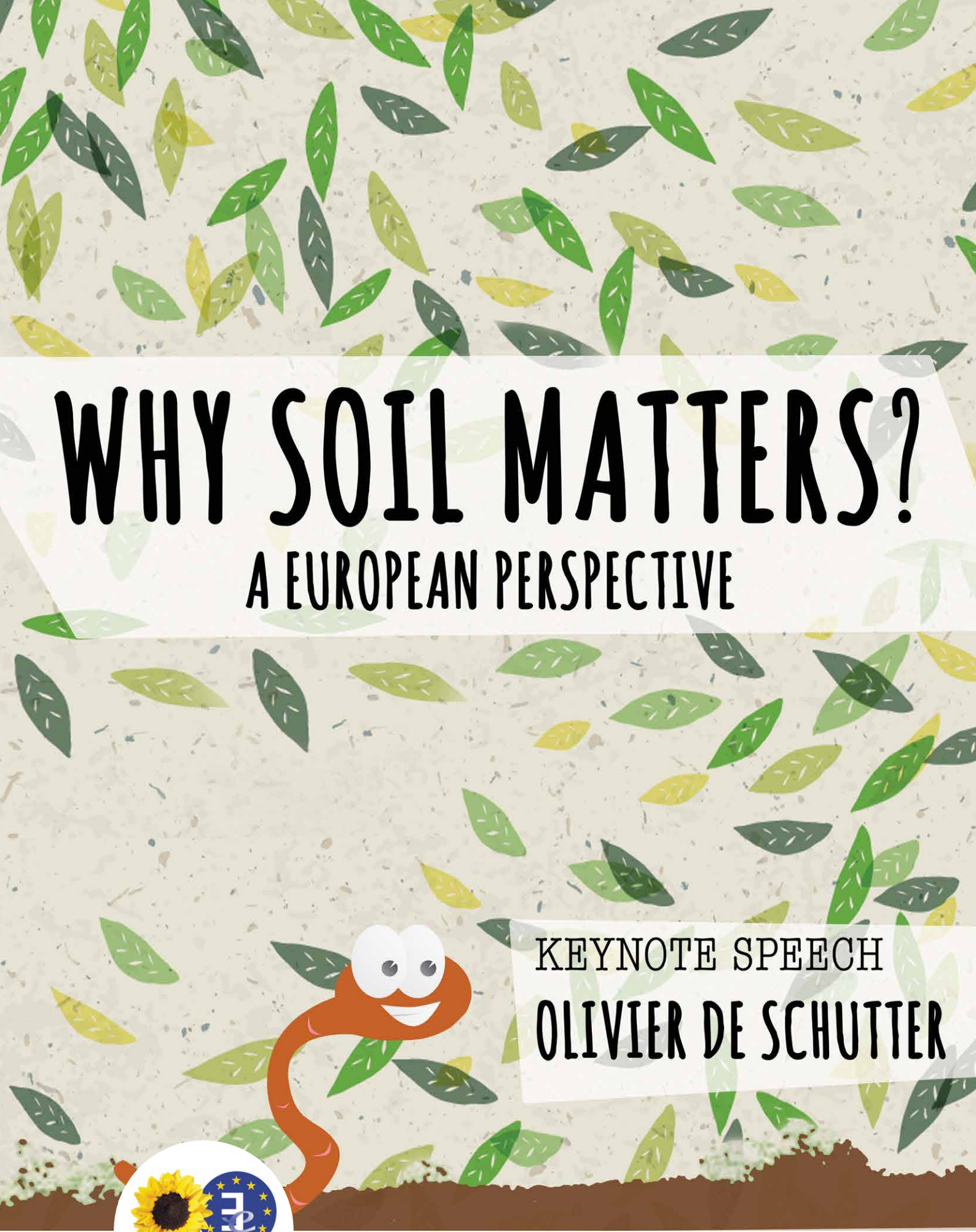
WHY SOIL MATTERS?

A EUROPEAN PERSPECTIVE



KEYNOTE SPEECH

OLIVIER DE SCHUTTER

The Greens | EFA
in the European Parliament

REPORT CONFERENCE

www.greens-efa.eu

Abstract

This report summarises the debate of the conference 'Why Soil Matters? - A European perspective' held at the European Parliament on 18th November 2015 and hosted by the Greens/EFA political group.
In the framework of the UN Year of Soils, this event aimed to discuss the links between soils, food security and climate, and how this interconnectivity is dealt with at a European level. The conference involved high level speakers from the academic world and practical approaches from field actors, working on the ground to preserve healthy living soils. The event brought a European perspective to major ongoing global debates, such as the discussion around sustainable food policies, agroecology and the Climate Summit (COP21).

REPORT CONFERENCE WHY SOIL MATTERS?

A european perspective
European Parliament Conference

April, 2016
The Greens/EFA Group in the European Parliament

Illustration cover: Istockphoto.
Design & digital production: about.me/pierrelambreth

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Executive Summary

Soil is a living ecosystem, which is essential for human and environmental health.

A healthy living soil sustains biodiversity, protects and nourishes crops and contributes to climate change mitigation and adaptation. But soil is under threat today. We lose an estimated 24 billion tons of fertile soil each year due to erosion, while many of the soil functions that are delivered for free to provide productive, fertile and nutritious food systems are destroyed because we systematically sterilise our soils with agro-chemicals, only for farmers to then pay to replace those lost functions.

Without protecting the soil, bringing it back to life and building topsoil, it will be impossible to feed people, to transition to a toxic-free future, to halt the loss of biodiversity and adapt to the challenges of climate change and extreme weather events.

The objective of the conference 2015 'Why Soil Matters? - A European perspective' organised by the Greens/EFA in the European Parliament, was to highlight the main concerns about soil health at EU level as well as the existing or potential solutions to preserve or revive soils, the basis of our food systems and essential to prevent climate change.

> This debate should be considered as a **starting point**, to follow-up on the UN Year of Soils that has now drawn to a close.'

The event demonstrated that all speakers, whether from the academic world, civil society, the European Commission or the European Parliament, agreed on the concerns raised about soil health at EU level and its impact on food security and climate change. They agreed that work to solve this concern should continue. There is also a consensus among speakers that institutional actions taken by the European Commission and FAO or UNFCCC, need to be completed and improved through the participation of all stakeholders in the process - including farmers, scientists, NGOs, urban planners and health professionals - and with the support of examples of good practice on the ground. All interested parties need to work in close connection to build the conviction with politicians at local, national and international level that the issue of healthy living soil is essential and cannot be ignored anymore.

This debate should be considered as a starting point, to follow-up on the UN Year of Soils that has now drawn to a close. It clearly pointed out that specific agricultural practices, based on agroecological methods, free of external chemical inputs, can improve soil organic matter and consequently, soil capacity to store carbon. The conference also made clear that agroecological methods should be part of a coherent policy framework on soil in order to bring EU soils, spoiled by decades of intensive agriculture practices, back to life and to help them recover their ability to provide sustainable food and counter climate change.

Proceedings of the Conference

Welcome words and introduction

Michael Hamell **is adjunct professor of agriculture at University College Dublin.**

Maria Heubuch **is Greens/EFA member of the Committee on Development (DEVE) and of the Committee on Agriculture (AGRI)..**

This event is held mid-way between the agreement for the Sustainable Development Goals and the Paris Climate talks, which have equally important tasks in relation to land, although that is not always visible. The aim of this conference is to look towards the future and the way forwards for **better soil health-related policies**.' **Michael Hamell**

In a context where people have moved away from soil's characteristics and functions, it is crucial to understand that the rules of growth and harvest cannot be decided artificially by humans. Understanding and acknowledging these rules will turn into a win-win situation for plant, animal and human health, as well as the climate. It is also a win-win situation for the economic viability of farms in the long-term...**When talking about soil we can talk about earth, humus or dirt**. But, basically it is a forgotten treasure' **Maria Heubuch**

Keynote: Olivier de Schutter

'It is an extremely important time. 42% of land that is cultivated today is degraded land; this is the result of different factors, depending on the region.

- **First** in many countries land is overused, particularly where land is becoming too small to support the livelihoods of the people, and is divided up generation after generation. Farmers have too little soil to cultivate and they overuse the land in some regions.
- **Second**, unsound agricultural practices degrade the soil: spread of monocultures that remove trees from farming - a particularly relevant topic when it comes to agriculture practices in the EU.
- **Third**, significant erosion of the soil. 50% of the planet's top soil has been removed in the past 50 years. In addition to erosion, there is also compaction of soils, loss of soil structure, nutrient degradation, and an increase in soil salinity, which should further increase with higher sea levels.

The consequences are important in terms of initiatives from the UN.
The most important of which is the UN Convention to Combat Desertification (UNCCD), adopted in 1992, together with the Convention on biological biodiversity (UNCBD) and the UN Framework Convention on Climate Change.

The UNCCD has now 196 state parties committed to preventing and reversing desertification and soil degradation, and it should remain part of the discussions to understand how these duties from countries can be better complied with.

50% of the planet's top soil has been removed in the past 50 years.

The consequences of soil degradation are the following:

- Loss of land productivity is a problem for farmers who depend on the land, in particular in developing countries where I have worked.
- Environmental consequences: degraded lands are less well-equipped to retain water which can worsen flooding; soil erosion leads to sedimentation in streams and rivers, clogging these water ways and causing decline in fish stocks and other species.
- The third and most important consequence: the organic matter in the soil holds carbon. The soil digests the plant which through photosynthesis has been absorbing carbon dioxide from the atmosphere. The more the soil is rich in organic matter, the more it can function as a carbon sink. Conversely, as soils lose organic matter, they release carbon dioxide in the atmosphere, worsening climate change. In fact, there was a study prepared by INRA at the request of the French government, which concluded that, as 24% of Greenhouse Gas (GHG) emissions come from agriculture and forestry, transforming soils into a carbon sink could lead to a very significant reduction of GHG.

Stephane le Foll launches the programme 4 for 1000 ('4 pour 1000'), which aims to increase the organic content of the soil by 4gr per 1000gr of carbon stock in the soil. If this programme is implemented with an increase in the organic content of 4 per 1000 every year, this could result in soils absorbing the totality of global carbon dioxide emissions, representing 75% of total man made GHG.

So, soil is an essential, vital asset in combating climate change and reducing GHG emissions. But at the moment we are losing this battle as a result of the quality of the soil.

There is today a debate within the international community as to how to re-launch agriculture, how to increase the ability of agriculture to satisfy a growing demand for agricultural products. **We can summarize 2 approaches to these questions:**

- The first approach is the classic, conventional approach - sometimes still called 'the green revolution' approach - which insists on bringing more external inputs: pesticides, synthetic nitrogen-based fertilizers- based on the NPK formula (Nitrogen-Phosphorus and Potassium), to re-inject into the soil the fertility that it would otherwise be losing. This approach also invests in mechanisation, large-scale irrigation and use of improved varieties of plants - so-called high-yielding varieties, often commercially bred seeds. This commonly known approach is expanding in Africa after having been developed in South America in the 1950's and in south Asia in the 1960's and 70's. It is the model that has been promoted in Europe since the 1920's.

- **Agroecology is the other approach.** It is a different way of looking at the challenge of agriculture. A way of looking at agriculture that recognizes the complexity of nature, the natural interaction between plants, trees and animals, and tries to replicate at farm-level the natural interactions between these different elements. Rather than simplifying nature, it recognises the complexity of nature and adapts agricultural practices to this complexity, to play with nature as an ally rather than reducing nature to a chemical formula.

This implies a range of agronomic techniques:

- **Agroforestry:** the use of trees to reduce erosion, to allow soil to better capture moisture from rainfall. For example, in Africa there is currently a widespread use of a particular type of acacia, called Acacia Faederbia, which is a fertilising tree that re-injects nitrogen into the soils, enabling farmers to plant trees around their fields to reduce their dependency on chemical fertilisers.

And we see this developing well in countries such as Zambia and in the Sahel: in Mali, Burkina Faso, Tchad, Sudan, Niger. It is this method - agroforestry - which is promoted by the Nobel Peace Laureate Wangari Matthai, or in Africa by the World Agroforestry Center and UN Environmental Programme (UNEP).

- **Biological control:** using plants rather than pesticides in order to protect cultures. E.g in Africa, beginning in Kenya, Hans Herren developed the use of desmodium intercropped with maize, in order to repel insects which attack either maize or sorghum, and alongside the field of maize intercropped with desmodium, you plant a grass called napier which attracts the pests and traps them alongside the field. And this biological control is again a way to play with nature, rather than trying to simplify nature thanks to the use of chemicals.

- **Use of leguminous plants**, such as peas, beans, alfalfa and clover, in order to fertilise the soil and reduce the need to rely on chemical fertilisers

We are now at the end of the cycle where the 'Green Revolution' approach was seen as desirable and as the only way forward.

This is for 4 reasons:

- 'Green Revolution' approaches lead to a significant dependency of agricultural production on non-renewable resources. Gas to produce nitrogen-based fertilisers, oil for mechanisation, phosphorus which is mined in different parts of the world and is not infinitely available either. Even nitrogen - we remove nitrogen from the atmosphere at a rate 4 times above what should be allowed. We remove about 120 million tons of nitrogen per year from the atmosphere, when it would be sustainable to use no more that 35 million Tons.

- The Green Revolution leads to pollution as a result of nitrogen run-off. The pollution of waters leads in some cases to algal blooms and, dead zones (e.g, in the Gulf of Mexico), with fish stocks being depleted as a result.
- This approach leads to a high level of GHG emissions, due to the use of nitrogen-based fertilisers. It is a very dangerous gas contributing to global warming.
- Overuse of pesticides and fertilisers may worryingly affect the biological life in the soil and reduce the ability for the soil to remain fertile without these additions.

So we are now in a paradoxical situation where we have soil slowly dying and yet we try to bring them back to life by re-injecting chemicals. We thereby risk making it even more difficult for the soil to support biological life.

It is a delicate situation because some soils are simply dead. In order to re-create biomass you need to inject these chemicals in order then for agroecological technics to be able to develop.

> There is today a debate within the international community as to how to re-launch agriculture, how to increase the ability of agriculture to satisfy a growing demand for agricultural products. The first approach is the classic, conventional approach which insists on using more external inputs. Agroecology is the other approach, which recognizes the natural interaction between plants, trees, animals... Rather than simplifying nature, this means recognising the complexity of nature and adapting agricultural practices to this complexity, to play with nature as an ally rather than reducing it to a chemical formula.'
>
> **Olivier de Schutter**

As special rapporteur I have been promoting agroecology, but when I met with governments I was confronted with 4 obstacles, mostly of political nature. And I don't think that the obstacles faced at EU level are much different from those with which we are faced worldwide:

- We are in a situation where agriculture is asked to produce not only food but also biomass, particularly for energy, whereas any biomass we use should be reinjected into the soil, in order to contribute to building up the organic matter. E.g in Belgium, you have very weak soil, with around 1.5 to 2% organic matter in the soil, whereas a good soil would have normally 4%. So when we move waste/biomass from the soil, instead of using it to regenerate the soil, it can no longer help to rebuild the organic matter that soil needs to become fertile again and to sink carbon.
- We have increasingly moved towards market-led agriculture, which does not respond to the ecological logic of how to respect the soil and how to rebuild ecosystems, but rather how to cultivate according to the evolution of market prices. This is typically the case for export-led agriculture - the sub-part of market-led agriculture in which large volumes of single products (coffee, cocoa, sorghum, cardamom...) are produced for the markets, using monoculture techniques that are problematic for the soil. Monocultures lead to soil erosion and rob the soils of the nutrients necessary to rebuild itself. **Increasingly, agriculture thus conceived resembles mining, with agriculture as a sector resembling the extractive industry.**

This connects with the debt burden that these countries have to pay back, and from an ecological point of view it is a very difficult problem.

- **There is a mismatch between productivity and competitiveness.** Agroecological methods can be highly productive if you consider the total output of various products per hectare. Various studies, including from the World Bank, explain how small farms can be highly productive thanks to agroecological techniques. But these farms are generally not competitive in markets, in part because **the environmental costs imposed collectively on the tax payer by large monocultures are not internalised into the price of food, but are instead billed to the tax payer, to be compensated for by public money.** So this mismatch is a major difficulty in making the transition to agroecology.
- Disbelief amongst elites about the virtues of agroecological approaches to farming and about the ability for agroecology to meet the challenges of tomorrow. This disbelief is to a large extent a self-fulfilling prophecy: because we don't believe enough in the alternative of agroecology, we do not invest in those techniques, we do not invest in training farmers in those techniques. We continue to subsidise access to fossil fuels and energy for farmers, and we delay the moment when that transition will become inevitable. As a result we don't give agroecology the chance to prove itself and to develop as an alternative on a large scale. Linked to this disbelief is the power exercised upon decision-making by large players, particularly agrochemical companies, who do not have much interest in promoting this transition towards agroecology and who sometimes exercise de facto veto power on political decisions. In the current context **we hear increasingly neo-Malthusian discourses on the need to increase production by 60 or 70% by 2050, to meet the need of 9 billion people; this is not wrong but it oversimplifies the issue.** It does not take into account the need to examine our consumption practices and the waste of agricultural products, nor the need to question our lifestyle and how we overuse the limited resources of our planet.

1ST PANEL:
HEALTHY LIVING SOIL: THE BASIS FOR SUSTAINABLE FOOD SYSTEMS

Martin Häusling, Greens/EFA coordinator of the Committee on Agriculture (AGRI) and member of the Committee on Environment (ENVI).

> Soil that has been improved for centuries is now getting worse in quality. This should sound the alarm bell for farmers, but also for society as a whole... and this should be the focus of policymakers' reflections when it comes to defining a coherent EU soil-related policy.'
>
> **Martin Häusling**

Professor **Christine Watson**,
Team Leader of the Soils and Systems Team at Scotland's Rural College (SRUC)

Professor Watson helped us understand why **we should be celebrating the diversity of soils.**

She explained that soil is made of various constituents; air, water, minerals and organic material. The mineral part of the soil (sand, silk and clay) gives the basic structure to our soil. We cannot change it very much, but we can change the organic matter content, and therefore the air and water within the soil. Without that air and water, our plants would not grow and microorganisms would not survive.

Dr Watson focused mainly on the role of organic material.

She explained that organic matter is important as a source of nutrients, as well as in creating the soil structure, the very habitat in which soil organisms live and root systems grow. Those roots help carbon move out through the soil. Soil organic matter is in fact a mixture of

> Organic matter is about holding nutrients in place."
>
> **Christine Watson**

soil organisms and partially decomposed plant and animal residues.

Besides, Dr. Watson highlighted that **there is clearly a climate impact on the capacity of soil to store carbon**. Globally, twice as much carbon is stored in soils as is present in the atmosphere. This is both a threat and an opportunity. The threat is land use change. The opportunity is carbon storage. She also noted that organic matter turns at a slower rate when it is wet and cold.
Dr Watson reminded us that the world's cultivated soils have lost 50 to 70 percent of their original carbon stock.

Nearly 50% of European soils contain very low levels of organic matter (0-2%), which have been caused by agricultural intensification. (Quinton, J., et al. Soils and food security briefing. (2012)).

Soil is home to a quarter of our planet's biodiversity, which is essential for food security and nutrition.
A single gram of soil may contain millions of individual bacteria,belonging to several thousand different species. In other terms, soil is alive and it is the diversity of soil organisms that is the engine keeping it alive.

Given such amazing diversity, we do not know yet the role of all microorganisms in the soil. **Now, the essential work of science is to identify what is in the soil and what is the role of these microorganisms in the soil, to be able to manage it**. The example of the tardigrade, more commonly known as the water bear, illustrates exactly this situation: it is omnipresent in the soil, found in all geographical areas and able to resist extreme weather conditions, but science has not yet discovered the exact role of this microorganism.

There are many ways to manipulate what happens in the soil through different management practices, whether it be monoculture, drainage, crop diversity, crop rotation, tillage, agrochemicals, fertilisers and manure - all of these practices are key factors in determining what happens in the soil, for soil biodiversity and soil carbon levels. This is why it is important to understand more about how all these management practices interact to give us what we need.

Dr Watson detailed the impact of crop diversification on soil carbon, based on a recent study, and explained that monoculture (e.g a continuous culture of maize) maintains a baseline level of soil carbon, while, with rotation of 2 crops, there is already an increase in soil carbon of 3.6% and an increase in nitrogen in the soil of 5.3%. Eventually, **with crop rotation management combined with cover crops we can improve soil carbon by 8.5%.** Crop rotation also increases the soil microbial biomass by 20.7%. Therefore**, soil has the ability to store carbon, but this ability depends on its texture. This texture can be improved via certain agricultural management practices.** Evidence shows that techniques based on mimicking nature contribute to more carbon storage in the soil.

Dr Watson also drew our attention to the challenges associated with soil and food security. These challenges **require joined-up approaches to soil protection and resource management**. They are also related to better use of food waste and sewage in urban as well as rural areas. Precision technologies, which aim to use material more efficiently, should also be explored. Eventually, **our ability to make dietary choices and adapt to changes is key** to surmounting these challenges.

Valo Dantinne,
Agroecological Gardener and Trainer,
Terre et Humanisme, France.

Valo Dantinne explains to the audience the work that he has been doing as gardener and trainer for the French association Terre et Humanisme. Through implementation of agroecological practices in the 600m² garden in the Ardèche region, acquired in the year 2000, the team of gardeners and volunteers of the association have **succeeded in bringing soil back to life and reinvigorating a productive piece of land with a large variety of crops**. Before 2000, the soil of the current garden was used as a vineyard, which resorted to heavy pesticide use and tilling, resulting in a very dry and eroded top soil in which plants were no longer able to grow their roots deep. **Within a few years, agro-ecological practices based on composting, cover cropping and use of green manure have allowed the soil to restructure,** which is visible through its dark colour and its humid, fresh and lumpy texture. This structure is the indisputable proof of a better management of microorganisms and iron in the soil, able to provide nutritive food production.

More about the work of Terre and Humanisme here

> Year after year the work done with volunteers in our agroecological garden has brought soil back to life. Now this heaven on earth provides healthy and tasty vegetables and fruits, according to our needs.'
>
> **Valo Dantinne**

Andrea Vettori,
Acting Head of Unit Agriculture, Forests and Soil, DG Environment

Andrea Vettori began by highlighting the main threats to soil as mentioned in the 2015 edition of the State of the Environment Report, published by the European Environment Agency (EEA). First, **'the ability of soil to deliver ecosystem services — in terms of food production, as biodiversity pools and as a regulator of gasses, water and nutrients — is under increasing pressure.**
Besides, the report says that a 'coherent soil policy at EU level would provide the framework to coordinate efforts to survey soil status adequately'. The report also explains **that land take is another cause of land degradation**, i.e soil sealing and use of agricultural land for energy or infrastructure. Land take concerns most of Europe and takes place in areas with the most fertile soil, and therefore constitutes an important threat for food

> Soil is about more than the soil framework directive'
> **Andrea Vettori**

security.

From 2000 to 2006, 0.26% of the production potential of arable land in the EU-27 was lost as a consequence of land take; over the period 1990–2006, this loss amounted to 0.81%.

In order to clarify the work of the Commission on this issue, Andrea Vettori reminded the audience that DG ENVI has a unit taking care of the soil issue. The proposal of a Soil Framework Directive (SFD) was withdrawn by the Commission in May 2014, after 8 years of negotiations and a blocking minority of 5 Member States in the Council. Despite the unsuccessful experience of the soil framework directive, the Commission continues to work on the basis of a Soil Thematic Strategy adopted in 2006 and based on 4 pillars: awareness raising, (events and publications), research (EU Funded research projects/ FP6-7 and Horizon 2020, LIFE/LIFE+, soil data collection), integration of soil issues into other policies and legislation (based on the commitment of the European Commission, following the withdrawal of the Soil Framework Directive, to reach the objective of soil protection and to examine how to best achieve it).

The European Commission still needs to widen stakeholders participation in the process

The EC is also working on soil in the framework of the 7th EAP. The latter sets out that by 2020: "land is managed sustainably in the Union, soil is adequately protected and the remediation of contaminated sites is well underway. On the other hand, under the 7th EAP, the Union and its Member States are committed to reflect as soon as possible on how soil quality issues could be addressed using a targeted and proportionate risk-based approach within a binding legal framework.

More concretely, in October 2015, the European Commission set up an expert group on Soil protection, with experts nominated by all EU Member States, who, over the next several years, will work on how to address the 7th EAP commitments on soil. Another ongoing action under the EU Soil Thematic Strategy is to make an inventory of soil protection measures in all EU Member States, and to start a Pilot Mapping and Assessment of Soil-related Ecosystem Services (MAES) project.

The EU also has an international mandate on soil protection, according to which the EU members states will have to reflect on how international objectives fit with EU policies.
There are **also considerations of the soil issue in the Circular economy package:** that which is taken from the biomass should go back to soil, to increase the organic matter of soil.

To achieve all these concrete actions, the European Commission still needs to widen stakeholder participation in the process, to include farmers, scientists, NGOs, urban planners and health professionals. Member States and civil society should then agree on the gaps at national level and on possible solutions at EU level to fill these gaps.

AWARENESS RAISING OPPORTUNITY

The conference was an unprecedented opportunity to share practical approaches from field actors of different EU countries, each working on the ground to preserve healthy living soils. In this panel, artists and representatives of civil society initiatives demonstrated how their work with communities on the ground is key to bring about change. They showcased how their voice and experience should be taken into account in the debate on EU soil related policies.

work with communities on the ground is key to bring about the change

Molly Scott-Cato,
Greens/EFA member of the Committee on Economic and Monetary Affairs (ECON) and of the Committee on Agriculture (AGRI).

> Making change is as much about the narratives, stories and myths that we have as it is about our knowledge of the world.'
>
> **Molly Scott-Cato**

Barbara Geiger alias Fräulein Brehm,

In homage to Alfred Brehm's imaginative spirit, Frollein Brehm wove vivid scientific knowledge into the story of the earthworm, a new King of animals.
Modern methods of field research and a personal view into the life of earthworms are central in Frollein's portrayals. Thanks to her welldocumented and theatrical story telling style, the **audience got closer to science than ever before!**

Time was too short that day and Frollein had to skip the part on procreation of the earthworm from her story... But she told us not to worry because she is available to tell the story of earthworms over and over again. She called on all those interested in the **importance of earthworms to our soils** to use her and her amazing energy! Want to raise your voice on healthy, living soil? Book Frollein, don't hesitate...

> Watch out and take care of the ground beneath your feet, so that it will remain a Garden of Eden for the King of Edaphon!'
>
> **Barbara Geiger**

Sharing how culture and agriculture are closely connected'

Miche Fabre Lewin and Flora Gathorne-Hardy from Touchstone collaborations presented the project 'Soil Culture at create - A recipe for soil guardianship'. Miche and Flora are ecological artists dedicated to re-connecting culture and agriculture through food, soil and ritual practices. They were invited to co-curate Soil Culture at Create, which took place in Bristol throughout July and August 2015, in celebration both of the UN International Year of Soils and of Bristol's year as European Green Capital.

At the conference, Miche and Flora shared the story of Soil Culture at Create with an inspiring movie. Miche and Flora's practice is rooted within an ethic and aesthetic of collaboration. Thanks to the soil shrine, made of local soil, which they created and installed for the conference, they illustrated the **connection between our soil and our souls**. Alongside a description of their project, this convivial environment invited **the senses, imagination, intuition and memory, and empowers us to act** at our scale, to protect and save our soils.

Miche Fabre Lewin and Flora Gathorne-Hardy

Damiano di Simine and Tiziano Cattaneo,
Project coordinators, People 4 Soil.

Damiano di Simine and Tiziano Cattaneo presented People4Soil, a coalition of NGOs, research institutes, farmers associations and environmental groups, that launched a European campaign aimed at introducing specific legislation for soil protection. People4Soil considers that existing EU policies in other areas are not sufficient to ensure an adequate level of protection for all soils in Europe. In 2016, they will launch a petition, to be promoted by EU citizens, asking for specific legislation on soil.

European citizens have the right to recommend EU legislation via the European Citizens' Initiative; a petition signed by a minimum of one million people. Through this European Citizens' Initiative, People4Soil expects to relaunch efforts towards an EU regulation on soil, after the withdrawal of the Commission's proposal in 2014. Damiano di Simine explains that such a regulation should recognize soil as a common good, essential for our lives. People4Soil wants the EU to take up the sustainable management of soils as a primary commitment.

We want Europe to recognise soil as a common good.'

Damiano di Simine

2ND PANEL:
HEALTHY SOILS, CLIMATE-FRIENDLY FOOD: RAISING OPPORTUNITIES FOR THE COP21

Bart Staes,
Greens/EFA member of the Committee on Environment, Public Health and Food Safety (ENVI)

> ‘The EU has paid limited attention to the contribution of more sustainable food production in responding to climate challenges.’
>
> **Bart Staes**

Teresa Anderson,
Policy Officer for Climate & Resilience for ActionAid International.

Teresa Anderson explained how ActionAid works closely with farmers in Asia and Africa, as well as with the UN, within the Climate negotiations. The organisation gives input to the climate talks, based on its experience with farmers who work with agroecology and improve the capacity of the soil, in a context of constant climate adaptation. Teresa explained how soil has a massive role to play in adaptation. We should not be talking about using soil to reach mitigation targets due to the reversible nature of soil.

On the other hand, **the potential of agroecology is vital for climate adaptation**.

Research conducted with scientists and governmental experts has confirmed that agroecological techniques (composting, mulching, greater seed diversity, agroforestry) are the answer for climate adaptation. In this regard, the concept of Climate Smart Agriculture (CSA), developed by the FAO and the World Bank, is potentially positive but also quite controversial. CSA entails 3 objectives, aiming to preserve soil health in a changing climate: adaptation, mitigation and increasing yields. However, **there is no clear definition, criteria or distinctions on what is and what is not CSA**, and how it can benefit food systems facing climate change. The Global Alliance on Climate Smart Agriculture (GACSA) was launched in September 2014. It includes 20 member countries, some NGOs and farmers’ organisations, but also agribusiness corporations which defend sustainable intensification. **60% of corporations in the alliance are fertiliser companies** such as Syngenta and Monsanto, and the

alliance also includes corporations such as McDonald's and Wallmart.
Agribusinesses use the term 'CSA' incorrectly, without questioning the use of synthetic fertilisers which limit carbon capture in the soil. As members of the alliance, the fertiliser industry is able to plead for solutions and can therefore claim to be part of the solution. For instance, the fertiliser industry proclaims their ambition to reduce slightly the amount of emissions per litre of fertiliser and presents this claim as an improvement and thus solution towards climate change concerns. Teresa Anderson firmly warned us against this greenwashing rhetoric, which actually reflects the crackdown on fertilisers.

Teresa Anderson pointed out the urgent need to prevent these deviations coming from industry, and to **stop presenting fertilisers as a solution to climate change**. In fact, accepting this so-called solution could increase the market access of fertiliser industries to some countries in Africa and Asia for example, which would be completely perverse from a climate and agriculture point of view.

> We should really be cracking down on fertilisers as a solution to climate change, but the Climate Smart Agriculture rhetoric is being used by the fertiliser industry to avoid that crackdown.'
> **Teresa Anderson**

But Teresa Anderson also explained that it is not easy to reject CSA altogether, as there are also many good initiatives coming from it. Some organic organisations are calling themselves climate smart; the French government has recently joined the GACSA, stating that it will try to push the CSA debate towards agroecology. Some organisations have also joined the Alliance to promote the true uses of this term. But, as the process began with the involvement of agro-industry, if we redefine the term now, said Teresa Anderson, it will nevertheless continue to be used by industry as it sees fit.

In other terms, Teresa Anderson said that CSA complicates much of what ActionAid and similar organisations wish to achieve for soil in climate negotiations.

> *"Soils really are about saving planet earth, but also saving the planet's earth."*

Unfortunately, the issue of **fertiliser use was not on the table during COP21 negotiations, and neither was agroecology**.
Teresa Anderson concluded that COP21 was not the right place to expect solutions for agriculture. The right place and the right ways to incentivise soil protection need to be found, but these were not in Paris.
Teresa concluding by saying: **'Soils really are about saving planet earth, but also saving the planet's earth.'**
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Hans Joachim Mautschke,
Organic farmer managing the Bioland farm "Gut Krauscha", Germany.

> There is no waste in nature (...) Any kind of organic waste is used several times over.'
> **Hans Joachim Mautschke**

H.J Mautschke runs the Gut Krauscha-Bioland farm in East Germany.
He implements climate-friendly practices on his farm as part of the EU-funded LIFE project SOLMACC (managed by IFOAM EU), in which 12 organic farms in Sweden, Germany and Italy implement four different climate-friendly practices. Mr. Mautschke explained his farm's role in the SOLMACC project, which works throughout different climate zones. They apply innovative techniques that demonstrate concretely how soil and climate benefit from organic farming. In this respect, H.J Mautschke explained how, in his 40 ha farm, organic farming is an essential tool to ease humus accumulation, provide higher nitrogen fixation of legumes, reduce soil erosion and greenhouse gases and, in the longer term, increase carbon stocks in soil and plant mass. Originally the soil in the area was quite poor and sandy brown, with cereals as the traditional crops. But the Bioland farm has since decided to go for innovative methods, and focuses in particular on 3 practices which enhance climate protection: firstly, crop rotation, with use of a high proportion of clover (clover was always used as inter-crop in the area); secondly, agroforestry, to preserve soil quality and optimise compost management; and thirdly, closing the cycle efficiently by recovering areas for grazing and for use in arable land.

> Fertilisers are not a problem as such; it is the way they are used that might turn into a problem.'
> **Moujahed Achouri**

Moujahed Achour
Director Land & Water Division, Food and Agriculture Organisation (FAO)

Moujahed Achouri stressed that 95% of our food is coming from soils. He added that, according to scientists, soil has not been on the agenda for the last 20 years, while it is increasingly endangered, and so he believes it is now good news to have it back on the political agenda.
He explained the FAO's work and strategy in the Global Soil Partnership. In this regard, the FAO supports the '4 for 1000' initiative, launched in France at the COP21. The overall objective of this initiative is to reach a 4‰ annual increase in soil carbon stock that can store 75 % of GHG emissions.
Following his presentation, Mr Achouri answered questions from the audience, in particular on the use of fertilisers in Africa to rebuild soils, and on Climate Smart Agriculture and the FAO's view on whether industry might highjack the initiative.
On the use of fertilisers Mr Achouri considered that fertilisers are not a problem per se; rather it is the way they are used that might turn into a problem. Most of the time, the information on how much product should be used and when, and the kind of product being used is missing. It is a lack of information that should be addressed, not the use of fertilisers as such.
On CSA, Mr Achouri explained that the FAO sees this initiative as a way to put 'intelligence' into agricultural practices to counter climate change. CSA is a way to include agriculture as a solution for climate change, rather than a problem.

Jenny Wong,
United Nations Framework Convention on Climate Change (UNFCCC)

It is very important to gather the most successful examples of soil management which we can share as solutions to improve work in the field. In her presentation, Jenny Wong explained that the **COP21 would not come up with solutions on soil management, but that there are other avenues within the UN process to talk about soil and land use issues.**

At the level of the UNFCCC, agriculture is under consideration in a subsidiary body - the Subsidary Body for Scientific and Technological Advice (SBSTA). It supports the work of the Conference of the Parties (COP) and the Conference and Meeting of the Parties of the Kyoto protocol (CMP), through the provision of timely information and advice on scientific technological matters as they relate to the Convention or the Kyoto Protocol.

Jenny Wong stressed that the decision-making process in this body is long and difficult, and it may take years for parties to come up with an internationally agreed package of methodological and financial guidance on how a country can implement actions to reduce emissions.

The SBSTA focuses more on adaptation aspects, with parties prioritising the exchange of technical information and scientific development.

Jenny Wong reminded the audience that, this year, the UNFCCC held 2 workshops on vulnerability assessment and on the importance of early warning systems, particularly for farmers in developing countries, to examine how farmers actually cope with the impacts of climate change, and adapt and build better resilience to extreme weather events.

As contribution towards Paris, there was a process of technical expert meetings, i.e a technical examination process which showcased activities and possible solutions through international cooperation. In these meetings, a broad range of actors reported their actions on adaptation and mitigation projects. According to Mrs Wong, this kind of meeting helps governments and stakeholders to identify contributions towards the solutions. In 2014, one such meeting was dedicated to land use, touching upon agriculture as part of the discussion. In this regard, Jenny Wong stressed that there is room for further discussion on land use as a sector that could deliver a high mitigation and adaptation potential.

Jenny Wong reminded us that all Annex 1 countries are required to report annual emissions and sinks of greenhouse gases under the UNFCCC. Within this exercise, they report on agriculture, land use and forestry. One field of the report is soil, but, according to Mrs Wong, many countries find it difficult to report on soil, as changes in soils can take a long time to manifest themselves in monitoring. It is an even greater challenge for developing countries to report on soil as a carbon pool, as they have difficulties in reporting on soil's above-ground biomass, let alone below-ground biomass. The challenge is to help them to report better on the carbon pools of which soil is a part. Mrs Wong ended by saying that it is very important to gather the most successful examples of soil management from different countries and to share them, as solutions to improve work in the field.

> It is very important to gather the most successful examples of soil management which we can share as solutions to improve work in the field'
> **Jenny Wong**

Conclusions

Joszi Smeets and Michael Hammel gave the final words at this event. As an encounter between 2 generations talking about soil, they expressed their views following the discussion that took place.

> Youth don't know about soil but they would care if they knew...It takes a different approach to reach young people.....Give them the freedom and trust to take action'

Joszi Smeets

In her inspiring speech, Joszi Smeets stressed that our living soil and the relationship that we have with our soil is one of the most deeply-rooted issues of our time. She pointed out that soil is at the origin of the most complex ecological but also social issues of our time: **when one does not have any fertile land or hopeful future, sometimes the only viable alternative is to flee to the extremes.**

Joszi Smeets also highlighted how young people do not necessarily know a lot about soil, but they would care if they knew. She addressed the audience and speakers, stressing that if we want young generations included in this soil discussion, we need a different approach to reach them. Young people are more visual, they are faster, and they wish to have the freedom to take action. They will also be more positive in their approach to soil, as they need motivation to overcome the difficult context and situation for the state of our soils today. Finally, Joszi highlighted how much **young people are unafraid of building alliances with so-called enemies** and are more likely to confront views and find potential common ground with stakeholders who do not necessarily share the same views.

Michael Hammel, took the floor, to highlight how much Joszi's speech reflected that the torch has been passed to future generations.

Michael recalled that **we have lost half our fertile soil in the last 150 years** due to soil erosion. According to Michael Hamell, in the 20 years since the European Commission started its work on protection of soil at the request of the European Parliament, **we have lost the potential of 5 million tonnes of grain production through the taking of land**. This loss reflects how Europe has failed to join up the issues of urban planning and agriculture in its effort to protect soil. The link between the two has not been stressed enough.

Michael quoted the definition of modern agriculture by Al Bartlett, in 1978: '**Modern agriculture is the use of land to convert petroleum to food**'

But today land as well as petroleum is under threat. This should be sufficient reason for concern about the current logic behind so-called modern agriculture.

The other side of the coin, the alternative to this declining model is agroecological agriculture and the building up of carbon sinks across the world within the context of adapting to and mitigating climate change.

But how can we then prove that the agroecological route and the building-up of carbon in soil is a durable solution that will feed the world? If we wish to win this battle, we need to make sure that there is a broad understanding that what we are doing for the protection of soil and land is the right thing. **We need to change the way agriculture and land use have developed and the general perception of it**.

Michael stressed that in his work in DG ENVI, he has not been encouraged to do so, and it seems that, in their view, this urgency has still not arisen

This is why Michael believes that now the next step is to spread the message, to build conviction with politicians at all levels, so that they cannot remain careless about the future of our soil, not only for our food but overall, for the life of future generations on this planet.

> The next step is to build the conviction of politicians locally, nationally and internationally, that soil is so important that we cannot ignore it'.
>
> **Michael Hamell**

SPEAKERS' BIOGRAPHIES

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