22 Case Study – Stichting De Zilte Smaak

‘Discovering Saline Farming Potential on Terschelling’

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22.1 INTRODUCTION

Stichting De Zilte Smaak (The Saline Taste Foundation) was founded in 2017. Three entrepreneurs on Terschelling initiated the foundation: Flang Cupido (Cooking Studio Flang in de Pan), Ria Laanstra (Catering Service ‘t Lokaal) and Hans Wilmink (owner of holiday apartments De Zeeboer). Being active in the hospitality sector themselves, they saw opportunities for saline products in menus of local restaurants and for developing other specific island food products.

Tourists associate the island Terschelling and its surroundings with sun, sand, sea and salt. Logically, these features are translated into the commercial touristic

products on offer at the island. Saline vegetables and herbs might fit perfectly into the existing range of these products. With this in mind, the idea arose to explore the possibilities of saline farming on the island. It fits perfectly in the growing attention for producing, tasting and buying local products as well.

22.2 SALINITY

Salinity is not new to the island. Being situated in the UNESCO world heritage region Waddenzee, the island is surrounded by salt sea water. For its fresh drinking-water supply, Terschelling relies on a fresh groundwater reservoir in the dunes of the island. In addition, the water company provides freshwater through a pipeline from the mainland.

The freshwater available for farming purposes on the island itself is plentifully available during autumn and winter and to a lesser extend also in spring. During these months, the water used for field irrigation in the summer months is replenished by rainfall. However, during the past few sunny, warm and extremely dry summers, the demand has been greater than the replenishment. The availability of freshwater for farming purposes, therefore, has become a major concern for the island.

22.3 CLIMATE CHANGE

Also, with the rise of the sea-level due to climate change, it is expected that the brackish or saline water pushing in from the sea towards the freshwater system on the island will affect farming more in the years to come. The plots closest to the Waddenzee dike on the south of the island have already experienced the effect of the saline seawater pushing in: waterways close to the dike mainly have brackish water. The salinity becomes a problem for farmers, as with increasing salt levels in the water it cannot be used as drinking water for the cattle anymore. All farmers on the island of Terschelling nowadays are dairy farmers. Land close to the Waddenzee dike is used for the harvest of roughage for cattle, in some cases for the grazing of sheep and if applicable as a resting area for the many geese and other migratory birds.

22.4 NEW OPPORTUNITIES

Saline crops are normally found on soils that are regularly flooded by salty or brackish water and tend to occur in clay-rich soils. As the land close to the coastline becomes more saline, growing saline arable crops might have potential on the soils of Terschelling. However, the soil conditions vary depending on the location on the island. The same goes for the saline conditions of the available water. The entrepreneurs of De Zilte Smaak looked for – and found – a piece of land on the island on which they could grow the saline crops. They started farming with crops such as samphire, sea lavender and ice plant ([Figure 22.1](#)). Their aim was to make positive use of the salinization of water and/or soil to learn how to grow these unknown crops and to share their knowledge and experiences.

FIGURE 22.1 Ice plant.

22.5 SALFAR

Besides gathering information on how to grow the crops as well as possible, the initiators have focused on product development based on the harvested produce. At first instance, the aim was to combine the fresh vegetables into a durable, shelf-stable product such as pesto or dried herbs. These kinds of products are not new to the market; however, they are new to Terschelling. In order to make use of already available knowledge and to benefit from ongoing research, the Stichting decided to participate in the international Interreg VB North Sea Region SalFar project.

22.6 EXPERIENCE

Based on experiences in the first year, the initiators learned that growing saline crops requires focus, attention and crop knowledge. In order to professionalise the growth of the crops and the work in the field, more information on arable farming was required. This was obtained by recruiting an experienced arable crop farmer from the mainland on a freelance basis. His external expertise proved beneficial to the success of the field design, crop development and harvest of ready produce.

22.7 PRODUCT INTRODUCTION

First steps into the market proved that there certainly is an interest in saline products. The freshly harvested saline crops were offered for taste sessions to consumers through local markets on the island. Consumers were enthusiastic about the possibilities to incorporate freshly grown saline products in an everyday (vacation) dinner

to add some extra island experience to their daily meal. Initiators Ria Laanstra and Flang Cupido successfully developed pesto based on the saline crops. When offered at the local market, the public enthusiastically welcomed this pesto as well.

The warm welcome of the products by the consumers at the local Terschelling markets proved that the initiators were on the right track with product development. However, the fresh produce offers a major challenge with regard to market development. Contrary to the ideal situation, the fresh product is not always available to meet the demand.

22.8 MORE VARIETIES

On the other hand, the recipe for pesto, although it can change based on the availability of the crops, has certain restrictions as well. Not all of the surplus of the crops can be processed into a balanced pesto. This experience in the second year of saline crop growing led to the conclusion that even more control of the field experiment was needed. Furthermore, a greater variety of crops – such as sea aster, beach beet, sea banana and oyster leaf – would be worth exploring as it was clear that the harvested produce could not all be sold as the fresh product (Figures 22.2 and 22.3).

FIGURE 22.2 Sea banana.

FIGURE 22.3 Oyster leaf.

22.9 DURABLE PRODUCTS

Development of more durable consumer products such as saline herb mixtures should, therefore, be explored further. Mixtures cannot be based on only a few different ingredients; therefore, a wider range of saline crops should be incorporated in the field design. Every crop has its own unique saline taste experience. The herb mixtures might be used for different applications and offer another opportunity to produce a product with an extended shelf life.

22.10 NEW CHALLENGES

The year 2019 offered new challenges for the test field of De Zilte Smaak. Unfavourable growth conditions in spring, an extraordinary dry hot summer and a very wet autumn hindered the development of many of the crops. The production of fresh produce was very irregular and neither suitable for regular delivery of products to the local farmers market nor for offering to consumers or being used by cooks in their restaurant menus. Most of the harvest, therefore, was used for making pesto.

22.11 NEW AMBITIONS

However, there were some small successes in the test field over the past few years that have given the team of De Zilte Smaak new ambitions (Figure 22.4). Some saline crops turned out to be very resilient and survived the unfavourable growing conditions. And some of the potato breeds that were tested in 2019 have been offering yield, even though much less than the commercially grown crop on the mainland.

FIGURE 22.4 Test field.

22.12 NEW FIELD DESIGN

The experience gained by the team resulted in yet another field design for 2020. The design is more robust and is based on more regulated growth conditions in the field. Furthermore, it was found that some of the saline crops have a troublesome start when sown directly in the open field. Therefore, it was decided to sow these particular crops in the future in a greenhouse and plant the seedlings later on as soil temperatures and growing conditions are more favourable for these plants.

Some of the crops need to be restricted as these have a tendency to overgrow other crops. Growing them in containers can prevent this. It enables the team to easily keep the soil free from weeds and prevents the crops from expanding uncontrollably. Growing the different herbs in restricted spaces also offers an opportunity to produce the product more in accordance with market demand.

22.13 IRRIGATION

Under dry conditions, the soil on Terschelling has difficulties retaining moisture. The team invested in drip irrigation for the open field as well as for the containerised crops. This enabled the team to irrigate crops in periods of drought, and also offered the opportunity to irrigate seeds to ensure germination when moisture levels were low or when crops needed less saline water to stimulate germination. The irrigation should also guarantee stable growth of the crops, giving a more secure base for the

FIGURE 22.5 Drip irrigation for rucola.

development of the crops during the season. This would benefit the market position of the fresh produce towards restaurants on the island by providing a more stable delivery of saline vegetables ([Figure 22.5](#)).

22.14 MARKET DEMAND

Market demand in the past years has been largely based on the development and production of pesto. The team of De Zilte Smaak would like to explore further which products could be developed based both on the potential of field crops and the market opportunities on the island. In order to do so, cooperation will be sought with other hospitality entrepreneurs who have shown interest in using the fresh produce in their restaurants.

22.15 COOPERATION

In the summer of 2020, the first successful cooperation with local restaurants was started. Two restaurants on the island signed an agreement with Stichting De Zilte Smaak. Following the agreement, restaurants can harvest crops during the season to meet the demands of the menu their cooks have designed. In return, the restaurants sponsor the initiative financially. As the summer of 2020 again was sunny, hot and dry, the initiators were careful in their approach and selected two restaurants for the first experience. The insecurity of crop availability was the main reason for a somewhat hesitant market introduction. During the summer, this turned out to be the right choice. As the summer progressed into autumn, some crops had an extra growth boost from the rainwater that fell in August.

22.16 PRODUCT DEVELOPMENT

Some of the crops turned out to deliver far more produce than could be used as fresh product in the restaurant menus. Therefore, the initiator will invest in making pesto from the surplus this year as well, knowing it will sell as an interesting local product in specialised deli shops on the island. The team will also continue to experiment with products from the test field and develop durable products such as herb mixtures, as they can be sold to tourists to let the memory of their stay on the island linger on. Obviously, the team will keep searching for other products in which the saline herbs can be used.

22.17 THE PEOPLE OF STICHTING DE ZILTE SMAAK

Stichting De Zilte Smaak (The Saline Taste Foundation) is an initiative of the people of Terschelling. Islanders do the fieldwork and product development as well. By exploring and developing saline farming on the island and creating a market for the saline products, the team of De Zilte Smaak aims to contribute to more sustainable crop production and offer local entrepreneurs an opportunity to differentiate themselves with unique products. External experts from the island of Terschelling support the work of the foundation, and in some cases, expertise is gained from the mainland ([Figure 22.6](#)).

FIGURE 22.6 Field visit.