

SMARTGREEN

Big Data and eco-innovative resource use in the North Sea Region greenhouse industry - greening the growth in the horticultural production

Local fresh food production

Greenhouse production of fresh fruit, vegetables and ornamentals is a successful, innovative component of the North Sea Region (NSR) economy with an output of €9 billions annually, and directly employing more than 500.000 persons. It embraces more than 10,000 very diverse SMEs with a high value supply chain. It provides sustainable and healthy food to consumers.

However, the producers in the NSR are facing challenges, such as high reliance on energy, water and a low use of renewable energy in some areas of the region.

The Greenhouse production systems in NSR has many common issues, but also high diversity. The energy supply and management systems differ and so does the organization, the type and the sizes of the SME's.

Reduced resource use is needed to improve the productivity

The importance of the reduced CO₂ emission is even more important as EU has suggested specific goals for a reduced CO₂ emission that might be a challenge to reach for the greenhouse industry.

The demand for new and improved knowledge to be used to reduce energy use and costs to green the industry has not changed.

SMARTGREEN aims to accelerate sustainable green economic growth in NSR greenhouse industries whilst generating significant environmental benefits: less pollution, lower emissions of CO₂ (15%) and less use of resources and potentially also increase in the local production due to shorter production times (5%). Knowledge transfer in NSR is needed to obtain the political goal of increasing the productivity and reduce resource use.

New technology to greenhouse production

Eco-innovations in new or improved control methods/services are needed to reduce the use of resources (energy, water and chemicals) and to decrease the CO₂ emission. However the technologies have to be deployed together in a holistic way in order to achieve the maximal Eco-Innovation potential. For instance the move to LED light requires a complete change in greenhouse heating strategy but is also the point of entry to new production systems – multilayer farming / urban farming, which moves the production to towns and reduce the time from harvest to consumption.

SMARTGREEN will also use novel Big Data analysis of climate and production data to pinpoint unnecessary energy use and to improve the climate control. This will, combined with research and practical demonstrations in commercial greenhouses, to secure a leap towards a greener and energy efficient production system.

Connecting experts and industry all around the NorthSea

SMARTGREEN connects experienced research groups, leading SME's in each country to promote the greening of the NSR. By fostering innovative eco-enterprises, we can ensure greener growth, whilst reducing the environmental foot print: less pollution, lower emissions and longer-lasting use of resources.

The transnational nature of **SMARTGREEN** will stimulate the development and adoption of eco-friendly and low-carbon products, green services and processes in NSR greenhouse industry.

www.northsearegion.eu/smartgreen

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