

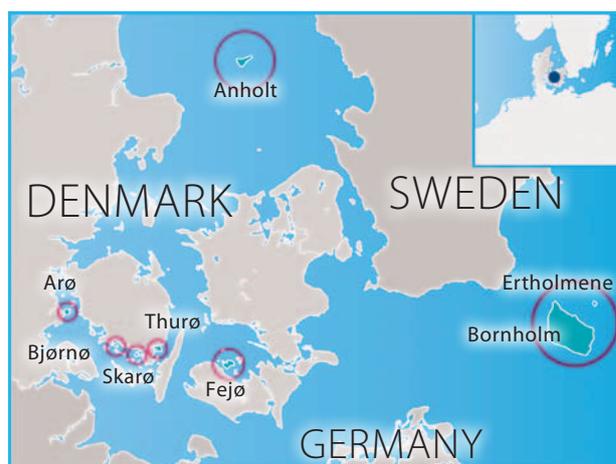
Production of edible seaweed

FLAGs: Danish Small Islands & Bornholm

Islands of Anholt, Fejø, Skarø, Årø, Bjørnø, Ertholmene, Bornholm, Thurø (Denmark)

Project overview

This project involves cooperation between stakeholders from two Danish FLAGs, one on the island of Bornholm and the other covering smaller islands, in commercially exploiting seaweed, an overlooked resource in Danish waters. By promoting the sustainable cultivation, harvesting and processing of seaweed, the project will assist in diversifying the local economies of the islands, thereby helping to maintain strong local populations and vibrant communities.



Context and Key Challenges



The small Danish islands and Bornholm are remote areas, threatened by depopulation and a loss of business opportunities. Seaweed production presents a potential new opportunity for local entrepreneurs, including fishermen. If exploited successfully, it could help to broaden the range of products offered locally and lead to increased earnings for local food producers and restaurants.

While there is no tradition of cultivating, harvesting, or exploiting seaweed in Denmark, with the growing popularity of sushi and the development of the New Nordic Cuisine, Danish seaweed is increasingly in demand. Danish waters produce, or can produce, similar seaweed species to those grown in East Asia or in the Atlantic. The quality of this seaweed is excellent, and for some purposes even better than imported dried seaweeds because of the limited salinity levels in some parts of the Danish waters.

Many of the 27 small Danish Islands with less than 1 000 inhabitants are, together with Bornholm, well known for food production. There is, however, a lack of development of new products that are competitive in the market-place. As a result many food producers only work part-time in food production, supplementing their income with other part-time jobs. This can create a stressful working situation, which leaves little time or energy for product development.

Project objectives

- › To grow three species of seaweed in sufficient quantities – and quality – that meets the demand of local food processing companies, as well as consumers and restaurants in the bigger cities;
- › To develop at least two new products to be exported from or sold at each local production centre;
- › To grow, as an ancillary activity, a range of salt tolerant plants of high gastronomic value;
- › To produce information material and to launch a campaign in major cities to promote awareness of the culinary value and health benefits of seaweed;
- › To exploit the tourism potential of this new seaweed enterprise by demonstrating the sustainable production of seaweed and by using seaweed to develop a genuine local cuisine based on local resources.

Project description

The project idea initially arose from a series of informal meetings and brainstorming sessions in 2009, involving independent producers and experts in production and product development.

The first concrete step was a pre-project which had been financed separately through a specific fund of the Danish Ministry of Food, Agriculture and Fisheries, to investigate the world market for seaweed and the technical aspects of seaweed cultivation, harvesting and processing. The Danish market for imported seaweed was examined and contact was made with top restaurants and food laboratories (such as NOMA, voted the world's best restaurant in 2010 and 2011, and the Nordic Food Lab) to learn from their experience of using seaweed and their views as to which species had the greatest commercial potential. The pre-project also included visits to potential partners to discuss their interests in seaweed production and to learn more about the possibilities for growing and harvesting seaweed.

Based on the results of the pre-project, an investment proposal was prepared, based on maximising the use of existing resources and infrastructure and minimising additional direct investment. This proposal also combined the cultivation of seaweed with the harvesting of wild seaweed. This made it possible to begin product development six months earlier than would otherwise have been possible.

The project application was submitted to the FLAGs in May 2010 and cultivation started on a small scale in December 2010. A series of workshops are now being organised (the first was held in April 2011) to deal with practical issues related to cultivation and processing. These workshops involve experts from Danish universities and research institutions.



To ensure professionalism and innovation in terms of product development, a well-known chef with experience in the use of seaweed will hold another five workshops for those project partners wanting to concentrate on product development. The products developed will range from seaweed-based crisps and salads to wine and ice-cream. A consultant experienced in the development of food products will regularly visit the different initiatives to consolidate and monitor their progress.

In anticipation of the first harvest, which is expected by the summer of 2011, packaging and presentation materials are also being prepared, together with promotional material, including a collection of recipes. Marketing campaigns are also being planned in collaboration with the Danish Fishmongers Association and the biggest Scandinavian food wholesaler. Local producers are also planning to present and demonstrate their products at local food markets and food fairs.

Main actors involved

The project involves eight islands, five of which are members of the “Danish Small Islands Food Network”. Bornholm, one of the biggest Danish islands, was the founder and is an active member of the European Culinary Heritage Network (<http://www.culinary-heritage.com/index.asp>).

In all, 16 producers are participating in the project, either in cultivation, or in both cultivation and product development. They come from a variety of backgrounds and include: mussel growers, fish farmers, gardeners, a nature manager and artist, a wine producer, a cider producer, an ice cream producer, a producer of plant extracts and functional food, and a producer of jam, pickles and spiced herrings.



Project outcomes

The main outcome expected is the creation of a small nucleus of Danish seaweed growers and processors with sufficient knowledge to expand production to new species and to develop new products in line with the needs of the New Nordic Cuisine. This will help to diversify the food production sector on the islands, making it less vulnerable to changes in the market.

Specifically, the project aims to:

- › Create a minimum of four new jobs by the end of the project;
- › Initiate the cultivation of at least three seaweed species;
- › Develop at least two new products by each participant that focuses on product development;
- › Launch two information and marketing campaigns, produce four information leaflets, organise one conference, four workshops and a number of research trips for the participants.

The use of existing infrastructure, such as old fishing boats, and existing harbours and buildings in the small fishing ports, will help to preserve the existing cultural heritage, thereby improving the attractiveness of the islands to tourists. In addition, the promotional campaigns will help to raise the profile of the islands, both as producers of quality local food products and as attractive places to visit.

Importantly, seaweed cultivation can also have a positive impact on the natural environment. The removal of nutrients helps to purify sea water, while cultivation systems also provide new biotopes for marine organisms (e.g. fish juveniles).

Overcoming obstacles: key lessons

The first barrier was financial. Small local producers have a limited investment capacity and finding sufficient match-funding has proven difficult for productive projects, which benefit from lower levels of public contribution. This lack of match-funding could mean that the project may not be able to use the full Axis 4 grant.

Another issue was the processing time of the application and the payments. It took around eight months for the first installment to be received. Interim financing is a major issue for cash strapped producers or non profit associations. Fortunately, this issue was overcome through the generous support of a local bank.

On a technical level, acquiring the “seedlings” of the algae to be cultivated proved very difficult. This appears to be a general bottleneck in the seaweed industry and because of this, project participants have decided to develop their own nursery, which will begin operating in the autumn of 2011.

In terms of success factors, project promoters highlight the following:

- › A carefully prepared report from the pre-project
- › The organisation of several seaweed presentations and tastings throughout 2010, which helped to gauge consumer reactions and interest from food wholesalers
- › The support and encouragement of the FLAGs involved
- › The remarkable “pioneering spirit” of the partners.

Future prospects

While the project’s financial requirements are not yet fully resolved, the project has enough funding to see it through to completion. However, further anchoring of the project in the local communities will be important, as well as establishing cooperation with experts and food authorities.

As the project has sought to limit the requirement for new investment, relying instead on existing facilities and equipment, running costs have been kept to a minimum. This will enable the project to continue for a number of years, even if sales levels are low at first.

This is important, as although the different seaweed products have been well received by the general public in tastings and other tests, the extent to which customers will ultimately purchase these products is still unknown and it may take time to develop a viable market.

In the longer term, a combination of seaweed production and fish or mussel farming is envisaged. The interaction between seaweed production and farming of seaweed eating fish species (such as mullet) could also yield additional benefits.

Transferability

The essence of this project is development based on local resources that were previously unused or under-used. There has never been a tradition of eating seaweed in Denmark, but the emergence of the sushi culture and the New Nordic Cuisine has opened up a new market opportunity.

The project concept is directly transferable to areas with under-utilised natural resources (fish by-catch, wild plants, old varieties of vegetables and cereals or traditional breeds of cattle or other animals). In Scandinavia, for example, the New Nordic Cuisine has created a demand for local, high-end products. In terms of organization of the project, the same organisational and financial systems could be used. Still the process could be streamlined further with, among others, an improved strategy to deal with the issues of interim financing.

Costs and funding

Total cost:	€ 158 253
Costs breakdown:	
Consultancy services and administration	€ 84 102
Production materials/equipment	€ 33 622
Travel and transport	€ 18 239
Information products	€ 17 596
Voluntary work	€ 2 682
Auditing	€ 2 012
Finance:	
<i>Axis 4 contribution:</i>	€ 84 492 (70% small island FLAG / 30% Bornholm FLAG)
Southern Funen National Park Project	€ 40 234
Danish Food Industry Agency – Marketing	€ 17 435
Ministry of the Interior	€ 13 411
Voluntary work	€ 2 682

Project information

Title: Production of edible seaweed species in Danish waters: the beginning of a new profession

Duration: two years (Jan 2011 – Dec 2012)

Case study date: May 2011

Contact details

Kai Winter

Chairman of “Danish Small Islands Food Network”

kai@kernegaarden.dk

+45 54 72 21 21

FLAG details

Danish small islands FLAG

mp@aktionsgruppe.dk

+45 38 33 00 67

[FLAG Factsheet](#)

FLAG Bornholm

hjj@lag-bornholm.dk

+45 20 42 33 70

[FLAG Factsheet](#)

Editor: European Commission, Directorate-General for Maritime Affairs and Fisheries, Director-General.

Disclaimer: Whilst the Directorate-General for Maritime Affairs and Fisheries is responsible for the overall production of this document, it is not responsible for the content nor does it guarantee the accuracy of the data.