

Food security and climate change: “4 per 1000” initiative new tangible global challenges for the soil

Conference report - Summary

Poitiers, France

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Introduction

This first international conference <https://symposium.inra.fr/4p1000> was organized in collaboration with the university of Poitiers France. It was held explicitly under the auspices of the “4per1000” initiative, which was launched in 2015 as a global initiative to promote the adoption of economically viable and ecologically sound agricultural practices in order to increase soil carbon sequestration. Management for soil organic carbon addresses at the same time several sustainable development goals related to climate change and food security. However, the goal here was to de-emphasize

the “4per1000” target and related debates—as we have moved past that. “4per1000” is an initiative and an initiative imply actions that need to be made by grasping the politically possible at every step, by turning countless, diverse and sometimes conflicting interests to a common purpose. In this regard, the conference aimed in the spirit of multistakeholder collaboration to build partnerships for soil sustainability and resilience, promote innovation and knowledge exchange, inspire people, build networks and ensure that appropriate solutions are put into practices under the framework of the “4per1000” initiative.



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The two-and-half-day meeting was attended by 150 participants that represented major research organization, universities, policymakers, private companies, associations/NGOs and projects from all the regions of the world. The conference

sessions/round tables alongside with high-profile plenary speakers provided a platform for exchange about the challenges to achieve the “4per1000” goal, including the current scientific and societal barriers and frontiers. As such, the conference enabled a very lively and constructive debate about the rationale,

critical issues, as well as realistic opportunities and challenges for the implementation of this initiative in France, Europe and the World. In view of the criticisms raised after the launch of the initiative, this conference was extremely useful for the community to find common ground. The output of this conference should better equip the actors for the challenges ahead, upscale solutions and take the initial steps towards implementing the 4p1000 initiative. On behalf of organizing committee Mr Abad Chabbi (Chair of the conference) expressed thanks to all sponsoring partners for their cooperation in making this conference a reality, as part of the efforts to support, not only the “4per1000” initiative but also the inclusive implementation of the SDGs.

Opening

An opening statement was given by the former French minister of agriculture - vice president of the “4per1000”, Mr. Stephane Le Foll introducing the “4per1000” initiative and stressing that this initiative wants agriculture to be part of the solution to fight against global warming. Agriculture is regularly identified as a source of greenhouse gas emissions and for facilitating soil degradation. He acknowledged also that scientific controversy is often at the heart of the evolution of scientific knowledge over the long term, but it must not prevent immediate action because there is urgency. He warned that time is not on our side. Decisions need to be taken, perhaps in an incremental manner, but most certainly with firm steps and unwavering resolve.

The PDG of INRA Mr. Philippe Mauguin called for concrete actions and the necessity to work as partners across sectors to implement national and international policies in which soil and soil carbon sequestration should be much more mainstreamed now than it has been.

Last but not least the state counselor in extraordinary service, Ms. Marion Guillou suggested to use the “4per1000” opportunities as a proactive tool in the area of climate change and land use, in particular to strengthen the ecological and energy transitions of the 21st century and meet both the research challenges and the expectations of governments and

society in a context of global challenges. All speakers of the opening session agreed that actions towards soil organic C stock protection increase must be maintained and/or established using well-designed agricultural practices.

Plenaries, parallel session and round tables discussion

Although speakers asserted from various perspectives, they all stressed the relevance of the initiative and the need to make rapid progress, establishing a concrete roadmap. A very fruitful debate emerged from numerous interventions and statements by stakeholders and country representatives. The discussion globally focused on changing storing practices, the environmental cost of storing carbon and its residence time, tools and methods to assess real time C changes, and the co-benefits of carbon storage and its links to food security. We also discussed methods of valuing C, interactions between politics, economics and science, the “4per1000” controversy.

Likewise, the discussion emphasized the need to consider the specificities of each region and to be inclusive of all major stakeholders for a successful implementation of the initiative. The need for a global soil information service that could provide the data and analytical capabilities to support a scalable quantification infrastructure to measure, monitor, verify and forecast soil C stock changes and greenhouse emissions to support climate mitigation policies was emphasized.

Though, the majority of scientist consider that “4 per 1000” is an efficient catchphrase that puts the mitigating potential of soil carbon on the global agenda, others still believe that soil organic carbon sequestration is a super wicked problem and that implementation of “4per1000” actions is going to be hard work. Everyone is aware about that difficulty. Thus, a call to introduce an action plan that gathers the most successful examples of soil management as tangible examples for the “4per1000” initiative to be share as solutions to improve the C storage and sequestration. This implies a need to change the way to do agriculture and the general perception of it. But

it is also necessary to inform politicians and the general public about the need to care for our soils, not only to assure food security but overall, for the life of future generations on this planet.

Indeed, agricultural practices that increase soil C also provide valuable co-benefits, however, land managers require incentives to change their current management practices to those that sequester additional organic C and the economic potential to increase soil C sequestration is lower than the technical potential. Economic consideration and factors that are important for the design of policy incentives, and supporting models, that examine producer decisions to change management practices and sequester additional organic C were discussed substantially. It was strongly suggested that incentives are required to scale up organic C sequestration in agriculture through different policies/voluntary measures or via incentivizing private behavior changes for broad social good while considering adoption barriers/social as well as economics.

In summary there was a strong recommendation to invest and consider the soil as business case namely through alternative practices (e.g agroecology, regenerative agriculture...). It emphasized the

necessity to invest in training farmers and speed up technological development strategies towards fossil fuel free agriculture, restoring soil health and sequestering C in soils as global imperatives. In addition, effective policies that incentivize farmers to adopt best practices need to be established, while informing them about the co-benefits of soil carbon sequestration. There was also strong support for the creation of a new virtual 'soils information system', that builds upon existing foundational pieces, but with greatly expanded content, consistency and access, that is global in scope.

All delegates agreed to give the "4per1000" as global initiative the chance to prove itself and to develop soil organic carbon sequestering practices as an alternative on a large scale. Linked to this belief is the power exercised upon decision-making by large players. Bringing together these pieces and initiating strategic research efforts to fill critical gaps are key elements to achieving the "4per1000's" goal of CO₂ removal at globally meaningful scales while ensuring agroecosystems resilience and food security. It's a big challenge that demands positivity and optimism that can go a long way in meeting the substantial challenges, which face us all.

***Abad Chabbi – Conference Chair –
on behalf the organizing committee.***