



# BALTIC GRASSLANDS for a CLEANER SEA

Wise Use of Semi-Natural Grasslands and Wetlands, for  
Nutrient Reduction, Biodiversity, and Rural Incomes  
in the Baltic Sea Region

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TEXT: Charlie Avis & Frida Hermanson

PHOTOS: Ola Jennersten (front page & OJ), Toomas Kokovkin (TK), Sven-Olov Borgegård (SOB), Berndt Godin (BG), Johan Persson (JP), Emelie Runfeldt (ER), Inger Abrahamsson (IA), Mati Kose (MK) & Anett Persson (AP)

ILLUSTRATION: Jonas Lundin

DESIGN: Upplandsstiftelsen

PUBLISHED BY: Upplandsstiftelsen, Uppsala, Sweden, 2012, second edition 2013.

[www.upplandsstiftelsen.se](http://www.upplandsstiftelsen.se)

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## FOREWORD AND INTRODUCTION

In the Baltic Sea Region, as elsewhere, the sea and landscapes continue to suffer from degradation and the breakdown of ecological functioning. Good examples of sustainable approaches to agriculture, forestry and business do exist, but are rarely found on a scale sufficient to reverse prevailing negative trends. By utilising and managing semi-natural grasslands and wetlands for producing sought after products and landscapes, the trend can be reversed.

Well-managed semi-natural grasslands and wetlands lead to:

- a reduction of nutrients from the agricultural sector leaching into the Baltic Sea
- a higher biodiversity in the agricultural landscape
- benefits for farm businesses, entrepreneurs, and rural communities in the shape of income and jobs

Tested on the ground in Sweden and other Baltic countries, these approaches have been shown to work. Developed and implemented by WWF Sweden and Upplandsstifelsen together with partners from the farming, business, and conservation sectors. These methods now need to be developed further, communicated, and supported so that more farmers and entrepreneurs apply them.

Fortunately, some supports already do exist, in national, regional and EU-wide policies and funding for environment, water and agriculture. But much more is needed. EU's Common Agricultural Policy (CAP) and its funding is being re-evaluated, in order for a more sustainable system to be in place from 2014. The new frameworks must take these methods into account, provide funding for them, and in that way provide opportunities for business, people, and nature across the region. At the same time reducing nutrient loads into the critically eutrophicated Baltic Sea.

## **THE STATE OF EUTROPHICATION IN THE BALTIC SEA**

Eutrophication is accepted by all, as the most serious environmental problem facing the Baltic Sea. Agriculture is one of the main contributors to this pollution due to the high levels of artificial fertilizers being used today.

### **AGRICULTURE AND EUTROPHICATION**

The intensification of agriculture – much of it in the last fifty years – in the surrounding drainage basin has led to large amounts of nutrients, mainly nitrogen and phosphorus, being released into the Baltic Sea each year. In 2000, almost 60% of the total water borne nitrogen input and 50% of the phosphorus input to the Baltic Sea originated from agriculture and managed forestry. It is therefore logical to assume that any effort to reduce eutrophication in the sea, should work on the land with agriculture.

The impact of eutrophication on the marine ecology is great, leading to an accelerated growth of algae during the summer months which disrupts the normal functioning of the ecosystem.

### **TACKLING EUTROPHICATION WITH "SOFT" TECHNOLOGIES**

The governments of the region have recognised this problem and have enacted national action plans to try to reduce pollution. Led and co-ordinated by HELCOM, ambitious targets have been set, and many millions of Euros spent on attempts to implement solutions.

Yet tackling diffuse pollution is notoriously hard. "Hard" technological engineering fixes and large capital investments (such as new wastewater treatment plants) do nothing to reduce nutrient inputs on a catchment by catchment, farm by farm, field by field scale.

That is why this project is unique. It offers tested, working "soft" technologies for altering agriculture and landscape management on a large scale which do work at the field level, and which do reduce nutrient inputs, whilst at the same time making sound economic sense.



## **THE IMPORTANCE OF GRASSLANDS AND WETLANDS**

### **NATURAL GRASS IN THE PLACE OF FERTILIZER INTENSE FODDER**

Well-managed semi-natural grasslands support a great biodiversity, offer opportunities for food and bio-energy production, act as "carbon sinks," absorbing more of the greenhouse gas carbon dioxide than they release, at the same time as they reduce agricultural pollution when used as an alternative to mainstream in-house cattle rearing systems.

Cattle grazing grasslands instead of being reared in stalls reduce the need for fodder production on arable land, where mineral fertilizers are used. Grass fed cattle thus produces not only high-quality, natural beef, but also produces more nature and a cleaner sea by reducing nutrient run-off.

Due to intensified rearing of livestock, semi-natural grasslands are one of the most threatened habitats in Europe. Near 235 species which are covered by the EU Habitats Directive are linked to grassland ecosystems. As man-modified habitats, shaped over centuries of haymaking and grazing they harbour a great biodiversity.

### **WETLANDS AS NUTRIENT TRAPS**

Managed wetlands work as nutrients traps, trapping and absorbing nitrogen and phosphorus in the wetland biomass (grasses). By removing the wetland grass through grazing and/or haymaking the nutrients are recycled into the agricultural system. The hay removed from wetlands can be used as bio energy, furthermore reducing the carbon foot-print.

Well-managed wetlands attract a large diversity of birds that feed on an abundance of grasses and insects that thrive here.

### **HUGE POTENTIAL IN LARGE AREAS OF UNUTILISED LAND**

There are wetlands and semi-natural grasslands all around the Baltic Sea, alongside rivers, at the coasts, and scattered throughout the interiors, of each and every country. A huge potential is harboured in these unutilised large areas of land that can be used to reduce the nutrient loads to the Baltic Sea.

In a Baltic context, restoration and wise use of these grasslands and wetlands is important if the challenges of reducing agricultural pollution are to be met!



## **EU POLICIES AND OPPORTUNITIES FOR CHANGE**

To combat eutrophication of the Baltic Sea, and a wide range of other environmental problems associated with agriculture, demands further, progressive reform of EU's Common Agricultural Policy (CAP).

### **ARTIFICIAL FERTILIZERS IN THE DRIVE FOR PRODUCTION**

Until relatively recently, the CAP encouraged agricultural production irrespective of market requirements. The more farmers produced, the more EU money they received. Increased use of artificial fertilizers has become a necessity in this drive for production. The CAP has gradually shifted to promote a more market oriented and sustainable agriculture, recognising the concerns of EU's citizens.

Progress has been made but there remains an overriding need to shift the CAP towards an even more environmentally focused and sustainable policy.

### **USE CAP TO COMBAT EUTROPHICATION**

The current CAP, together with Cohesion Funds, dominates EU policy and expenditure and commands about 40 % of EU's total budget. Direct income support (Pillar I) for farmers and market intervention receive almost 75% of the total CAP budget while environmental and rural development support (Pillar II) receives only 25%.

There is a need for good examples showing how CAP can be used to combat eutrophication of the Baltic Sea, achieve better water management, reverse the decline in biodiversity, create rural job opportunities, adapt to and mitigate against climate change as well as ensuring a plentiful supply of food.

The current CAP is being revised for the new period of 2014-2020. The Commissions proposed revision of the reform is a step in the wrong direction when it comes to addressing environmental problems. The way forward for CAP should be guided by the key principles: Polluter Pays Principle and Public Payment for Public Goods. These payments should be linked to the delivery of clear objectives and targets, which is most clearly shown in Pillar II. Therefore, WWF argues that at least 50% of the CAP budget should be allocated to Pillar II of which 50% should be earmarked for environmental measures supporting development of farms and rural areas.



## TWO DECADES OF DESIGNING SOLUTIONS

### FUNCTIONING NETWORKS

WWF Sweden and Upplandsstiftelsen have many years of experience in developing approaches, concepts, and methods to manage grasslands and wetlands benefiting biodiversity and local businesses while reducing nutrient run-off to the Baltic Sea. Well functioning networks between farmers, landowners, authorities, organisations and experts have been built up by WWF Sweden, Upplandsstiftelsen and partners over the years.



### TENS OF THOUSANDS OF HECTARES

Since starting on the ground in the early 1990s, the project's many partners have expanded the work to include tens of sites across different countries all around the Baltic Sea. What began with just one farmer, a handful of beef cows and a few hectares of land, has grown to include hundreds of partners, tens of thousands of cows and tens of thousands of hectares of semi-natural grassland under management.





*Project locations around the Baltic Sea, in 2010.*



OJ

## WHERE IT ALL STARTED: GRASS-FED BEEF AND BIODIVERSITY ON STOCKHOLM'S DOORSTEP

In the early 1990s, the first initiative got underway, along the shores of Mälaren in Uppsala County next to the urban market of Stockholm. There, interested farmers, Upplandsstiftelsen and WWF came together to put the first cows back out onto semi-natural grasslands and wetlands. Cooperation with a local supermarket, ICA, provided support and crucially a market outlet for the beef, and the scene was set. Now approximately 1000 cows graze 1000 hectares of semi-natural grasslands and wetlands again. These pastures are to a large extent found along the shores of Mälaren, to many birds delight.



BG

Upplandsstiftelsen and WWF then spread the idea to the Roslagen area of northern Uppland County with its unique archipelago and intricate network of inlets, meadows, pastures, wetlands and forests. This landscape with its small-scale farming, lime enriched soil, coastal climate and long history of traditional farming houses an array of rare plant and insect species.

A total of 50 farmers now keep cows on 2,200 hectares of semi-natural grasslands and wetlands in Roslagen. The farmers deliver meat to the market, while the grasslands they manage provide habitats for endangered plant and insect species. In 2004 just a handful of the endangered butterfly *Parnassius Mnemosyne* was found in a few locations. Six years later hundreds of butterflies can be counted at each, now carefully restored and managed, location.



OJ

## WETLAND MANAGEMENT IN CENTRAL SWEDEN

Meanwhile, in the mid 1990s, an equally impressive project was being developed in the Örebro area. There, a small partnership of like-minded farmers, the local municipality, County Administrative Board and WWF came together to put cows back out onto semi-natural grasslands and wetlands around Örebro.

The management of wetlands have since then been developed further. Parts of the wetlands are now being mown with specially adapted machines and the wetland biomass is delivered to the local biogas plant where it is turned into fuel for the local buss fleet. The remaining nutrient-rich slurry can then be returned to the nearby fields, recycling the nutrients and thereby reducing the need for artificial fertilizers further.

Today the cooperation in the Örebro and Mälaren region is a well-functioning economic and ecological system of 42 producers with its own consumer label. The farm sites have been visited by hundreds of interested organisations and individuals from all over the world, all of whom have been inspired by the beautiful setting, successful business model, and not least delicious tasting pasture-fed beef which is the heart and soul of the entire initiative.



### **CROSSING THE BALTIC TO ESTONIA...**

At this time, the late 1990s, large political and economic changes were taking place in Europe. Environmentalists in the west were becoming aware of the rich biodiversity still to be found in eastern Europe, whilst farmers and business people in the east were starting to work out how to make a living in their new situation.

WWF Sweden decided time was ripe for this approach to be taken to the neighbours across the Baltic Sea. Estonia, specifically the coastal meadows of the west coast and islands, was selected. Partners were sought and feasibility studies undertaken. The very high level of interest and openness to new ideas – many of which had already been developed independently by the Matsalu Nature Reserve staff – led to the Väinameri project.

In June 1999 the first 6 Highland cattle were introduced, and publicity surrounding the event and the project was so high that the Estonian Government visited during a special outdoor summer session.

Ten years later, some 2,000 cattle graze an area of 2,000 hectares of semi-natural grasslands, and meadows covering 2800 hectares are mown. The grass fed beef is now available in local supermarkets and in shops and restaurants of the national capital, Tallinn.



WWF Sweden, together with its partners from Matsalu and the local NGO Arhipelaag developed the project to eventually involve also high-quality handicraft production and eco- and farm-based tourism. The local economy is now more diversified and more robust. By now, more than 100 local businesses are involved. Tourism has kicked off, and many local farmers and other rural entrepreneurs have opened up guesthouses which visitors use as bases for exploring the area's many nature trails and beautiful, peaceful landscapes.

Measurably higher numbers of stop-over migratory birds now visit Väinameri on their way to and from the north, with as many as two million waterfowl descending on the grasslands each autumn and spring.





### ... AND THEN ON INTO RUSSIA

The experiences gained in Estonia led directly – and have contributed – to the development of a sister programme in Russian Karelia. Here, working with the newly-invigorated Olonets Agricultural Cooperative and local NGO Baltic Fund for Nature, the WWF project has resulted in approximately 200 cattle and the restoration and conservation of 1200 hectares of semi-natural grassland. Another 4000 hectares of abandoned farmland has been cleared of brush to the delight of migrating geese.

The farmlands around Olonets are Europe's largest spring stopover site for the White-Fronted Goose (*Anser albifrons*) and the Bean Goose (*A. fabalis*). At the height of migration, over 110,000 birds a day may be seen, in feeding flocks of up to 10,000 individuals around Olonets. Such a multitude of bird arrivals is now reflected in the annual "Goose Festival" which now attracts (human) visitors in ever increasing numbers, too.



## **EXPANDING THE IMPACT – DVIETE FLOODPLAINS, LATVIA**

The experience gained in Sweden, Estonia and Russia is now being applied in Latvia. Regular exchanges take place between the countries, and together with the Latvian NGO “Latvian Fund for Nature” scoping exercises have identified appropriate locations, of which some are on the beautiful Dviete floodplains in southeast Latvia. The work has been started by the Latvian stakeholders who are now well on their way.

As well as pasture-fed beef, the project in Latvia is recreating wetlands and meandering streams to further reduce the nutrient run-off to the Baltic Sea. The stage has been set.

*Altogether, the lives of thousands of rural people have been transformed, whilst at the same time delivering tangible benefits for the wider economy, nature, and the Baltic Sea.*



SOB



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## WHAT NEXT?

### EXPANSION ACROSS THE WHOLE BALTIC SEA REGION

Building on their previous experiences, WWF and Upplandsstifelsen are now upscaling this work and extending it to reach across the whole Baltic Sea region.

Consumers have shown they are serious about purchasing the products. Farmers have shown they are serious about producing them. WWF, Upplandstiftelsen and its partners have shown they are serious about making this work. Once moving, the activities are self-financing and self-perpetuating. Once moving, the benefits start to flow and will continue to flow.

If the European Union is serious about using its enormous agriculture budget for measures, which produce good quality food for the consumer at the same time as they do not destroy or degrade our natural heritage, they will take account of these approaches and make provisions for Member States to support them.

*Now is the time to invest in businesses, which go hand-in-hand with our natural systems. Join us in making it happen. After all, it's good for people, good for business, and good for the Baltic Sea.*



## OBJECTIVE AND SCOPE

The over-arching goal is to **reduce nutrient loads (N and P) into the Baltic Sea**. This will be done by developing, implementing, and communicating methods for the agricultural sector, which are environmentally and economically sustainable through projects such as SNOWBAL. These methods are:

- wise use of wetlands for nutrient trapping and nutrient recycling; by cattle grazing and harvesting biomass for energy;
- cattle grazing on semi-natural grasslands minimising the need for fodder production on arable land, where mineral fertilizers are used.

In addition to this very valuable service, a range of other benefits accrue including the provision of **habitats for biodiversity, socio-economic benefits** for local people, farmers and “green” businesses, the supply of healthy, high-quality meat to the consumer, and positive impacts on climate change.

It is a conservation strategy, which can – after modest initial investment and if the enabling environment is supportive – pay for itself, through the sales of meat, biomass and other products combined with an income from managing the landscape.





Agricultural pollution to the Baltic Sea can be reduced through wise use of the existing vast areas of abandoned semi-natural grasslands and wetlands around the Baltic Sea.

Join us in making it happen!



Box 26074  
750 26 Uppsala  
Sweden  
Tel +46 18 611 62 71  
[www.upplandsstiftelsen.se](http://www.upplandsstiftelsen.se)



Ulriksdals Slott  
170 81 Solna  
Sweden  
Tel +46 8 624 74 00  
[www.wwf.se](http://www.wwf.se)



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