

RESOURCE USE (ADAPTATION AND MITIGATION)

Agro-environment and climate change

KEYNOTE SPEAKER

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CHALLENGES

- Changing weather conditions
- Increased pressure on land and water resources
- Challenge to feed the world
- Changed biodiversity: Invasive species, New pests
- Different challenges in different regions
- Awareness!
- New knowledge
- Innovative solutions - Improved techniques and varieties
- Innovative policy design
- Role of governments

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PRESENTATION

Climate change will bring challenges. There will be more extreme weather; it can be too dry or too wet, as well as gradual permanent changes. This might bring increased pressure on land and water resources. Additionally, we will face difficulties to feed the world as the demand for food increases.

A changed climate will also affect the biodiversity. The plants and animals that we are used to have around us and try to preserve in order to secure the biodiversity, will face changed conditions and many will not survive in this new climate. Instead, other species will arrive – for good and bad. Invasive species can out-conquer native varieties, further deteriorating the biodiversity and possibly threatening the important eco-system services, such as pollination. Locally, new pest will arrive, affecting out agricultural production.

Facing these challenges, there is a need to increase production, without increasing pressure on land/water resources and biodiversity, as well as the flexibility for handling variations. We need to produce more using fewer resources in order to decrease the impact on climate. Regarding the biodiversity, the challenges are on different scales. On a global scale, there is a need to decrease the pressure on agricultural land and to get innovations regarding how to increase yields and resource efficiency. On a landscape and field scale, there is a need to target innovation and measures to off-set negative impact of intensification (in intensive plain land) or land abandonment (in natural pastures). However, there are also possibilities associated with the climate change. New varieties of plants and animals will be available in some regions and many European consumers are willing to pay for climate friendly products.

Facing these challenges and opportunities, we need to understand how innovativeness can be encouraged and spread across Europe. How can we design measures and legislations that hinder the negative effects of climate change and at the same time provide the innovators with possibilities to develop their ideas? How can we stimulate collective learning within the EU and make sure that our regulations stimulate innovative solutions rather than preserve older, damaging techniques? How can we integrate collection of public good effects from “grass-root innovation”, e.g. farmers trying new CO₂-saving/sink techniques, and can we allow for “failure” when practitioners are trying? Does legislation allow for innovation - How do we innovate the legislation?

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MAIN OUTCOMES FROM THE DISCUSSIONS

In the session, a number of innovative projects were presented. During the following discussions, a common theme was the need to have a multi-actor approach when testing and spreading innovative solutions. In order for new ideas and solutions to get accepted and applied, a system approach involving many actors in the innovation system, such as farmers, researchers and advisory services, needs to be used. Networks are important tools for sharing and developing ideas. The role of ENRD was stressed as well as the need for cross-border and cross-project co-operation. Knowledge sharing could be done through "crowd sourcing".

"There is a need for knowledge based agricultural policy. Also, new technical solutions could replace physical audits."

A need of education of all citizens regarding the climate impact of products was foreseen. A consumer climate label could help consumers to make more climate-friendly decisions.

New technologies and farming practises were put forward as solutions to the challenges we face due to climate change. Here, the digitalization of the agricultural sector brings opportunities as it will provide tools for better farmer decision-making, resulting in higher quantity and quality yields, save labour costs, and reduce the need for travelling. However, it is important to have the needs of the end-user in focus while developing these digital solutions. The digitalization can spur the development in many ways. It gives opportunities for creating virtual environments, in one shared system containing data and written outputs available to all stakeholders, where scientific and practical outcomes and experiences can be spread and discussed. Another opportunity is the development of data collection using micro sensors.



Using the data and knowledge being available through the digitalization, remote farmer decision-making and system tools, based on own farm data regarding products and production systems, can be developed. On a more general level, the increased collection of data enables improved life-cycle analysis output on the efficiency of mitigation and adaptation of the farm activities. Put together, all this can improve the resilience of the farms. But, there are no opportunities if there is no broadband!!

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INNOVATION PROJECTS

At this thematic session, each participant assisted to the presentation of 3 of the following posters:

- **BIOINVENT** - Generic bio-inventory of functional soil microbial diversity in permanent grassland ecosystems across management and climate gradients
- **Evaluation of carbon footprint** in relation to highly sustainable viticultural systems
- **GOEfluentes** - Livestock effluents: strategic approach towards agronomic and energetic valorization of flows in the farming activity
- **GO SOLO** - Development of an expedited low-cost soil organic matter evaluation method for sown biodiverse pastures
- **HNV-Link** - Thematic network about high-nature value farming
- **Inno4Grass**
- **Low-carbon wine** - Sustainable wine producing techniques emitting less GHG (Alentejo region)
- **New management practices in rainfed olive orchards** - strategies for mitigation and adaptation to climate change
- **VleesVEEPAS** - Emission reduction through good management in beef cattle

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