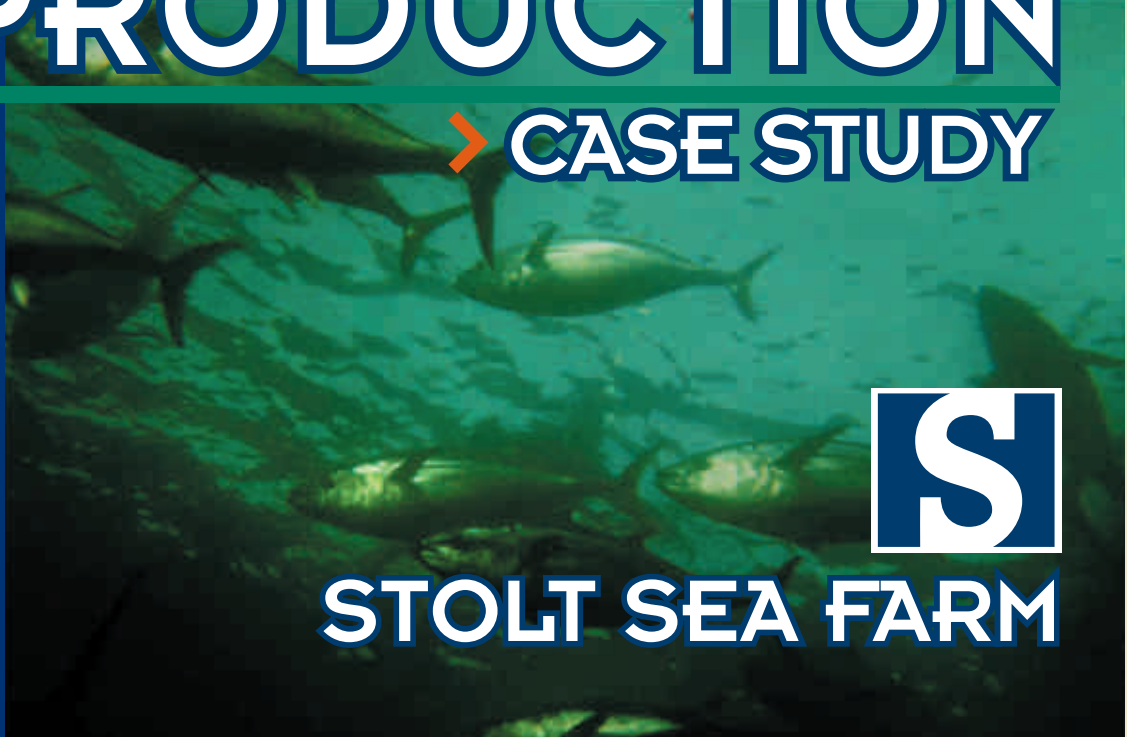




# CLEANER PRODUCTION

## > CASE STUDY



## STOLT SEA FARM

### SUMMARY

A detailed investigation into water usage and wastewater generation at Stolt Sea Farm, which produces sashimi tuna primarily for the Japanese market, identified possible improvements in both quality and quantity, particularly in the washdown and pilchard thawing areas. As a result of this consultancy and changes in its practices, Stolt Sea Farm has reduced its annual water usage by approximately 40% and saved \$13,900 in 2000.

# STOLT SEA FARM

## Business profile

Stolt Sea Farm is a major tuna processing company, based in Port Lincoln, which produces sashimi tuna primarily for the Japanese market. The tuna industry currently dominates aquaculture in South Australia and has an economic value of over \$500 million.

## Financial assistance provided

Flinders University of South Australia carried out the consultancy with a grant of \$15,000 from the EPA and funding through the Coast and Clean Seas scheme. The consultancy covered eight major processing facilities in Port Lincoln.

## Technology implemented

A detailed investigation of water usage and wastewater generation (both quality and quantity) identified areas where major savings could be made, in particular in washdown and pilchard thawing. An investigation into the optimum regime for temperature exchange during pilchard thawing showed that significant savings could be made by changing the water inlet to the base of the thaw-out bins and by pulsing water exchange via solenoid valves. Australian Quarantine Inspection Service requirements are maintained through the use of backflow prevention valves on the main inlet pipe.

## Cleaner production motivators

The implementation of a new marine discharge policy by the EPA in 2001 will require Stolt Sea Farm to instigate new waste treatment practices at significant cost to the company. Waste minimisation was considered important for continuing economic operation of the facility. The Coast and Clean Seas project was also an important driver for this study.

## TRADITIONAL APPROACH

The traditional approach to pilchard thawing was to defrost pilchards using cold water in open tanks with water running continuously. This approach was inefficient and required 14 kilolitres of water per tonne of pilchards.

CLEANER PRODUCTION INITIATIVES



Benefits recommended and implemented

Pilchard thaw-out process improvement

The process used for pilchard thaw-out was improved significantly and water usage has decreased from 14 kilolitres per tonne to approximately 5 kilolitres per tonne, with no increase in processing time.



TUNA RACKS



TUNA PREPARATION



## BENEFITS



ENVIRONMENTAL	
Water usage	<ul style="list-style-type: none"> <li>Major reduction in water usage for the thawing of pilchards.</li> </ul>
Waste reduction	<ul style="list-style-type: none"> <li>Reductions in nutrient load in wastewater will have significant benefits for the re-use of wastewater treatment plant effluent being implemented in the Coast and Clean Seas initiative.</li> </ul>
ECONOMIC	
Productivity	<ul style="list-style-type: none"> <li>Productivity and cost efficiency have increased significantly.</li> </ul>
Water usage costs	<ul style="list-style-type: none"> <li>Water usage has decreased in the processing factory by approximately 40%.</li> </ul>
Waste treatment costs	<ul style="list-style-type: none"> <li>Future trade waste discharge fees to sewer will be based on both volume and strength; savings in charges through waste minimisation and separation of high nutrient streams, use of screens etc. will result in significant future savings.</li> </ul>
Payback period	<ul style="list-style-type: none"> <li>Costs associated with the new pilchard thawing system are low (total &lt;\$1000 for new piping, solenoid valves, bin adaptations).</li> <li>Payback period for measures aimed directly at waste minimisation is estimated to be less than one month.</li> </ul>

## BENEFITS RECOMMENDED AND STILL BEING CONSIDERED



### Monitoring

A thorough review of all water usage and wastewater generation on site was instigated in the program, identifying opportunities for minimisation. Use of water for sashimi tuna processing was low, but possible additional savings during washdown have been identified, and further changes in operational procedures should save more water and improve ongoing waste treatment charges in the future.

## WHERE TO FIND ADDITIONAL INFORMATION



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