

## Wastewater recycling on the Koster Islands

**The Municipality of Strömstad has built a recycling plant on the Koster Islands that does not just treat the wastewater and reduce nutrient inputs to the Skagerak. It also deals with the residues from wet composting, which are converted to biohumus and fertiliser and used in local food production.**

On the Koster Islands, just off Strömstad, a new water and wastewater system was installed in 1999–2003 with support from the local investment programme (LIP). The aim was to develop a facility that would be part of the infrastructure, profile and entrepreneurship of the Koster Islands and provide an opportunity for greater local food supply. The wastewater was to be treated so that it could be used to flush toilets and for irrigation. The latter is particularly important in view of the limited supply of freshwater on the islands.

### POSITIVE ENVIRONMENTAL AND ECONOMIC IMPACTS

- Reduced nutrient inputs to the sea (approx. 1,200 kg nitrogen and 350 kg phosphorus/year).
- Reduced emissions of carbon dioxide (800 kg/year).
- Reduced biochemical oxygen demand (BOD) (approx. 8,000 kg/year).
- Reduced need for groundwater due to re-use of treated wastewater.
- Reduced need for commercial fertiliser due to production of biohumus and fertiliser.
- Increased local employment.

Photograph: Anders Tysklind



## IMPLEMENTATION

The recycling plant replaced four older plants, resulting in a sharp reduction in nutrient discharges. The plant serves around 150 people in winter-time and around ten times that number in the summer. Because of the seasonal variation, two lines were created in the plant, one for high load and one for low. The treatment of the wastewater includes biological treatment of the sludge in a reed bed. Phosphorus reduction takes place and the dry matter in the biohumus is increased in this bed. The treated wastewater is re-used in toilets and for irrigation.

The plant proved to be more expensive than planned due to a change of principal supplier and building permit appeals. The project was marketed through the website of the Municipality of Strömstad, and an information brochure was distributed to households on the islands of North Koster and South Koster. The environmental administration took part in several island councils and discussions on the plant. The plant has attracted great interest among both Swedish and Norwegian municipalities and media. A variant of the plant has been built in the Municipality of Hammarö.

## POTENTIAL AND FUTURE BENEFIT

It is important to create sustainable and ecocycle-based water and wastewater systems for infrastructure and the environment. One aspect of adaptation to the ecocycle is to re-use the water, nutrients and energy contained in wastewater. Phosphorus should be returned to arable land and other productive land.

## WHY BEST PRACTICE

The recycling plant creates jobs for the population of the Koster Islands. A new restaurant has opened for business, and demand for locally grown foods is increasing. New technology has been tested and developed, and municipalities planning similar plants can benefit from experience gained in the project. The plant also forms part of a project in the EU's structural funds, Objective 2 Islands.

The project has been based on local circumstances. Dialogue and collaboration with various stakeholders have contributed to the success of the project. There is growing interest today in local production and recycling solutions on the Koster Islands.

## FOR FURTHER INFORMATION

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For further information on Best Practice

[www.swedishepa.se/bestpractice](http://www.swedishepa.se/bestpractice)  
[www.naturvardsverket.se/mir](http://www.naturvardsverket.se/mir)

## FACTS

LIP Strömstad 1999  
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Grant: SEK 3.4m

