

Nature-based solutions to increase carbon sinks on land



Thursday 21st September 2023, 13:15 – 15:00 CEST

Hosted by MEP Elsi Katainen

Vice-Chair of the European Parliament Intergroup on “Climate Change, Biodiversity and Sustainable Development”

Event moderated by **Lene Topp**, Science for Policy expert

Speakers:

- **MEP Elsi Katainen**
- **Werner Kutsch**, Director General, ICOS
- **Kaj Granholm**, Project Manager, Baltic Sea Action Group
- **Claire Chenu**, Research Director, INRAE, and Professor of Soil Science at Agroparistech
- **Jari Liski**, Research Professor & Chief Scientist at the Finnish Meteorological Institute
- **Christian Holzleitner**, Head of Unit “Low Carbon Solutions: Land Economy & Carbon Removals”, DG CLIMA, European Commission
- **Nicola Di Virgilio**, Policy Officer, DG AGRI, European Commission
- **Alex Mason**, Head of Climate & Energy, WWF Europe
- **Gary Healy**, Director on Regulatory Affairs, Coillte, EUSTAFOR Member

Opening Remarks

MEP Elsi Katainen

“Lately, carbon removals and sustainable soil management have been in the centre of huge interest where farmers and forest owners can play a significant role in reducing the effects of climate change by catching carbon from the atmosphere and returning it to the soil.”

As an opening statement, **MEP Elsi Katainen** recalled the importance of **carbon removal** and **sustainable soil management**, not only for foresters and farmers, but for the climate, environment and biodiversity. She stated that, more than a challenge, is an **opportunity for the economy of rural areas**. But, she also reminded that for the EU’s work to be effective, it is necessary to be accompanied by **evidence and high-quality data**, so that a reliable certification framework for carbon removals can be implemented.

Werner Kutsch, Director General, ICOS

“The problem is the phantom of the atmosphere, and that is CO2.”

Mr Werner Kutsch reminds everyone the danger that the world faces from CO₂, an invisible and tasteless gas. Through the ICOS, he states the importance of having sensors everywhere, to measure said gas, but also the importance of this **interface, between scientists and politicians**. He also recalls the necessity of this **monitorisation** for both sides of this interface.

Kaj Granholm, Project Manager, Baltic Sea Action Group

“Through working with farmers and landowners for the past 15 years, we have discovered that for multi-benefit solutions, we need to turn our attention to the soil.”

Mr Kaj Granholm states the importance of **nature-based economies**, such as agriculture and forestry, to nature-based climate action, as well as the importance of soil, and carbon farming practices. He also reminds everyone about the importance and necessity of science also for farmers and landowners.

Scientific Presentations

“How to make nature-based solutions for carbon removal on land a success for climate, environment and farmers” by Claire Chenu

“European soils are being degraded. The most recent estimate is that 60% of European soils are not healthy, not able to provide ecosystem services”

Ms. Chenu started her intervention by mentioning the importance of **preserving and increasing tree biomass and soil organic carbon stocks**. These carbon stocks depend on a balance between the input and output of carbon in the soil. She states that there are a multitude of options that allow for the storage of a significant amount of CO₂ in the soil, but that quantity is **expensive**, and therefore needs to be subsidized. She also highlights the importance of other greenhouse gases, and further down, the importance of soil organic matter to soil health. But she also warns about **adverse trade-offs**. Lastly, she focuses on the impact on farmers, stating that the increase in soil organic matter means an increase in soil yields, but also that an increase in carbon stocks means a stabler yield. She identifies the challenge on how to **reward pioneers**. She concludes by saying that nature-based carbon removal methods are a **win-win solution**, both for farmers and the environment and climate change.

“Towards a Unified Estimation (MRV) System for Land Carbon and Greenhouse Gas Fluxes: The Importance of Integrating Field and Satellite Measurements with Modelling” by Jari Liski

“The way forward is to integrate the different quantification methods, the different measurements methods, and the different modelling approaches into a digital system.”

Mr. Liski splits his speech in three parts, starting with understanding what does the scientific community needs to estimate, then which methods does it have to improve soil health and carbon removal, and finally introducing the way forward. On the first part, he highlights the importance of **capturing other greenhouse gases**, what is the improvement from carbon capture, how long does it last, and how can carbon removal methods be used with different stakeholders. Moving to the methods available, he enumerates the several issues found for each method, from **direct measurements, to satellite and remote measurements, to emission factor and to process-based modelling**. Finally, he lists several new approaches to integrate and develop the studies done by the FMI with the farmers, to gather more accurate data.

Q&A session

Mr. Liski is asked how to improve the **remote sensing models** to account for loss of carbon, to which he agrees with the question, stating that remote sensing doesn't account for the output of carbon as well as it does the input, but reinforces the idea that the system itself isn't useless in and of itself. **MEP Elsi Katainen** asked **Ms. Chenu** about the health of the soils, and if there's **area differences in the EU map**. She replies positively, by saying that there are regional differences that need to be accounted for. She mentions the example of **wind erosion**, that is most severe on the Mediterranean countries, while **water erosion** mostly affects Western and Mediterranean Europe, **soil compaction** is most concerning in Eastern Europe, **soil "ceiling"** is mostly around big cities, and loss of organic matter is mostly affecting cropland. Finally, **Mr. Liski** is asked about the using of **VHR imagery**, **LPIS**, and whether **geo-tech imagery** would be beneficial in his research. He replies that, through the FMI, they look for several possibilities that can provide useful information, but they haven't been used.

Panel discussion

Speakers that took part in the panel discussion:

- **Christian Holzleitner**, Head of Unit "Low Carbon Solutions: Land Economy & Carbon Removals", DG CLIMA, European Commission
- **Nicola Di Virgilio**, Policy Officer, DG AGRI, European Commission
- **Kaj Granholm**, Project Manager, Baltic Sea Action Group
- **Alex Mason**, Head of Climate & Energy, WWF Europe
- **Gary Healy**, Director on Regulatory Affairs, Coillte, EUSTAFOR Member

The panel discussion started with the intervention of **Christian Holzleitner** who stated that carbon farming is an essential part of the carbon removal certification, but that we need to look for opportunities that offer us **triple-benefit**, that being, opportunities that are good for climate, good for biodiversity, and good for farmers and local economies. He also highlights the importance of **empowering the farmers** to take up carbon farming, since they have the best knowledge of their land. He mentions that there are two important enabling factors to make that happen. The first one is **monitoring and reporting verification**, that means going to the level of the farm and forest. He also mentions about the importance of **bringing the price down**, and providing advice to farmers, to take measures into action.

The next speaker is **Nicola Di Virgilio** who shared the views of DG AGRI, and the role of the **CAP** in implementing nature-based solutions. He stated that all MS recognized the importance of increasing soil carbon stock and soil organic carbon in their CAP Strategic Plans and planned different interventions, also reflecting different needs. However, he mentions that the important thing is not only practice implementation, but also the

implementation of measure for innovation, for cooperation, for investments, for farm advisory knowledge transfer. He states that from a first analysis, through CAP, more than 35% of European agricultural area will receive support for carbon farming practices beyond conditionality. Finally, he says that there are more than 120 interventions planned to contribute towards carbon farming.

Following him, it's the time for the intervention of **Alex Mason**, who recalls the importance of this subject to the so-called "**twin crisis**" of climate change and biodiversity, as well as the importance of establishing carbon removal as soon as possible, to tackle the climate emergency. But he argues that you can't compare ton for ton the removal of carbon in the land-use sector with fossil fuel emissions or other greenhouse gas emissions. He thinks that we need to **avoid funding programmes that undermine climate action**, such as **harvesting trees**, which he states that there isn't good scientific evidence supporting it. He also supports that carbon farming shouldn't result in credits that can be bought by other companies to avoid bringing down their own emissions. Financially, he believes that farmers, foresters and land-owners should be rewarded for adopting environmental and climate friendly practices. Lastly, on the **CAP**, where he states the EU spends a third of its budget on it, a large fraction goes to large commercial farms, which he argues don't need it, instead focusing on **climate and biodiversity friendly farming**.

He is followed by **Kaj Granholm**, who restarts his speech by saying that it's important to connect carbon removal with **productive agriculture**. This carbon removal should be connected with overall sustainability and multiple gains, carbon sinking is just a co-benefit. He also hopes that the **CAP will be reviewed and reformed**, and turned into something more flexible and effective. He highlights that all this work should be done in a holistic way, taking other metrics, as well as biodiversity, into account. Finally, he ends his speech with an example of a dairy chain aiming for carbon neutrality by 2035, that took carbon farming as a real measure to combat its own emissions.

Finally, the last intervention is done by **Gary Healy**, who recognises forestry as a potential carbon sink, but warns about the policy decided by the EP. He states that we need to look at fossil fuel emitters, and make sure they reduce emissions, and he warns about better carbon advocacy to **prevent greenwashing**. He moves on to the importance of **increasing the level of forestation**, but says that the **use of land is becoming a political issue**. He also mentions that we have a carbon sink around Europe, however, is not growing as it is expected, and that needs to be addressed. He goes on to state his difference from **Alex Mason** as he views **harvesting forests as necessary** to prevent carbon emission. Finally, he underscores once again the importance of forest owners and farmers, stating their deep knowledge of their own land, as each country has their own challenges.

Q&A session

The general panel is asked about the problems around the **failure of incentives**. The questioner highlights offsetting as a general failure, given that the academic information is ignored. She then asks the panel about certifying activities in the problematic forest restoration, and the support for a **forest monitoring law**, similar to an aforementioned soil monitoring law. **Mr. Healy** agrees with the necessity of getting better at carbon monitoring, but warn of duplications when it comes to a forest monitoring law, as plenty of member-states already have individual laws monitoring forests. **Mr. Di Virgilio** highlights the importance of monitoring and of bringing down the cost for said monitoring. **Mr. Kutsch** pushes for more monitoring in-between, and warns about the **lack of evidence** in the atmosphere about the decrease of CO₂. One question from the audience highlights a **“triple crisis”**, instead of a “double crisis”, with the addition of **pollution**, and warns about a **dangerous trade-off between nitrogen and CO₂**, making pollution worse. **Ms. Chenu** confirms this danger, calling for an integrative approach, but saying it would be more complex. **Mr. Granholm** also agrees with this question, stating that he prefers to talk about **regenerative agriculture** instead of carbon farming, which supports a more holistic transition in food systems, aligning also with circular economy. The last question mentions the importance of **financing pioneers**, whether they are farmers or forest-owners, and asks if there are any models on how this funding could or would occur. **Mr. Mason** states that there are already some **national models**, but he reinforces his concern for the establishing of a **market-based system**, that would allow for the delay of **decarbonisation of aviation and shipping**. **He also responds to Mr. Healy, saying that the EU shouldn't be encouraging harvesting** forests as a climate solution, as it is unscientific.

Closing remarks

As closing remarks, **MEP Elsi Katainen** underlined the importance of the event on the identification of the **challenges** behind carbon removal, but also plenty of **potential**, that should be fully exploited in the legislation. She also highlighted the importance of involving farmers and land-owners in crafting said legislation, but also doing the necessary **research alongside the scientific community**.