Press release **17 December 2020**

The Economic Impacts of Salinization Exceeds half a billion EURO a year in Europe alone – and the Cost is Projected to Rise with the Tides

There is an urgent need to strengthen systems and mechanisms for monitoring soil salinity and associated risks. This is one of the conclusions in the "Baseline Study Report", published by the University of Lincoln on behalf of the Interreg North Sea Region project SalFar.

Facing the unprecedented risks of sea level rise, SalFar explores the options for farming and food production under increasingly saline conditions. This is essential to preserve natural capital and to strengthen the ecological and socio-economic development of the coastal and peripheral areas of the North Sea Region.

Soil salinization is a significant constraint to agricultural production globally. Furthermore, projected changes associated with climate change are likely to exacerbate the risks associated with salinization, which has implications for global food security.

A review of studies on the impacts of salinity show that salinity intrusion costs range from € 577 – 610 million per year in Europe and are projected to increase significantly with sea-level rise over time.

Detailed case studies conducted in Europe as part of the SalFar project show that the magnitude of the economic impact of salinization depends on a range of factors, which include; the type of salinization or the process that causes salinization, the severity of salinity, the types and value of crops grown, farm level decisions such as the use of salt tolerant crops and other adaptation mechanisms as well as external shocks such as sea level rise due to climate change.

Saline agriculture, as an adaptation strategy, has the potential to ameliorate some economic impacts of salinization. However, there is an urgent need to strengthen systems and mechanisms for monitoring soil salinity and associated risks.

How climate change will affect coastal areas
Simulations of climate models have shown that by the end of the century climate patterns of Central and Northern Europe will recall the climate profile of Southern European latitudes as they are today. That is, warmer and dryers summers and milder and rainier winters.

Climate change is predicted to impact coastal areas in three possible ways: mean sea level rise, increase or decrease of river discharge into the sea estuary and increase of storm surge intensity that induces seawater overtopping:

- A rising sea level can affect the quality of present groundwater resources by shifting the seawater–freshwater interface position further inland.

- Increase or decrease of the river discharge into the estuary sea can affect the salinity of the sea water in the estuary, hence the saltwater intrusion into the coastal aquifer can be affected.

- Increase of storm surge intensity can result in seawater overtopping when the waves created are high enough to pass over the top of defence structures or when a flood defence fails. Therefore, flooding of the inland by seawater results in salinization of the superficial and subsurficial zones of the flooded areas.

Download the full report on the economic impacts of salinity induced soil degradation here.

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Facts about SalFar:

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

Photo: Test field on Sejerø in Denmark where salt-tolerant potatoes are grown.

Photo credit: SalFar