



case study

environmental sustainability



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The Objective One Partnership
for Cornwall & the Isles of Scilly

CORNISH MUSSELS

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the project

Cornish Mussels received £53,380 from the Financial Instrument for Fisheries Guidance (FIFG) to establish a new rope-grown mussel farm in the Truro river at a total cost of £152,516. The investment will deliver increased annual turnover and profitability by increasing mussel production.

Mussels are one of the most popular shellfish eaten in the UK and currently production cannot meet demand. By growing mussels in Cornwall, the company can provide fresh, top quality mussels to wholesale and catering outlets outside Cornwall and develop new marketing opportunities for Cornish produce.



James Griffin aboard his farm rafts on the River Fal

measures of environmental sustainability adopted

To promote the prudent use of natural resources

Very little waste is created by the business (about one dustbin every three months) as mussel farming is a low waste process and the polystyrene boxes used for transporting product are reused. The company uses ICT for communication and research thus reducing paper use. Very little water is wasted as, once used, it is recycled back into the sea. Local sourcing is practiced where possible e.g. for the plastic netbags. Distribution of the product is via collective transportation from Newlyn to markets across the south of UK. Staff live close to work so some are able to cycle and walk.

To protect and improve the environment

The mussel rope farming process inherently improves biodiversity in the area because the mussel ropes act like a 3D reef or kelp forest leading to many species using the habitat to feed and shelter. All the equipment is driven by biodegradable hydraulic oil. Staff regularly remove floating rubbish, carried into the mussel farm by the tides and wind, out of the water. Water returned to the sea is cleaner than when it was extracted.

To take advantage of the business opportunities afforded by growing demands for environmental goods, processes and services

Branding of the mussels product uses the stamp of 'King Harry' and 'Cornwall' as the Atlantic environment and Cornish fish have good reputations with customers.

To increase awareness of residents, businesses and visitors of the value and importance of the environment

The business website includes a page about the environmental benefits of mussel rope farming and there are links to other sites with environmental information.

benefits of environmental sustainability

The biodegradable hydraulic oil is more expensive but ensures less pollution and damage is done to the environment in which the mussels are farmed, which is important as mussels require a fairly pristine environment. The market for mussels is quality and price driven so there is a need to increase the quality of the product by protecting the environment.

The business provides information on the environmental aspects of their product because the public, Carrick District councillors, those managing the Special Area of Conservation and others ask questions about the sustainability of fish farming, so they need to explain that this type of farming is improving, rather than damaging, the environment. This will reduce political resistance on the business currently and also support efforts to expand in the future as there is recognition that the business is benefiting the environment.

The business recognises that there will be an increasing number of potential customers wishing to source



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mussels sustainably so using this method of farming could increase revenue in the future. Already there is marketing benefit (worth 40p more than Shetland Isles mussels) in branding a product as 'Cornish' as the quality of the product is linked directly to the perceived quality of the environment.

The reuse of customers' polystyrene fish boxes to transport the mussels saves the business money because they are cost free.

In summary the economic benefits created through the adoption of environmental sustainability measures include marketing advantages, improved product quality, reduced costs, and enhanced opportunities for growth.

lessons learnt

Steve Kestin of Cornish Mussels said: *"One reason we chose this line of business was because it was environmentally benign, as this fits with the ethos of the company.*

"The one weakness in the environmental credentials of the business are the food miles generated. This story applies to many businesses and is a hard area to tackle, but at least we generate less miles than our competitors in Scotland.

"We have recently invested in more economical generators to help reduce our carbon impact. We all simply have got to do something about our carbon impact so energy conservation is the issue. Besides this the environmental impact of any project should be negligible or beneficial.

"In my experience there are no downsides to being environmentally friendly."

Explanation of environmental aspects of farming mussels on ropes

Unlike most forms of fishing or fish farming, growing mussels on ropes suspended from rafts or long-lines has a minimal adverse impact on the environment. This is because no chemicals, food or foreigner species are added to the water. Clean ropes are simply hung in the water and wild mussel spat, free swimming in the oceans, settles onto the ropes and starts feeding on the plankton in the water.

When the mussels are big enough, the ropes are lifted aboard a harvesting barge, stripped off the ropes and taken for cleaning, depuration and packing. The environmental benefits of farming mussels on

ropes is well recognised by many groups. See for example: eartheasy.com, www.mbayaq.org and www.fishonline.org.

In addition to providing an excellent habitat for mussels, the ropes provide an equally good habitat for many other forms of marine life. Rather like a kelp forest, the ropes provide an environment where many forms of invertebrate can thrive. Large invertebrates and vertebrates prey on the worms and small fish that inhabit the ropes and their surroundings. It is not unusual to see birds and seals feeding on fish living amongst the ropes. The local biodiversity is considerably enhanced around mussel farms.

After harvesting and before marketing for consumption, it is usual to hold mussels (and most other shellfish) in purified water for 42 hours to clean them and remove any contamination. Cornish Mussels have built a compact modular depuration system. This is based on standard 750 litre stillages that hold 250kg of mussels. Seawater is pumped from a reservoir through a powerful Ultra Violet light to kill any bacteria and then to the stillages filled with live mussels. The water passes through the deep bed of mussels, carrying away mud and other impurities. Over 42 hours the mussels cleanse themselves of impurities, rendering them safe for human consumption. The mussels are then drained and tipped from the stillages, washed and inspected and then packed in 5 and 10 kg bags ready for dispatch. To allow for weight loss in transit, we pack about 20 percent overweight.

For more information about how you can incorporate environmental sustainability into your project please contact the Objective One Partnership Office on 01872 241379 or email objectiveone@cornwall.gov.uk.