

Could 'saline agriculture' be the future of coastal farming?

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Credit: University of Lincoln

One of Europe's leading climate change experts detailed the extreme challenges facing farmers around the world at the latest in a series of industry briefings at the University of Lincoln, UK.

Professor Pier Vellinga, one of the co-founders and first Bureau Members of the Intergovernmental Panel on Climate Change (IPCC), joined a team of researchers from across the University's Lincoln Institute for Agri-food Technology (LIAT) to examine the water and flooding-related challenges facing the agricultural industry, and possible solutions to solve these pressing problems.

These solutions could include 'saline agriculture' – the process of adapting farming techniques to salted soils – which could prove key for

coastal farms at risk of flooding, and is a new area of focus for researchers at the University of Lincoln.

Since 1996, Professor Pier Vellinga has been an advisor to the EU commission, recently taking on the role of vice chairman of the Advisory Committee on Green Growth for Europe as part of the EU's Directorate General for Research and Innovation. He is a member of the group which works to protect Venice and its lagoon, and is also engaged as scientific advisor in the development of climate policies in Vietnam, Indonesia, California and Florida.

Professor Vellinga joined Wageningen University and Research Centre in the Netherlands 10 years ago as a Professor in Climate Change, Water and Flood Safety. In 2014 he was appointed to the board of the Wadden Academy – a think tank that advises on research and policies regarding the management of the World Heritage Site the Wadden Sea, which runs along the Dutch, German and Danish North Sea coast.

As keynote speaker at the University of Lincoln event, hosted at its National Centre for Food Manufacturing in Holbeach, Lincolnshire, Professor Vellinga discussed 'North Sea coastal zone agriculture in times of [sea level rise](#)'. He presented key statistics on the rise in global temperature, the loss of ice mass from both Greenland and Antarctica, and the sea level deviation over recent years, before examining some of the successful tactics used by the Netherlands to defend at-risk coastlines and the farms that line them. These include so-called 'super-dikes', creating new barriers and islands, and developments in saline agriculture – for example, making existing fresh water crops more salt-tolerant through a process of breeding and selection.

Dr Gary Bosworth, Deputy Head of the School of Geography at the University of Lincoln, also spoke at the event, which was attended by invited guests from the region's food and farming industries. Dr

Bosworth, a specialist in rural development and the creation of sustainable and 'liveable' rural communities, introduced 'SalFar' - a new European research project which will investigate opportunities for innovative agriculture that can adapt to [climate change](#) and [sea level](#) rise.

The Interreg North Sea Region project, funded by the European Regional Development Fund (ERDF), will see the University of Lincoln work with a number of partners, including those in countries with vulnerable coastlines, to develop more salt-tolerant crops, create local food brands based around saline agricultural production, and carry out economic assessments for growth in saline agriculture both locally and globally.

Dr Bosworth said: "Resource consumption and carbon emissions are major drivers of climate change. In order to reduce these, we have to look for alternative methods of production in agriculture. Our new project aims to promote resource efficiency by re-using degraded farmland and reducing fresh water consumption – we will use a number of open field labs to demonstrate innovative methods of farming on saline soil with natural adaptation processes in plants and crops.

"Thinking green' in this way means a real change of perspective in farming and food production, a change of behaviour of the consumers of food, and, for authorities, re-thinking water management and changing policies on environment and agriculture in coastal areas."

Professor Edward Hanna, also from the School of Geography at Lincoln, spoke at the event about the possible causes and predictability of recent UK extreme weather events, while Dr Iain Gould, a soil scientist from the Lincoln Institute of Agri-food Technology, provided an update on the year-long research project at the University which aims to support farmers to bring back saltwater-damaged land after coastal flooding. Finally, Martin Collinson of Collinson and Associates and the Greater Lincolnshire Local Enterprise Partnership (LEP) discussed the

importance of water management to enable economic growth in the Lincolnshire region, and explored the economic importance of the agri-food sector to the local economy.

The briefing on Tuesday 30th May 2017 was the latest in a series of industry events hosted by LIAT at the University of Lincoln, which looks ahead to the future of farming and explores how the latest agri-tech research will impact on the agricultural industries.

Provided by University of Lincoln

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