



Saline Farming - innovative agriculture to adapt to climate change and sea level rise (SalFar)

1. Project idea identification

Project Type	Expression of Interest
Call	Call 2 January 2016: EoI and FA
1.1 Project title	Saline Farming - innovative agriculture to adapt to climate change and sea level rise
1.2 Project acronym	SalFar
1.3 Lead Beneficiary	Waddensea Academy
1.4 Start Date	01/06/2017
1.4 End Date	31/05/2020
1.5. Programme Priority	Priority 3 Sustainable North Sea Region: Protecting against climate change and preserving the environment
1.6. Specific objective	3.1 Demonstrate new and/or improved methods for improving the climate resilience of target sites

2. Project description

2.1 Project Summary Impacts of climate change on coastal regions worldwide include progressive sea level rise, more frequent flooding and land-degradation due to increased soil salinity. To address the potential damage this will cause to the NSR's agricultural sector and the coastal economies depending on it, our project will test, develop and support the commercialization of new salt-tolerant crops to enhance the resilience of these coastal regions.

The main objective is: to increase the resilience of coastal regions in the face of climate change and sea level rise by developing new saline farming methods and corresponding food product chains and to speed up the learning curve towards resilience by boosting transnational co-operation between knowledge institutes, farmers and entrepreneurs, consumers, and the public sector around and beyond target sites.

In a collaborative setting we will develop 10 field labs (target sites) in the coastal zones of the six participating countries for large-scale testing and screening of the adaptation potential of traditional crops and food products to more saline conditions. We will stimulate the introduction of a common North Sea brand for high quality sustainable "saline" food.

Through mapping and cost benefit analysis of coast protection and water-management practices for the target sites and surrounding regions we will enhance the capacities of relevant authorities and practitioners to identify and implement solutions for improving climate change resilience.

2.2 What are the shared territorial challenges that will be tackled by the project? Climate change is a global phenomenon, but with local and regional impacts, which demand joined-up approaches to mitigate inevitable events. In the North Sea Region, accelerated sea level rise is a shared territorial challenge. Global data demonstrate that the global average rate of sea level rise has recently doubled from 1,8 mm per year to about 3,6 mm per year. Projections for sea level rise over the next 85 years range from 0,26 up to 1,36 m (Mengela, M.et al., 2015, www.pnas.org/cgi/doi/10.1073/pnas.1500515113 and Kopp, R.E. et al., 2015, www.pnas.org/cgi/doi/10.1073/pnas.1517056113)

Salinization has been identified as one of the key drivers of soil degradation in Europe and over the coming decades the pressure on traditional freshwater farming in the coastal areas will increase. (<http://www.greenfacts.org/highlights/2012/02/farming-erosion-biodiversity-or-contamination-the-declining-state-of-soil-in-europe/>) Water management authorities try to continuously defeat the further salinization by keeping the salt water out of farmland. But these are proving to be very costly operations and with the rising of the seawater level in the future, costs will exponentially increase. Presently, the participating countries across the North Sea Region: Belgium, Netherlands, Germany, Denmark Sweden, UK deal with this future challenge all individually and in completely different ways. Even within the same national coastal areas there are different approaches, depending on whose vision of protecting or using the coastal zones is dominant: local, regional or national authorities, farmers' organizations, engineers and water management corporations, cockle and shrimp fishers, nature reserves, individual landowners or voluntary organizations.

At the national level, many Member States have produced legislation, policies or guidelines to ameliorate or prevent soils from further degradation. But these policy measures are primarily aimed at combating pollution in other areas, and affect soils only indirectly. Statutory soil monitoring is carried out as well in a number of Member States, but rarely for the purposes of soil protection and not at all for making use of saline soils for agriculture, and comparability at the EU level remains weak. (<http://www.eea.europa.eu/publications/92-9157-202-0/page306.html>)

While market failure has motivated public policy intervention in adaptation (such as coastal protection measures), the development of private sector adaptation innovations like saline agriculture has been slow. This is partly because of the high degree of uncertainty associated with climate change effects and the fact that the market typically fails to internalize such long term impacts.

A related shared territorial challenge is the downward demographic and economic trend in many coastal areas. Getting innovation on the agenda of regions that have little capital surplus is difficult. Without the availability of alternative production methods the traditional agricultural and the financial return will decrease and these regions will lose an important economic pillar. This holds for nearly all low lying agricultural areas along the North Sea shores. The shared territorial challenge for entrepreneurs, farmers and public authorities is thus to develop viable and sustainable alternatives, such as saline agriculture and the development of new food product chains

There may be enough food and adequate agricultural land today, but the impact of predicted rates of climate change combined with global food security concerns point towards an impending market failure. The innovation of new salt-tolerant crops offer a solution (Ladeiro, 2012), but these must be developed to thrive in a range of saline conditions and be commercially viable. This requires a transnational effort to carry out scientific crop trials in different environments and market research with a mix of growers and consumers.

Because climate change is a global challenge, we have to look beyond the borders of the North Sea Region as well: worldwide about 1.5 billion hectares of land is salt affected and this is on the increase. With the expected growth of the world population up to 9 billion in 2050, food production has to increase by 70 %. But fresh water availability will become an unavoidable bottle-neck. With the 10 pilot areas around the North Sea Region we will produce guidelines for innovative farming and food production on the basis of saline soils and brackish water. Globally, this provides the opportunity for the NSR to become a hub for saline agriculture innovation.

Through transnational co-operation within a quadruple helix structure, our multi-disciplinary partnership will demonstrate possibilities to make use of saline soils and mixed irrigation for agricultural production, develop innovative methods of farming, and promote resource efficiency and risk prevention in dealing with climate change adaptation along the North Sea Region coastal zones and beyond.

2.3 What is the project's approach in addressing these shared challenges and/or joint assets and what is new about the approach the project takes?

As all coastal zones have to cope with the consequences of climate change, our shared challenge is to improve the climate resilience of coastal agriculture across the North Sea Region by setting up living labs in each participating country to conduct experiments with the salt tolerance of crops. In addition to new methods of farming, our joint asset will be the branding of our products as terroir-based high quality food.

A small number of farmers and entrepreneurs on the Danish coast have started to experiment with saline agriculture and alternative food production has been taken up by a test-site on the Dutch island of Texel on a small scale. Our project wants to multiply and reinforce these scarce and isolated examples by transnational co-operation, linking research, practice and public policies at each of the target sites and across the NSR countries as a whole.

The project's approach is to identify ways to foster saline agriculture and the salt tolerance of a variety of crops, hence increasing the resilience of agriculture in coastal areas by:

- demonstrating innovative approaches for agriculture in dealing with salinized soil and brackish water
- developing and implementing sustainable food production
- establishing economically sustainable businesses and communities in the peripheral and coastal areas of the North Sea Region.
- designing new approaches and demonstrate that climatically induced environmental changes and changes in conditions of farming and food production can just be seen as an opportunity for innovation and the development of new qualities in crops and food
- demonstrating that areas of agriculture threatened by increased salinity have a future in providing food to meet the globally increased demand.
- establishing a transnational "Network of Excellence" comprising the complementary competencies of our partnership to address challenges and exploiting opportunities for innovative farming and food production in times of climate change across the North Sea Region, Europe and world-wide.

Apart from the overarching work packages "management" and "communication" (including impact as well as dissemination), our transnational consortium has proposed the following approach:

WP 3: Set-up of 1-3 field labs in each participating country: identifying 10 target sites and sharing knowledge and expertise among partners for field experiments and monitoring and evaluation. Development of training modules to increase knowledge on optimum conditions and commercial potential of saline crops among traditional farmers.

WP 4: Selection of crops for experiments with saline soil: development of tests for normal crops like potatoes, vegetables, grains to measure their salt tolerance under field conditions. Deliverable: tool kits for experiments on various soils, data collection and analysis.

WP 5: Food from saline soil: development and documentation of unique food qualities and specific nutritional value derived from unique farming conditions in coastal and high salinity areas. Identification of 2-3 farmers per region for documentation and quality measures to screen their production. Development of a toolkit for quality measures including taste, texture, diet values, functionalities, market potential.

WP 6: NSR Branding: Creating an internationally acknowledged brand of food products from the North Sea Region's saline soils. "Terroir" implies the qualities and climatic/geo-eco conditions of the land (terra) of production. Coastal and high salinity farm land has all the features that appeal to an exploitation of terroir-based branding. Implementation of such a NSR coastal region brand, including EU-protected designation of origin status will generate significant added marketing value reflecting unique production conditions of target sites. Deliverables: a catalogue of criteria ensuring the unique terroir qualities and authenticity of production. Assessment of the socio-economic impacts of developing terroir-based branding from coastal and high salinity areas. Collective transnational marketing actions for the new brand. Establishment of regional information centers. Dissemination and awareness rising activities.

WP 7: Mapping trends: To improve the climate resilience of not only the target sites, but North Sea-wide on a broader scale, it is necessary to better understand the relationships between the resilience of ecosystems and the resilience potential of the project areas, especially pilot areas. WP 7 will both map these areas at the NSR scale and identify needs and development trends which influence the actors of farming and food production. In this way, the project will reveal how research and knowledge institutions as well as public support can join their efforts to unlock the potential of innovation in farming and food production in coastal and high salinity areas. Deliverable: Paper "Climate resilience of coastal agriculture. A way to stronger, more sustainable economies and societies around the North Sea"

2.4 Why is transnational cooperation needed to achieve the project's objectives and result?

The Paris Agreement on Climate Change demonstrated the world-wide concern about climate change and its impacts. Agreement was reached on the need to take preventive measures, to keep the effect of human activities global warming below 2 degrees and preferably below 1 ½ degrees. Significant budgets (100 billion \$ per year) were allocated for reducing emission and supporting adaptation measures in the developing countries. However, even when temperature targets will be achieved, sea-levels will continue to rise for many decades, even centuries. Scientific economic literature clearly indicates that international cooperation in the development and implementation of technologies and practices to tackle climate change is a major instrument in reducing the cost of both mitigation and adaptation.

The geographical and the geo-ecological situation, the socio economic and cultural aspects and

the rate of sea level rise including the uncertainties, show major similarities around the North Sea Basin, which demands a common approach by all partners involved. Techniques and policy practices tested in one location provide valuable lessons for other North Sea locations. Mutual inspiration among entrepreneurs, farmers and policy makers will help to identify and implement the most cost effective sustainable solutions. Of course the solutions will always have a major local component as adaptation to climate change and sea level rise is local by definition.

1. Our transnational consortium jointly identified 10 appropriate target sites (open field labs) so far in all the participating countries. Pilots will be conducted at these sites with a transnational team of experts covering various disciplines. Frequent transnational consultations and experts meetings will ensure that these sites are complementary in diversity and cover the broad set of issues that present themselves along the North Sea Shores.

2. There are no common guidelines for working with saline soils, nor is there any training and education offered for saline agriculture. Based on the results of the pilots in the open-air labs, a common NSR framework will be established with guidelines for farmers and enterprises on how to tackle the increased degradation of farmland, and develop future perspectives for their businesses.

3. Knowledge exchange will play a major role in the project, with a series of dedicated workshops in each participating country, bringing together experts from the different fields of our transnational consortium: farmers, economists, plant biologists, experts and policy makers in coastal protection and land- and water management, microbiologists, business and branding experts, food scientists, and food policy makers. By setting up a transnational knowledge exchange platform we will enable practitioners, scientists and policy makers to compare results and define new methods to improve climate resilience and prevent degradation of farmland.

4. Farmers co-operation network across borders: because climate change is a common phenomenon, which affects all the North Sea Region countries, we need a transnational co-operation network of practitioners. Comparing results from the experiments with salt tolerant crops in other countries and learning from each other cross-border wise is essential to promote practices of saline agriculture across the North Sea Region and prepare the regions for the future.

5. Creating a common brand for regional food production from saline soils North Sea Region and EU-wide. Only with the set-up of collaborative field labs and pilots in each participating country (UK, Belgium, The Netherlands, Germany, Denmark, Sweden), we can ensure the transferability of results and create commitment among the partners. Working on a common brand with a catalogue of criteria to guarantee quality and authenticity will contribute to the creation of a corporate identity of North Sea Region farmers and food producers. There is a significant added marketing value reflecting unique production conditions of target sites enabling our transnational consortium to pave the way to a shift of paradigm from traditional to saline agriculture. Our project wants to implement such an overarching NSR coastal region brand, including EU protected designation of origin status.

6. Transnational co-operation on legal issues: as already argued above, the North Sea Region countries all have to cope with the same consequences of climate change, but there is no common approach, they must act in different ways, on the basis of different legislation concerning water management, environmental issues, agriculture, nature conservation etc. The project will establish a transnational data bank where all legal issues will be documented. Together with the results of the pilots in all the participating countries, this data bank will help to induce necessary changes in regional legislation on climate resilience and preparation for the future challenges of climate change.

3. Project objectives and expected results

3.1 Project overall objective The overall objective of the project is to develop climate change adaptation solutions that reduce or prevent the negative impact of loss or damage of target sites throughout the North Sea Region. The project wants to implement new adaptation techniques along the coastal zones of the North Sea Region by promoting saline agriculture and rethinking water- and environmental management. The partner consortium believes that improving the climate resilience of target sites goes hand in hand with the creation of new businesses and strengthens the socio-economic development of the peripheral areas. By engaging the larger community of farmers, entrepreneurs, experts and policy makers we want to enhance the capacity of the coastal and agricultural authorities and farmers/entrepreneurs to implement cost effective sustainable solutions for improving climate change resilience. The project will establish sustainable farming and food production along with stronger and more sustainable economies and communities in the peripheral and coastal areas of the North Sea Region.

The overall objective of "SalFar" is therefore linked to the programme's specific objective 3.1: "*Demonstrate new and/or improved methods for improving the climate resilience of target sites*".

Earlier research has explored potential uses of saline soils (e.g. BIOSAFOR – an FP6 project assessing the environmental value of growing trees on saline wasteland http://cordis.europa.eu/result/rcn/52974_en.html). Our project consortium believes that with the anticipated sea level rise it is important to explore the options for farming and food production under saline conditions in greater depth, as a contribution to improve the climate resilience of target sites and to ensure the ecological and socio-economic development of the coastal and peripheral areas of the North Sea Region.

We will do this:

1. by demonstrating that traditional approaches of tackling sea level rise (such as coastal protection and fresh water flushing) are not the most sustainable and most cost effective ways of increasing the resilience of coastal communities and their farmlands under conditions of climate change and sea level rise. The cultivation of crops salt tolerance and the development of new food products in the threatened areas will under certain conditions be more sustainable both in ecological and in economic terms. We will define and demonstrate such conditions
2. by demonstrating the possibilities of food production under saline soil and brackish water conditions at 10 different target sites across the NSR, including professional analysis of costs and potential improvement
3. by exploring the creation of new food product chains and the opportunities for regional entrepreneurs working under a common North Sea brand for high quality sustainable food. Whilst we know that some salt-tolerant crops have favorable or unique qualities, these are not yet attracting a market premium and thus the market is not currently incentivizing the technological innovations needed to develop saline agriculture to the point analogous to conventional agriculture

The testing and implementing of innovative methods of farming and water management, goes along with enhancing the knowledge and skills of practitioners to create new perspectives for the coastal and peripheral zones of the North Sea Region. Education and training, as well as the development of guidelines for farmers and food producers will ensure the transferability of the results, along with expert workshops in each participating country. Knowledge exchange will also take place via transnational innovation workshops and a mid-term and final conference each both intended to reach a wider public for information and dissemination of the results on a broad scale.

Through co-operating with regional and local municipalities and umbrella organizations of farmers, respectively food producers, a large group of stakeholders has been identified already at this preliminary stage of the project, such as the Dutch SPNA, It Fryske Gea, the Flemish Landmaatschappij, the German Landwirtschaftskammer, the Deutsches Institut für Lebensmitteltechnik (DIL), the seed company Elsoms, the rural land and agricultural management organisation Struut & Partner, East Midlands, and the Environment Agency Lincolnshire & Northamptonshire Area in the UK, or the food producers umbrella organisation Taste of Denmark, ToD. At least 3-5 farmers in each country who will experiment with saline agriculture during the course of the project have been identified via this stakeholder network. These are the base for further improvement of knowledge and understanding of innovative farming and food production and finally the significant enhancement of the capacity of relevant authorities and practitioners around the North Sea to identify and implement solutions for improving climate change resilience.

3.2 Project results The project results can be seen as four-fold:

1.1 To tackle the future challenges of climate change, a shift of paradigm concerning saline soil, farming and water- and environmental management is necessary. 10 pilot areas across the North Sea Region, where saline agriculture is implemented. A proof of concept based on transparent data for ten different target sites (open field labs) in the six participating countries of the NSR regarding the ecological and economic viability of farming and food production under saline conditions and specific coastal protection and water

<p>1. Enhanced capacity for local/regional authorities and farmers and entrepreneurs across the North Sea Region to identify and implement solutions to improve climate change resilience of former fertile farmland under pressure of progressing salinization.</p>	<p>management practices. Continuous capacity building and involvement of all stakeholders on the knowledge exchange platform</p> <p>1.2 A 500 ha area of target sites across the North Sea Region making use of saline agriculture techniques. After completion of the project, these sites will be used to demonstrate these new techniques to a broader public, supported by the establishment of information and education centres in at least three of these countries (NL, DK, DE), where knowledge and capacity building will be intensified for selected target groups, like farmers and entrepreneurs, local and regional authorities as well as businesses from countries outside the NSR. 32 organisations have already announced their interest in saline agriculture.</p>
<p>2. Improved knowledge and enhanced capacity around unique food production with added market value and NSR brand to create sustainable economies and communities along the peripheral and coastal areas of the North Sea Region</p>	<p>1.3 At least 100 farmers / food producers taking up cultivation of crops on saline soils and adopting innovative farming methods thereby contributing to adaptation techniques and improving the climate resilience of target sites and beyond.</p> <p>2.1 At least 15 crops or plants cultivated under saline conditions identified and their market potential assessed, to enable food producers to start with new unique production chains and establish sustainable businesses.</p> <p>2.2 10 food products under a common terroir-based brand of the North Sea Region as a joint effort of farmers / producers of food to lead the way to stronger and more sustainable economies and societies, especially in the coastal and peripheral areas of the North Sea Region</p>
<p>3. Resource efficiency and risk prevention in dealing with climate change adaptation along the North Sea Region coastal zones and beyond.</p>	<p>3.1 Analysis of costs of water management practices in the 10 pilot areas. Detailed cost plan of risk prevention, degradation or loss of farmland, flood retentions areas etc. across the participating countries.</p> <p>3.2 Analysis of costs of the 10 pilot areas. This analysis will be related to the different levels of salinization in each participating country and assess the costs of different adaptation approaches, like using new types of crops or adapting existing crops.</p>
<p>4. Capacity and skills enhancement beyond the scope of the project</p>	<p>4.1 Established NSR Network of Excellence to ensure the transferability of the results across the North Sea Region. With the large number of stakeholders already identified, this network will be established in the course of the project and capacity and skills enhancement ensured by regular transnational workshops and conferences also after completion of the project.</p> <p>4.2 Export of the techniques and products of saline agriculture to developing countries, which already nowadays have to cope with droughts and salinization.*</p>

* 4.2 is clearly to be seen as a spin-off beyond the scope of the project. Already established links with the ministries in Pakistan and India will help to take the project results beyond the borders of the North Sea Region. Saline agriculture techniques from the North Sea Region are a solution for the present and future challenges of degraded soils and climate change all over the world.

3.3 Project detailed objectives

Title	Description
1. Pilots on saline agriculture in 10 different coastal areas across the North Sea Region	Setting up 1-3 target sites in every participating country to conduct field experiments with the salt tolerance of selected crops under site-specific water management conditions. Monitoring the different locations and analysing the results by taking into account the different soil conditions and regional practices of farming.
2. Creating new business opportunities for farmers and food producers	A number of innovative producers will be identified whose food production and market prices will be screened and documented. Economic analysis of producing saline crops and food products as compared to business as usual policies and measures.
3. Branding: Internationally acknowledged terroir-based trademark of unique food from the NSR	Creating an internationally acknowledged brand of food products from the North Sea Region's saline soils. Establishing a catalogue of criteria ensuring the unique terroir qualities and authenticity of production. Develop transnational collective marketing actions for the new brand. Dissemination and awareness rising activities.
4. Ensure long-lasting knowledge exchange	Creating a transnational network organisation and knowledge exchange platform to enhance knowledge on saline agriculture as a way to adapt to climate change and improve the resilience of coastal areas for all stakeholders across the NSR. Release the potential of innovation in farming and food production in saline areas and transferability of results

4. Project budget

4.1 Project partners overview

Beneficiary Name (Abbr.)	Legal status	Contact	Address	Budget (indicative)
1. Waddensea Academy (WA)	Public	Pier Vellinga pier.vellinga@waddenacademie.nl +31582339030	Ruiterskwartier 121A 8911 BS Leeuwarden, THE NETHERLANDS	500.000 €
<i>What is the partner's role in the project?</i> Lead beneficiary, expertise in climate change adaptation options, monitoring and evaluation of all wps, reporting on content and finances, overall evaluation				
2. Ziltproefbedrijf (ZILT)	Private: no IPR	Marc van Rijsselberghe mvanrijsselbergh@saltfarmtexel.com +31651327951	Hoornder Weg 42 1797 AB Den Hoorn, Texel, THE NETHERLANDS	430.000 €

What is the partner's role in the project?

Partner, leader of wp 3. This partner is experimenting with the salt tolerance of crops on a small scale and will share his expertise with the other partners. Contribution to the set-up of target sites in the different coastal areas of the North Sea Region. He will also offer his own target site for experiments on the island Texel, will set-up an education- and information centre to enhance knowledge on farming and food production in saline soil for a wider public. WP 1, 2, 3, 4, 5, 6, 7

3. Kookstudio Flang in de pan (FLANG)	Private: no IPR	Flang Cupido koken@flangind epan.nl +31 562 850134	Dorpsstraat 25 8896 JA Terschelling Hoom, THE NETHERLANDS	150.000 €
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What is the partner's role in the project?

Partner who will invest in a target site along the Wadden Sea coast of the island Terschelling to experiment with the salt tolerance of selected vegetables and potatoes. Producer of regional food contributing to the envisaged North Sea Region brand of sustainable saline food. Contribution to wp 1, 2, 3, 5, 6, 7

4. Ökowerk Emden (Öko)	Public	Detlef Stang info@oekowerk- emden.de +49 4921 954023	Kaierweg 40a 26725 Emden, GERMANY	320.000 €
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What is the partner's role in the project?

Leader of Wp 2. Ökowerk Emden is a regional centre for ecology, which offers target sites on its own grounds to experiment with the salt tolerance of selected crops, like e.g. potatoes, vegetables, grains. The director, Detlef Stang, is an international economist on agriculture and has not only the necessary knowledge on farming but, through years of work in Africa, also the expertise of setting up aid programmes for developing countries. Contribution to wp 1, 2, 3, 4, 5, 6, 7

5. Waterplant (WPLANT)	Private: no IPR	Detlef Dunker info@water- plant.de +49 4925 990 544	Hellerstraße 11 26759 Hinte, GERMANY	110.000 €
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What is the partner's role in the project?

This partner will offer target sites to experiment with the salt tolerance of selected crops and he will share his knowledge and expertise on the natural protection of coastal zones by plants. Contribution to wp 1, 2, 3, 4, 7

6. HAW Hamburg, Faculty of Life Sciences (HAW)	Public	Walter Leal walter.leal@haw -hamburg.de +49 40 42875 6313	Ulmenliet 28 21033 Hamburg, GERMANY	300.000 €
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What is the partner's role in the project?

Partner, leader of wp 7. This partner will contribute to the research on resilience of target sites and share his knowledge and expertise on climate change adaptation. HAW is an experienced Interreg NSR partner with a broad experience in setting up projects in developing countries, which could contribute to a further spin-off beyond the scope of the project. Wp 1, 2, 3, 6, 7

7. Vlaamse Landmaatschappij (VL)	Public	Wim Van Isacker Wim.VanIsacker @vlm.be +32 50 45 91 27	Velodroomstraat 28 8200 Brugge, BELGIUM	310.000 €
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What is the partner's role in the project?

This partner is an expert in water management and open space in rural and coastal areas, building bridges between ecology, economy, nature, and urban planning. The organisation's aim is to find a balance among the various interest groups and as such is an expert for the exchange of knowledge and information between the various target groups in our project: farmers, researchers, entrepreneurs, citizens and public authorities. VL will offer target sites for pilots and contribute to wp 1, 2, 3, 4, 7

8. Taste of Denmark (ToD)	Public	Laurids Siig Christensen	Horsekaer, Sejerovej 28 DK-4592 Sejerøe,	420.000 €
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<p><i>What is the partner's role in the project?</i> Partner, leader of wp 6. As an umbrella organisation for more than 700 farmers and entrepreneurs, this partner will offer various target sites along the Danish coast to experiment with the salt tolerance of selected crops and with innovative food production, e.g. seaweed added products. He will contribute with his knowledge and expertise on branding and regional food production for sustainable businesses and communities.</p>				
9. University of Gothenburg, Department of Biological & Environmental Sciences (UoG)	Public	Henrik Aronsson henrik.aronsson@bioenv.gu.se +46 31 786 4802	Box 461 SE-405 30 Gothenburg, SWEDEN	180.000 €
<p><i>What is the partner's role in the project?</i> Partner, leader of wp 4. This partner will identify a number of farmers / food producers for research and analysis of the quality of their products and pave the way to a North Sea Region branding of innovative and sustainable food production. They will closely work together with the University of Lincoln, which will do the economic analysis of costs of water management and the loss or damage of farmland to justify "fair trade" prices for high quality food derived from saline soils.</p>				
10. Crop Tailor AB (CT)	Private: no IPR	Olof Olsson olof.olsson@crop tailor.com 46 46 222 8364	Sölvegatan 39A SE 22100 Lund, SWEDEN	220.000 €
<p><i>What is the partner's role in the project?</i> Partner who will contribute with his knowledge and expertise as microbiologist to the selection of crops for the target sites to experiment with and to the identification of farmers / food producers of which the quality of products will be analysed. Contribution to wp 1, 2, 3, 4, 7</p>				
11. University of Lincoln, Lincoln Business School (UoL)	Public	Gary Bosworth GBosworth@linc oln.ac.uk +44 1522 835576	Brayford Pool, Lincoln, Lincolnshire. LN6 7TS Lincoln, UNITED KINGDOM	420.000 €
<p><i>What is the partner's role in the project?</i> Leader of wp 5. Analysis of target sites in terms of loss or damage of farmland by salinization against the costs of new methods of farming and food production. Works closely together with farmers' organisations, and Elmsom seeds, will focus on the development of salt tolerant halophyte crops which are now to be indigenous to the NSR region. Elmsoms have a large net work of SME seed distribution companies across the NSR who will support the market development of these new crops. Wp 1, 2, 3, 4, 6, 7</p>				
12. MaRenate (MaRe)	Private: no IPR	Wolfgang Schuster wolfgang.schust er@marenate.d +49 441 217 96 70	Clausewitzstr. 105 26125 Oldenburg, GERMANY	220.000 €
<p><i>What is the partner's role in the project?</i> This partner is a centre for marine biology which will contribute to research on seaweed as a natural fertilizer for crops. The idea is to make use of seaweed and other biomass which is found at all the coastal zones of the North Sea Region, separate it from plastic waste and ferment it to produce high quality fertilizer, thereby contributing to the resilience of target sites. Wp 1, 2, 3, 4, 5, 7</p>				
13. Development Forum of South-West Jutland (SFSW)	Public	Knud Hjortlund Hansen khh@svuf.dk +45 36973501.	Niels Bohrsvej 6 DK-6700 Esbjerg, DENMARK	220.000 €
<p><i>What is the partner's role in the project?</i> The DFSW is a development organisation funded by five municipalities in South-west Jutland and including the</p>				

Wadden Sea and Marsh land along the coast of the North Sea. They will offer 1-2 target sites as pilot areas for the experiment with normal crops. Contribution to wp 1, 2, 3, 4, 5, 6, 7

14. Development Funen (DF)	Public	Mads Asbild Kristensen mkasb@udviklin gfyn.dk +45 51464569	Forskerparken 10, DK-5230 Odens M., DENMARK	190.000 €
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What is the partner's role in the project?

Development Funen is a Development organisation funded by 5 municipalities on the Island of Funen. They will contribute by offering 1 target site for piloting a selection of salt tolerant crops. Involved in wp 1,2, 3, 4, 5, 6, 7

15. MEMPHYS Center (MC)	Public	Ole G. 30.000 Mouritsen, ogm@memphys. sdu.dk +45 65503528	MEMPHYS Center, University of South Denmark, Campusvej 58, DK-5230 Odense M, DENMARK	30.000 €
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What is the partner's role in the project?

MEMPHYS is a research center of membrane physiology and Ole G. Mouritsen is head and professor of the center. The Group has a strong competency in seaweed and the use of seaweed as raw material in development of food with novel qualities associated with the seaweed. WP 1, 2, 5, 6, 7

16. Stichting Proefboerderijen Noordelijke Akkerbouw (SPNA)	Public	Michiel Bus bus@spna.nl +31 06 19 49 71 45	Hooge Zuidwal 1 9853 TJ Munnekezijl, THE NETHERLANDS	360.000 €
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What is the partner's role in the project?

This partner is an umbrella organisation for agricultural research in the Northern provinces of the Netherlands. They will set-up a field lab in the Northern coastal area to conduct experiments on saline agriculture with (seed) potatoes. Contribution to wp 1, 2, 3, 4, 5, 6, 7

17. Province of Groningen (PoG)	Public	Matthijs Buurman m.buurman@pro vinciegroningen. nl +310615068217	P.O. Box 610 9700 AP Groningen, THE NETHERLANDS	400.000 €
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What is the partner's role in the project?

The province of Groningen participates with 1 or 2 sites as part of innovative coastal protection schemes, for experiments with the salt tolerance of crops, support research and knowledge exchange and encourage farmers to foster saline agriculture. Contribution to wp 1, 2, 3, 5, 7

18. Deutsches Institut für Lebensmitteltechnik - German Institute of Food Technologies (DIL)	Public	Christian Kircher c.kircher@dil- ev.de +49 5431 183- 287	Prof.-von-Klitzing-Str. 7 D-49610 Quakenbrück, GERMANY	400.000 €
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What is the partner's role in the project?

The DIL is a research institute supported by more than 120 members from fields of food production, mechanical engineering, process engineering and metrology. The DIL develops innovative methods for food production, quality assurance and process optimization. It focuses on new insights in food technology for SMEs. Contribution to wp 1, 2, 4, 5, 6, 7

4.2 Project budget summary

Financing source	Programme co-financing	Public and private contributions	Total eligible budget
ERDF	2.590.000 €	2.590.000 €	5.180.000 €
Norwegian funding	0 €	0 €	€
Total	2.590.000 €	2.590.000 €	5.180.000 €

4.3 Investments

Title	Description	Explanation
1. Equipment for mixed irrigation and measuring the salt content on target sites	For the 10 collaborative field labs (target sites) we need compatible and site-specific manageable irrigation systems (for fresh and salty water) and recording equipment.	To measure the salt tolerance of the selected crops, site-specific manageable irrigations systems are required. Moreover the data loggers and sensors to record the salt content at various levels in the ground should be compatible across all target sites to enable systematic comparison and analysis of results across the North Sea Region

Funding confirmation - I confirm that the activities and costs included in this application have not and will not receive any other European Union funding in addition to the grant from the North Sea Region programme.

5. Submission

Managing User Angelica Kaus @ University of Groningen

Sent to JS Yes

Date of submission 13/03/2016 16:25:00