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Multidisciplinary approaches and technologies are needed to solve the challenge of salinization of agricultural land

This was one of the conclusions of the international Saline Futures Conference in Leeuwarden, 10-13 September 2019.

The conference gathered over 200 researchers, farmers, entrepreneurs and policymakers from all over the world to present, discuss and share knowledge and experiences on how to deal with increasing salinization of farmland due to climate change and rising sea levels. Over 30 nationalities were represented at the conference including participants from Australia, Bangladesh, Egypt, India, Iran, Morocco, Russia, Saudi Arabia, South Korea, the USA, and many EU countries, which shows that salinization, degraded farmland and food security are growing global problems.

In order to solve these problems, it is necessary to *"focus on multidisciplinary approaches and technologies - It's not a one-man show, it's not a one-woman show, it's a team show. From that aspect, we need to bring together different expertise to deliver successful projects like SalFar that can guarantee the continuation of sustainable and climate resilient farming systems"*. This was one of the conclusions of keynote speaker Dionysia Angeliki Lyra from the International Centre for Biosaline Agriculture (ICBA).

Dyonisia, as well as other key-note speakers, stressed the importance of direct co-operation between researchers and farmers in terms of training and capacity-building. This is also an essential objective of the SalFar project. Prof. Pier Vellinga from the Waddenacademie pointed out that, among farmers, there is a certain taboo to talk about 'salinization', and that awareness-raising is a special issue. Farmers often fear that their land will be devaluated. It is important to demonstrate that saline farming can be regarded a new, innovative method of agriculture and adapting to climate change. The purpose of the conference was also, therefore, to minimize this taboo and open-up the discussion to combine forces and knowledge of various experts.

A conference tailored for researchers, policymakers and farmers

"A lot of thought and effort has been put into creating an interesting programme that speaks to all the different target groups we are trying to reach", says Angelica Kaus, SalFar project manager. Next to the plenary sessions, several parallel sessions were organized where scientists presented their latest research and participants could gather knowledge on various topics such as "experiments and promising crops", "revitalization of saline degraded soils", "alternative use of salt-tolerant plants", etc. In total, 12 parallel sessions were arranged during which more than 50 abstracts were presented.

Specifically tailored to the farmers participating in the conference were "farmers' cafés" - interactive workshops on salinization and saline agriculture, including among others an inspirational presentation by farmer and entrepreneur Marc van Rijsselberghe of the Salt Farm Foundation on Texel. Having practiced saline agriculture for more than 40 years, Marc shared his mistakes and successes with the farmers from Belgium, Denmark, Germany, The Netherlands, Norway and the UK. He also provided them with knowledge on the salt-tolerance of various crops and the potential of saline farming in the North Sea Region.

Experimenting with saline farming, Marc has a practical approach, and he stated: “I am a farmer, I am not interested in how it happens, why it happens, I am only interested in – are they [the plants] staying alive and are they edible?”. Åsgeir Almås from the Norwegian University of Life Sciences and Iain Gould from Lincoln University, both soil scientists and representatives of the SalFar project, explained the impact of salt and seepage on soils, plant growth and agricultural liveability on some well-chosen examples.

Map the problem and start measuring

At the closing session of the Saline Futures conference, farmers communicated their main concerns about salinization and what they expect from science. Stating that there is a lack of knowledge on saline agriculture, they clearly wish to strengthen the co-operation with the scientists. A good start could be to regularly measure the salinity of their land and to provide the data to the scientists. This is done in the Netherlands already with the project “Boeren meten water” (farmers measure water). In this way, a map of salinization can be drawn up and farmers in the salinized areas could get support for a transition of their business to saline agriculture.

Don’t wait until the problem is there

One of the concluding remarks at the closing session of the Saline Futures conference was: “don’t wait until the problem is there”. This was followed by a call to the policymakers that they should not hesitate to give permission for certain coastal areas to be naturally flooded and provide funds for experiments with saline farming methods so that farmers can learn and share their knowledge with others.

Visits to test fields

Four excursions were on the programme during the last two days of the conference. Participants visited Ökowerk Emden in Germany, that has set up open-air labs for testing different sorts of halophytes as well as green houses where some other varieties of plants are cultivated. On the island of Terschelling, Netherlands, the scientists visited the foundation "De Zilte Smaak" which runs several test fields for saline crops right behind the dyke and a cooking-studio where these crops are converted into delicious dishes. Two excursions were organized to the island of Texel, where the farmers and scientists visited the Salt Farm Foundation with Marc van Rijsselberghe showing them the test fields he has been working on for many years. The visitors learnt a lot about the set-up of an open-air lab, unexpected salt-tolerance of various crops like potatoes, carrots, beetroot, cabbage and many more, and had a unique tasting-experience when a lunch was served made exclusively from saline products.

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Facts about SalFar:

- SalFar is co-funded by the North Sea Region Programme 2014 - 2020.
- The project has a total budget of 6.147.375 €
- 14 partners from Norway, Sweden, Denmark, The Netherlands, Germany, Belgium and the United Kingdom respectively.
- SalFar is an acronym of 'Saline Farming'.