synergies between the different ecosystem services in the sense e.g. of nature protection and food production.
- Need to come up with new research approaches e.g. with the funding instrument of the European Innovation Partnerships (EIP) as a bottom-up approach to involve researchers, policy makers, land users, and interest groups (iterative processes).

- To take the opportunity to install the ecosystem services into the established sustainability assessment procedures (impact assessment).

Debate/counter arguments:

- Soils are a major source for ecosystem services – and soil biodiversity is a major ecosystem service supplied by soils.
- Do soil biodiversity conservation and agricultural production fit together?
- How do farmers as local decision makers interact with policy makers?
- Is there a lack of knowledge on the side of farmers on their soils? Having farmers studying agricultural sciences and those learning agricultural production by giving them opportunities to acquire this knowledge..
- There is a lack of knowledge about the actual value of soils and the valuation of ecosystem services of soils.
- The discussion about soil ecosystem services is not considered in sustainability impact assessment procedures?
- Synergies (e.g. soil fertility and biodiversity due to different tillage methods) can/should be provoked.

Solutions/examples/case studies:

Scientist should work with NGOs to speed up issues/policy recommendations with policy makers.

There should be an understanding on why farmers have certain traditional practices and scientist should try to link it with scientific findings, and make improvement/modifications in their practices to contribute to soil biodiversity conservation and other ecosystem services.

There should be the use of plain languages and plain messages for land users/farmers e.g. 'Healthy soils provide healthy food', then explain what a healthy soil is e.g. with the essentials of sustainable management definitions.

Case studies: In the European Innovations Partnership (EIP) program the researchers/scientist have innovative ways to design research projects based on the requirements of land users and other interest groups, policy makers etc.

Further design and development of system research could provide a profound scientific basis for the future analysis of this complex topic.

Key conclusions of the session:

- The discussion of soil ecosystem services fosters the discussion on how to attract attention to soils. Soil biodiversity in this context is a strong tool that can be used to provoke emotions.
- Much scientific knowledge available, but need to optimize use through advisory business.
- To install an integrative research and policy approach.
- Consensual scientific advice for action.
- To use existing networks/panels etc. to further develop the science/policy interface.

Key general recommendations of the session:

Ecosystem services of soils provide more synergies than competition. Broad scientific knowledge on soils ecosystem services is available, but an integrative research and policy approach is lacking. Researchers, stakeholders/interest groups, and policy makers together have to conceptualize and implement smart integrated measures.

New questions arising –ways forward:

- To raise awareness of soils via soil ecosystem services
- New integrative trans disciplinary research approaches (e.g. innovation partnerships) including e.g. social and economic sciences
- Find ways to foster a scientific consensus
- To draw emphasis onto the valuation of soil ecosystem services
- To integrate the discussion on soil ecosystem services into existing sustainability impact assessment procedure

Notes:

This session focused on three main 'sectors' of soil – Science, Management and Farming, and Policy. We identified that all three sectors are concerned about communication of how knowledge of soil biodiversity and soil ecosystem services can promote a sustainable use of soils. For example, how best can scientists convey their findings to farmers and policy makers, and likewise, how best can policy makers convey their needs to scientists or regulations to farmers. This session made clear that often it is not scientific knowledge gaps that hinder soil management but rather the lack of communication between these three main sectors involved in soils. Further, we also need to find the best balance of managing soils for ecosystem services. While some soils are best used for food production others may be best

used for carbon storage and nutrient cycling. Identifying these synergies and competitions (using soils for food or water cycling) is a huge task and will be best addressed if the three sectors can work together.

This session also discussed implementation and action plans of regulating soil and soil biodiversity for ecosystem services. It is important to remember the vast differences between soils, ecosystems, farming and management practices, and government and policy roles. These differences promote actions plans that focus on general tools and processes to promote soil ecosystem services.

Finally, there is a need to bring awareness of the importance of soils and soil biodiversity for ecosystem services. Soils, the room agreed, do not hold the same appeal as charismatic megafauna (Pandas and Tigers) or lush rainforests, and the resources they provide are less tangible, especially when compared to water for example. Therefore, how can we increase the appeal and interest of the public and therefore policy sectors? Some of the solution will come from better translation of scientific results to the farmers including: promoting sustainability agriculture use and ecosystem services benefits, valuing biodiversity to farmers, and clearly demonstrate how much economic profits and services are provided by soils and soil biodiversity. There also needs to be a stronger effort to market ecosystem services to decision makers and the private sector and NGOs. Still, the economics of soil will go beyond putting a price tag on the services they provide and scientists, farmers and policy makers must be creative in the ways that we acknowledge the natural capital value of soils

Contributors from the participants

There was an intense discussion among the audience with lots of contributions already included in the summary above.

IASS POTSDAM Global Soil Forum
Institute for Advanced Sustainability Studies e.V.

First GLOBAL SOIL WEEK | SOILS FOR LIFE

Soil Security

Date:	**19th November 2012**
Name of the rapporteur:	**Fabien Sachse**
Moderator/commentator:	**Andrea Koch**

Why is this session topic important:

The five top problems facing humanity over the next 50 years, including food and water security, rely on well- functioning soils. As such it should be a major concern to society at large that the world's soil stock is being rapidly degraded. Soil degradation is a global phenomena, which takes many guises including soil sealing, the use of topsoil to make building materials, erosion and acidification.

Soil security is a concept that can engage the world giving prominence to the importance of soil and providing solutions to climate change, food security, water and biodiversity. Soil carbon is the key indicator of soil security, and provides a focal point for measurement and the monitoring of progress being made in securing our soils. This concept is based on sound science, and provides a platform for policy frameworks that can be scaled from local through to international levels of government.

Objectives of the session:

The goal of this session is to inform participants about:

- The role of soil security as a policy platform
- The science of soil security
- The role of agriculture in securing soil through the management of soil carbon
- Soil carbon as a key indicator for global sustainability

Key discussion Points:

Soil security is a new term. It is about ensuring that soil is managed and maintained in such a way that it can continue to provide essential ecosystem services including the production of food and fibre, fresh water supplies, biodiversity and climate regulation.

Soil security refers to the maintenance or improvement of the world's soil resource so that they can supply the world on an ongoing basis with sufficient food and fibre and a variety of ecosystem services and to contribute to energy sustainability and climate stability.

A principal mechanism for achieving soil security is the management and sequestration of soil carbon through active land management systems and technologies.

Soil carbon is a key indicator of soil function and as such, is essential for ongoing ecosystem service delivery.

Of critical concern is that we have no way to know the extent to which soil is being degraded or lost.

GLOBAL SOIL MAP PROJECT

In 2009 the globalsoilmap.net project was initiated by the International Union of Soil Scientists (the main international body for soil science). This project aims to develop a global digital map of the world's soils – an important tool for soil and land management. Regional nodes have been established internationally and work to develop the digital soil map is well underway. The group has established technical standards for the mapping of data, ensuring a consistent approach worldwide.

POLICY

Soil degradation is a global crisis, and we believe that managing, measuring and monitoring soil carbon holds the solution. By using land management practices that increase and manage soil carbon, soil degradation can be reversed, and soil can be secured. These are great policy issues, both internationally and domestically.

A number of efforts were made to raise the issue of soil degradation at Rio+20. There is momentum building around this issue of soil degradation, and an increasing recognition that soil carbon holds one of the keys to the required response. International connections are being made, discussions and conferences such as this one are being held.

Australia has a long history of soil conservation science and policy, across state and federal governments. However Australia also has a unique policy focus on soil carbon sequestration as a climate change mitigation strategy. In August 2011 the federal Carbon Farming Initiative for the first time allowed, for the approval of methodologies that are proven to sequester soil carbon, to earn offset credits. In addition, the carbon pricing mechanism came with a Land Sector package of A$1.7billion, for research, development and extended to the reduction of agricultural greenhouse gases.

LAND MANAGEMENT AND AGRICULTURAL PRACTICES

Australian farmers are among world leaders in agricultural practices that increase soil carbon – conservation agriculture, zero and minimum tillage, High Intensity Short Duration grazing systems, all of these practices and more mean that many of Australia's agricultural soils have already made the 'soil carbon U-turn'. Instead of losing soil carbon, these soils, under the correct management, are now gaining soil carbon. Farmers and rangeland managers are the stewards of our soil, and our soil security.

Soil science already provides evidence that changes in land management practices effects soil organic carbon. For example converting from pasture to cropping will lead to decreased soil carbon levels, just as converting from cropping to pasture will improve soil carbon levels. In the cropping arena, converting from tlllage to No-Till increases soil carbon.

Key concerns/challenges:

- There is no warning system existing, which can help us to recognize degradation of soils before it is too late.
- Monitoring of soil carbon stocks could become such a warning system.
- There is no global standard adopted to protect our soils.
- Soil degradation is going on much more rapidly than the restoring of degraded lands could be implemented.
- - Good soil management is not interesting from a short-term economic point of view, however it holds the key to sustainable agriculture, food and water security, and ongoing ecosystem service delivery

Solutions/examples/case studies:

- The possibility of mapping and monitoring soil carbon was presented:

  How the data can be collected,

  how it can be visualised,

  how the outcome looks like and

  how we can use such maps.

  - There is a need of payments for ecosystem services. This tool would convince land-users to implement more sustainable ways of acting in their work and could contribute to the financing of the restoration of degraded lands.
  - More research is needed to understand which land management approaches will increase soil carbon stocks

Key conclusions of the session:

- Soil Carbon stock is a valuable indicator to show the functionality of soils including:
  - Fertility,
  - water-holding-capacity,
  - stability against erosion,
  - biodiversity
- It is comparably easy to measure.
- If we find good ways to monitor the carbon-stocks of soils we can learn and recognize land-use-methods, which allow carbon stocks and monitor changing's in soil-carbon. This could be an important tool to develop a warning system of soil degradation. The Global Soil Map Project can play an important role in this.

Key general recommendations of the session:

- To be aware that the amount of soil carbon is an overall indicator of soil security, and in a general sense that soil degradation is being avoided or reversed.
- This is important as soil security underpins food and water security, biodiversity, and contributes to climate stability and energy sustainability. Well functioning soil is critical for the on-going delivery of ecosystem services provided by soils.

- Some agricultural practices are known to increase soil organic carbon (e.g. No Till and High Density Short Duration grazing), however more research is needed to determine a wider range of land management techniques that will increase and manage soil carbon.
- Before we adopt standards for securing soils we should talk and exchange with people who are working with/on/in soils, like i.e. farmers. We should listen to their knowledge that is based on long term and practical experience.

New questions arising – ways forward:

There are some known land-use systems, which can increase or keep the soil-carbon, like i.e. the increasing of nitrogen in the upper layers. But there is a need for research

- on existing systems to demonstrate their soil-carbon-impact and
- to develop new systems.

Notes:

- Segregation is an important tool to secure the soil and their ecosystem services.

How can the amount of soil-carbon be increased?

- With good management it is possible to increase soil-carbon examples:

Agro-forestry-systems like silvi-pastoral meat production,

Increasing of nitrogen especially on top of the soil.

Converting unsustainable cropping land to pasture and grazing.

This will lead to better protection against erosion and will stimulate soil-organisms fix carbon from decomposed soil organic matter.

With good management it is also possible to restore degraded land and prepare it for agricultural use.

- The idea that erosion is a global carbon sink, because due to erosion high amounts of carbon are transported into the oceans can be true. But with this los of carbon in the soils there will also be a loss in the ecosystem services of the soils.
- Soil organic carbon makes the quality of soils. The hole life on earth is depending on the "black soil layer"!
- Why is soil carbon so important?

It is responsible for lot of different qualities.

The actual carbon stock as well as time related differences can be measured easily, because soil carbon is not changing to fast or to slow if the influences change.

IASS POTSDAM Global Soil Forum
Institute for Advanced Sustainability Studies e.V.

First GLOBAL SOIL WEEK SOILS FOR LIFE

Ecosystem Services for Business

Date:	**19th November 2012**
Name of the rapporteur:	**Hugo Rosa da Conceição, Claus Gerhard Bannick**
Moderator/commentator:	**Prof. Dr. Franz Makeschin**

Why is this session topic important: Soil derived ecosystem services are essential for livelihoods as well as for business. Water cleansing or the production of food are just two examples. There is a growing recognition from business that they have a large stake in preserving the ecosystem services provided by soils, and that debates between different stakeholders are required. This session contributed to these debates by putting together representatives from business, science and policy to debate the synergies between ecosystem services and business.

Objectives of the session:

- Exemplify how companies and science can work together to mutually improve their understanding of ecosystem services.
- Debate the role of a possibly regulatory framework to effectively integrate industry, science and policy in the sustainable use of ecosystem services and natural resources.

- The demonstration of examples from the business sector to contribute to ecosystem services

Key discussion points:

- Defining who will bear the final costs of taking ecosystem functions into consideration in business activities.
- What kinds of measures can be implemented by the business sector to improve their use and preservation of ecosystem services and natural resources?

Key concerns/challenges: 1 - A very relevant issue is about how and who gets a financial compensation for the use of ecosystem services. Is it possible for companies to internalize these costs and then pass them on to the customers? 2 - Without sustainable land management, the costs of drinking water production will greatly increase. 3 - There is currently a decoupling between biomass production and consumption, which leads to unbalanced nutrient loads to water resources. 4 – Farmers/ land managers play a very relevant role in ecosystem service protection, but need economic incentives and sufficient technical solutions. 5 - Business can play a large role in measuring environmental aspect in production chains, especially when in association with scientists 6 - Regional and local contexts are very important and a challenge for country and continent wide legislation. 7 - Challenges are not only natural and economic but also strongly political and regulatory, but it's hard to get science policy and industry together.

Debate/counter arguments: Panelists showed how business can contribute in measuring and improving soil ecosystem functions, but participants pointed out that they still failed to understand that soils are a resource that also contribute to their activities, that soils are part of their business (Ecosystem services "as business" and "for business")

Solutions/examples/case studies:

The moderator gave an overview regarding defining relationships of economic issues and soil ecosystem functions and relationships between economic issues and soil ecosystem functions. Monetarisation of soil ecosystem functions is missing – first general studies in the area of biodiversity are available. Dr. Hilgenstock presented ways to reclaim soils at previous lignite mining areas managed by the RWE AG. Their activities happen in densely populated areas with a strong regulatory framework, so recovery of old mining spots is a key challenge. Main issues are the preservation of wetlands, biodiversity conservation and the re-cultivation of soils, for multiple purposes. Dr. Bauer (BASF) presented a framework for a sustainability index to deal with the complexities of sustainable land management in agriculture. Dr. Kabbe

and Dr. Grützmacher (Berlin-Wasser) showed ways to maintain soils through improved recycling products in the fertilizer sector and highlighted the importance of the filter and buffer function of soils in relation to drinking water quality. Andúgar Miñarro (Copa-Cogeca) presented the importance of soils and their functions in the context of different land use systems and political targets, such as the Green Growth or Bioeconomy.

Key conclusions of the session:

- Ecosystem functions lead to a variety of gains - but they are largely taken for granted
- When determining land prices and rents, most of essential ecosystem functions are not considered
- The monetary value of many ecosystem functions is not known – so far there is no basis for an adequate financial compensation for the soil owner
- Companies (consumer) contribute to the degradation of soil ecosystem functions
- Companies and land users, can and should, contribute to the rehabilitation and reclamation of soil ecosystem functions
- A cross-sectoral approach to the economic valuation of ecosystem services is necessary
- Science is required to provide conceptual approaches for an economic soil assessment and back this with actual scientific based facts

Science, policy and industry will only work effectively together if all sectors collaborate equally and effectively, but integrating their work is a difficult task. Regulating agencies are needed not only to provide science-based information but also cooperate with industry.

The relation between ecosystem services and business results from the interplay of multiple agents. Their inter-relations, however, has been hindered by among other reasons the fact that existing data was "sectoralized". Presently, however, there are tools available to bring together data from different sources.

Technologies already exist that can greatly reduce the negative impact of economic activities on ecosystems.

The dynamism of the business sector is a great opportunity for putting forward innovations in a timely manner, without necessarily having to wait for government action.

Key general recommendations of the session:

Regulations have to take the specificities of ecosystem functions, regions and business sites into consideration. They must be harmonized, in line with the interdependent reality of business and should take into consideration the realities of stakeholders, especially regional level regulations. Multiple regulations are detrimental, as they increase transaction costs and increase uncertainty.

Indicators also have to be designed in accordance with specific regions and sites, so that they can properly serve as a basis for policy recommendations. Specific indicators have to be defined from the start, before focusing on complex systems.

Research investments have to be strategically prioritized, so that suitable, already available technologies can be more effectively used.

Sustainability has to be taken into consideration in the whole production chain. In the agricultural sector specifically, farmers can play a large role in promoting green growth by upholding environmental regulations and improving productivity at the same time. The business sector can use their expertise to increase available information on ecosystem services, especially in reducing complexity and uncertainty, thus contributing to policy making and to improved business decisions.

New questions arising – ways forward:

Companies have to realize that they not only have an impact on ecosystem services, but that ecosystem services form the basis for their business. A new understanding, of ecosystem services as part of business, not external to it, has to be strengthened. This requires a new concept for working together (science, business, politics) and a better understanding in society.

Global Soil Forum
Institute for Advanced Sustainability Studies e.V.

First GLOBAL SOIL WEEK SOILS FOR LIFE

The Syndrome Perspective: A Focus on Soil Contamination (I) and (II)

Date: **19th and 20th November 2012**

Name of the rapporteur: **Tallent Dadi**

Moderator / commentator: **Dr. Guenther Bachman**

The objective of the session was to explore soil contamination from a scientific, policy and social perspective and how these perspectives can be transformed into a holistic approach to address soil contamination. Soil contamination is an important issue because it affects society and the environment in many ways. Furthermore the demand for land is on the rise hence there is need to deal with soil contamination. The topic was divided into 2 sessions. The first session was on presentations from external experts and local authorities/people involved in the two major historical contaminations; Bhopal incident, India and Dioxin contamination, Vietnam. The second session focused on four major themes on how to address soil contamination. These were; (1) contamination diagnosis, (2) "Therapy and surgery", (3) prevention, (4) after care and reuse. The 'World Cafe Table' approach was used to discuss the major themes in small groups.

The presentation from the experts and local authorities involved in the Bhopal and Vietnam contaminated sites highlighted the challenges of dealing with historical soil contamination. In both cases contamination was caused by a foreign company and country. It was noted that in both examples no one has taken full responsibility of the contamination hence it has taken a very long time to clean up the sites. In Vietnam the government does not have enough

resources to handle the contamination on their own while the US government has failed to take full responsibility. It was also noted that decontamination of polluted sites heavily relies on politics. In the Bhopal incident there is a general feeling from the public that the authorities have been reluctant to solve the issue. This normally results in the spreading of the original contamination to scales that are even more challenging to handle. In Vietnam contamination has spread further into deeper layers in the soil.

The presentations showed that communities in developed world are aware of soil contamination in their areas unlike in the developing countries were awareness is limited. It was also noted that in developed countries there is a high level of social stigma on contaminated lands which is driver for action. However in developing countries there is no social stigma on contaminated lands. For example the people of Bhopal did not desert their homes because of contamination. The presentation of decontamination experts highlighted the challenges of investigation in a foreign country. In Vietnam the expert noted languages barriers, bureaucratic processes leading to delays in access to information and an un-willingness by authorities to release data as some of the challenges they faced.

An interesting question on the diagnosis table was on who should pay for the contamination clean up. Many delegates were of the opinion that financing decontamination projects should be a burden of the polluter however society still needs to deal with historical pollution. It was noted that society benefited as a whole in the past from cheaper production which lead to most historical contamination. Therefore society now needs to bear the cost of addressing historical contamination.

The second session focused on the four major themes highlighted above. It was interesting to note that delegates from developed countries felt a lot of measures were in place to handle contamination, while those from developing world generally felt that a lot more still needed to be done. However both groups were of the general impression that whatever was in place still needed to be improved because even in the developing (developed?) world there were still some grey areas. The following are the main points that came from the four themes discussion tables.

Diagnosis is considered a crucial step and delegates were of the opinion that systematic and dynamic diagnosis approaches should be used in a complementary manner to derive maximum benefits of each method which in many cases eliminates the shortfall of the individual approaches.

For **'therapy and surgery'** to be effective there is need to understand the problem in order to manage it. A lot of technologies have been invented however delegates noted that more

and more technologies were coming on the market and that these available technologies are not fully utilised. The delegates felt there was no need for new technologies but rather a need to promote available technologies. Sharing of experiences and knowledge transfer was also cited as an important aspect in 'therapy and surgery'. The role of the public in **after care and reuse** cannot be over emphasized. Delegates echoed the same sentiments on the need to make the public aware so that they can trigger change. For **prevention** to be a success in soil contamination it should be tackled by a holistic approach incorporating technical, financial and policy instruments.

The syndrome perspective session were well attended with between 28-33 delegates per session. From the two sessions communication between governments and the affected people was highlighted as critical step in addressing soil contamination. Delegates also felt that there was need to invest in sound investigation and assessment of contamination so that people can manage what they know. Delegates were also of the notion that there was need to promote reuse of decontaminated land so as to encourage funding of decontamination, otherwise clean-up efforts would be in vain.

"The Syndrome Perspective: A Focus on Soil Contamination"

Lessons learned from the world café:

The syndrome perspective has to recognize several symptom features. Phenomena or characteristics that often occur together, so that the presence of one or more features alerts to the possible presence of the others. Some syndromes have only one cause; others have multiple possible causes. In other cases, the cause of the syndrome is unknown.

It was tried to explore this in the platform session under several headlines:

<u>Prevention:</u>

Under the prevention topic for soils we have to realize existing interfaces among still existing regulations. Soil is covered in several agricultural related regulations, (e.g. the use of fertilizers, compost, sewage sludge etc.) and the Industrial Emissions Directive covering the impact on soil and groundwater released by industrial activities. The requirements for soil and groundwater quality are based on the media protection law. These interfaces are one source of lacking soil protection because the focus on soil quality will cover separate only. Participants agreed that there is no alternative to this approach. A fair approach regarding prevention is seen in industrial emission regulations which give a clear motivation to prevent

soil and groundwater contamination and to fix responsibilities to rehabilitate any negative impact.

However we observe a still ongoing increase in soil related background values. The anthropogenic impact from human activities will lead to the effect that these background values will reach earlier or later a hazardous level. So there might be a lack within execution. Competent authorities are no longer in the position to fill it because a decreasing capacity and competence within authorities. Due to budgetary requirements they are not able to control/monitor the fulfillment of regulation and the adequate behavior of operators. Most of participants agreed that regularly and spontaneous inspection could change manners!

Especially with regard to prevention a missing public awareness was stated. What we see is, that individuals are might be unaware of environmental problems and regulations. In this case information and publicity can help to make people sensible about environmental issues. We have also to recognize that is will be a long lasting process. On the other site we have to understand that industry is fully aware about possible effects on soil and groundwater. Moreover they are lobbying against new regulation and requirements to be more successful in protecting soil and groundwater with the argument of existing high technical standards which will avoid any significant negative impact. But what is to do in case of bankruptcy or illegal behavior. Generally financial guarantees or insurance solutions could help, but so far approaches failed e.g. due to the "small" market and high prized fees for this kind of insurances.

So we have to stick on the polluter pays principle and we have to establish in parallel incentives to support any prevention. But this doesn't mean that the public have to pay the industry. The implementation of requirements in this regard will play a key role. Here we have to strengthen the precautionary approach among the pillars of environmental policy.

Diagnosis

The diagnosis of the situation on contamination has started in a lot of countries, including developing countries, showing the dissemination of the public awareness on contamination issues. The identification process is proceeding at different speeds depending on the background knowledge, the industrial history and the available resources in each country. A systematic approach of identification (publically funded) and opportunities for diagnosis created by land sales and land use changes should be combined to tackle the challenges created by soil contamination.

Most countries have developed advanced policies for dealing with hot spot contamination. Diffuse pollution is mainly managed with focused actions on different sectors (e.g.

agriculture and reduction of use of pesticide / fertilizers) and would need a more holistic management approach than that adopted for hot spots.

An efficient policy on contaminated soil must integrate legislation and regulations for setting the principles and the rules (from prevention to remediation, aftercare and reuse), with technical guidance and financial instruments for implementing it, organization and structures for acting at the relevant scale(s), and public awareness actions. Most problems are encountered during the implementation phase and its control. Policy and decision makers should pay more attention to local experiences and knowledge. More integration during the legal framework development and the transposition at the regional (area)/local scales is needed for increased policy efficiency.

Public awareness differs between regions, depending on the existing knowledge levels, the perception of risks. Involving intermediates such as the architects, the construction companies, the notaries, the municipalities or the farmers unions could raise attention with a special focus on success stories (a lot has been done in the past in solving problems, but media attention is still focused on the worst cases).

Some important gaps have been identified during the round table such as:

- At the policy level, more integration and attention to local transposition and implementation
- At the management, estimation of social and societal costs of land/site remediation; proposals for decision making with land needs are competing (depending on pressures to land),
- At the research level, development of cost-efficient investigation tools for rapid and scientifically based pollution detection, or better estimation of pollutant effects on human health (for different pathways of exposure).

Therapy and surgery

A summary of answers to each of the questions posed is given below.

- Appropriate, practicable and type-related rehabilitation approaches for all kind of soil contaminations are available? Where are obvious gaps?

There are appropriate, practical and type-related rehabilitation approaches for all kind of soil contaminations. While technologies can always be improved, no suggestions for new therapies were identified. The gaps are in the accessibility to technologies around the world and in having local stakeholder confidence that a technology will be effective in a specific locale.

- What are main obstacles for delaying remediation?

The need for rapid reuse of former industrial sites means a surgical rather than long term therapy is needed. Such surgery while effective is more costly.

The lack of funding for public sector remediation is an obstacle however the practice of importing assessment criteria from another country or of having a single screening value that then gets treated as a remediation target may be unnecessarily raising the actual or perceived cost of remediation.

There is a lack of political will and of staff resource (capacity and maintaining capability as colleagues leave or retire). These result in regulators making over conservative decisions and on focusing on upward reporting rather than on local specific issues.

- Remediation of contaminated land – Successful approaches for hot spots are state of the art, do we have economic viable solutions for enormous contaminated areas as well? Could a comprehensive toolbox with so called BATNECC solutions helps and is it even realistic for diffuse pollution?

Large areas of diffuse pollution were identified as arising from mining, abandoned military bases, impact of areal weapons, irrigation with polluted water, deposition from industrial emissions to atmosphere or local pollution on large scale chemical works. The challenger was not seen as particularly technological but more a question of scale. Scaling up a technology that would work for an individual petrol station or former gasworks is not practical. Instead gentler techniques were suggested. Phytoremediation was seen as a pathway interruption solution – access to the contaminated soil was broken by the vegetation and rainfall infiltration was reduced by take up in the root zone. Hyper accumulators were not felt to be a viable solution for source removal. A management rather than surgical removal approach to dealing with large scale contamination was suggested. This would mean tolerating the presence of a chemical but ensuring it could not harm anyone or the environment.

- Which are the criteria a remediation decision should be coupled with? During implementation of remediation measures, what kinds of hurdles are stakeholders faced at (technical, economical, judicial, and administrative)?

Decisions are often claimed to be risk based but that can mean exceeding of a generic and overly assessment criterion that was meant to be used as a screening value and not an action value or remediation target.

- Did we really understand the actual existing "therapy" or is it just a shift of problems or a source of new or other difficulties?

The issue of disseminating information was raised on several occasions. Activities such as Eurodemo or CLU-IN need to be extended to other parts of the world.

- How can research help with recipes and technological innovations for single case related solutions? What are barriers for implementing innovations?

Research is needed to optimize existing technologies and to assist in the selection of the most appropriate for a specific site or problem.

<u>After Care and Reuse</u>

- The context
    - The problem is (too) big
    - There is not enough money
- The definition of a sustainable approach (4 characteristics)
    - It has to manage the risks
    - There should <u>not</u> be <u>more</u> <u>problem</u> after the intervention/remediation measure <u>then before</u> (for example, to excavate contamination at one site and spread it on neighbouring land would not sustainable
    - It has to reduce the contamination load (some treatment)
    - The land should be reuse (if necessary, mechanisms should be build in so that a link will be establish before reusing the site and paying for cleaning it up. For example, developer pays or industrial user devotes a small share of its profits to pay for a progressive cleanup)

Some countries (e.g. India, Brazil) are at a beginning stage. In that case, first step must be to become aware that there is a problem and inform the population, so that it may get concerned and push the government to act

- Is what we are now doing sustainable
    - In Europe, it is very much focus on managing the risks. There is a feeling that there is barely enough money to manage the more risky sites.
    - It is not enough. To have a really sustainable approach, there should be more reuse of the sites

- $ (economic aspects)
    - Everyone agree that to financial means are essential to attain sustainability. No money, no candy
    - But how far should we go to assume that sustainability equal affordability, to make affordability a part of the sustainability definition
    - It is a dangerous assumption. Affordable for whom The person which land has been contaminated or who is force to live on a contaminated land or the polluter
    - If an approach is sustainable because it is affordable, you introduce a double standard for sustainability, one for the poor countries and one for the rich. A transnational company could then act totally differently in one place then in another.

You cannot get a full sustainable approach at once. You can only implement it stepwise and it is a long term undertaking

Global Soil Forum
Institute for Advanced Sustainability Studies e.V.

First GLOBAL SOIL WEEK SOILS FOR LIFE

Holding Actors Accountable Instrument for Accountability in Large-Scale Land Acquisitions and Investment?

Date:	**19th and 20th November 2012**
Name of the rapporteur:	**Komolafe Sunday**
Moderator / commentator:	**Lasse Krantz**

Why is this session topic important?

There is urgent need for clarification of land grabbing/acquisition guidelines in various countries and at global level. In addition, the purpose of the session is to give impetus to initiatives that promote accountability of the states and private sector via monitoring and improving the transparency of large-scale acquisitions and investments.

Objectives of the session:

- To discuss the overview of key questions linked to accountability of states and private sector over land, investment and food security.
- To identify potentials and limitations of private-sector led sustainability initiatives.
- To discuss mechanisms and identify instruments that could promote accountability.
- To assess the effectiveness, feasibility and possible structure of existing and proposed instruments and enhance any potential complementarities.

Key discussion Points:

- Transparency serves as means to accountability that makes the communities to understand what they are entitled to.
- Transparency has to be complemented by broader governance reforms as well as capacity-building for Civil Society Organisations (CSOs), otherwise, it becomes a technical fix that does not address illegalities, corruption and power imbalance.
- Idea of open contracting means disclosure of information before any contract is awarded. In addition, there is need for a monitoring and enforcement to make the entire process transparent for both government and private sectors (companies).
- FPIC recognises the right of indigenous people, though this has not been permanently defined.
- How to address the issue of commercial confidentiality. Government is always party to the contract; therefore, dealing with the state land automatically becomes a public interest, and how to ensure minimum amount of information deemed commercially confidential.
- How do we institutionalize the initiatives? Voluntary regulations or existing initiatives? Voluntary regulation is a positive step but has to be a means to overhaul the whole process in the long-term.
- Web tool (Land Matrix) may be a useful way to provide a global overview of the phenomena and promote information flow to all the actors

Key concerns/challenges:

- Public land is not precisely defined, that is; with no title or legal investment at national level
- Lack of global regulations is one of the major concerns
- Consultation/consent processes pose a serious challenge to all stakeholders
- Disclosure of details of land deals by private and public sectors most times are difficult as most actors involved are not interested in disclosing the private data of their organization
- Corruption/bad governance poses serious challenges in public contracting
- Dispute resolution mechanisms are difficult to develop especially when conflicts occur as a result of increase use of biomass for food, feed, fibre and alternative to fossil fuel
- Dissemination of land deal details are difficult to get from some governments

- In the case Web tool (Land Matrix), some data are difficult to get from private and public organization. In addition, the information on the web tool cannot be accessed by some local communities
- Designing of webpage for each country for public to access (possibility and integrity of the data)

Debate/counter arguments:

- Can transparency and accountability become tools for stability in land acquisition?
- How can we draw the interest of government into transparency and accountability
- Expanding biomass production causes conflict in other areas of agriculture
- What interest in transparency does the private sector have?
- What are the main bottlenecks for speeding up the development of effective instruments for transparency?
- How to combine sustainability with transparency and accountability initiatives?

Solutions/examples/case studies:

- Focus should be on regulations that lead to accountability and transparency
- All actors should be included in decision-making process (private and public partnership) including communities
- Prohibitions on land grabbing at various level of government is one of the solutions
- All stakeholders should have access to information on the investors and targeted countries
- Establishment of a standard that involve the representative of public, private and NGOs (Transparency Initiative –TI, Financial Standard & Voluntary Standard Systems)

Key conclusions of the session:

- Transparency and accountability are not the solution to large-scale land acquisition issues but can serve as vital tools in addressing the challenges.
- Political will should be built in order to solve land grabbing issues

Key general recommendations of the session:

- There must be a regulation that will facilitate improved land use (legal policy)

- Regulation of negative impacts (mitigation)
- Communities must be involved in the decision-making process
- We should streamline our concentration on few important issues
- There must be an agreement among all actors involved in the reform (Large-scale land acquisition)
- We need not to focus only on land grabbing, but also pay attention to food availability, production and consumption habit

New questions arising –ways forward:

Missing initiatives : Key problems that are not discussed during the session

- equity and democracy issues are not included in the topic for the session and are very vital to land grabbing processes
- How do these initiatives related to soil? The initiatives raised during the session were not directly link to the soil which is the major topic of the conference.

Global Soil Forum
Institute for Advanced Sustainability Studies e.V.

First GLOBAL SOIL WEEK SOILS FOR LIFE

Greenbelt Movements and Ethiopia´s Tigray Project

Date:	**20th November 2012**
Name of the rapporteur:	**Fabien Sachse**
Moderator / commentator:	**Prof. Dr. Stephen Kiama Gitahi**

Why is this session topic important?:

There is a need for public awareness that sustainable soil use and the restoration of degraded soils is possible. There is a need to involve community in all efforts to save soils. There are good examples that could be emulated.

Objectives of the session:

Show examples where communities have be involved in protecting soil loss and degradation. Demonstrate successful examples in Ethiopia and other parts of Eastern Africa where people found ways to fight against soil degradation and ways how to improve or gain farmland by soil building.

Key discussion Points:

- There is a need for international soil standards. Is it better if they are voluntary or obligatory?

- How can the outcomes of models or scenarios be implemented into the work of the small-scale farmers who produce 60% of the global food products?
- How can we learn out of the presented success stories and implement this knowledge to other areas?

Key concerns/challenges:

- In the past local or indigenous knowledge was often ignored.
- Political instability can be the source of over-exploiting of natural goods what often leads to soil degradation.
- How best to demonstrate that losing soil is like losing a territory to the enemy.
- How to balance the need for more land, more food for the growing population with the need to preserve our forests
- How to raise awareness to those owning private land that they are holding it in trust for future generations

Outcome of the session:

- The demonstration that there is "good news" out there, successful stories on soil preservation with a positive impact for the motivation to act.
- - All mentioned persons leading successful projects have done it voluntary. This is one argument for making global standards for soil security voluntary.

Notes:

Presentation of Passion of **Wangari Maathai**´s in planting trees and saving soils:

- She recognized that the degradation of soils will become a serious problem in future and started acting.
- In the beginning she distributed tree seeds to women. After understanding that this is not sustainable she started to teach women how to collect seeds themselves and develop tree nurseries for indigenous trees available within their locality.
- She had revolutionary ideas on how to bring the soil challenge awareness to the public:

She started to cooperate with schools, to teach students how to plant trees and to "bring them closer to soils" by showing how this is done.

She involved the Military (Kenya Army) in tree planting by explaining that loosing soil is the similar to loosing Kenyan territory.

She motivated people to plant trees by pointing out that soils and trees do not belong to governments or countries but to the people.

These are some of the points that she used to demonstrate and improve soil awareness in particular the degradation of soils to a large number of people.

- Clearing of forests because of increasing demand for firewood and charcoal lead to landslides and floods.
- Land-grabbing leads to deforestation due to the demand for new farmland for cash-crops.
- The cultivation of riverbeds leads to increased soil erosion.
- In *artificial* forests (i.e. plantations of exotic tree species) the forests are not accompanied by undergrowth- thus water does not get time to be soaked by the soils. This in turn leads to floods.

Presentation of the **Tigray Project of Ethiopia**:

In Ethiopia there is a lot of indigenous knowledge about farming and soil management as Ethiopians have a long tradition of undertaking agricultural activity and have accumulated a vast array of experience and knowledge.

Some sources of soil degradation in Ethiopia:

- A special challenge in Ethiopia is the fact that most of the country consists of mountain areas: most of the agricultural land is situated on gradients.
- For grazing there is open access to land in the country, which leads to extensive degradation due to overgrazing
- Especially in the western part of Ethiopia there are areas showing a high amount of rainfall (up to 2000mm/year).This is intensifying the challenge.

How the **Tigray Project** is bringing awareness of the soil challenge to the public, identifying small-scale farmers with soil-security and coming to successful outcomes:

- Showing that land healing is possible if physical (i.e. water catchments, dams and terraces) and biological (i.e. production of compost, planting trees in agro-forestry systems) tools are implemented. There is no need for big machines and high financial input and it can be done with manpower and use of simple tools.

- Showing that the utilisation of fertilizers in dry areas does bring lower yields compared to the utilisation listed in the previous point. This is due to the fact that drier soils are not capable of absorbing the fertilizers. In comparison to compost fertilizers which are washed out very quickly and do not prevent soil erosion.
- Why diversification of the whole context is important:
- Diversification of crops will improve the susceptibility to erosion.
- Diversification of crops will reduce the risk of pests.
- Diversification of crops will improve the biodiversity which will in turn lead to richer soils.
- Diversification of plant-layers will contribute to soil improvement.
- Presentation of the situation in **Somalia and Somaliland**:
- In Somalia and Somaliland there are some special conditions leading to a special situation:
- Long tradition of pastoralism as a special method of land-use management
- The special socio-economical situation of this area impacts the management of it's soils.
- There are many examples in Somalia of how the degradation of soils is affecting every day lives of the people
- Political instability is often leading to short-term oriented land-use: After the meat-trade the next largest export of the country is charcoal: which has a huge impact to the forests and the soils. This trade of charcoal is one of the main incomes of the Shabab militia.
- The transfer of knowledge is particularly difficult in an area where there is a very high rate of illiteracy.

IASS POTSDAM Global Soil Forum
Institute for Advanced Sustainability Studies e.V.

First GLOBAL SOIL WEEK | SOILS FOR LIFE

Payments for Environmental Services

Date:	**20th November 2012**
Name of the rapporteur:	**Hugo Rosa da Conceição**
Moderator / commentator:	**Moritz Remig**

Why is this session topic important: Payments for Ecosystem Services (PES) is currently amongst the most prominent concepts in the sustainable development debate. The most common objectives of present PES initiatives are carbon storage and watershed protection, both having close ties to sustainable soil management. PES are, therefore an interesting integrative approach for the debate and practice on soils, since PES activities are increasingly recognizing the vital role of soil management in the provision of ecosystem services. The session is also relevant because project implementation has already yielded valuable lessons worth sharing and because the Global Soil Week also has a complementary session on soil carbon and, finally because soils are an area that receive insufficient attention in the PES debate.

Objectives of the session: The objectives of the session were to review the conceptual understandings of PES and to discuss the role of PES in soil conservation practices, focusing on the synergies between PES, sustainable soil management and watershed protection. The session also aimed at presenting PES projects that carry out sustainable soil management activities.

Key discussion Points:

- Definition of the values of the benefits in PES programs
- The conceptual definition (e.g. payments or rewards or co-investment) are relevant for practice.
- How to upscale local level PES projects?

Key concerns/challenges: 1 - The realities of PES on the ground raises questions about the current conceptual debates on the issue. 2 - PES schemes have to be sensitive to the socio-economic and cultural particularities of the beneficiaries. 3 – Up-scaling local PES activities requires support from policy making institutions and donors. 4 - Appropriate targeting of PES is the main challenge, which requires appropriate MRV mechanisms and, in some cases, third party verification. 5 - Support from researchers is required for the appropriate identification of intervention spots and beneficiary groups. 6 - Understanding enforcement capacities is a key concern to determine policy design features.
Debate/counter arguments: 1 - Payments or rewards? The term "payments" might mean a commodification of nature, while the terms "rewards" and "co-investment" intend to mean a more inclusive participation, which recognizes good practices and active participation in policy formulation, instead of simply passive provision. 2 - The nature of the benefits provided (e.g. direct cash payments or payments in goods) must be well planned to avoid incentives for other types of environmentally harmful practices.
Solutions/examples/case studies: Rewards for, Use of and shared investment in Pro-poor Environmental Services (RUPES) and Pro-poor Rewards for Environmental Services in Africa (PRESA) projects, implemented by the World Agroforestry Centre (ICRAF). Both projects provide payments for the participants to perform erosion control practices.

Key conclusions of the session:

PES schemes, particularly cash payments may crowd-out traditional social norms of conservation. For that reason, the economic approaches suggested by PES schemes will work better when combined with other approaches, such as continuous capacity development, service provision, awareness raising local empowerment and the enhancement of social norms of conservation.

The definition of what constitutes the benefits is central for the implementation of PES. Two issues were highlighted: a) the amount of payments varies a lot depending on the local context. Current projects have direct payment values sometimes considered low, but that still greatly benefit the poor. Covering opportunity costs, a common theoretical view on the

definition of the amount of payments, does not "tell the whole story". Participation in PES schemes is also influenced by non-economic factors not included in opportunity costs, such as access to information, environmental concern, and trust between actors, b) the provision of services and goods as part of the benefits of PES activities must be well-balanced not to produce other types of social and environmental harm, even when they are defined through a participatory process.

Sustainable options for financing of PES schemes can arise from the engagement of private sector beneficiaries of environmental services. User fees, environmental levies and taxes can be adjusted or made flexible, to encourage private sector engagement in PES schemes.

The enforcement capacities of countries will be relevant, especially relating to the strictness of conditionalities, so broader paradigms of PES could be applied based on prevailing conditions. MRV capacities will also be crucial for appropriate targeting of projects. PES could run the risk of wrong attribution, or paying the wrong people/community.

Bundling ES services and payments is part of a "comprehensive" approach to natural resource management and is not a stand-alone approach. However, there might be trade-offs in bundling different ecosystem services in one payment scheme. This complexity has to be addressed in policy design.

Key general recommendations of the session:

The identification of areas for PES activities has to go beyond political considerations and include research support. Identified hotspots should serve as the basis for dialogue, negotiation and action by stakeholders. Research is also needed for inclusive, fair and efficient PES schemes, including tools for determining beneficiaries' preferences on benefits and benefit sharing.

Policy makers and PES practitioners need a nuanced approach in designing PES schemes, combining sanctions with respect for stakeholder preferences and voluntary participation.

Policy and donor support is needed to upscale small successes in PES, taking into consideration that approaches that were successful in one region have to be carefully adapted to new contexts.

New questions arising – ways forward:

Development projects are moving towards 'rewarding poor people for good practices, rather than treat poor people as passive recipients of development goods'.

Further elaboration of transdisciplinary PES schemes, which include a multitude of valuation

forms not only based on monetary terms and commodification.

Starting a PES-soil dialogue and research on new perspectives for an enhanced PES which can be discussed at the second soil week.

Notes:

The session had a higher than expected attendance, which demonstrates the popularity of the concept.

Global Soil Forum
Institute for Advanced Sustainability Studies e.V.

First GLOBAL SOIL WEEK | SOILS FOR LIFE

Raising Soil Awareness

Date:	**20th November 2012**
Names of the rapporteurs:	**Francesca Bampa, Gabriele Broll**
Moderator / commentator:	**Luca Montanarella**

Why is this session topic important:

Raising soil awareness is internationally recognised as a pre-condition for promoting soil protection strategies and legislation between policy makers, but the actual activities do not often address the general public.

Objectives of the session:

The main objectives of the session are to discuss the main effective ways of raising awareness about soil issues and developing concrete ideas for an "Agenda for action" in 2013 at the international scale and not only at the EU level.

Key discussion Points:

Key concerns/challenges:

Despite the importance of raising soil awareness, the actual activities do not address the whole public.

Debate/counter arguments:

The session debate was structured in a "World café" style. Conference attendees were free to move between 5 separate tables led by coordinators.

Main discussion questions included:

1. What should be done globally to raise awareness about soil?
2. Which tools are available?
3. How can a broader public be reached?

The five different tables reflected different strategies of action:

- Chuck Rice (Past President of the Soil Science Society of America & Distinguished Professor in Soil Microbiology of the Kansas State University). The table discussion focused on the potential and actual collaborations amongst various forms of social media (Soil societies and associations using Facebook[1] & Twitter), networks and soil movies and started with a presentation being given at the beginning of the session.
- Nancy Klehm (Social Ecologies, Chicago). The table discussion focused on school and education activities like soil taste and body language experiences. The table coordinator invited attendees to touch, smell and taste the soil samples she collected from three locations in Berlin. After this "physical soil experience" the attendees were asked to write down their impressions, using language that the soil samples inspired in them. Together with the soils, the spontaneous vegetation at each sampling site was presented as part of the urban habitat. Spontaneous vegetation was considered as a key indicator of the state of the soil. She talked about how she leads urban foraging walks to observe and study the edible and medicinal spontaneous vegetation in an urban habitat as a clue to the nature of the soils below. She also presented many examples of visual messaging about soil awareness – t-shirts, stickers and patches. The table concept aimed to show an innovative way to reach the public and spreading a positive message.
- Greg Zibell (Photographer, NoKaKtus project founder). The table discussion focused on multimedia tools: a dynamic web platform called "*NoKaktus*". *NoKaKtus* is a transmedia project which includes a web platform, a book, documentaries and a photographic exhibition.

  The project aims to raise public awareness on soil degradation and desertification in

[1] German Soil Association https://www.facebook.com/BundesverbandBoden; SSSA http://www.facebook.com/SSSA.soils

Europe and to propose solutions on how to slow down the process. The project should link the subjects of these environmental and social problems, to association leaders, scientists and politicians to hear their different points of view and try to elaborate on the most appropriate solutions.

This work associates photographs, videos, sounds, drawings, interviews, maps, diagrams and graphs in order to provide broad information to the public. The web platform is perceived to be flexible and collaborative. One example would be the creation of a European landscape library collection, based of photographs taken decades ago and today, to underline the evolution of the environment. Many interviews will be undertaken to hear the voices of the people already affected by soil degradation problems, because those questions are also social problems, NoKaktus project's aim is to listen to the forgotten voices.

- Ciro Gardi. (EC – DG JRC – SOIL Action) The table discussion focused on communication between urban people (citizen) and rural people through simple effective positive messages. Both the two communities need to be addressed to raise awareness on soil issues. To be successful it is necessary to differentiate methods and messages and to find common environments to bring the communities together, sharing views and experiences. Most of the table attendees agreed on the following points/activities/actions, necessary to improve the communication between urban and rural people:
  - Need for emotional messages (i.e. how many football field are lost every day due to land take, how many living organism are in a teaspoon of soil, etc.)
  - Need to promote education on soil at every school and at university level
  - Importance of activities on urban agriculture and gardening
  - Combine nutrition information with soil information
  - Use goods and services that are relevant for city dwellers
  - Promote citizens to visit and experience rural areas
  - Connect citizens to nature
  - Improve communication and education on soil also for farmers
- Alexandra Toland (Berlin University of Technology, Co-commissioner of the German Soil Science Society's Commission on Soils in Education and Society). The table discussion focused on various strategies from visual artists working on soil issues in the public sector. The table coordinator offered a "menu of awareness themes and approaches" divided into appetizers, starters, main courses, side dishes, cocktails and

desserts. The "five course menu" analysed soil under different artistic perspectives: from aesthetics to social justice issues, urban gardening to watershed management and wasteland renewal, and religious and cultural symbolism to economic value. One consideration was the fact that in science-art collaboration it is mostly artists that initiate contact with scientists and only rarely that the scientific community calls on the art world for their skills. For this reason it is necessary to improve collaboration between the two spheres.

Secondly, environmental awareness programs (especially those focusing on climate change and food security) often use frightening facts and prognoses. Art projects can frame fearful issues with humour, beauty, and direct involvement, giving communities a sense of hope and empowerment. The discussion concluded that there is a need to communicate simple messages through visualization and symbolic language in a dynamic approach that considers feedback from creative confrontation, collaboration and participation of the public. Artists are expert communicators with an innate skill for identifying and addressing different audiences and should be better integrated into soil awareness building initiatives.

Solutions/examples/case studies:

The solution is to set up the future "Agenda for Action" for raising soil awareness in 2013:

- European Network of Soil Awareness meeting in September 2013 in Aberdeen,
- Expanded session at the next Global Soil Week 2013
- UN International year of Soils

examples were presented as further soil awareness raising activities:

- The Action leader of SOIL Action Luca Montanarella introduced the session with an example: the EU has inside his policy strategy framework a programme dedicated to awareness raising in the general public. An outcome of the programme for the Join Research Centre of European Commission is the Open Day planned for next May 2013 in Ispra (Italy).
- Prof. Charles W. Rice (Past President of the Soil Science Society of America & Distinguished Professor in Soil Microbiology of the Kansas State University) gave a presentation on "*Connecting Soil Science to the Public*". Prof. Rice focused on three key factors that will become increasingly crucial to face the challenges in the coming decades:
  - Human nutrition & health (food quantity / quality and cost)

- Climate (climate change)
- Natural resources (soil, water and energy)

In consideration of these factors the Soil Science Society of America (SSSA) aims to be an essential soil information source and an organization serving the larger soil community. The SSSA has developed multiple approaches to serve soil science through the website[2], the *I heart soil* website[3] and campaign, social networks (Facebook[4] and Twitter[5]), a general public outreach, as well as urban public and policy. The SSSA produced three short videos for public service announcements to give simple messages on soil connections to water, food, and human health.[6] Future steps forward need to focus on educational channels through the recruitment of soil science students and the acquisition of a public understanding and support of soil science. Synergies and coordination between various professional societies of soil science to spread awareness of soil is on the agenda for 2013.

- As collaboration between the IASS, the EU JRC, the DBG, and the TU Berlin's Soil Art Initiative[7], a festival of soil films was featured as a free public outreach event at the Kino Arsenal at Potsdamer Platz on Sunday the 18th of November 2012 and Wednesday the 21st of November. The "pilot project" was well attended and has been recognized as a good start. The development of the soil film festival is planned for future events such as the next GSW, the WCSS 2014 in Korea and other soil conferences worldwide.

Key conclusions of the session:

- There are enough tools and ideas on raising soil awareness. All the keynote speakers of the conference mentioned that raising soil awareness is the most important thing but almost no funding is available.
- All the existing networks should coordinate and team up using a unique and easy platform.
- Soil awareness raising should be carried out both amongst citizens (urban people) as well as rural communities.
- Soil awareness raising activities should recruit young people with an innovative view on soil science

[2] https://www.soils.org/
[3] http://www.iheartsoil.org/
[4] http://www.facebook.com/SSSA.soils
[5] https://twitter.com/SSSA_soils
[6] The story of soil https://www.soils.org/videos/play/psa/sssa-psa-001-water.flv
[7] https://soilarts.wordpress.com/category/soil-cinemathek/

- Soil awareness raising needs to include more innovative tools, channels and communicators (e.g. engaging famous personalities, prominent politicians, pop stars)
- Everybody should get involved and become an "Ambassador of the soil".

Key general recommendations of the session:

Prof. Gabriele Broll (University of Osnabruck) concluded that the session is only the start of the agenda for 2013 to inspire people about soil. The European Network on Soil Awareness[8] (ENSA) will meet next September 2013 in Aberdeen, Scotland, to discuss steps, ideas and ways forward and how to enlarge it into a global network. Participants of the session will be invited to join the ENSA network and to take part in future activities.

New questions arising –ways forward:

- How can the public participate in the future agenda?
- How can all the active actors team up to draft a common strategy?
- How can the GSW be used as a vehicle to raise soil awareness? Raising soil awareness should be it's main purpose.
- The Global Soil Week addressed the traditional audience, next year the event should opened up to the public and not by invitation only.
- Need for soil summer schools for the general public in different locations: Summer of Soil[9] could be one answer.

Notes:

Not enough time to fully discuss during the "world café" tour.

Contributions from the participants:

There was an intense discussion among the attendees of every table with lots of contributions. Some have already been included in the summary above and some will be taken into account within the ENSA network.

[8] http://www.eu-ensa.org/
[9] SUMMER OF SOIL 7/7-9/8/2013, Jarna Sweden http://www.summerofsoil.se/

IASS POTSDAM Global Soil Forum
Institute for Advanced Sustainability Studies e.V.

First GLOBAL SOIL WEEK SOILS FOR LIFE

Soil Information for Environmental and Societal Sustainability

Date:	**20th November 2012**
Name of the rapporteur:	**Cristiano Ballabio, Ece Aksoy**
Moderator / commentator:	**Prem Bindraban**
Facilitator:	**Thomas Scholten**

Why is this session topic important: Soil information is critical as it provides the foundation upon which an answer to questions about environmental, societal and economic sustainability can be built. Soil information is critical for food security, as a lot of earth surface is not usable for sustainable agriculture and provides the a basis for land use planning

Objectives of the session: Explain why soil information is critical for any other activity involving soil and give an introduction about the "state of the art" in the collection, organization and elaboration of soil information.

Key discussion Points:

- Which is the scope of soil information?
- How soil information can prove critical in developing sustainable agriculture for food security
- How to integrate soil information in climate change scenarios

- Which is the already available soil data, where is it, in which format and how end users can access to it
- How soil data must can be provided in a usable form to farmers and other users
- How existing soil maps can be improved to provide more accurate information to users

The session

Key concerns/challenges: How to meet users requirements; soil information must be delivered in a usable format. Understanding who, where and for which use soil information is collected and processed is critical
Debate/counter arguments: • There is a lack of mandate from and to supranational institutional bodies for collecting and managing soil data at a global scale. In particular, solving legal issues about data ownership is a critical point • Global soil information and Global Soil Maps are very attractive for the mass media, but probably having better soil maps at regional scale would be more useful to tackle local issues • Gathering soil data is difficult in many countries and no institution can force a global soil data collection
Solutions/examples/case studies: The GlobalSoilMap.net project aims at providing a very high resolution global map of soil properties, this product will provide an enormous amount of information for a wide range of possible uses. Countries can build their map following project specifications.

Key conclusions of the session: Increase the resolution of soil maps, even a marginal increase in the accuracy of global soil map prove critical. End-users must be involved in the elaboration stage. Provide information about soil functions rather than about soil taxonomy

Key general recommendations of the session:

- Meet the requirement of the people using soil information; launch a report on the use of soil information by the "real world" users, in order to understand which are and meet their needs.
- Make maps oriented at the needs end-users, make different maps for different users

- Address soil variability at different scales
- Collecting more field data is critical, a suitable would be involving local students in small scale projects to collect more soil profiles data

New questions arising –ways forward:

- The outcome of the Rio+20 conference might open some way for a global soil monitoring by UNCCD.
- How to cooperate with the remote sensing community in order to better map and monitor soil change

IASS POTSDAM Global Soil Forum
Institute for Advanced Sustainability Studies e.V.

First GLOBAL SOIL WEEK SOILS FOR LIFE

Voluntary Guidelines on Land Governance: Can they help to minimise and address competition and conflicts for natural resources?

Date:	**20th November 2012**
Name of the rapporteur:	**Andrea Buser**
Moderator/commentator:	**Jeffrey Hatcher; Paul Mathieu**

Why is this session topic important?

A new tool to address current land governance challenges was considered a necessity. The poorest are being marginalised geographically, socially and politically. Many questions arise to what extent the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forest can contribute to solving the issues and how the political momentum created by the endorsement of the Voluntary Guidelines can be best used to work towards more inclusive tenure systems.

Objectives of the session:

- To brief participants on the Voluntary Guidelines
- To discuss possible ways to promote their enforcement

Key discussion points:

Key concerns/challenges:

Creating awareness was identified by the participants and presenters as a key challenge. It has been mentioned that there had been successful cases in Africa. However, the awareness on the existence of the Voluntary Guidelines is still not yet enough raised. It was thus concluded that successful examples should be more widely spread and used.

The question of what could be learnt from the Voluntary Guidelines to the right to food was furthermore discussed. It was stated that these guidelines have been established longer ago and that the experience is well documented. It was added that the Voluntary Guidelines to the right to food seem to be a powerful instrument as displayed in the case of India referring to the right to food in the constitution. It was argued that with hard law on the right to food having been established, there might be the possibility of hard law being established following the Voluntary Guidelines on land governance. The Voluntary Guidelines were therefore considered a stepping stone towards enforceable legislation. It was however added that India was a very context-specific case due to the background of starvation in India.

Another challenge identified was the follow-up process to the endorsement of the Voluntary Guidelines. It was noted that the follow-up process was largely demand-driven which is time consuming. It was stated that it was too early for significant results to be reported six months after the negotiation of the text. It was noted that the monitoring progress would require financial support. In this context the question of the donors' responsibility in helping to enforce the Voluntary Guidelines were discussed.

Debate/counter arguments:

The second presentation gave a human rights perspective on the Voluntary Guidelines with an introduction on how the Voluntary Guidelines and human rights are interlinked. Sometimes existing legal instruments which refer to land in the human rights context only do so in a vague or procedural manner which can lead to difficulties to the interpretation of the legislation. It was argued that the Voluntary Guidelines have the potential to help with the interpretation and understanding of the human rights by putting more content in existing legal instruments. The third presentation was on the potential of soft law approaches. It was stated that it might be too early for binding instruments in that field. It was argued that there would however be instrumental and non-instrumental reasons for which one would adopt the Voluntary Guidelines in practice. Non-instrumental reasons for example include consensus building. Instrumental reasons include self-interest, reputational interest to maintain peace and avoid conflict. In this sense better governance of tenure may have very positive effects on the economy due to increased stability, peer pressure, more effective coordination and

collective action. In order to create peer pressure it is however necessary to create awareness.

Solutions/examples/case studies:

The first presentation was on the challenge to the responsible governance of tenure where three short examples were given to illustrate challenges and opportunities. The first case was on Vietnam, where the land reform was successful in promoting tree plantation managed by small holders. The second case was on three villages in Albania where the examples showed that the question whether tenure rights lead to justice is a question of the context. The third example was on Romania where local officials manipulated owners to sell trees cheaply. At the same time they sent illegal loggers to harvest trees in certain spots. This example shows that local leaders might not act as guarantors of right but as violators. However, the local population could not pursue the issue legally as the courts were not transparent.

Key conclusions of the session:

The session concluded that it is necessary to link the language of the Voluntary Guidelines to other existing legal instruments and processes. It was moreover concluded that it is necessary to communicate the message that the Voluntary Guidelines are relevant and potentially useful to all actors: State (central and local), investors (national and international), civil society organisations (CSOs), farmers' organisations, etc. In addition, the state might not only act as a guarantor of rights but also as a violator as it has been shown by the specific cases. Tenure rights leading to justice depend on the context and donors, and CSOs play an important role for monitoring and implementation.

Key general recommendations of the session:

In the session it was moreover established that there was a common interest between the Convention on Biological Diversity (CBD) and the Voluntary Guidelines in terms of the role of indigenous people and communal tenure. It was stated that a major issue of the UN programme on reducing emissions from deforestation and forest degradation in developing countries (REDD) is land tenure. It was therefore suggested that the Voluntary Guidelines could support the land implications of the REDD activities. A dialogue between the different parties was moreover strongly suggested.

New questions arising – Ways forward:

The ways forward identified in the session were to determine the various and complementary roles and responsibilities of different actors and identify how to raise awareness widely and quickly. Moreover, it was recommended to establish a dialogue between different parties and

processes (CBD, REDD, and Voluntary Guidelines). Finally, it was emphasized that a comprehensive monitoring system should be set up.

IASS POTSDAM Global Soil Forum
Institute for Advanced Sustainability Studies e.V.

First GLOBAL SOIL WEEK | SOILS FOR LIFE

Urbanisation: Challenges to Soil Management

Date:	**20th and 21th November 2012**
Name of the rapporteur:	**Yusuf Yigini, Ece Aksoy**
Moderator / commentator:	**Klaus Lorenz**

Why this session topic is important: Urbanization, urban population growth and urban expansion are major drivers of global environmental and land use changes. Increasingly, fertile soils are converted to make room for housing and development. Further, the growing and more affluent urban population increasingly depends on fertile soil resources afar for supporting consumption and urban life style. Thus, reducing the global soil footprint of urban dwellers and implementing soil-smart urban land use policy and planning is needed for sustainable development.

Objectives of the session:

- Compare approaches to protect fertile soil and land resources from urbanisation
- Identify strategies to reduce the global footprint of urban areas
- Compare urban governance and planning policies in developing and developed regions
- List the reasons for contrasting urban developments and effect on soils

Key discussion Points:

The session was structured according to the following discussion topics:

1. Soil Quality
2. Reasons for contrasting urban developments and effects on soil
3. Measures to improve the recognition of urban soil quality
4. Approaches to reduce the global soil footprint of urban areas
5. What is soil-smart urban development?
6. Policy options in developed regions
7. Policy options in rapidly developing regions
8. Urban – Rural linkages
9. Extreme strategies
10. Awareness Raising on Soil and Urbanisation

Key concerns/challenges:

- To enhance understanding on soil, soil functions and urbanisation pressure on land resources
- How to reduce the migration from rural to urban areas?
- Policy options to manage urbanisation and land resources
- How cities can develop in a soil-smart way?
- To educate all the levels of stakeholders (i.e., urban dwellers, land-use planners, politicians) about soil

Debate/counter arguments:

Solutions/examples/case studies:

Solutions to urbanisation and its negative impacts on soil and land resources were discussed by the participants during the presentations session and in the World Café Table Sessions which are detailed in the key conclusions section below.

Key conclusions of the session:

- **Reasons for contrasting urban developments and effects on soil**

Participants gave examples from different regions and countries. It was concluded that the developing and developed countries should be approached in different aspects considering the reasons for contrasting urban development. One of the main reasons for contrasting urban development in Brazil, for example, is social inequity and poverty. Otherwise, in Italy urban

development is linked to improving life quality but in the US governed by the availability of low-priced land.

- **Measures to improve the recognition of urban soil quality**

The starting point of the discussion was the question "Who needs to recognise?". The participants were asked the question and everybody agreed that soil quality should be recognised by people at every level of the population (businesses, citizens, policy makers, children, workers, legislators, students, land owners, etc.). Following the question "How to recognise?", participants discussed that the ways to recognise the soil quality are visual instruments, interaction with wild life, air quality, archive of history, introducing soil to citizens, building soil culture, etc.. The table discussion continued with another main discussion point about soil quality and its definition. The soil functions included in definitions of urban soil quality are above- and belowground biodiversity, soil-derived ecosystem services, drainage ability, contamination and fertility.

- **Approaches to reduce the global soil footprint of urban areas.**

World Café Table participants discussed on the subject "Approaches to reduce the global soil footprint" and following topics/solutions were identifies:

- Construction materials can be more recyclable and environment friendly.
- Using more solar power
- Green roofs
- Promoting urban agriculture
- Develop indicators of soil footprint to reduce the consumption
- Transportation: reducing private car use, investing in public transport
- Minimising food waste
- Using waste water as fertiliser

- **What is soil-smart urban development?**

The discussion of this topic was moderated by Dr. Schwartz and Mrs.de Flander. The discussion shaped around the importance of soil functions. Soil is the major component of urban ecosystems and should have the priority in urban planning activities. It's one of the main underlying causes of urbanisation with the migration of the rural population to urban areas and strategies to reduce rural migration were discussed. Other discussion points of the table are as follows:

Legal arrangements and awareness raising practices can support soil-smart urban development to reduce soil sealing and to support de-sealing of urban soils, keeping the balance between

built and green areal coverage, urban regeneration, promoting public transport, urban soil mapping/surveys, protecting undisturbed urban soils, removing the municipal competition and supporting urban gardening/agricultural activities.

- **Policy options in developed regions**

For developed regions, urbanisation and urbanisation pressure on soil resources and policy options addressing the issues were discussed. Main discussion points were:

- Taxation options to reduce soil sealing
- Promoting consumption of local products
- Promoting viability and economics of rural areas
- Compensation fee (or pricing) for land loss or regeneration
- Fine for land abuse
- Incentives for soil saving construction

- **Policy options in rapidly developing regions**

Policy options to urbanisation in rapidly developing regions were also discussed. The discussion centred around following key topics and the questions:

- Research: Research capacity should be strengthened.
- Governance: Investing in governance to urban planning, tax incentives, managing urban-rural linkages
- Dense Cities: Supporting high density developments where possible

- **Urban – Rural linkages**

The table discussion started by the definition of Urban and Rural terms and the linkages between rural and urban. Rural areas need urban areas to receive processed food, knowledge, education, culture, lifestyle, technology, money, etc. Otherwise, rural areas serve foods, energy, recreation, etc. to urban areas. The main actors to organise the rural-urban linkages are markets, institutions, and global organisations.

- **Extreme strategies**

Some radical approaches were discussed under the topic "Extreme Strategies" . The following suggestions were expressed during the table discussion:

- Eco-dictatorship
- Stronger legislation
- Fixed land area per citizen
- No private land and no individual houses

- Vertical cities
- Fixing the limit for ecological footprint
- Compulsory gardening
- Compulsory Soil Science courses similar to other disciplines such as mathematics
- 'Soildiers'
- Zero land consumption, zero land take
- Taxation arrangements for imported food
- No more human, leaving the planet

Key general recommendations of the session:

Landowners, investors and private sector may also be invited in the future to make dialogues about urbanization and its challenges for soil management more participative. The following Global Soil Weeks may also be hosted in other global regions. Inviting right people is important to have information on certain regions and countries.

New questions arising –ways forward:

As agreed during the wrap-up part of the session, it's decided that a meeting may be organised next year in June to specifically address soil issues in rapidly urbanizing regions.

Notes:

On 21st and 22nd November, the "Urbanization: Challenges to Soil" session started each with presentations and brief reports from various cities and countries.

First day presentations:

Sabrina Freda, head of the Urban and Environment Regeneration Group, gave a speech on urban development in the Regione Emilia Romagna, which is the most populated and most urbanised part of the Italy. She talked about the region's main policies to fight with urbanisation, and their practices shaped by legislative and participative tools. Sjoerd Andela from Netherlands talked on the current situation and the historical development of the city Haarlem, and the reclamation project carried out Mr. Andela mentioned also the importance of the soil education and their education activities. Peter Earl from South Downs Park Authority, UK, presented 'Sustainable management of soils in the UK', and talked about the activities to manage and protect soil resources. He highlighted the progress on achieving the objectives with regard to the topic. Dr. Grzegorz Siebielec, Institute of Soil Science and Plant Cultivation, talked on "Urbanization pressure on soil resources in Poland". He mentioned that in Poland the high quality soils are also under pressure of urbanisation. Dr. Detlef Gerdts, Vice Chairman to the European Land and Soil Alliance (ELSA) gave a talk about ELSA,

current situation on the topic, and land consumption in Germany, and discussed the causes of land consumption and measures on the issue. Katleen de Flander, from IASS, talked on the topic of "Closed-Cycles Open City, Urban Systems Transitions in the Anthropocene" and spoke about stopping cities parasitic behaviours, activating urban soils and transition from consuming to producing. Dr. Christophe Schwartz presented a brief overview of Morocco and talked about dramatic increase of the population, urbanisation and pollution in urban soils of Marrakech. Dr. Rongliang Qiu, talked on the topic "Urbanization and Needs for Soil Remediation in Guangzhou City". Dr. Riu talked about very fast expansion of the urban area of the city Guangzhou. Dr. Clistenes Nascimento presented the situation in the city Recife in Brazil under the title "Urbanization: Challenges to Soil Management (Brazil: Recife)". He talked about urbanisation in general in Brazil, countryside urbanisation and land degradation.

Second day's presentations:

Luca Marmo, European Commission, gave a presentation on the urbanization of soils issue and mentioned European Commission policies to protect soil resources in Europe. He talked about EC thematic strategy on soil resources and the objectives. Dr. Craig Johnson, from University of Guelph, Canada, talked on the topic "Policy Options in Rapidly Urbanizing Regions: Dhaka, Bangladesh; Kolkata, India". Dr. Armando Sarmiento Lopez, Pontificia Universidad Javeriana, talked on the current situation and land policies in Colombia. Jean Louis Morel, Chairman of SUITMA spoke on "Soils and urbanization: introduction to sub-Saharan Africa issues" and emphasised the contrast situation of Sub-Saharan Africa with Europe. He reported that the situation is Sub-Saharan Africa is changing very fast. He pointed out that the urban population is projected to reach 600 million by 2030 and 24 of the world's 30 fastest growing cities will be African by 2020. He also talked about soil contamination in urban lands mainly sourced from domestic and petroleum wastes. He finished his presentation with suggestions along the lines of "Strong contrast between North and South Africa but similar trends" , "How think cities in a different manner?", "What is sustainable UPA?" , " Is it too late?" After the country reports and the presentations, the World Café Tables were arranged on both days to discuss urbanisation and solutions with given topics.

At the end of the session, the following topics were discussed:

Zero Land Take: Possibility to have a goal of "Zero Land Take", The European Commission's goal of "Zero Land Take" by 2050 was mentioned.

Energy Demand: The participants discussed on energy dependency and focusing on renewable energy, energy generation and regeneration, geothermal energy utilisation possibilities.

Compensation possibilities: Feasibility of compensation practices on the subject.

Investment on Soil Quality: It depends on economical dynamics. The approach must be different on governments, individuals and private sector. Concept of Soil index is an approach to communicate soil quality but might not work if it is not explained to be understood by all levels of the population.

Migration: Migration from countryside to urban areas. Migration from rural to urban plays an important role in terms of urbanisation.

Build on Built: Our urban design philosophy should be to 'build on built' rather than 'build on un-built', i.e., pristine fertile soil.

IASS POTSDAM Global Soil Forum
Institute for Advanced Sustainability Studies e.V.

First GLOBAL SOIL WEEK SOILS FOR LIFE

Global Land and Soil Degradation

Date: **20th and 21st November 2011**

Name of the rapporteur: **Andrea Buser, Michael Cherlet**

Moderator / commentator: **Ivonne Lobos Alva**

Session Objectives:

- To frame soil and land degradation as a global problem, with environmental but also development implications and flag the need for a holistic approach.
- Presenting current global land and soil degradation trends.
- To discuss the implications for policy and science of a set of Sustainable Development Goals with a focus on a goal for Zero Net Land Degradation or a Land Degradation Neutral World.

The session convened on Tuesday (20.11) afternoon and Wednesday (21.11) morning. On Tuesday, the discussions focused on framing soil and land degradation as a global problem and outlining some general trends. On Wednesday, implications for science and policy of zero net land degradation as a specific goal within the SDGs framework were at the center of the discussion.

Luc Gnacadja, Executive Secretary, UNCCD, noted that meeting growing demand for land while protecting the environment can only be achieved if concerted efforts are made to restore degraded land. He also focused on the need to avoid a too pessimistic perspective when discussing land and soil degradation. In reality, a great majority of very poor people live on degraded land and this fact needs to be considered. He noted that the Rio+20 outcome document laid the foundation for global efforts towards this end by adopting the concept of land degradation neutrality but that goals would need to be local and leakage needs to be avoided. He also highlighted the importance of a global assessment, of measuring process with a dynamic monitoring system and to mobilize resources through partnerships between stakeholders.

Quang Bao Le, Institute for Environmental Decisions, Switzerland, stressed the need for robust and reliable indicators to capture the complexity of land degradation and support decision making. He called for greater harmonization of existing global and regional land degradation assessment approaches and for ensuring that identified indicators are responsive to the needs of different stakeholders. He suggests future research should focus on local risk and severity, on region-specific causes and mitigation options. The cost-benefit analysis of degradation can also be helpful. Clear baselines are needed to better monitor progress. Every sector in the economy contributes to land and soil degradation, therefore, the issue needs to be analyzed on a country level.

Joaquin Etorena, Directorate of Soil Conservation and Combating Desertification, Argentina, analyzed the impact of productive land use changes in Argentina. He noted that agricultural exports have quadrupled over the past decade, driven by demand for oilseeds and biofuels, especially in Europe, and pointed out that this has allowed for great improvement in tackling social and economic matters, such as poverty reduction, investment in education and overall fiscal recovery. On the other hand, he stated that this process has contributed to accelerate deforestation and threatened fragile but said this has accelerated deforestation and threatened fragile ecosystems. He also noted a rise in social conflicts due to increasing concentration of land ownership and competition for water resources.

Mariné Pienaar, Terra-Africa Consult, presented a case study on South Africa's mining sector, identifying mine subsidence, water pollution and sedimentation of waterways as key impacts. Noting that both large scale and artisanal mining contribute to land degradation, she outlined possible solutions as improving land use planning techniques, conducting systematic research on the costs and benefits of different types of mining, and "grow what you eat, eat what you grow" as a guiding principle in the remediation of degraded land.

During an interactive panel, participants outlined some global trends in land and soil degradation. The panelists were: Lindsay Stringer, Sustainability Research Institute; Ronald Vargas, FAO; Quang Bao Le, Institute for Environmental Decisions; Luca Marmo, European Commission; Anneke Trux, GIZ; and Ivonne Lobos Alva, IASS. Several contributors reiterated that no country is immune from land and soil degradation although the scale and type may differ. Noting the difficulty of arriving at consensus on the degree of scientific certainty needed before action can be taken, some speakers called for a pragmatic approach that entails compiling existing studies, complemented by pilot implementation projects to identify land degradation hotspots and trends. One contributor called for an authoritative global assessment of land and soil degradation modeled after the Millennium Ecosystem Assessment. Participants also highlighted the role of visionary leadership, knowledge dissemination and economic incentives in making the transition from land degradation to land care approaches.

Thereafter, four working groups convened to formulate more specific conclusions and messages.

Group 1: Quantification and qualification of drivers of land and soil degradation in the context of a globalized economy, diverse resource tenure regimes and a changing global environmental governance system

On specific drivers of land and soil degradation in the context of a globalized economy, participants identified four key variables: land use and production systems; market and governance frameworks that influence land use decisions and choices; ecological characteristics and carrying capacities; and types of land tenure and user rights.

Group 2: Need for a global land and soil degradation assessment for different sectors (e.g. mining, agriculture, REDD, soil pollution) and with different assessment tools

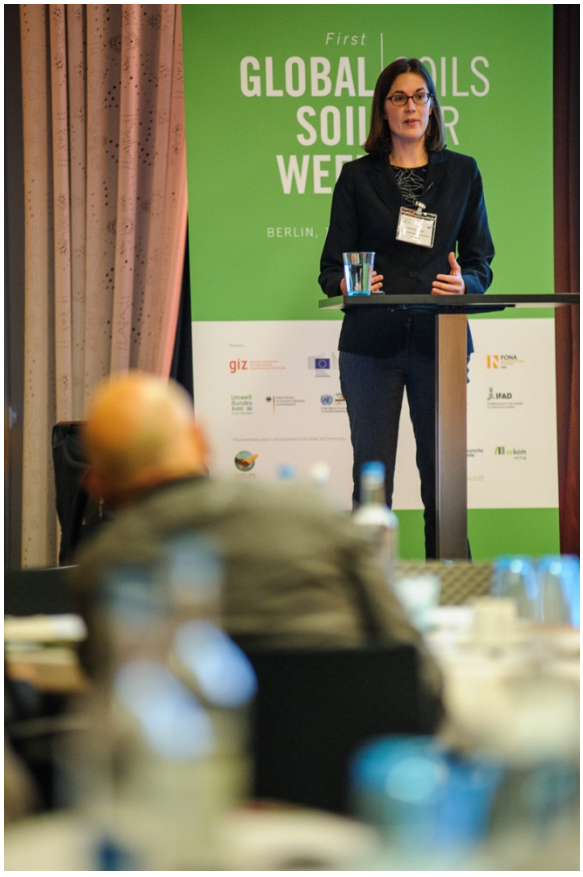
On the need for a global land and soil degradation assessment, participants agreed that this should build on existing studies and integrate local, national and regional data. They also noted the need to identify simple tools for farm-based assessments of soil and land quality. The utilization of productivity as the most important indicator of degradation was supported by some and questioned by others.

Group 3: The role of global governance MEAS and policy making to combat land soil degradation

The debate among the members of the working-group focused on the manifold problems MEAs face and tried to find out how these agreements could counter the degradation of soils.

On linkages to the global environmental governance system, participants concluded that there is no clear overarching framework for monitoring soil and land degradation and took note of the proposed SDG on zero net land degradation as a possible tool for defining context-specific priorities and tracking progress.

With regard to measurement tools at the national level, participants proposed a phased approach that would start with defining land degradation processes and the relationships between different drivers, pressures and impacts.



Group 4: Areas that should be prioritised for investment in remediation efforts

On the areas that should receive most attention, all economic sectors were seen as causers of land and soil degradation. Industry and agriculture were mentioned as outstanding examples. Participants also highlighted the importance of country level analysis and the definition of context-specific drivers and aspects.

On **Wednesday** morning, discussions opened with two keynote presentations on

the global governance environment. Anne Glover, Chief Scientific Advisor to the European Commission, noted that soil and land degradation is one of the most pressing issues of our time but attracts little policy attention. She attributed this to the absence of a compelling voice on soil issues, inability of individual policy actors to work imaginatively across sectoral boundaries and the lack of clear messages for decision makers on the scale of the problem and priority actions needed. She observed that soil scientists should draw lessons from the Intergovernmental Panel on Climate Change (IPCC) on what it takes to build an authoritative global voice on soil and land issues.

Carol Hunsberger, Institute of Social Studies, the Netherlands, shared insights from UNEP's Fifth Global Environment Outlook (GEO-5) and related studies. She outlined key drivers of land degradation as: rising competition for access to land, the role played by long distance connections in shaping land use decisions and outcomes, and the impact of urbanization, all of which point to the need for putting a realistic value on ecosystem services. Hunsberger underscored that progress in meeting internationally agreed goals is most evident where there are measurable targets in place, while they are less likely to succeed if science and policy are disconnected and "responsibilities are greater than the resources." In conclusion, she noted that the emerging policy dialogue on land and soil governance should address how to legitimately and effectively link global standards to local control over land use, and address questions of ethics and equity.

In the ensuing panel discussion on operationalizing SDGs, Luis Rios, Ministry of Natural Resources and the Environment, Guatemala, provided an overview of the evolution of the SDG proposal, which was first tabled by Colombia. He noted the aim is to overcome the limitations of the MDGs by moving away from a one-size-fits-all target to take into account different national and regional realities. He also highlighted the unique opportunity to focus on equity presented by the SDGs.

Uriel Safriel, Hebrew University, Israel, explained that the target of zero net land degradation aims to convey the positive message that, while land degradation cannot be totally avoided, its negative impacts can be "offset" at the local level by restoring degraded or unproductive land.

Henry Tachie-Menson, Ghana Permanent Mission to the United Nations, noted that, from an African perspective, land degradation neutrality entails investing in sustainable land management and restoring unproductive land in order to meet the ultimate goals of food security and poverty reduction. He also noted that internationally, a land degradation neutral world is better received than a numerical zero net land degradation goal. This position was

also supported by the Argentinian delegate Joaquín Etorena, who pointed out that the international community, has approved land degradation neutrality as common language and that the discussions should abide by this agreed language.

Noting growing dissatisfaction with a 'lowest common denominator' framework of UN processes, Eduardo Viola, University of Brasilia, called for the creation of a progressive reformist coalition that would pursue more ambitious goals. Martin Rokitzki, Oxfam GB, noted that targets have a normative as well as operational value and called for a more strategic approach focused on defining a number of scenarios and impact pathways to trigger action. He also pointed out the value of the concept of planetary boundaries to guide future action. He suggested that countries could have national soil budgets to monitor use and progress.

Following a final round of workshop discussions, participants highlighted a number of issues for consideration in the emerging dialogue on global governance. There were five working groups.

Group 1: Elements of soil degradation neutral world, indicators, and standards

With regard to elements of a soil degradation neutral world, carbon content was identified as an important indicator of healthy soils and adaptation to climate change. Participants also noted that further indicators should be defined according to soil type. Salinization, permafrost, acidification, degradation, sedimentation, sealing, erosion, contamination, loss of fertility and compaction were also mentioned as indicators.

Group 2: Implementation and delivery mechanisms i.e. agencies, international cooperation, global roadmap; political and institutional frameworks

On means of implementation and delivery mechanisms for zero net land degradation, participants noted the need to move the discussion beyond official development assistance flows and explore incentives for long term land and soil management. They proposed that institutional frameworks should: be cross-sectoral and nationally driven; enhance the mainstreaming of land degradation strategies in all land and soil related sectors; and incorporate monitoring mechanisms. The importance of incentives for long term investments in productive soils was also mentioned. Finally, the concept of 'local' offsetting was mentioned as key for implementation.

Group 3: Necessary policies for the achievement of zero net land degradation

As land and soil degradation is a cross-sectoral issue, participants consider that it is not enough to integrate the concept of zero net land degradation/land degradation neutrality

into NAPAs only. The group suggested that soil and land degradation issues be mainstreamed into soil and land use related sector policies for agriculture, forestry, energy, etc.

With regard to examples of policies, the group mentioned the importance of establishing positive incentives and eliminating perverse incentives, subsidies, payments for conservation of soil friendly production and food production chains focusing on avoiding losses within the food chain and food waste in households. Sustainable forest management, land use planning, the promotion of climate-friendly consumption/eating habits, education and awareness raising, food labeling, phasing out EU subsidies supporting livestock production the taxation of agricultural products taking into account emissions intensity and the support soil and climate-friendly agriculture were also mentioned as necessary policy tools. The role of budget allocation and public participation was also highlighted.

Group 4: linking the achievement of a zero net land degradation world with the general post-2015 development agenda

On post-2015 scenarios, participants noted that a zero net land degradation target could help to operationalize the concept of planetary boundaries, and called for an interdisciplinary and cross-sectoral dialogue approach.

Group 5: How can the Global Soil Week process help to the achievement of the ZNLD goal? Research gaps, etc.

On the role of Global Soil Week and international scientific community, participants stressed the need to make a strong case for policy makers by articulating the costs of action and inaction and impacts on food security and sustainable development. They further noted the need for research on transferability of success stories as not all practices can be replicated or scaled up, the need for a long-term focus in soil research, and bridging the research-extension gap.

Working Group Implementing the Agenda for Action: Global Land and Soil Degradation and Global Soil Policy

The purpose of the working group meeting was to design an Agenda for Action and discuss how the Global Soil Week can contribute to on-going processes on the topics global land and soil degradation and global soil policy.

The main outcomes of the Global Land and Soil Degradation include the recognition that soil is the nexus between energy and water and this realization needs to be considered in management approaches. Land and soil degradation is a global problem and it poses a serious challenge for the sustainable development of all countries. In terms of soil data, there is a need for harmonization of indicators and tools, a clear quantification of indicators and a global assessment. The value of a Sustainable Development Goal specific to soils and land was also discussed and the need to reinforce country-level accountability and context-specific targets and indicators was specified.

The main outcomes of the Global Soil Policy Session included the analysis of hard law and soft law options for an improved global soil policy. The group concluded that both hard and soft law are needed. Soft law is considered to be more implementable and hard law technically more effective. The current most prominent instrument, the UNCCD, is not appropriately fitted to deal with current issues around soils and land because of its limited mandate. A set of Sustainable Development Goals (SDGs) and a protocol attached to UNCCD were seen as the preferred options for future steps. An intergovernmental technical panel on soils providing scientific and technical advice to the Global Soil Partnership and FAO is also seen as a feasible option.

Main Discussion Points:

- Incentives for the sustainable use of soils are a very important tool but potential impacts need to be considered.
- Need to keep supporting the topic of soil and land in the SDG process.
- The need for a global communication strategy and the development of an easy communicable message regarding soils.
- The importance of a comprehensive global assessment was determined. And how the GSW partners would like to present a critical assessment and place it on the international agenda. With a special focus on the economics of land degradation.
- There is little appetite internationally for more conventions – a protocol to the UNCCD could be a medium term objective but we also need short term objectives. Need indicators (scientific and economic) and examples of best practices.
- There is an online consultation from UNEP-UNDP on the SDG process. It was suggested that all partners should contribute to the discussions and help to putt soil and land in the agenda.

How the IASS/ Global Soil Forum and the Global Soil Week (GSW) process can support the partners:

The Global Soil Week has created the momentum to talk about soils and land and it is important to determine what the next steps should and could be. The partners see the following as activities that should take place in the short and medium term:

- Policy makers and farmers should be target groups for the next Global Soil Week.
- Country case studies and best practices need to be documented and presented/shared. Especially for effective policies, partnerships and agricultural practices (no only to increase productivity but also to reduce waste and affordable practices for small-scale farmers).
- Build community through an online platform where ideas can be discussed and research can be shared.
- Host 2 working groups on Sustainable Development Goals: a focus on soils (short term) and on the creation of a protocol for UNCCD (medium term). Some participants proposed that the method for meeting be videoconferencing, this is to facilitate the participation of all interested partners who may not be able to attend the meetings in person. The method for the meetings will be chosen by the groups once the planning begins. UBA and EC are interested in leading these groups.
- Support the development of indicators and measurement of soil and land degradation. Also with economic indicators. With science to study drivers.
- Facilitate regular meetings so that interested partners can meet before the next GSW.
- Development of a toolkit of legal and economic guidelines for countries to develop good policies within the framework of the SDGs. This toolkit should be presented at the next COP of UNCCD.
- It was mentioned that very high level stakeholders need to be invited to the Global Soil Week. For example UN-Secretary General Ban Ki-moon. It was also mentioned that the World Bank should be included more and be more visible.
- Continue with soil awareness raising activities such as the Soil Film Festival. And host a working group on public awareness activities. Carry out other activities like sharing the soil animated film on YouTube and getting celebrities to tweet about it.

- Need to have more discussions about alternative agriculture methods, like Agroecology and include organic agriculture movements such as IFOAM - International Federation of Organic Agriculture Movements.
- Support the Economics of Land Degradation initiative.
- Support efforts for science policy interface with focus on agricultural practices.
- Gender should be a crosscutting theme at the GSW 2013.

Upcoming meetings

Soil Carbon Sequestration, for climate, food security and ecosystem services Carbon Sequestration Conference – Reykjavík, Iceland 26-29 May 2013

3-6 June 2013 IUSS Global Soil Carbon Conference, Madison Wisconsin

IUSS Intercongress Meeting Korea, 3–8 June 2012

The Third special session of the Committee on Science and Technology (CST S-3) 4th to 7th of February 2013 in Fortaleza, Brazil

The 18th session of the Conference of the Parties to the UNFCCC, November, Doha

UNCCD/CST – side event on zero net land degradation

XVII Conference of the International Soil Conservation Organization (ISCO) "Environmental sustainability through soil conservation" 08 - 12 July 2013 Medellin, Colombia (South America). Universidad Nacional de Colombia - Sociedad Colombiana de la Ciencia del Suelo (SCCS)

GSP Workshop "Managing Living Soils" 05 Dec 2012 - 07 Dec 2012, FAO Headquarters, Rome, Italy and "Securing healthy soils for a food secure world" A day dedicated to soils 05 Dec 2012 - 05 Dec 2012, FAO HQ, Rome, Italy

Summer of Soil PDC Course July 2013

Living Soil Forum, Stockholm, July 2013

Soil of the Year UBA Initiative

8-13 June 2014 IUSS 20th World Congress of Soil Science, Jeju, South Korea

Year of the soil 2017

IASS POTSDAM Global Soil Forum
Institute for Advanced Sustainability Studies e.V.

First GLOBAL SOIL WEEK SOILS FOR LIFE

Global Soil Policy

Date: **20th and 21st November 2012**

Name of the rapporteur: **Rannveig Guicharnaud**

Moderator/commentator: **Knut Ehlers, Harald Ginsky**

The session provided a forum where selected international policy instruments designed to improve the sustainable use, management and restoration of soils and their functions on global level were presented and discussed.

The session convened on Tuesday (20.11) afternoon and Wednesday (21.11) morning and was attended by about 35 people with various professional backgrounds. Politicians as well as scientists from different disciplines and representatives of NGO participated in the session. On Tuesday, the discussions focused on options of international hard law development. On Wednesday, discussions dealt with options for international soft law development.

On **Tuesday** afternoon the focus was on international hard law instruments. After an introductory talk the three relevant international instruments UNCCD, CBD and UNFCCC were presented. Additionally an overview on options to further develop the current international regimes was provided.

Ulrich Irmer, head of the soil and water division in UBA, gave an introductory talk concerning the intended objective of the session, the factual background concerning the sustainable use, management and restoration of soils, the major challenges faced on global level to improve global soil policy and the existing hard and soft law instruments including their

strengths and weaknesses. He stressed that the soil topic has been brought on the global agenda – especially by side-events at the Rio 20 + Conference, the Rio outcome document and the Berlin call for action ”Protecting Soils for our Common Future”.

Sergio Zelaya, Coordinator of the Policy Advocacy on Global Issues within UNCCD, gave a speech concerning the legal and political status quo of UNCCD and the options of further development. He stated that under UNCCD desertification is limited to dry lands, but the term land degradation is much broader and could include many aspects of soil related topics, even those in developed countries. He stated that there is a need to enlarge the scope of UNCCD and to improve the organizational structure of the regime. Moreover he stressed that the science-policy interface needs to be improved – both on an international and national level. In his view an independent science-policy panel could bring together different parties (scientists, communicators, decision makers…) Sergio Zelaya emphasized that UNCCD aims at approaching the soil aspects holistically including all economic, environmental and social dimensions.

Braulio Diaz, General Secretary of CBD, gave an overview on CBD in general and on the recent developments under this instrument. He emphasized that the focus of CBD is on biodiversity and that CBD primarily brings forward plan and strategies and that up to now the implementation is weak. He said that CBD treats soils aspects as a cross cutting issue and via cross sectoral approaches. One weakness of CBD in his view is that US is not a Party to CBD. Soils aspects are therefore not dealt with specifically, but within the sectoral approaches. 2006 an international initiative on soil biodiversity was launched within CBD which mainly is about awareness raising and building partnerships and alliances. He stated that the strategic plan for 2011 -2020 include 20 target which implicitly include soil targets. Based on this target a specific soil related target was agreed upon in 2011. More generally he argued that target setting could be politically very important, provided the targets are both ambitious on one hand and measurable and achievable on the other hand.

Professor Ian Hannam, University of New England, Australia, provided a twofold talk, firstly about the status quo of UNFCCC and secondly about the options how to further develop the available hard law regimes in order to improve the sustainable management, use and restoration of soils and their functions. He stated that UNFCCC deals only with climate change issues. UNFCCC tackles soil aspects insofar as soils are very important sinks and reservoirs of CO_2. UNFCCC is therefore limited to soil aspects with regard to climate change issues. Comparing the available three international instruments he emphasized that all have their limitations and weaknesses, however in his view UNFCCC is the least suitable for a general soil regime due to its focus on climate change issues. He also questioned the

suitability of CBD due to its focus on biodiversity. He finally mentioned a discussion under the umbrella of UNCCD to draft a protocol in order to implement the objective of Zero Net Land Degradation which was agreed upon in the Rio 20 + outcome document.

Discussions during the first day revealed the following additional important aspects: Although international treaty law could be regarded formally as hard law, it could be in fact very weak due the lack of clear obligation and of implementation. In this sense it could also be considered as soft law. There is probably no political support for a binding new international regime and organization for global soil policy. International hard law provision should be precise enough to have a regulatory effect.

After the presentations the participants were divided in two **working groups** mandated to assess the strengths and weaknesses of the three international instruments and to provide ideas for future options to improve global soil policy via hard law instruments.

The first working group concluded that an extra protocol under UNCCD would be a suitable option although UNCCD is relatively weak with regard to implementation. The group stressed that new international obligations must be designed to be effective and to meet the political priorities of contracting parties. In the view of this group it is essential to get a common understanding of the objectives and dimensions of global soil policy. In this regard the assistance by soil and social science was seen as a prerequisite.

Concerning the three international regimes the first working group concluded that the widening of the scope of UNCCD would be necessary in order to tackle all aspects of global soil policy, that the fundamental weakness of CBD is that its main instruments are plans and strategies and that UNFCCC is limited to climate change issues and that the bargaining situation under this instrument is very complex.

The second working group focused on the preconditions to design regulatory instruments on soil aspects on a global level. The group stated that there is a need for sufficient background information on the framework conditions for provisions to be implemented and on the requirements and dimensions of international soil policy. The group furthermore discussed the necessary steps to be undertaken to allow for a well informed decisions. The steps include an analysis of current international law, the identification of existing gaps and of options to fill these gaps, an impact assessment of the different options and finally the decision which institution should take the lead in this regard. The working group concluded that the GSW could be an important player in order to provide such an expert statement.

On **Wednesday** morning, the focus was on the development of soft law instruments and their ability to improve soil protection on global level and on the possibilities to improve the

science policy interface. The soft law instruments that were discussed were voluntary declarations such as the envisaged Sustainable Development Goals (SDGs), voluntary guidelines such as the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security and types of international non-binding cooperation such as the Global Soil Partnership.

Luca Montanarella, SOIL action leader of the European Commission Joint Research Center, noted that a soil related SDG would be an option to improve soil protection on global level. The soil related SDG which is currently discussed is "Zero net Land and Soil Degradation". This means that land degradation needs to be reduced and inevitable land degradation needs to be balanced by land restoration. Luca Montanarella stressed that in order to achieve the Zero net Land and Soil Degradation target, a clear definition is needed. Furthermore, currently available data on land and soil degradation on global level is outdated. Thus, new data is needed in order to be able to measure and monitor land degradation and restoration. Finally, a system of incentives has to be established.

Michael Windfuhr, deputy director of the German Institute for Human Rights, introduced the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security which were approved this year. These voluntary guidelines define norms and principles and outline practices that governments can be referred to when administering land in order to serve the best interests of their populations and promote food security and rural development. Those guidelines are able to provide a fast response to urgent issues and can serve as description of good practice. Michael Windfuhr pointed out that there is need to improve land administration in order to ensure security of landowners and tenure systems as legal uncertainty is a major obstacle to land restoration.

Ronald Vargas, soil and land management officer at the FAO, introduced the Global Soil Partnership (GSP) as an example of a non-binding international cooperation. The vision of the GSP is to improve governance of the limited soil resources on global level. It is to become a interactive and responsive partnership. Ronald Vargas stated that the GSP should be guided and advised by an intergovernmental technical panel on soils and be facilitated by the GSP secretariat located at the FAO. The GSP, furthermore, promotes the establishment of regional soil partnerships.

Mariam Akhtar Schuster, member of the advisory board Desertnet International and chairperson of the Ad-hoc Working Group to further discuss the options for the provision of scientific advice focusing on desertification/land degradation and drought issues, presented options on how to improve the science policy interface on soil issues on global level. The science policy interface could be improved by building on existing networks, or forming new

networks as well as by using existing scientific advisory panels or by installing a new intergovernmental panel on land and soil. The role of such a newly formed intergovernmental panel on land and soil to the UNCCD would be similar to the role of the IPCC to the UNFCCC or PIBES to the UNCBD. Mariam Akhtar Schuster stated that if a new advisory mechanism is to be established, it should be organized globally containing regional sub-networks. It furthermore should be independent from political influence and include non-academic knowledge.

After these presentations **working groups** according to the world café method were formed in order to discuss strengths and weaknesses of the presented soft law mechanisms, to define options of further development and refinement. Regarding a soil related SDG participants stated that open questions such as the scope, common terms and a monitoring process need to be answered. Furthermore they saw the difficulty that soil and land are politically sensitive issues of national competence and thus the implementation of a soil related SDG might be difficult. Any SDG should, furthermore, emphasize the importance of national objectives plus regional cooperation in order to be fruitful. The topics "voluntary guidelines" and "Global Soil Partnership" were pooled. Participants stated that a set of incentives is necessary in order to make these mechanisms successful in improving soil protection on global level. They, furthermore, need to consider geographical and cultural regionalization and multistakeholder involvement in order to work. Regarding the science policy interface participants pointed out to combine different scientific disciplines and traditional knowledge. Regarding institutional issues such an intergovernmental panel on land and soil, participants made clear that such a panel would need a clear mandate and that possible redundancies to other panels need to be avoided.

Finally, a **survey** was conducted to catch a snapshot assessment of all participants on the discussed options. The majority of participants believed that there is a need for additional international instruments and that a combination of soft and hard law instruments is generally needed in order to improve soil policy on global level. The participants stated that soft law instruments have a higher political likelihood of realization, whereas hard law instruments are considered to be technically more effective.

Regarding the various discussed options of hard law development, the majority of participants believed that further development of the UNCCD and/or UNCBD and the preparation of an extra protocol to one of the existing conventions are promising approaches to improve the sustainable use, management and restoration of soils and their functions on global level. Regarding the discussed soft law approaches participants stated that voluntary cooperation like the Global Soil Partnership is especially promising. Some potential was also identified in the further development of voluntary guidelines. Participants had no clear

opinion on the further development of an international panel on land. Soil and on a soil related SDG were seen as generally helpful but the need for further clarification was stressed.

At the end of the session participants stressed the importance of mainstreaming soil issues. It was stated that a global soil policy needs a global soil communication strategy.

Global Soil Forum
Institute for Advanced Sustainability Studies e.V.

First GLOBAL SOIL WEEK | SOILS FOR LIFE

Natural Resource Governance

Date:	**21st November 2012**
Names of the rapporteurs:	**Jade Buddenberg and Delphine de Brogniez**
Moderator / commentator:	**Purabi Boase, Franziska Linz, Charlotte Beckh, Constanze van Oppeln**

Why is this session topic important:

Land tenure rights ensure food security and livelihoods for local communities. In countries where economic growth has become more important than social equalities, indigenous livelihoods are threatened by land dispossession, displacement in extremely violent conditions. Raising the awareness on the topic of natural resource/land governance for food security may allow us approaching in a more "ethical/societal" way the meaning of land and understanding better the impact decisions taken in western world may have elsewhere.

However social land conflicts are intensifying. Struggles for land between corporations, farmers, indigenous peoples, smallholders and governments are increasingly violent and destructive. The Case Studies from Brazil (video "The Amazon in the hands of a few") shows how high the stakes are and how often, the rights of marginalised communities are not protected by the law, for lack of, awareness, will or capacity to enforce. The example also highlights the value of land, and the high stakes commercial interests attach to claiming ownership of land.

Rural poverty needs to be tackled urgently. Land and Soil are at the heart of International Development. Soil provides 90% of food, sustains livelihoods and is often the main source of income of the poorest communities. Marginalised people need support to protect their fragile rights to resources. With the trend of urbanisation, the social relations attached to soil governance are changing. This has severe consequences for the natural resource soil, much of which is already degraded. With the challenge of feeding 9 billion people by 2050, soil governance needs our attention which is why this session is so important.

Quote: *"No management without governance, and no natural resources without Management."*

Objectives of the session:

The session aims at emphasizing the inherent political nature of the governance of natural resource in general and land in particular. It demonstrates that granting land tenure rights to marginalised groups requires an approach that is conscious of the power imbalances involved and the obstacles to overcome when altering social structures in place in favour of these groups. Further aims of the sessions are to identify the key challenges of natural resource governance for the case of soil and discuss possible ways forward and an agenda for action.

Key discussion Points:

Key concerns/challenges:

Unlike other natural resources, land is not only a factor of economic production. It also has a societal, cultural value to local populations; it is where they belong. Such value cannot be subsumed in purely monetary terms. There is however a gap between the perception of land between decision makers and local communities. A point for concern is that current agricultural and land policy does not reflect local realities and the heterogeneity of natural resource governance.

Modern states face both the challenges of facilitating processes of capital accumulation and of maintaining a minimum level of political legitimacy. This leads to conflicts between indigenous populations and businesses willing to settle on their land. Land grabbing, dispossession, displacement of local communities with extreme violence are common situations in countries where economic growth is considered more important than social equalities and well-being. The neo-liberal economy leads to the impoverishment of the poor. Legal frameworks to prevent abuses are usually missing, land titling (if any) is mostly done in the interests of big companies and allocates unfertile, remote lands to the poor. The right to

mine soil as a resource is too often given priority over the rights to live off land. The most fertile soils are lost this way.

However even if there is decent policy and land laws, the gap to implementation is worrying especially in areas that are most vulnerable to land grabbing and that would need a rule of law the most. This is partly due to the lack of enforcement capacity but also due to ignorance of authorities.

Worryingly, inequality is formalized by land policies or lack thereof. New pro-poor regulation and land reform may legitimise historic dispossession as well as unequal gender relations and fix them forever.

At the same time, the poor and marginalised face substantial barriers to the rule of law (e.g. geographical isolation, mobility difficulties, language and literacy barriers). Finding a voice and securing rights is therefore skewed towards the elites. Better governance is also dependent on better extensive baseline data – lots of land is unregistered (e.g. 20% in Brazil). More research is needed here.

Quote: *"Where agriculture is being developed, people go hungry."* Defacto the costs for rural development are being paid by the poor.

Quote: *"Economics has become the judgement for all."*

Debate/counter arguments:

Participants discussed at length the connection between the concepts of land, resources and soil. While a need to distinguish between the three was felt by some, most argued that we need to incorporate the understanding for better resource governance. Especially the social dimension of land was highlighted.

A debate around the effectiveness of governance expressed on one hand the need to see the common elements of "what works" in different contexts to be able to harness the positive aspects while on the other hand, the critique of the status quo dominated the evaluation of existing governance.

Participants openly debated whether the solutions should focus on home-grown measures compared to extraterritorial obligations. The case study of Cambodia's burden of the sugar industry that exports to Europe under the Everything but Arms Trade Provision was a case in point. The questions arose: Are the entry points on the national state level or should the international scene serve to leverage action in the local context?

Participants further asked themselves: What are the real costs of rural development and of

"land-export agriculture"? Do we need to calculate this cost of human rights for illustrative purposes? Or is the commodification of natural resources and human dignity neglects moral and ethical dimension?

Quote: *"freedom from torture is priceless".*

Solutions/examples/case studies:

Natural Resource Governance needs more rights-based approaches and fully include human rights in policy, land reforms, legislation etc. We need to systematically challenge the "export land" agricultural model. Part of this is changing the reputation of small-holders as an old fashioned and unproductive mode of agriculture to highlighting the benefits, which include the avoidance of social cost incurred by the "green revolution model" and effective governance of common resources like soil. Restoring the dignity of small hold farmers by valuing them for what they produce is also important in terms of the generation gap that follows from urban migration.

Activists can use the Two Level Game between national and international to improve resource governance of soil. For instance: when direct action channels within the local setting are blocked, turn to international platforms of raising awareness e.g. the European Commission could ban sugar imports from Cambodia under the EBA (Everything but Arms) initiative for the national government to recognize and avoid land grabbing here. In this case study the result was that the Cambodian PM called a moratorium on land concessions. Even though this not enforced, it shows the pressure points of the system. Furthermore international conventions like the Geneva Convention of Human Rights or even traditional law principles like "not exploiting weakness" (e.g. France) to produce a "boomerang effect". Lastly the aspect of funding and investment in resource governance needs to be highlighted. All aid and investment should be conditional of an environmental and social impact assessment.

Lastly, gathering evidence through research and activist coalitions is part of the solution. This knowledge then spread needs to be spread through the global network (knowledge diffusion). Such a process will support public education and awareness raising especially needed among government officials and affected communities. The silence of the affected can no longer be confused with their acceptance of injustice.

Key conclusions of the session:

Soil is inherently connected to the concept of land. Land holds resources: minerals, water, forests etc. The rights to land are fundamental for the governance of soil as a resource.

Without security to the title, use or other supporting right to land, the sustainability of this resource is threatened. When talking about the resource governance of soil, we have to understand that land is defined by its social relations. However, the way social relations of land are currently governed through land titles and land laws tend to formalize inequality. Protection of small-hold farmers is missing in reality. In sum, land rights are central to the debate and these have to be improved especially for marginalised communities.

To improve resource governance of soils, rights-based approaches are the way forward. It is important however that these respect human rights adequately. The Voluntary Guidelines on Tenure can serve as a checks and balance for national property rights. The challenge however is often less the design but the enforcement of law. For the work of building institutions needs to be continued.

Another leverage point besides land laws and law enforcement are the investments and funding sources that are currently leading to land grabbing and social conflict around the resource of soil. Financial investors then should be a target of activism. This would help to illustrate the real cost of the investment to donors and stop the structural promotion of land grabbing.

Quote "*Rule of thumb: As long as it does not harm the poor, it is pro-poor.*"

Key general recommendations of the session:

Marginalised peoples and local communities need to be at the centre of governance of natural resources. National legislations need to be developed for example with the voluntary guidelines. To ensure effectiveness of governance, monitoring guidelines need to be improved for example by bringing in participatory mechanisms. Participatory mapping through GIS is one way of adding this aspect to resource governance. Furthermore civil society needs to be better acknowledged in resource governance on the national and international level. This will help to increase leverage for change at the local level. The support of international organisations and donor is needed to bridge the current gaps between governance levels of civil society and government.

In order to improve resource governance effectively, policy windows of opportunities are the most effective way of leveraging change. For example the current land law development in Cambodia or the current Safeguards Development Process of World Bank are opportunities for participating in governance design and making the voice of the poor and marginalised heard. Building alliances for this is crucial. Further dialogue with different actors (research activists, social movements, companies etc.) remains key for better resource governance of soils. The GSW 2013 can be a forum to facilitate such exchanges further. Again, governments are called

upon to include social movements in discussions and processes of state level governance initiatives.

In terms of science and research, more evidence is needed as a basis for just resource governance. For this the research community needs to develop more problem oriented approaches. The focus of identifying the common interest between different communities (science, political) and the relation between soil and land needs to be extended. Researchers are further called upon to recognize and explore the hidden layers of resources such as soil beyond the productive side – for example the reproductive capacity of soil (CARE).

Lastly the link between social science and governance with natural and soil science needs to be strengthened. The session participants call for a more holistic understanding between the different communities (science, political) to strengthen the understanding of the link between the resource soil and social relations. Underlying this is the promotion of horizontal knowledge spreading which could be doing by building consortiums and networks between researchers. The Global Soil Week is a good example that should be further developed.

New questions arising –ways forward:

- What can the voluntary guidelines do? How can we translate and break them down?
- What are the elements of governance that make these tragic situations happen? How can they be remedied?
- How can synergies be built to unite forces of research and activists to improve soil governance?
- Since governance at the state level is central, how can governments be accessed to enforce the right laws?
- How can the rules of investment be recast in order to respect human rights and ensure the livelihoods of marginalized peoples?

Notes

- The session was attended by about 25 people.
- Little time was left for discussions after the presentations.

IASS POTSDAM

Global Soil Forum

Institute for Advanced Sustainability Studies e.V.

First GLOBAL SOIL WEEK SOILS FOR LIFE

Securing the Commons Dialogue Session: Recommendations and Action

Global Soil Week

Berlin

22 November 2012

Background: Why do the commons matter? (L. Alden Wily)

- Securing communal land and natural resource rights *at the local level on a global scale* is now a necessary focus of concerted action.
- Fair and workable agrarian change in rural economies
- Sustainable natural resource use and governance
- Land rights, and thence social, economic, and cultural rights
- Critical contributions to rural livelihood for millions
- Democratic Governance
- Peace

How expansive are the landed commons?

- Commons amount to an astounding 8.5 billion hectares of land of a global land estate of 13 billion hectares, or roughly two thirds of the world's land area. For Africa:

Land category in Sub Saharan Africa (SSA)	Hectares	% of total land area
Total Land Area excluding water bodies	2,362,209,000	100.00
Estimated Maximum area of Private Lands as defined by estimated area of formally titled lands as 10% of total area of SSA	236,220,900	10.00
Urban areas	3,105,200	0.13
Terrestrial Protected Areas (Forest & Wildlife Reserves & National Parks)	2,97,987,641	12.61
Estimated Total Customary Domain	1,824,895,529	77.25
Permanently Cultivated Lands (excludes shifting cultivation)	188,976,000	8.00
Estimated Community Commons within the Customary Domain in accordance with customary tenure	1,635,919,259	69.25

Securing the Commons: Themes of Discussion

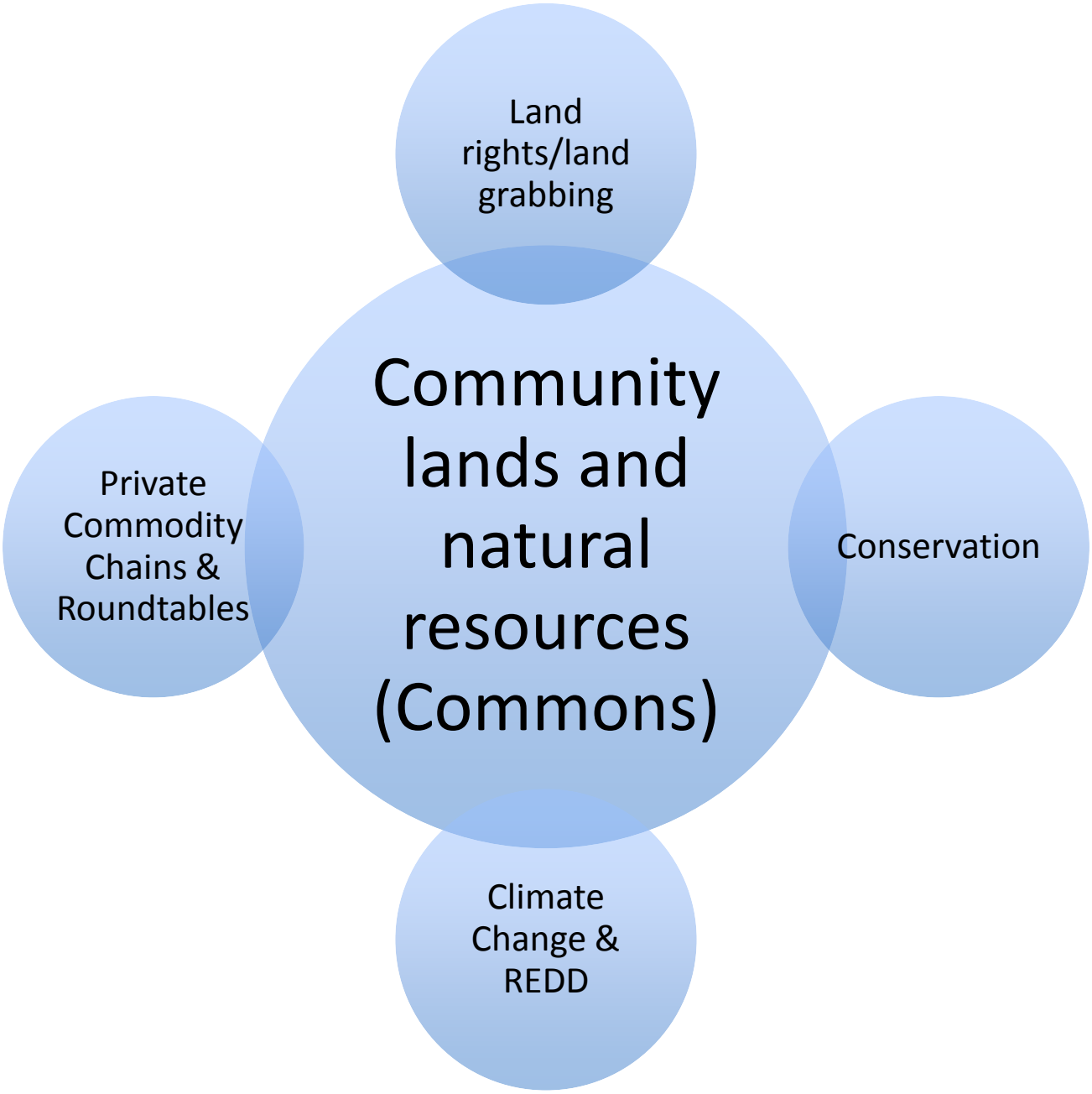
- Scope, values, and threats to communal land and natural resource regimes and landscapes
- Numerous examples e.g. ICCA movement
- Root problem: 'collusive state-private' expropriation
  - Land grabbing a prominent example
- Legislative basis often exists but problems lie in process, implementation, political will and interests
  - Recent progress but also setbacks in India, Latin America
  - "Challenge in India is not necessarily one of legislation; challenge is how do we enable communities to exercise these rights effectively."

Key Issues

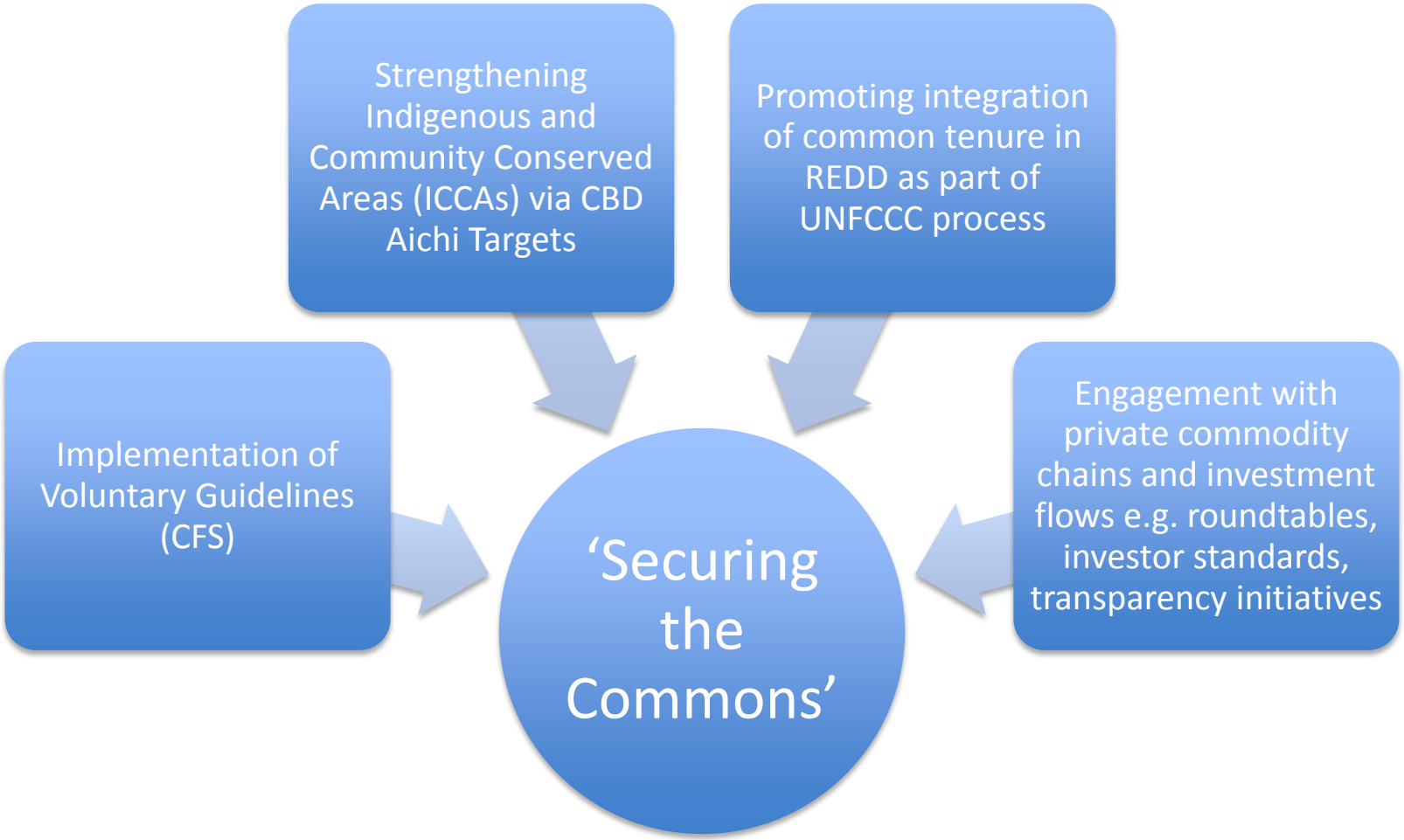
- Widespread need to assist communities to secure their rights
  - Information, facilitation, empowerment, policy reform
  - Appropriate forms of recognition of local rights and governance practices
- Commons issues as the intersection of multiple interests and movements
  - Conservation and environment (soil)- major changes since 90s
  - Development agenda
  - Social justice & democracy
  - Land rights & tenure- land grabbing
  - Food security

Opportunities & Points for Action

- Develop stronger linkages, shared agenda, and joint actions between different groups or movements with key interest on community land and natural resource issues
  - Land tenure: Engagement around Voluntary Guidelines as major opportunity
  - Conservation: CBD, IUCN processes
  - REDD & climate change
  - Private sector investor forums with links to land and natural resource issues (e.g. roundtables)


Land rights/land grabbing
Community lands and natural resources (Commons)
Private Commodity Chains & Roundtables
Conservation
Climate Change & REDD

Synergy between processes



Global Soil Forum
Institute for Advanced Sustainability Studies e.V.

First GLOBAL SOIL WEEK SOILS FOR LIFE

Nutrient for Food or Pollution

Date: **20th November 2012**

Name of the rapporteur: **Tallent Dadi**

Moderator/commentator: **Dr. Anjan Datta**

Nutrients are crucial components in agricultural production systems and are deemed to be part of the solution to address food security in the light of an increasing global population and the degradation of soils. Unfortunately the same nutrients can also lead to eutrophication of aquatic systems leading to many adverse impacts with huge costs to the global community. Mismanagement of nitrogen and phosphorus (key nutrients limiting growth) have resulted in numerous cases of environmental problems worldwide. Nutrient availability and use across the world is however, not uniform. In some parts of the world there is "too much" of nutrients while in some other parts there is "too little" of it. Both situations (too much or too little) can lead to numerous problems. Limited application of nutrients, e.g., in Africa has contributed to the decline in soil fertility due to soil nutrient mining. Furthermore there is an envisaged surge in nutrient use driven by population pressure and potential depletion of phosphorus, which mainly comes from mainly mined phosphate rock, a finite resource. Given such a background the objective of the session was to explore feasible nutrient management strategies that can be adopted to increase nutrient use efficiency that optimise yields and minimise environmental pollution.

The session was made up of various expert presentations covering all facets of nutrient management from 'cradle to the grave', including successful case studies from China and India. Each presentation was followed by a discussion to gain further insight into the various topics. From the presentations it is evident that there is still a lot of misuse and over application of fertilizers in some countries mainly because the prices of fertilizers are very low due to subsidies, as well as a lack of knowledge on sustainable fertilizer use for crop production and soil health. Farmers often take the view that they have nothing to lose but to gain when they over apply fertilizers. While discussing the possibility of reducing nutrient use, some experts were of the opinion that the use of nutrients in regions like Africa is inevitable since it has the oldest soils and these have been severely degraded over time. However the situation in Europe is different in that the soils are comparably new, and nutrients have been over applied for the last decades. The time has now come to drastically reduce this over application of nutrients.

It was noted that a lot of strategies for sustainable nutrient management have been successfully implemented in Europe and other developed regions however most of them cannot be replicated in developing nations because of small farm size and lack of/unavailability of mechanised agriculture. From the success story in Europe it also emerged that some of their nutrient management strategies would not result in net success but would trigger nutrient problems in other regions. An example is the reduction of livestock in Europe as a strategy without any corresponding reduction in consumption of meat and other livestock products, means transferring immediate nutrients management problems to countries supplying livestock products to Europe.

Understanding of plant nutrient requirement ratio was highlighted as critical in devising sustainable nutrient management strategies. An example is India where at one point they subsidized nitrogen fertilizers and this resulted in increasing use of nitrogen fertilizers but there was no increase in yield since the crops were limited by other nutrients like phosphorus which was not subsidized. Recognizing this policy deficiency the Indian government has now introduced "nutrients-based subsidy" programme. It was interesting to note that recently a project has been initiated in India to monitor the impacts of present nutrient use practices on environment through ecosystem health report card and this is now being piloted in the Chilika lake region of Odisha state of India. The project has the potential of being replicated in other parts of India and other countries where it is relevant. The Chilika Lake Development Authority of India and the Laguna de Bay of the Philippines has already started a collaborative program to refine the methodology and replicate this.

Unsecure tenure systems were noted to be influencing poor nutrient management hence there was a call for reforms on tenure systems. Analysing nutrient flows and determining nutrient budgets was also identified as crucial. Though feasible it is hindered by non-availability of data in many developing countries. On the issue of depletion of finite phosphorus the presentation showed that we are close to a point where recovery of phosphorus will be inevitable. However it was noted that this would require economically feasible technologies for phosphorus recovery from various waste streams. It was also noted that there is need for risk insurance for farmers to implement sustainable nutrient management strategies. The argument was that farmers are not willing to try something new if they are not protected against the worst case scenario of severe loss. Viewing from this perspective there was general consensus in support of a holistic approach of integrated nutrient management for sustainable agriculture.

The case study from China pointed out some of the critical issues that are needed to increase yields and reduce use of nitrogen and phosphorus. China drawing from the experiences of integrated nutrient management and integrated soil-crop system management adopted a 3 steps system. They are;

- optimization of nutrient inputs taking into considerations all possible sources of nutrients
- matching of soil quality with the selection of crops and their requirements spatially and temporally and
- deploying all possible yield increase measures into considerations

In conclusion the session agreed that sustainable nutrient management is of critical importance for ensuring soil health, food security and human wellbeing, and will require approaches that can be adapted to national and regional settings. Strengthening of extension services by national governments is crucial to improve nutrient use efficiency at the farm level. There was a general consensus that the issue should remain on the agenda and that further dialogue was needed. The Global Partnership on Nutrient Management (GPNM) which is endorsed by 64 governments and the European Commission should continue in its role of building a consensus in promoting nutrient use efficiency and work with the governments and other stakeholders to develop guidance, strategies or policies on the sustainable use of nutrients so as to improve nutrient use efficiency with attendant economic benefits for all stakeholders, including farmers, and to mitigate negative environmental impacts.

IASS POTSDAM Global Soil Forum
Institute for Advanced Sustainability Studies e.V.

First GLOBAL SOIL WEEK SOILS FOR LIFE

Sustainable Land Management (SLM)

Date: **20th November 2012**

Name of the rapporteur: **Marco Nocita**

Moderator / commentator: **Sally Bunning**

Facilitator: **Constance Neely**

Why this session topic is important:

The importance of SLM is expressed by its central role in strengthening soil protection and management as pillars for food security and climate change adaptation and mitigation

Objectives of the session:

The main objectives of the session were to (i) present case studies where soil is addressed as integral part of SLM, and (ii) to identify critical gaps to take up through the Global Soil Partnership and SLM programs

Key discussion Points:

importance of soil in SLM, land degradation, land use, participatory approach.

Key concerns/challenges:

The session started proposing two important concerns/challenges:

- Is it possible to make greater advances in the implementation of SLM if the benefits of land health were stressed over the problems of land degradation?
- 2) Does soil receive enough attention within SLM?

Debate/counter arguments:

The debate was animated by important topics related with the SLM. It was pointed out as land is receiving an increasing pressure due to the world population growth. In 2050 it will be needed to increase the food production by 70%. This poses many interrogatives on whether, with the actual land use, water resources and technologies, the world will be able to feed an increasing population in a sustainable way. The keynote speakers stressed the importance of soil as critical point for food security. It was mentioned that in order to produce sustainably and to protect soils, it is necessary to avoid the cultivation of exotic crops and to treat food security at local scale. SLM should be put in action to reduce disaster risks and water scarcity. The application of SLM is strictly linked with when to intervene, which technology to adopt, and in which situation the scaling-up can be applied. The debate also focused on the need to clarify the Economic impact, the socio-economic benefits and the weaknesses of SLM.

Solutions/examples/case studies:

The session was characterized by many presentations showing examples of SLM applications around the world. Dr Hanspeter Liniger (University of Bern) explained the WOCAT (World Overview of Conservation Approaches and Technologies) and presented several case studies of soil conservation from Africa and Asia, either funded projects or spontaneously promoted by independent farmers (Tajikistan). Helga Hissa (Superintendencia de Desenvolvimiento Sustentavel, Brasil) presented the experience of a 30 years old association called Rio Rural, which promoted the agricultural development of rural areal finalized to the income generation. Dr Tesfaye Mebrahtu (Ethiopia) showed a scaling-up process of SLM practices under the Ethiopian Strategic Investment Framework, which contributed to restoration of large degraded areas and favoured the generation of new incomes. Dr Constance Neely (ICRAF, Kenya) exposed a project of holistic grazing land and livestock management in Kenya, pointing out the enormous advantages of sustainable grazing activities in terms of land protection and soil fertility maintenance. Nahid Naghizadeh (Centre for Sustainable Development, CENESTA, Iran) presented a Territory-Based Sustainable Range Management Programme, which focuses on the protection of nomadic communities and reinforces the ecological integrity and soil conservation of rangeland areas. Prof. Dr. Jean Charles Munch (Technical University of Munich) focused on the importance of enhancing the soil biological functions for sustainable soil management from the local to the global scale in order to

support policy makers. Mike Grundy (Landscape systems and trends, CSIRO, Australia) presented new trends of land use management in the Oceanic continent, and the complexity of the soil conservation issue due to the extremely differentiated cases of land use and settlements movements that occur in Oceania.

Key conclusions of the session:

The key points which arose from the SLM session were:

- The importance to build SLM projects with a strong participation of the local communities in the planning processes.
- Raising awareness among policy-makers about soil as an important factor in SLM
- Building a project able to focus on the results, such as income generation plus environmental conservation
- Seeking innovation is crucial to generate new sustainable opportunities of land management
- Increase soil information through the acquisition of new soil data based on less expensive and large scale techniques, such as remote sensing.

Key general recommendations of the session:

The most important recommendations were (i) to focus on the lessons learned by previous SLM projects to not repeat the same mistakes of the past, and (ii) to promote big investments for the prevention of land degradation (through the continuous land resources monitoring) instead of intervening for the restoration of the degraded land

New questions arising –ways forward:

The final discussion proposed the split of the audience in 4 groups dealing with 4 topics, identified as the keypoints of the agenda for action:

- Prevention versus restoration

The future investments will be much lower and wiser if the prevention of the onset of degradation will be preferred to its cure.

- Complexity of tools/data

All SLM projects should base their decisions on good practices and the priorities have to be adapted to communities priorities, speaking their languages and providing information at all

levels

- Scaling-up costs/sustainability

SLM has to be designed as a production/protection system based on activities able to bring income/productivity to the farmers

- Local knowledge

It is essential to document good practices and disseminating and leading to recognition. Moreover local knowledge has to be connected with SLM through horizontal knowledge and experiences exchange between users/farmers.

Notes:

The session on Sustainable Land Management (SLM) got and audience of about 40 people coming from the five continents and several institutions such as governmental agencies, research institutes, and development associations, universities, etc.

Summary of the session "Sustainable Land Management"

The main objectives of the session "Sustainable Land Management" (SLM) were to (i) present case studies where soil is addressed as integral part of SLM, and (ii) to identify critical gaps to take up through the Global Soil Partnership and SLM programs. Two important questions were identified as icebreakers of the discussion: 1) is it possible to make greater advances in the implementation of SLM if the benefits of land health were stressed over the problems of land degradation? 2) Does soil receive enough attention within SLM? The session made clear that in 2050 it will be needed to increase the food production by 70%. This poses many interrogatives on whether, with the actual land use, water resources and technologies, the world will be able to feed an increasing population in a sustainable way. The role played by soil as critical point for food security was stressed together with the application of SLM practices to reduce disaster risks and water scarcity. The application of SLM is strictly linked with when to intervene, which technology to adopt, and in which situation the scaling-up might be applied. The debate also focused on the need to clarify the economic impacts, the socio-economic benefits and the weaknesses of SLM.

The session was characterized by many presentations showing examples of SLM applications around the world. The key points which arose from the case studies were (i) the importance to build SLM projects with a strong participation of the local communities in the planning processes, (ii) raising awareness among policy-makers about soil as an important factor in

SLM, (iii) building projects able to focus on the results, such as income generation plus environmental conservation, (iv) seeking innovation to generate new sustainable opportunities of land management, and (v) increasing soil information through the acquisition of new soil data based on less expensive and large scale techniques, such as remote sensing. In order to achieve fruitful results the participants agreed on need to focus on the lessons learned by previous SLM projects to not repeat the same mistakes of the past, and to promote big investments for the prevention of land degradation (through the continuous land resources monitoring) instead of intervening for the restoration of the degraded lands.

The final part of the workshop was characterized by the designation of the agenda for action based on four main points: 1) The future investments will be much lower and wiser if the prevention of the onset of degradation will be preferred to its cure. 2) All SLM projects should base their decisions on good practices and the objectives have to be designed around the communities' priorities, speaking their languages and providing information at all levels. 3) SLM has to be designed as a production/protection system based on activities able to bring income/productivity to the farmers. 4) It is essential to document good practices and disseminating and leading to recognition. Moreover local knowledge has to be connected with SLM through horizontal knowledge and experiences exchange between users/farmers.

Global Soil Forum
Institute for Advanced Sustainability Studies e.V.

First GLOBAL SOIL WEEK SOILS FOR LIFE

Economics of Land Degradation (ELD):
A Dialogue between Decision-Takers and Scientists

Date:	**20th November 2012**
Names of the rapporteurs:	**Michael Cherlet, Carolin Möller, Alisher Mirzabaev**
Chair:	**Joachim von Braun (ZEF, University of Bonn)**
Moderators / commentators:	**Joachim von Braun, Deborah Bossio, Victor Chude, Stefan Schmitz**

Why this session's topic is important:

In recent years, prices of agricultural land have increased quickly in many parts of the world. This land value reassessment has been prompted by rising crop prices and growing land scarcity. But even as the value of land rises, land degradation continues and investments to prevent it are lagging.

This inaction is partly the result of limited knowledge of the costs related to land degradation and of insufficient institutional support. It is also a serious food security and equity matter, as large parts of the world's poor live already on degraded lands.

Policy action and research are needed to resolve this paradox of increased land values and insufficient levels of investment in sustainable land management. The international development community can contribute in numerous ways to prevent or mitigate land degradation, including through helping to decentralize natural resource management, invest

in agricultural research, public and private investment stimulation, and build local capacity for participatory programs. Clarified property rights and related legal protection, including for communal lands, is part of the needed institutional agenda for sustainable land use.

Applied interdisciplinary research on economic costs of land degradation, conducted in collaboration among biophysical scientists, socio-economists and practitioners, across regions and across sectors, should be scaled up. A global cooperative effort is needed to identify the costs of action versus in-action. Research does indicate that the costs of in-action significantly exceed the costs of action.

Objectives of the session:

This session provides an interactive reflection and discussion on the key aspects of Economics of Land Degradation. The session consists of four interconnected discussions each covering a key element in the Economics of Land Degradation: i) starting from the vision and strategies for a land degradation neutral world, through ii) state-of-the-art research and iii) country experiences of applying SLM practices, to iv) a discussion on achieving policy action and financial investments into SLM.

Key Discussion Points:

Key concerns/challenges:

Soil is a non-renewable resource at risk of depletion with high relevance for food security. Soil degradation has many types (salinization, erosion, etc) and cannot be viewed separately from land degradation, which also includes water, soil biota, etc. We should aim for a "zero net land degradation" goal. It is usually less costly to prevent soils from degradation, rather than restore the soil functions back once they are lost, especially because of non-linear dynamics and threshold effects in soil degradation curve over the time.

The political and public awareness about the urgent need to combat land degradation needs to be further raised. Governments need strong economic justifications for investing in land and soil protection. Economics of Land Degradation (ELD) is based on trans-disciplinary research and aims at bringing together the required expertise to enable practical actions against land degradation. Neglecting soils means missing opportunities of food security globally. Soil degradation also poses an important barrier for achieving Millennium Development Goals.

The key challenge of ELD is to incorporate the total economic value of land in its analysis. The evaluation of costs of action versus those of in-action is required, thereby, factoring all costs, both market and non-market. At this moment, there is insufficient data on land and

soil degradation, especially on its economic aspects. Knowledge on the topic is still limited.

Another challenge is to define what can be done to change land use practices to prevent degradation and increase the economic value of land. A key driver here is the return on investments, but also the asset value of land. The expected return on investments conditions the land management options. For such decision making, the total economic value of land management needs to be estimated and not only 'soil' use. Land use assessments need to encompass all target groups.

Debate/counter arguments:

Soil degradation is not sufficiently high on the global political agenda. Defining soil degradation is complex and comprises many parameters; hence considering a more comprehensive concept of land degradation becomes even more complex. Issues to be included are actually also influenced by the ultimate use of the land and how one wants to manage land resources. A holistic economic assessment is needed with all indirect and marginal costs.

Assessing market values of land, also by addressing soil degradation aspects, is very multifaceted. The data issue is not easy to solve as soils are under national sovereignty, often under private property, and therefore data are not easily made available. Moreover, there is a lack of data on market values, let alone non-market values. Satellite data are often not enough and cost-effective field data sampling/ground monitoring is needed but difficult to implement. Up- and down-scaling of assessments is not straightforward but needed.

Moreover, the economic analysis should not be too reductionist, as for people land also has cultural values. ELD needs to consider all these aspects.

Solutions/examples/case studies:

The list of all variables to consider for assessing land and soil degradation is too vast, hence ELD will need to start with key variables, for example, Soil Organic Matter, and gradually add more complexity. Initially, the value of individual functions of soil could be assessed, such as, for example, the added value of soil for filtering water and what is the value lost when this soil degrades.

Country examples showed that there are conflicts of interest for the use of resources and these trades-offs can be better evaluated when scenarios are constructed and the economic impacts of solutions are assessed. For market purposes, there is a need for pricing of public goods. Case studies should be carefully selected to ensure their representativeness. They will need to illustrate key examples on the economics of land degradation to document the

complexity. The case study approach can then also be used for training country experts to undertake further assessments.

Datasets will need to be optimized and therefore practitioners and national administrators will need to be convinced that there is a need to collect [and make available] soil data as there is an urgent need to manage this information collectively to address an issue that is of collective interest – the degradation of natural resources with a direct link to food security. Landscape units could then be used to allow for up/down scaling of results.

Market alone cannot handle land degradation, state regulation needed (scale varies). Farmers are highly interested in sustainable land management, but need support from governments. Enabling policies are needed based on action-orientated research.

Key conclusions of the session:

There is an urgent need for evaluating the Economics of Land Degradation, which requires strong interdisciplinary scientific collaboration, active involvement of all stakeholders, and a strong basis on representative country case studies. Economic assessment of land degradation is needed to guide investments and policies on sustainable land management, with the ultimate goals of ensuring food security and reducing poverty through zero net land degradation.

Key general recommendations of the session:

ELD needs to bring SLM into the development agenda while offering strong arguments based on solid science. ELD needs to focus on all the complexity of land/soil functioning and the economic value of these, but starting with pragmatic approaches from simple to complex. Case studies will be representative of key regions and are excellent tools to catalyse on the expansion of the initiative by offering further tools to extrapolate results globally. The research should not be too specialized, but action-orientated. All values of soil/land should be incorporated: cultural, socio-economic, environmental; etc. Education and extension services for SLM need to be enhanced. The narrative of land degradation should be integrated into macroeconomic frameworks.

New questions arising – ways forward:

Need to establish relatively simple starting points considering key variables, key regions, key economic typologies to gradually increase into more complex configurations based on improving insights on the complexity of land and soil degradation and protection.

Global Soil Forum
Institute for Advanced Sustainability Studies e.V.

First GLOBAL SOIL WEEK SOILS FOR LIFE

Markets for Soil Organic Carbon: A Feasible Policy Solution for Smallholders

Date:	**21st November 2012**
Names of the rapporteurs:	**E. Lugato, F. Bampa, C. Seeberg-Elverfeldt, C. Neely**
Moderator/commentator:	**Constance Neely**

Why is this session topic important:

Carbon (C) markets can be an important avenue for providing incentives for increased soil carbon and other functions, food security and mitigating and adapting to climate change. Measurement and institutional factors need to be in place to support them.

Objectives of the session:

To understand the available knowledge and gaps and to include soil carbon projects in carbon markets

Key discussion Points:

Key concerns/challenges:

The different presentations highlighted the following issues:

R. Lal: Soil Organic Matter/Carbon (SOM/SOC) and its effect on and representativeness of soil quality, fertility and other soil functions has long been recognized. Soil C is directly related to

biomass productivity and is climate sensitive. What is needed is a matrix of production practices and the sequestration potential. While measurement of soil C has been underway for years, a practical low-cost field methodology is still needed to account for C at the scales at which markets demand.

M. Bernoux: The C market was initiated through the UNFCCC, specifically, the IPCC developed guidelines for GHG inventories for the LULUCF sector which can be used to estimate SOC stock changes. In grasslands and croplands the major C component is in the soil, which is inherently variable. Classical measurement techniques (sampling and analysis) are time consuming and expensive, therefore new methods have become more popular such as INS, Laser Bin (LIBS), IR spectroscopy. However despite many possibilities offered, the C market is not only dependent on these methods. A proposal is to have the markets and trading based on the adoption of sequestering practices or management options and would therefore be based on the impact/result of the practice/management option.

A. Wekesa: A positive experience comes from the first agricultural soil C project in Kenya with smallholders, using the Sustainable Agriculture Land Management (SALM) methodology from the Verified Carbon Standard (VCS) to certify C credits– which are currently purchased through the World Bank Biocarbon Fund. Smallholders have adopted mixed cropping systems, based on residue management, composting, and agroforestry. The Roth C model was parameterized in several farming systems and used to define the best management practices to be adopted.

A. Morrison: In another case study, the standard elaborated by Plan Vivo is used to support smallholders in applying sustainable management practices (REDD and agroforestry) and to generate payments for the ecosystem services provided (C credits). Additional C services with respect to a baseline are quantified by an independent methodology. The project coordinator enters into payments of ecosystem services in agreement with multiple participants. Staged payments are based on performances.

E. Milne: The Carbon Benefits Project has developed a toolkit for GEF and other sustainable land management projects to track and report, in a standardized way, the impact of the projects on C stock changes and GHG emissions. Web-GIS and modelling tools could be useful to predict the effect of land management activities on SOC changes.

Debate/counter arguments:

The presentation section stimulated the debate leading to some key points, which are summarized according to different points of view:

- **Sellers**: who buys and why?; How could the risk be taken into account?
- **Smallholder**: extension advisory is required; opportunity costs and risk must be taken into account.
- **Project developers**: is there a consistent market to easily sell C credits?; How long should management practices be maintained?; aggregation of smallholders in groups/ associations/cooperatives is important.
- **Methods**: how representative are the actual models? Is the quality of SOC also taken into account?; What are the sequestration rates of different management practices, C range and uncertainty are strongly needed; is it possible to check if practices are adopted?

Solutions/examples/case studies: to discuss these topics in greater detail, dynamic World Cafè style tables were organized.

Key conclusions of the session:

Question 1: Knowledge gaps in SOC management to link C management to C finance (research, practice or policy gaps)

While not all conversations could be recorded, key interventions centred upon:

- Policies: Current lack of recognition/acceptance of soil C at international level needs to be addressed. Policies should ensure sustainability of C management projects.
- Markets: The UNFCCC is a limited market. Focus on private/voluntary markets.
- Research: Correlation between land use and farming for C management and C markets. Linking erosion quantification with C stock quantification.

Question 2: What kind of capacity development is required for small holders, extension officers and project developers and who can do this and who will finance this?

Proposal centred upon the need for information platforms where information can be exchanged for farmers (associations/cooperatives), extension officers and project developers on demonstration projects. This would include numbers and indicators in terms of C mitigation potentials and other land health variables on sustainable land management practices. Governments are needed to provide funding for these activities for the national and local levels.

Smallholders need capacity development in terms of training, access to decision making groups, land tenure rights; extension officers need communication tools and equipment and project developers the management and administration skills, upfront funding, marketing

communication support. Finance could be provided by consumers and private sector (awareness raising and CSR), along with development partners and governments.

Question 3: *"MY GREAT IDEA AS PRIORITY RECOMMENDATION"*

Research and Practice: Define target C contents in soils; The global soil C stewardship. Research on best practices; Implement a platform where Soil Land Management practices would be classified in terms of benefits in water/soil/ economy/biodiversity impacts; Risk assessment before project implementation; Global soil C standardization scheme. Link market and policy mechanism. Based on research linking farming practices and C gain. Knowledge of best practices spread to farms and extension services. Funding from governments; Develop approaches of integrating C management in standards for sustainable production; Project/Practice systematic identification plus documentation of profitable agricultural practices followed by capacity development of extensions and farmers.

Markets and Financing: We should be talking about C-management at farm scale in the context of food system sustainability > improving farmers position within the food system can/will improve their environmental performance; Economic analysis is essential in C financing; Paying farmers to implement SOC friendly practices rather than for the C itself , building in this way a market which saw certain products certified as SOC friendly in the same way as the actual organic products; Make products CO2 neutral COOL; Project chain followers; Rewarding for recommend management practices; C INSETTING – climate friendly products – look to existing supply chains and networks to build or "inset" improved soil management/Climate Smart Agriculture practices into funding streams; Promote supply-chain transparency "insetting" – ecological recycling agriculture plus organic agriculture linked to C markets; Promote supply chain transparency "insetting". Ecological recycling agricultural + organic agricultural linked to C market; Smallholders should be better informed about C market opportunities; Governments and/or others have to provide (financing for) capacity development of farmers to apply Climate Smart Agriculture practices. ; How to ensure financial sustainability? How can the C-financing from offsetting be linked to label schemes for food to reinforce impact?

Policy/Advocacy/Information Sharing: Global action to introduce SOC in UN International market; UN system to incorporate firmly the role of Soil C regulation; Better communication between researchers and economists (e.g. those studying soil and those creating markets); Implement policy on inter/regional, national scale; Talk & work together; Make policy maker realize that CO2 is a resource out of place. Put soil C sequestration same level as climate solution as technical solution; Redesign relevant policy to stimulate land user to adopt sustain management practices. Explore private market + public sector interest.

Key general recommendations of the session:

There was broad agreement that this was a successful session and brought together key actors from diverse perspectives. The group made mention of continuing to share information and to bring recommendations into other meetings. As an example, there were key relevant meetings identified including: Rapid Assessment Methods (Italy, 18-22 March 2013), Climate Smart Agriculture[1] (UC Davis, USA, 20-22 March 2013), Carbon Sequestration[2] (Iceland, 26-29 May 2013) , IUSS[3] (Wisconsin, USA, 3-6 June 2013); and Carbon Management and Trade (Turkey, April 2014).

[1] http://www.cevs.ucdavis.edu/confreg/index.cfm?confid=595&webid=3073
[2] http://scs2013.land.is/
[3] http://iuss-c-conference.org/static/index

IASS POTSDAM Global Soil Forum
Institute for Advanced Sustainability Studies e.V.

First GLOBAL SOIL WEEK | SOILS FOR LIFE

The Soil Energy Nexus

Date:	**21st November 2012**
Name of the rapporteur:	**Fabien Sachse**
Keynote Speakers:	**Alexander Müller, Uwe Fritsche, Bernd Uwe Schneider, Reinhard Hüttl**
Moderator / commentator:	**Thomas Scholten, Dr. Bernd Uwe Schneider**

Why is this session topic important:

Germany is the world's largest lignite producer. Respective opencast mining entails a consumption of soils on a large surface area. As a consequence, advanced concepts and methods of mine site reclamation are needed to restore soils properly and to re-establish the economic, ecological and social functions of a landscape.

The worldwide demand for energy is increasing. In many parts of the world the only available energy are biofuels such as wood and charcoal used for cooking or heating. The demand for firewood will continue to increase dramatically due to population growth particularly in Asia and even more pronounced in Africa.

The ambitious goals to reduce the global emissions of greenhouse gases call for alternative energy sources to compensate for fossil fuels. Bioenergy is likely to play an important role in the future energy mix as long as respective land use systems integrate food and energy supply without compromising the productivity of soils are needed.

Objectives of the session:

This session pointed to challenges but also and especially on the opportunities of wood based biofuels and had several main objectives:

- Elucidating modern concepts of mine site rehabilitation: In Germany some post open-cast areas have been restored. Several examples have shown that the restoration of degraded land is possible, but frequently requires considerable efforts.
- Emphasising the negative and positive impacts of current bioenergy production on soils and creating a more differentiated perspective for future bio energy production harmonizing food and energy supply in a sustainable way.
- Identify land use options to foster synergies between bio energy production and soil protection/regeneration particularly in countries of the Global South.

Key discussion points:

To understand the importance of this topic it is necessary to know and accept that the demand for bio energy will drastically increase by a factor of 2-3 in the next 30-40 years on a global scale. Hence, there is a challenge to increase the availability of bioenergy in place (local, regional markets) particularly where bioenergy is mainly used for cooking.

If well-managed and cultivated, wood based biofuels can provide a number of advantages besides the providing of renewable energy. To communicate this aspect the positive synergies of woody biomass production systems in terms of increasing the carbon sequestration in soils need to be highlighted. Sustainably managed forests, short-rotation-coppice and agroforestry systems provide alternatives for climate smart management and will foster both climate mitigation and adaptation.

The production of woody biomass on degraded land may become part of a long-term shifting cultivation where periodical conversion of woodlots into arable land may allow for cyclic improvement of the soil organic carbon stocks and an increase of soil fertility.

Woody biomass production on degraded land may facilitate investments into soil remediation and local/regional infrastructures, but needs a solid contractual framework and capacity building in place to make local populations share the benefits. If done on a sustainable basis, bioenergy may become a catalyst of growth.

To design the bioenergy production, more sustainable there is a need work and focus on following challenges:

The utilization of degraded land for bioenergy production needs to comply with the protection of biodiversity in the same areas (see also set of criteria provided by the GBEP initiative). Cooperation on all scales and between all actors is one way to tackle the problematic issues related to bio energy production. In many regions a lack of data is a huge problem, e.g. when it comes to assess the soil organic carbon. Therefore, advanced remote sensing tools and environmental criteria are needed for mapping, selecting and monitoring degraded land when used for bio energy production. Together they will form the prerequisite for developing decision support systems, which can be handled by politicians and which should be applicable in different contexts.

More emphasis has to be given to the development of technologies for a cascading usage of biomass with regard to food, fibre and fuel.

Bio energy should not put additional pressure on land use systems to avoid further soil degradation and productivity losses as well the reinforcement of climate change.

There is a need of basic research on soil plant interactions that provides important knowledge for assessing relevant ecosystem processes and structures as well as the resilience of such systems.

In the discussion on bioenergy a differentiated view is needed with regard to assessment of effects of annual and perennial (woody) energy crops on soils.

Competing forms of land uses (food & feed, raw materials…) have to be harmonized somehow and constraints need to be overcome. There is a need for testing and introducing new land use concepts for the restoration of mining areas (especially in Germany but also in other countries, such as China).

The transfer of knowledge is indispensable. It is important to realise that this knowledge and technology transfer is not a "one-way street" from north to south but will offer its full potential if a mutual exchange of skills and ideas exists.

As a summary, the session concluded in the notion that "bioenergy is neither good nor bad, it's management that matters!"

IASS POTSDAM Global Soil Forum
Institute for Advanced Sustainability Studies e.V.

First GLOBAL SOIL WEEK SOILS FOR LIFE

Challenges for Intensifying International Soil Research Cooperation

Date:	**21st November 2012**
Name of the rapporteur:	**Claus-Gerhard Bannick, Cristiano Ballabio**
Moderator / commentator:	**Stefan Schmitz, Franz Makeschin**

Why is this session topic important:

Strengthening international soil research cooperation would help filling the existing knowledge gaps arising from global challenges such as climate change and food insecurity. These gaps could be filled through the sharing of innovative measures to limit land degradation, the loss of soil fertility and other potential threats to soils.

Objectives of the session:

- To identify relevant global, regional and national research partners and existing global soil research networks and groups and share and adapt their research results tailoring them for local application.
- Discuss ways that they can better implement better cooperation and coordination.
- To improve and to encourage the link between soil science and other soil-related research fields, business, politics and society.

Key discussion Points:

The global challenges such as climate change and global food security are directly linked to processes that take place in and on soils. To find answers to these challenges innovative research for integrated solutions is needed.

In addition to content issues also structural issues have to be clarified for improving better global soil research cooperation.

Many international institutions are working on soil and land management, however, a world Soils Institute does not, as yet, exist. It is also unclear which regional and national research centers can contribute to global issues with their competence and international expertise. Thus, enhanced cooperation between international and regional institutions is required. Major groups in this context are the CGIAR institutes, the FAO, IUSS and ISO. Sectoral cooperation between CGIAR Institutes and national institutes predominantly takes place at a local or sub-regional level, missing overarching efforts for a systematic cooperation.

Soil research is positioned globally diverse. Between public and private funded research lacks an open exchange. Language barriers hinder an intensive cooperation at international level.

In detail the below listed demands were discussed:

- Extend and promote soil observatories
- Promote the passage from scientific research and technological implementation
- Understand the role of international cooperation in estimating the economic impact of land degradation
- Promote the creation of a relation between public and private research
- Promote low cost technological solutions for degraded land reclamation

Key concerns/challenges:

- Start a debate if a stronger global cooperation among soil researchers and institutes is necessary
- To promote the role of an integrated soil research in relation to the global challenges
- Identify partners for a global soil research network
- Find appropriate structures for improving the international cooperation
- Develop a roadmap or cornerstones for next actions

Debate/counter arguments:

- Soil research is often very focused on specific topics, this is driven also by the scientific reward system. Fact is that scientific journals count more than knowledge outlet in practise.
- Soil science is often too focused on basic research; more applied research in connection with basic research is needed
- Harmonized methods, commonly agreed solution concepts and more intensive data exchange is needed

Solutions/examples/case studies:

- CGIAR global sustainability agenda aiming at developing an integrated soil fertility management system, link soil properties with IR spectra for fast and cheap soil properties estimation, develop bioindicator for soil functionsFAO offers via the Global Soil Partnership good conditions for trans-regional and trans-national research
- European Soil Bureau Network, a network of national soil science institutions. The ESBN at the JRC is operated by staff members of the Land Management Unit (LMU). Its main tasks are to collect, harmonise, organise and distribute soil information for Europe
- IUSS (International Union of Soil Science Societies) provides a broad access to soil scientists from very different working fields…
- ISO provides harmonized soil investigation methods

Key conclusions of the session:

- Understand key topics in soil research and where soil research is going
- Set up a global cooperation to tackle local problems – solve global issues by solving local ones
- Harmonize research methods
- Promote an optimal use of the existing knowledge
- Intensify in-the-field data collection
- Make research outcomes available to the end users

Key general recommendations of the session:

- Integrate Soil research within the global change community. Make it a key component

to tackle global challenges

- Strengthen scientific partnership by promoting student exchange programs
- Integrate different research approaches by taking advantage of differences among research institutions
- Identification of globally acting and national interested customers for a better research cooperation (e.g. FAO, CGIAR, IUSS, ISO)*
- Implementation of a larger workshop on research cooperation in next half year*
- Preparation of a study on research structures and research content*

New questions arising – ways forward:

- Avoid the dichotomy between theoretical and practical research
- Promote interdisciplinary research and find a common language with other disciplines

*If you have any specific inquiries about our process, contact Claus Gerhard Bannick (bannich@gfz-potsdam.de)

IASS POTSDAM Global Soil Forum
Institute for Advanced Sustainability Studies e.V.

First GLOBAL SOIL WEEK | SOILS FOR LIFE

FROM DEEP DOWN - A Social Sculpture Soil Seminar

Date:	**20th and 21st November 2012**
Name of rapporteur:	**Rebecca Gasson**
Moderator / commentator:	**Hildegard Kurt ,und.Institut (and.Institute for art, culture and sustainability), Berlin**

The purpose:

Sustainability is a creative challenge. Thus we need the resource of culture and the knowledge of art to develop a humane and ecologically viable world.

The seminar From Deep Down offers a framework to develop a new awareness of soil which is informed by cultural research and by the idea of social sculpture. Social sculpture contains an expanded concept of art in the sense that `every human being is an artist´ (Joseph Beuys). This means: We are all able and should be called upon to contribute creatively to the reshaping of our society into forms that can be experienced as humane and desirable.

With a methodology based on experiential knowing and creative strategies this seminar helps individuals, groups and communities to:

- develop a relationship and awareness to soil issues

- find one´s own agenda around soil issues
- explore the relationship between inner activity and outer work
- gain new insight and motivation through different forms of dialogue
- connect with one´s creativity

With a focus on `how´ we think, perceive, act, listen, relate to ourselves, to each other, and to the world, this seminar investigates the epistemological dimension of working with soil. It explores conditions for transdisciplinary work and is accessible to people from all different backgrounds and professions, scientific and non-scientific.

The ideas and creative strategies practiced here can be integrated into various fields of work.

The questions:

One of the key issues discussed in soil science is the conditions that either degrade or increase soil fertility. A comparable question would be what processes or substances today undermine or enhance our capacity to overcome exploitative ways of living and producing?

What are the practical implications – including economic and political – of the fact that humus and humane stem from the same etymological root?

Are there forms of thinking that harden, deteriorate or even seal, in the way that chemicals, asphalt and concrete act on the earth?

What modes of knowing, of understanding and of communicating would better help us to reconnect with soil, learn from soil and thus becoming ourselves `humus´ of a culture of sustainability? How can we consciously nurture and enrich such ways of being in the world?

The strategies:

An example of the creative strategies practiced in this seminar is the process of 'finding one's earth', based on imaginative thinking. Here participants are invited to connect with their own experience of soil by finding and sharing an image or a memory of soil, of earth which is of particular value to them.

One participant, a soil scientist in *Qatar*, described an experience when he was 3 years old: 'I'm sitting in a ditch in Africa, surrounded by plants and flowers.'

A soil scientist from *Italy* spoke of a place in the woods where she played as a child and was 'living with' nature. A place that got destroyed to build a clay quarry, leaving her with the question: 'What can I do?'

Such images, which stay with us for so long, often carry important questions and tasks that are worthwhile exploring and can often act as triggers for future careers committed to saving our environment.

Another example of how From Deep Down explores experiential knowing unfolds with the question: `What are properties and behaviors of fertile soil?´

To ask for properties and behaviors opens up to a qualitative approach, as opposed to a quantitative one which is implicit when soil science focuses on identifying types and functions of fertile soil. Properties were then jointly gathered - such as generous, patient, malleable, absorbent, holding something hidden, taking in information, limited capacity, needing care when humans work with it, evolving, transforming, etc. Building on this, participants then engage with the question: `How would we think and act, if we purposefully wanted to generate the effects that fertile soil generates? ´

Throughout the seminar participants are invited to practice 'active listening' (non-judgemental listening) which opens one up for another kind of dialogue that goes beyond debating the issues.

Photo: Rebecca Gasson

The context:

From Deep Down is connected with the University of the Trees – an alternative mobile university, conceived and developed in the field of social sculpture. In the University of the Trees everyone is potentially a student and a teacher, but the trees and other-than-human beings are recognized as our teachers as well. This university can come into being anywhere

on earth where a community or a group of people wants to explore ways of learning and of knowing that help reconnect with what is alive in oneself and in the world. In the seminar From Deep Down, soil is our teacher.

For more information see www.universityofthetrees.org (re-launch in February 2013)

Quotes from participants at Global Soil Week :

"Gaining new and deeper insight into one's work needs time. Mostly this time is lacking or not given. The space and attention given to each participant during the seminar allows for thoughts and ideas to emerge but also to go further and dig deeper into them."

Soil science student, Germany

"This gives motivation for my work and fosters creativity."

Soil scientist, Switzerland

"Such an approach is unusual for me. It can open up one's mind. It should be used as an approach for people from all backgrounds to better understand the meaning of soil in the life of each person. The significance of soil reveals itself in the soul of participants."

Soil scientist, Italy

"The quality of listening, of thinking and of dialogue experienced in this seminar provides a basis for dealing with particular issues and topics. Therefore such a seminar should be considered as a preliminary step for all lectures, panels and alike during the Global Soil Week. It should be offered to every participant as a starting point for the conference."

Artist working in the field of art and ecology, Germany

"This approach, very new to me, allowed me to re-center myself with my everyday work as a photographer. The thoughts and reflections that came up during the seminar are still living with me today. I think it is particularly interesting to ask oneself what is 'deep down' in the earth. In today´s urban societies, the contact with soil is absent in our ways of living, and I think that for the Global Soil Week this way of working is judicious."

French photographer, committed to environmental issues

"Soil is always there but our awareness isn´t always."

Soil scientist, Qatar

Partners:

This event took place in the framework of the Global Soil Partnership:

Funded by:

Media partners: