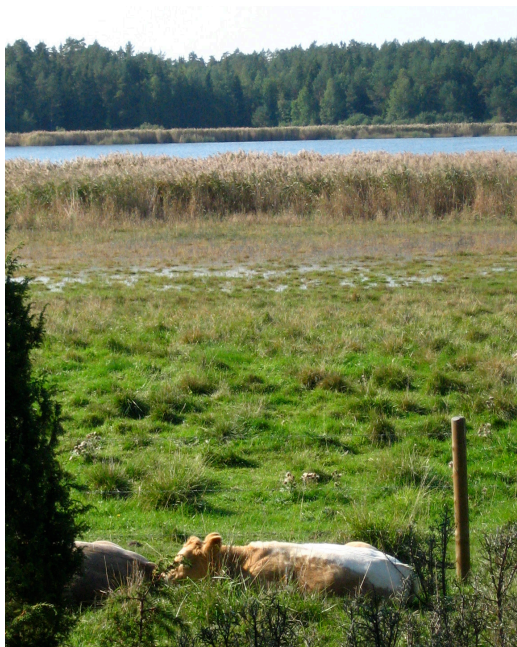


REPORT 2013/9

IDENTIFYING AND REMOVING BOTTLENECKS IN MANGEMENT OF NATURAL GRASSLANDS AND WETLANDS

- CASE STUDY FROM SWEDEN, ESTONIA
AND LATVIA

Upplandsstiftelsen, Estonian Fund for nature
and Latvian fund for nature



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**Identifying and removing bottlenecks
- in the management of semi-natural
grasslands and wetlands.**

Case study from Sweden, Estonia and Latvia.

**The Uppland Foundation, Estonian Fund for Nature and
Latvian Fund for Nature**

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In the current RDP the only agri-environmental measure targeting biodiversity is Maintaining Biodiversity in Grasslands. The objective of the measure is to facilitate conservation of biologically diverse grasslands, populations of wild plants, animals and birds, as well as maintaining landscapes in rural areas with biologically valuable grasslands. 12

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Summary

Bottlenecks found in the management of semi-natural grasslands and wetlands through animal production, have been pin-pointed and solutions to these suggested (Annex 1). A range of hinders, *bottlenecks*, have been found that cause both large and small problems for farmers. The bottlenecks that have been found during the Snowbal-project (2011-2013) are in many cases the same for Sweden, Estonia and Latvia (Annex 1).

The major bottlenecks that have been found are:

- how the subsidies for the Rural Development Program have been handled
- the need of investments
- the lack of available semi-natural grasslands and grass leys.

The subsidies from the Rural Development Program (RDP) are a large part of the farmers income (%?), but have given problems such as uncertainty of income due to changing definitions and rules, landowners collecting subsidies themselves without using the land for production etc. This in its turn makes it difficult for famers to invest in cattle buildings, manure handling systems and machinery.

Introduction

This report has been put together as a case study from 3 countries bordering the Baltic Sea; Sweden, Estonia and Latvia. Bottlenecks found in the management of semi-natural grasslands and wetlands through animal production, have been pin-pointed and solutions to these suggested (Annex 1). The bottlenecks have been collected in the Snowbal project during the period of 2011-2013, through surveys, from earlier work and close contacts with farmers. The SNOWBAL project deals with the reducing of nutrient leakage from food-production by increasing the use of semi-natural grassland for production of summer and winter fodder. The management of high natural value (HNV) pastures and hay-meadows is also crucial for biodiversity connected to the agricultural landscape.

Being a farmer is largely to be a problem-solver. Problems that are encountered can be expected and unexpected, immediate and long-term, of economic, practical or ecological nature, or caused by the mismatch between national policies and the local conditions. In the agricultural landscape, where sustainable farming is a prerequisite for good environmental status, the problems can not only be solved by the farmer, policymakers need to create and shape policies making good agricultural practices possible and sustainable in the long run (Lennartsson & Hoflin 2004).

In this process, it is necessary to show the wide range of problems identified in the production chain and from the environmental perspective. The projects run by Upplandsstiftelsen, Estonian fund for nature and Latvian fund for nature, in the agricultural landscape, have proved that a key step is to identify these problems that comprise hinders on the road to the target – here referred to as *bottlenecks*. Unless such bottlenecks are removed, the solving of other problems will lose its function for reaching the project's target.

Method

The bottlenecks have been collected in the Snowbal project during the period of 2011-2013 through surveys, from earlier work and close contacts with farmers. Most of the used material comes from the past 10 years. The areas covered in Estonia are coastal areas on the west coast, in Sweden the coastal area of Uppland and in Latvia the working area has mainly been the north – west part of the country. These areas are Less Favoured Areas (LFA) with small farms where a high proportion of the former agricultural land has been abandoned. In Sweden the working area consists of a fragmented small scale landscape with high natural values (HNV), even in the overgrown semi-natural grasslands. The average age of the farmers is high and it is common with part time farming. Estonia's working area includes huge coastal meadows and quite a few young/middle aged farmers who are active.

The overall goals of Snowbal aim to reduce nutrient run-off to the Baltic sea by increasing animal production based on semi-natural pastures and hay-meadows with high natural values, and increasing the number of wetlands. Bottle-necks have been identified and put together in a list in Annex 1. In order to identify bottlenecks for reaching the two overall goals, the goals have been decomposed into a number of specific sub-targets:

- **Facilitating the build-up of ecologically and economically sustainable animal farms based on HNV grasslands**
- **Encouraging younger farmers to take over HNV pastures from retired farmers**
- **Encouraging farmers with grazing animals to utilise all their available HNV grasslands**
- **Encouraging continued use of HNV pastures among small-scale farmers**
- **Utilizing HNV grasslands far away from the farm**
- **Achieving good management status in managed HNV grasslands**
- **Economical sustainable management of hay-meadows**
- **Encouraging farmers and landowners to recreate wetlands**
- **Encouraging farmers to naturalise their drainage systems**

For each sub-target problems and suggestions for solutions have then been listed. The list has roughly been made according to importance. The problems may be related to economy, practice, legislations/policy, or biodiversity/ecology.

Background

To get a better understanding of the situation country wise, a background description of the current situation in Sweden, Estonia and Latvia has been put together.

Sweden - Biodiversity in semi-natural grasslands and wetlands

Earlier trends and current status of biodiversity

A rapid decline of species-rich semi-natural grasslands started in Scandinavia 50-100 years ago when artificial fertilizers began to replace manure, and intense animal husbandry or farming without livestock replaced traditional farming systems. For example, in Sweden the area of mown semi-natural grassland decreased from about 1.2 million to 2 400 hectares between 1880 and 1990 (Statistiska Centralbyrån 1990), and

in the province of Blekinge about 60 per cent of the wetland area was drained between the late 1800's and today (Bergman et al. 2008). In both examples the decline is due to both abandonment followed overgrowth, and active transformation into arable fields or production forest. Coastal areas and other topographically heterogeneous and dry regions have the highest proportions of abandoned habitats, such as grazed calciferous forests and wooded meadows with coppiced trees. This habitat loss has caused a drastic decline of abundance of species connected to the semi-natural habitats.

The habitat loss has also caused a decline of species utilising whole landscapes. The stork (*Ciconia ciconia*), depending on landscapes rich in wetlands, occurred with at least 1000 reproducing pairs in the early 1800's in Sweden, but declined due to drainage of wetlands and was extinct in Sweden around 1950 (Gärdenfors 2005).

The 2005 national red list (Gärdenfors, 2005) lists 1783 species entirely or partly belonging to the agricultural landscape. 132 species are extinct from the Swedish agricultural landscape.

For some species groups, especially birds, trends for the last decades are known, and the trends show the same picture as the red-list. Of the farmland birds (36 species) 22% have lost more than half of their populations during the last 30 years and 58% in total have declined. Of 75 wetland species (many of which are connected to wetlands in the agricultural landscape) 29 have declined. Many of the previously declining species have during the last 10 years stabilised at a lower level (Ottvall m.fl. 2008).

National aims of biodiversity conservation

Swedens' interpretation of the Convention on Biological Diversity (CBD) is expressed as a number of environmental objectives. For the agricultural landscape the general aim for environmental quality is:

“The value of the farmed landscape and agricultural land for biological production and food production must be protected, at the same time as biological diversity and cultural heritage assets are preserved and strengthened.”

Systems for implementation of the CBD in Sweden are the: Swedish environmental objectives, European Agricultural Policies, Protected areas, Natura 2000, LIFE, Action plans for threatened species, NGO and voluntary programmes. The main tool for reaching the aims is the Rural Development Programme (RDP) for restoration of habitat, resumed management, and continued management.

Sweden - Rural Development Program

Measures under axis 2 in Sweden's Rural development program are designed to preserve and improve an attractive landscape and living countryside, and stimulate the shift to efficient and sustainable production with a lower environmental impact, in order to help achieve EU and Swedish environmental objectives as effectively as possible.

The sub-measure “Biodiversity and cultural heritage in semi-natural grasslands and wetlands” has the purpose of contributing to the fulfilment of the objective of halting the loss of biodiversity by 2010. Support is paid for the preservation and management of 9 classified types of semi-natural grasslands. In Sweden semi-natural grasslands have not

been ploughed or fertilised for a long time. There are two categories of semi-natural grasslands, with a higher payment to HNV grasslands. The grasslands need to be managed by grazing or mowing. Fertilization or spreading of manure is not allowed on these areas.

During 2012 support was paid out to 440 600 hectares of semi-natural grasslands in Sweden (including grasslands on former arable land with less biodiversity) of which 7 800 hectares was meadow and about 50% are HNV grasslands. 34 000 hectares of restorable HNV grasslands have been mapped in an inventory carried out by the Agricultural Board during 2002-2004. This is a low number as the inventory was not focused on finding restorable grasslands. In one area along the coast Upplandsstiftelsen has done an inventory of the whole area and found 407 hectares of restorable HNV grasslands compared to the Agricultural Boards inventory that only found 117 hectares of restorable HNV grasslands.

A compensatory support is paid for semi-natural grasslands and grass leys in Less Favoured Areas (LFA).

It is possible to apply for non-productive investment support for restoring semi-natural grasslands and also for recreating wetlands.

Support is paid for managing wetlands. The management consists of keeping the wetland functioning and keeping away over growth. Additional support can be applied for grazing or mowing the areas around the wetland.

RDP measures	Support per year
Pastures	1 250 SEK/ha
Semi-natural pastures (HNV), entitled to single farm payments	2 650 SEK/ha
Semi-natural pastures (HNV), not entitled to single farm payments	3 850 SEK/ha
<i>Coppicing in semi-natural pastures, additional measure</i>	+ 100 SEK/tree, max 2 000 SEK/ha
Meadow	1 450 SEK/ha
Semi-natural meadow (HNV), entitled to single farm payments	4 200 SEK/ha
Semi-natural meadow (HNV), not entitled to single farm payments	5 400SEK/ha
<i>Coppicing in semi-natural meadows, additional measure</i>	+ 100 SEK/tree, max 2 000 SEK/ha
<i>Post grazing in semi-natural meadows, additional measure</i>	+ 700 SEK/ha
<i>Manual mowing in semi-natural pastures, additional measure</i>	+ 7 000 SEK/ha
Forest pasture*	2 500 SEK/ha
Selected environments	
Mosaic pasture (HNV)	2 150 SEK/ha
Restoration of pastures and meadows, regional*	3 600 SEK/ha (5 years)
Restoration of pastures and meadows, investment support*	Max 90% of actual cost, max 40 000 SEK/ha
<i>Grazing and mowing in remote areas (islands), additional measure</i>	+ 1 000 SEK/ha
<i>Special hay handling (turning or drying), additional</i>	+ 1 700 SEK/ha

<i>measure</i>	
Restoration and rebuilding of wooden fences	270 SEK/meter
Restoration of agricultural buildings not in use (cultural heritage)	14 300 SEK/building
Build or restoration of wetlands	Max 90% of actual cost, max 200 000 SEK
Fencing against large carnivores	50 SEK/meter
LFA	250-2700 SEK/ha

*Fig 1: Swedish RDP measures, in the region of Uppsala County, under the sub-measure "Biodiversity and cultural heritage in semi-natural grasslands and wetlands". There are a few more measures that are regional, which have not been listed here. * No single area payment*

Sweden - Farming and functioning modern agriculture

The total number of cattle in Sweden in 2012 was about 1 443 600. The number of cattle has decreased with nearly 11 % since 2000. The number of milking cows has decreased with 19 % while other cows have increased with closer to 16 % since 2000. The number of beef cattle grazing outdoors during the summer months is approximately 30% of the total Swedish beef cattle.

In Sweden most farms have cattle buildings, manure management systems and fencing, mainly due to laws and regulations. Sufficient machinery usually exists on the farms, in a machine pool or work can be bought from a neighbouring farm with special machines. Cattle are kept indoors in the winter but the buildings in the coastal areas of Uppland are often old and work intensive. It is heavy and inefficient working in these cattle buildings. Investment costs are high for new cattle buildings and it is hard to get a good economy on the small farms. There are also a lot of pastures with old, dysfunctional fencing that needs to be replaced.

Only those farmers who have a large part of their income from farming can get investment support. This means that young farmers, part time farmers and others wanting to start farming on a larger scale cannot get investment support. It is also hard for new farmers to get bank loans to build new buildings when they do not have any security for the loans.

Sweden - Nutrient run-off

In Sweden nearly 50% of the Swedish meat in the shops comes from cattle that have never grazed outside. These cattle are reared intensively in stalls and fed with grains and other high protein concentrates that have been grown on ploughed and fertilized fields. If cattle instead graze unfertilized semi-natural grasslands and wetlands half the year and feed on mainly hay and silage during the winter, the use of grains is reduced to a 10th compared to cattle reared in indoors all year round. Due to the long period of grazing the amount of manure is also reduced significantly leading to less manure on spreadable land. The cattle that are not reared on grain also have less nitrogen and phosphorus rich fodder leading to less nitrogen and phosphorus rich manure.

Sweden - Products and market

A bit more than half of the beef that is consumed in Sweden is imported, mainly from other EU countries but also from South America. The imported meat is cheaper than the Swedish and is found in both the cheaper and more expensive segment. In Sweden beef can be certified as Pasture beef through Swedish Sigills quality assurance system. Certified pasture beef comes from cattle that mainly graze semi-natural pastures during the summer months and are mainly fed hay and silage during the winter months. The

breeders get 3-10 SEK more per kilo when pasture beef is slaughtered. Pasture beef is sold in Sweden partly by the food chain ICA as part of a selection range. ICA's pasture beef is not certified and does not have a local sender. The local pasture beef from Närke, Mälarhagar and Vindelälvens pastures has a profile with a local identity, high nature values and a higher quality than ordinary Swedish beef. These breeders certify their production with Swedish Sigills quality assurance system.

If the extra payment for the extra work with producing pasture beef is not paid out to the breeders, it is tempting to deliver conventional beef and this way not have the "hassle" with keeping cattle on semi-natural pastures. The market needs to find a willingness to pay more for pasture beef.

There is an interest in pasture beef today and a bottle neck is to get big enough volumes with certified pasture beef to match the markets demand. It is important to maintain the will to keep cattle on semi-natural grasslands, certify the production and do the extra work that this means, even though there is not always a market willing to pay the higher price.

Estonia - Biodiversity in semi-natural grasslands and wetlands

Earlier trends and current status of biodiversity

Among the natural values of Estonia, of primary importance are the large areas of semi-natural habitats, the preservation of which depend on the grazing or mowing - without this management, the habitats are bound to become brushwood with low value for biological diversity and also for recreation.

Semi-natural grassland habitats are threatened mainly by changing rural lifestyles and changes in land use, abandonment, overgrowing and eutrophication. Also conversion to arable lands, afforestation, hydrological modifications (drainage, beaver activities), invasive and expansive species, leisure activities, overgrazing or heavy mowing pressure, fragmentation and isolation threaten these habitats.

The degradation of the agricultural landscape during the last 50-100 years has suppressed a large number of species to low abundances and highly fragmented distributions. For example the natterjack toad (*Bufo calamita*) was very common in Western Estonia and Pärnu county coastal areas in the first half of the 20th century. In the last 50 years the number of natterjack toads has continuously decreased and today this species has disappeared from many coastal meadows and dunes in Estonia and other countries. If the decrease of this species continues, the natterjack toad will most likely disappear from Estonia within next 10-15 years (Lotman, 2011).

A number of bird species are connected to coastal meadows, such as waders, especially, *Calidris alpina schinzii*, Eurasian avocet, black-tailed godwit, ruff, curlew, ringed plover, redshank, lapwing and oystercatcher. Among the species of perching birds, the wagtails, sky larks and meadow pipits use the treeless coastal meadows for nesting. In addition the coastal meadows are important resting and feeding places during migration for anseriformes as: greylag goose, greater and lesser white-fronted goose and barnacle goose.

Calidris alpina schinzii is the subspecies of Dunlin, which population is decreasing fast around the Baltic Sea and in Estonia as well. The main reason for this population decreasing is neglected coastal meadows. The inadequate maintenance impacts the population in several ways - the grass in the area is too high for proper feeding (especially the nestlings), without muddy water bodies and aquifers. The population of other umbrella species has decreased, which has increased the predation among the bushes and trees growing in meadows (Lotman, 2011).

The coastal meadows in Estonia are the largest and most integrated habitat types in Europe. At the same time, the fact is that, the number of managed coastal meadows has decreased from 29 000 to 8 000 ha in the past 50 years, showing that they are in great danger. The gross area of coastal meadows is estimated to be 18 000 ha, but most of them are overgrown with reed and not in good shape (Lotman, 2011). 9 250 ha of coastal meadows was managed via support from the RDP, in 2012.

The area of alvars was estimated to be approximately 12 000 ha in 2001; in 2012 approximately 2 490 ha was managed by the RDP support (Koorberg, 2013). The alvar area is decreasing rapidly mainly by overgrowing of junipers.

In the beginning of the 20th century the area of wooded meadows were nearly 850 000 ha. The overgrowing with bushes started already during the Second World War, when manual mowing was decreased due to the lack of working-hands. The creation of Soviet collective –farms and state farms cause irreversible loss of wooded meadows (Talvi, 2012). Approximately 6 000 ha of wooded meadows remain with high or average geo-botanical and conservation value and characteristic appearance. Large areas, approximately 8 500 hectares, have lost their value due to overgrowth, but are still relatively easy to restore (Sammul et al 2008). Only 688 ha of wooded-meadows were managed with the RDP's semi-natural habitat support in 2012.

National aims of biodiversity conservation

The aim of nature conservation is to ensure the favorable status of species, habitats and landscape diversity and ensure the conservation of protected natural sites and Natura 2000 areas.

It is estimated that about 60 000 hectares of semi-natural habitats in protected areas in Estonia need regular management. As there are also valuable areas outside of protected areas, which are not mapped, the number of semi-natural habitats worth to maintain might be even 100 000 hectares or more. According to the nature conservation plan a regular maintenance of at least 45 000 hectares must be ensured by 2020.

In 2012 approximately 26 000 hectares of semi-natural grasslands in Natura sites were managed, of which 15 000 hectares were grazed by beef-cattle. When the conditions of the coastal meadows and floodplain meadows have improved, more attention must be paid to continue the restoration and maintenance of wooded meadows and alvars.

The financing of restorations for biodiversity in Estonia is mainly done via EU funded projects, especially LIFE+. Management is supported by RDP measures. Nature conservation payments administered by the Ministry of the Environment have been paid in Estonia since 2001. National funding is used for supporting management on small

islets, small-scale restoration work, management on state property and also co-financing of EU projects. Since 2007 national financing of restorations of semi-natural grasslands is distributed through the Environmental Board, the support rate depends on the type of habitat (between 147 – 435 EUR/ha)

Estonia - Rural Development Program

Measures under axis 2 in Estonia's Rural development program are designed to preserve and improve an attractive landscape and living countryside, and stimulate the shift to efficient and sustainable production with a lower environmental impact, in order to help achieve EU and Estonian environmental objectives as effectively as possible.

Support is paid for the maintenance of semi-natural habitats and wooded meadows situated in Natura 2000 areas and registered in the environmental register. The grasslands need to be managed by grazing or mowing. Fertilization or spreading of manure is not allowed on these areas.

It is not possible to apply for non-productive investment support for restoring semi-natural grasslands or for recreating wetlands from the RDP. Non-productive investments were available for the reconstruction of stonewalls.

RDP Measures	Support per year
Semi-natural habitats, not entitled to single farm payments	185,98 EUR/ha
Wooded meadows, not entitled to single farm payments, wooded meadows	238,07 EUR/ha
LFA – support for less-favoured areas -	25 EUR /ha
NATURA 2000 Support for agricultural land	32,08 EUR /ha

Fig 2: RDP measures related to semi-natural communities, in Estonia 2007-2013, Axis II – Preservation of the environment and country side .

There are approximately 55 000 ha of agricultural land in Natura 2000 areas. Under the support for Natura 2000 agricultural land, cultivated grasslands and arable fields for crops could be supported. In practice there are not strict regulations, although the fertilisation, use of plant protection products and the establishment or maintenance of land improvement systems may be regulated or prohibited depending on the management plan of the specific nature conservation area.

Estonia - Farming and functioning modern agriculture

In 2011, 29% of the agricultural economy in Estonia was related to producing raw milk while only 3% was cattle husbandry. The aim for 2020 is to increase dairy farming with 1/3 compared to 2011. The rapid concentration of milking farms continues. The milking cows from bigger modern farms usually do not graze at all. The calves and heifers grazed mainly cultivated grasslands.

Estonia had more than 51 000 beef cattle at the end of 2012; about 12 800 of them grazed semi-natural areas. The beef cattle farming is also developing rapidly – there are estimates that 200 000 beef-cattle is achievable in the future. About 3/4 of the herds are still under 50 animals, but there are also some farms with are over 500 animals. (In several cases there are 2 or more companies in one family, so the real herd might be

even bigger). 252 beef-cattle farmers applied for support for managing semi-natural habitats 2012. They had 12 802 animals and managed 15 000 ha of semi-natural grasslands. In total there are 2025 farmers in Estonia, who raise beef-cattle.

The big farms are generally better equipped with machines, buildings and modern equipment.

Quite often beef cattle are kept outside during the winter, without barns, especially on farms managing semi-natural pastures. A lot of cattle buildings are too old or too small. Investments in buildings, farm technology, predator resistant fences (especially in sheep-farms) are needed. Modern cattle buildings have been built in the current RDP period (2007-2013), mostly in the dairy sector. Payments have been made for building or modernizing 58 milking cow buildings, 27 beef cattle buildings and 64 manure storage places in Estonia during this period.

For maintaining semi-natural grasslands the farmers mainly need access to lightweight caterpillar tractors suitable for wet surfaces, also choppers, stump cutters, trimming machines and chain mulchers. There is no restoration support in the RDP, which is needed to create a market for entrepreneurs, who can invest in special technical machinery and carry out restorations. Therefore there is a lack of these kinds of machines.

Estonia - Nutrient run-off

Due to shortages of financial resources, agricultural producers have not made sufficient investments in manure handling systems. Therefore, the inadequate capacity of manure storage facilities is still a problem. More than 80% of manure storage facilities are older than 10 years. Producers engaged in animal husbandry must continually make big investments in manure handling. In addition, the introduction of best available techniques should be considered (ERDP Strategy 2007-2013). According to regulations, if a farm has more animals than 10 LU that are kept in a livestock building, the farm should have a manure or liquid manure storage facility with a storage capacity of at least eight months. In cowsheds where animals are kept on deep litter, there is no need for manure or liquid manure storage facilities by law.

Although in recent years the situation of manure management has improved in dairy farms and some pig-farms there are still about 25 % of the manure storage places in big dairy-farms (more than 300 animal units) which does not meet the requirements (2011). In smaller farms (including cattle, pigs, poultry) the situation is even worse.

Proper manure management is not considered a priority according to beef cattle farmers answering a questionnaire in 2012 (ELF 2012). The main problem is the low investment capacity. Today the investments are rather made in machinery than in sheds, forage areas or manure handling equipment. A quite common belief is that beef animals do not need any special care or shelter in the winter. Animals are kept outside even if the winter area is in immediate vicinity of ditches or other water bodies. This kind of attitude shows that despite the environmental awareness of farmers, in reality environmental hazards are ignored in the winter period. It should be noted that it is especially problematic when large numbers of cattle are put together in the fall and early spring on unfrozen surfaces without special facilities. Climate change, with long

warm falls tending to become more frequent, should be taken into account while preparing development plans.

Estonia - Products and market

Consumption of beef and lamb is relatively low in Estonia. But in recent years there is a visible development in popularizing quality beef, by efforts of beef cattle farmer's organisations. According to data from The Rural Economy Research Centre, in 2011 beef accounted for 15% and sheep and goat meat only for 1% of the total meat production (Aamisep et al, 2012). In 2011 self-sufficiency in beef was 80%.

In 2012, 1 962 tons of beef was exported, and 4 222 tons imported (includes meat from dairy-cattle; export of live cattle are not included). Beef is imported, mainly from other EU countries, but also from South America and New-Zealand. Beef production has gone down, compared to 2007, with more than 3 000 tons. One of the reasons for the decline is an increase in live cattle export. In 2011 a total of 39 000 live cattle were exported of which 22 000 were animals for slaughter. The main target countries were the Netherlands and Turkey accounting for 63% and 20% of the total cattle export (Aamisep et al, 2012). The Turkish market will eventually cease and new markets will need to be sought.

The marketing of local, specifically labelled beef, including special brands of beef fed only with grass-fodder, has been more intensive during the last few years. This is partly due to RDP measures, including LEADER support. The market is being developed by farmers, NGOs and other organisations in Estonia. There has been an interest from restaurants and other consumers to use more high quality meat. Nevertheless the internal market of pasture beef is still being developed and needs improvement. No special marketing for semi-natural pasture beef is done and semi-natural/HNV pasture beef is sold together with other pasture beef from cattle raised on cultured grasslands. Organically grown beef is labelled separately in some cases, but still most of the organic beef is sold together with conventional meat as beef in general is sold at a relatively high price.

Latvia - Biodiversity in semi-natural grasslands and wetlands

Earlier trends and current status of biodiversity

Semi-natural grasslands (meadows and pastures) represent one of the most diverse and species-rich and, at the same time, the most threatened habitat groups in Latvia. Today they only cover 0.3 % of Latvia, with a continued decline. 80 % of the EU important semi-natural grassland habitats in Latvia have an inadequate conservation status (Article 17 report submitted to EC in 2007). A preliminary result of the national biodiversity monitoring 2008–2012 shows that the situation has not improved in recent years, 40–80 % of the EU important grassland habitats in Natura 2000 sites were not managed and 70–87% of them experience dominance of untypical species and dense litter layers.

Semi-natural grassland habitats are threatened mainly by changing rural lifestyles and changes in land use, abandonment and overgrowing, conversion to arable land or afforestation, fragmentation and isolation, hydrological modifications (drainage, beaver activities), overgrazing, late mowing, mulching, eutrophication, expansions of invasive and expansive species or leisure activities.

Many grassland-related species, both rare and common, are declining along with habitat loss and deterioration. Management of semi-natural grasslands is crucial for ensuring conservation of numerous species, for example approximately 40 % of the nationally protected vascular plant species are found in grasslands and 82 % of the Latvian population of *Crex crex* nests in grasslands.

According to data available from the Paying Agency, the area of biologically valuable grasslands in Latvia is a little more than 65 000 ha, while only 50% of these areas are managed with RDP subsidies (Annon. 2012a). This indicates that the RDP subsidies are not sufficient to encourage landowners to resume the management of the grasslands, and that other methods should be sought out.

National aims of biodiversity conservation

One of the aims of the National Programme of Biological Diversity in Latvia is to preserve the semi-natural grasslands and prevent its overgrowth. The Latvian Environmental Policy Strategy 2009–2015 states that the favorable conservation status should be granted to at least 60% of habitats and species of EU importance by 2015.

The main tools for reaching objectives concerning semi-natural grasslands are the Rural Development Programme (RDP), the LIFE Programme and networks of specially protected areas and Natura 2000 sites.

The financing of management and restoration of semi-natural grasslands in Latvia is mainly done via EU funded projects, especially LIFE+. National funding is very limited. Management of biologically valuable grasslands is financed with RDP agri-environmental funds, but there are numerous problems related to restrictions applied by the Paying agency. Restoration of grasslands is not financed in the RDP

Latvia - Rural Development Program

In the current RDP the only agri-environmental measure targeting biodiversity is Maintaining Biodiversity in Grasslands. The objective of the measure is to facilitate conservation of biologically diverse grasslands, populations of wild plants, animals and birds, as well as maintaining landscapes in rural areas with biologically valuable grasslands.

Support is paid for the preservation of botanically valuable semi-natural grasslands (EU importance grassland habitats) and grasslands that are significant for grassland-nesting birds that are registered in the Rural Land Register. Despite the fact that management conditions in the grasslands are very different the support amount for all cases are the same. The grasslands need to be managed by grazing or mowing. Cultivation, fertilization or spreading of manure is not allowed on these areas.

Around 35 000 hectares of semi-natural grasslands receive support, which is about 50% of the total area of identified semi-natural grasslands.

RDP Measures	Support per year
Maintaining Biodiversity in Grasslands	123 EUR/ha <i>commitment period of 5 years</i>
LFA – support for less-favoured areas -	25/40/58 EUR /ha
NATURA 2000 Support for agricultural land	44 EUR /ha

Fig 3: RDP measures targeting semi-natural grasslands in Latvia 2007-2013.

Natura 2000 support for agricultural lands is paid for permanent meadows and pastures located within Natura 2000 areas. No special management requirements are set by the RDP, as the support is justified by a false assumption that all Natura 2000 areas stipulate special management practices.

Farmers carrying out agricultural activities in areas with unfavourable natural conditions, Less Favoured Areas (LFA), get additional support. LFA support for meadows and permanent grasslands on arable land is granted if the minimum livestock density is ensured in these areas. The objective of the measure is to ensure and facilitate maintenance of a more open rural landscape and to promote sustainable agricultural activities which are environmentally friendly in areas where the conditions for agricultural production are harder. The status LFA has been granted to 74.4% of the total agricultural land in Latvia, accounting for 1.81 million hectares of utilised agricultural area.

Non-productive investments for restoring semi-natural grasslands or for recreating wetlands are not included in the current RDP.

Latvia - Farming and functioning modern agriculture

There were 37 376 suckling cows of beef cattle breeds (and its crossbreeds) in Latvia in 2012 (LRZM 2012). Numbers of beef cattle are increasing every year.

Most beef cattle breeding farms are small and still developing. Quite often the beef-cattle are kept outside in winter; especially on farms managing semi-natural pastures. A lot of cattle buildings are too old or too small. Farmers have a strong need for investments to increase cattle numbers and acquire good breeding material, machinery, buildings, fencing and manure management systems.

Although EU funds for modernization on farms are available, they are poorly managed and have not improved environmental issues on farms to any large extent. As a result, most of these funds have been spent on machinery.

Latvia - Nutrient run-off

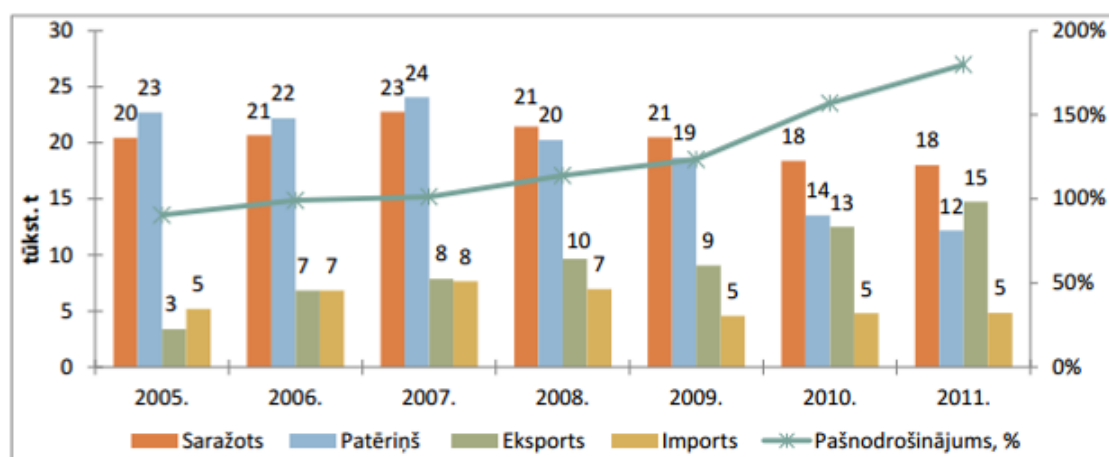
The main part of the surface run-off occurs during winter, leading to a large transport of nutrients as the infiltration capacity of frozen soil is low. Nutrients are also released from the thawing soil surface, further adding to the risk of high losses of eroded particles and nutrients from trampled winter places. During cold periods biological activity that otherwise increase stabilization and retention of soil particles and nutrients are low.

According to existing rules, if farmers build new cow-sheds then the building of a manure storage facility shall be intended in the building design. For those farms in which old buildings with no appropriate facilities for manure handling are available,

manure handling facilities must be installed by mid-2014. Thus, bigger and economically stronger farms capable to build new cow-sheds have no serious problems with nutrient run-off. However, most beef cattle breeding farms are small and still developing and improvements to prevent nutrient run-off still need to be made. Deep straw bedding is allowed only for cow-sheds for up to 20 animals. For more than 20 animals non-permeable materials shall be used for the floor.

In many farms problems with storing winter fodder still do exist. There are no hay sheds available in farms and farmers are not aware of the losses of nutrients when storing fodder outside.

Latvia - Products and market



Avots: LAD pēc CSP datiem

Fig. 4. Production data of beef sector in Latvia 2005–2011 (LRZM 2012). [Saražots – produced; Patēriņš – consumption; Eksports – export; Imports – import; Pašnodrošinājums – self sufficiency]

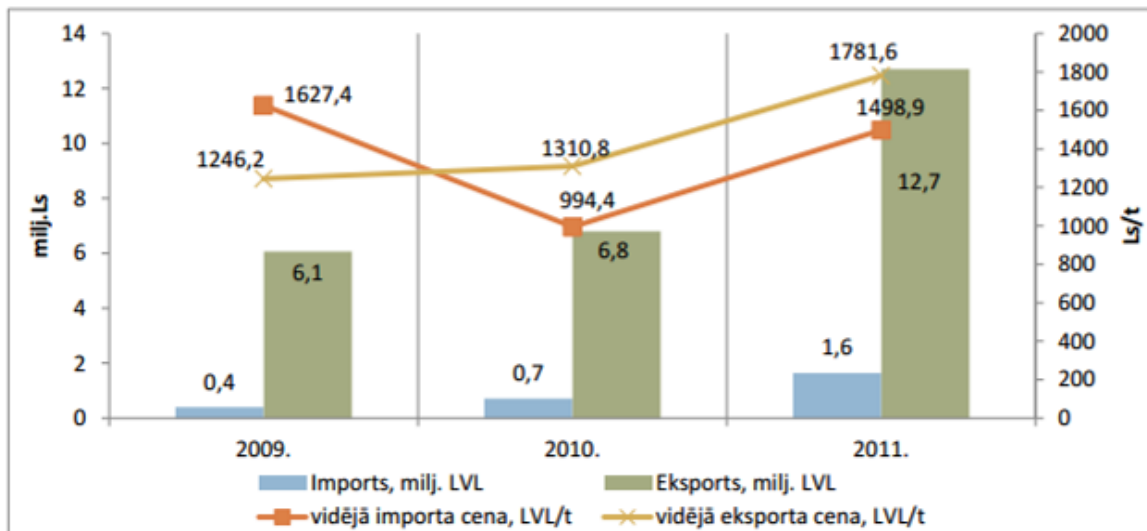
The latest available production data of the beef sector provided by Latvian Ministry of Agriculture show a gradual decrease of production volumes since 2007, reaching 18 000 tons in 2011 (Fig 4). The same can be said about the consumption dropping to 12 000 tons in 2011. A steady increase of exports can be observed in the period starting with 3 000 tons in 2005 up to 15 000 tons in 2011. The data clearly indicate that Latvia is self sufficient regarding beef production with a steady increase over the years, also indicated by the rising export amounts.

The number of beef cattle (non-dairy) has a slight upwards trend reaching 215 880 animals in 2011 (LRZM 2012). However a majority of these animals are dairy breed heifers and calves and only around 10% if the total amounts are suckling cows (either purebred beef animals or crosses with beef breeds).

The purchase price for beef in Latvia tends to be below the average beef prices in EU, which is explained by the low level of specialization in beef production. The price tendencies however tend to be the same – somewhat stable with a slight increase. The price fluctuations in Latvia are greater than the EU average.

Trade balance of beef (fresh, cooled and frozen meat) is negative, however increase of both import and export values has to be noted in 2011, when relative increase of exports was greater (+48%) than that of imports (+33%). The same can be said about the

increase on export prices (increase by 17.3% when compared to 2010). In the given time period the exports value has increased by 69% and imports by 21.3%.



Avots: Eurostat

Fig. 5. Trade balance of live cattle in Latvia 2009–2011 (LRZM 2012).

Imports of live animals is insignificant, however in 2011 a significant increase of imports by 128.6% (when compared with 2010) can be noted. Export of live animals plays a significant and increases year by year reaching the value of 12,7 million LVL in 2011 (Fig. 5).

Until now farmers have sold mainly weaned calves, at an age of 6-8 months, at auctions and usually to foreign actors. Buyers from Turkey are often mentioned. But breeders have now started looking for new alternatives. To send animals to local slaughter houses has been considered to be very unsecure and foremost a very bad deal. A small amount of beef is slaughtered and taken back to the farm for sale in boxes. There is not much interest for farmers themselves to sell to local shops, the prices in the local shops are low and the farmers do not believe in getting an extra payment for their local, pasture beef. To be able to produce and market Latvian pasture beef in the existing situation at a national level seems to be hard as there needs to be some kind of contact and a confidence between slaughter houses, farmers and a sales organization. There is a possibility to develop farm sales at a larger scale, but even then some kind of faith has to be built up between slaughter houses and breeders.

Discussion

Bottlenecks in management of semi-natural grasslands

Species-richness and ecological functions of semi-natural grasslands depend on active and regular management measures. Maintenance of semi-natural grasslands is crucial for ensuring conservation of numerous species. In the present agricultural landscape much of the species-rich traditional habitats have vanished due to production intensification in some areas and abandonment in others. Intensification consists of both transformation of semi-natural habitats into arable land or production forest and intensification in terms of increased fertilisation, use of biocides, and homogenisation of

arable land. Abandoned semi-natural habitats remain rich in species for some period of time. Overgrown areas can be restored and managed again with a recovered high biodiversity.

To achieve a sustainable management of semi-natural grasslands it needs to be economically viable to managing these. A farmer producing meat can get an income (subsidies) from managing grassland and wetlands by grazing or mowing (for fodder) and also get an income from the sale of meat. This equation must give a positive result for farmers to be able to make a living. It is important that the economic result is as good or better than conventional production where cattle are kept indoors otherwise there will be a low incentive to produce meat on semi-natural grasslands. There are some crucial parts that need to be in place to facilitate and create a good economy for farmers who manage semi-natural grasslands. A range of hindrances, *bottlenecks*, have been found that are in the way for farmers, both large and small. Those that have been found during the Snowbal-project (2011-2013) are in many cases the same for Sweden, Estonia and Latvia (Annex 1). The subsidies from the Rural Development Program (RDP) are a large part of the income of farmers producing beef on semi-natural grasslands, about 40% in Estonia and Latvia and about 60% in Sweden (in the working area for the Snowbal case study). But the subsidies have given problems such as uncertainty of income due to changing definitions and rules, landowners collecting subsidies themselves without using the land for production etc. This in its turn makes it difficult for farmers to invest in cattle buildings, manure handling systems, machinery etc. In some areas we are losing, or risk losing in the next few years, the management of grasslands due to bottlenecks creating difficulties. By solving these bottlenecks the trend can be reversed giving more managed grasslands and wetlands, less ploughed and fertilized arable fields leading to a higher biodiversity and less nutrient run-off from fields to the Baltic Sea.

To get a good economy on a farm based on cattle rearing on semi-natural grasslands a larger herd of 100 cattle or more are usually needed. These need to be kept in larger and better buildings, it is not possible to keep larger herds in the traditional, old irrational buildings that you find on most farms. Rational buildings are needed to minimise the working time and make the production possible. The investment support for animal buildings is low, it needs to be higher and prioritised for farmers managing semi-natural grasslands.

Another threat to the management of semi-natural grasslands is the uncertainty concerning how EU's Rural Development Programme will be in the future. Without a big enough support to semi-natural grasslands, combined with a worry for the changing rules, a lot of farmers will abandon their own and/or rented semi-natural grasslands in favour of simpler production models.

Bottlenecks linked to the Rural Development Program

The CAP subsidies are important to maintain the numbers of active farms and for the economic stability of farming. Environmental payments in the Rural Development Programme directly aiming at improving biodiversity are important for the sustainable management of semi-natural grasslands and wetlands.

The Rural Development Programs (RDP) that have been running so far, with the latest period running between 2007-2013 have given a possibility to produce beef on semi-

natural grasslands as an alternative to intensive production of cattle held indoors in stalls. Everything has not run smoothly concerning the subsidies, largely because semi-natural grasslands are very varied and can look very different at the same time as the subsidies have to have a stereo type framework. The frame work with rules and guide lines, and the interpretation of these used to asses if the grassland qualifies for subsidies and the management requirements for these, are too uniform. In this case it is the coupling of the single area payments that have given the largest problems as they are applied to semi-natural grasslands in the same way as they are applied to arable fields that are a lot more uniform. The large variation of different types of semi-natural grasslands and the need for a variety of management needs to be addressed so that more grasslands are not abandoned or managed in a way that is harmful to biodiversity.

Directives for management that are poorly ecologically justified occur both within the application of CAP regulations and within the Nature 2000 framework. The main criticism, especially concerning CAP, has been that uniform management regimes (in terms of grazing intensity, scrub clearing etc.) are applied without sufficiently considering different management needs among different habitat types (Overud & Lennartsson 2004; Lidén 2006). Insufficient habitat quality has attracted little attention compared to habitat loss, and few quantitative estimates of its impact are available.

Major bottle-necks

The major bottlenecks that have been found are:

- The CAP subsidy system that favors intensive production
- how the subsidies for the Rural Development Program have been handled
- the need of investments for restoring grasslands and wetlands
- the need of investments for cattle buildings and manure management systems
- the lack of available semi-natural grasslands and grass leys in some areas

There is a large factor of uncertainty for the farmers concerning how much agri-environmental subsidies they can count on getting from the semi-natural grasslands as the requirements have been inconsistent and rules have been changed even during the commitment period.

There is a large need for investments in rational cattle buildings and in the case of Estonia and Latvia also in functioning manure handling systems. Machinery is also needed for manure spreading and for managing grass-leys and restoring semi-natural grasslands.

In Sweden and Latvia there is a lack of available semi-natural grasslands. This is due to a variety of factors such as lack of communication between cattle-owners and land-owners, lack of funding for restoring grasslands (Latvia) and administratively complicated, poor knowledge among farmers of which pastures are semi-natural pastures as they themselves have to make an assessment before they apply (Sweden), restrictions to add new land that was not in Good Agricultural and Environmental Condition (GAEC) in 2003 (Latvia). Apart from the availability of semi-natural grasslands there is a large problem in all three countries with the availability of winter fodder from grass lays, as landowners receive EU area payments without needing to use the grass in agricultural production. This leads to a situation where large proportions of grass lays are managed without integration into farming (just mulching of grass), thus

leaving fewer areas available for farmers. There are even examples where non-farmers rent land and apply for subsidies without using the land for agricultural production.

In Latvia there is also a problem with the local beef market that is practically non-existent. So far most of the cattle have been sold to foreign actors but this market is failing. In Estonia the local market for beef is developing, but sales volumes are still low compared to pork or chicken. In Sweden there is no large demand for pasture beef, probably mainly as the consumer is not familiar with this product and do not know how most meat is produced.

Bottlenecks in Sweden

In Sweden the **major bottlenecks** that were found are:

- Possibilities for investments in cattle buildings, especially for new and young farmers
- Not enough winter fodder due to many landowners not renting out their land but instead collecting subsidies without using the grass
- Uncertainty concerning support from the RDP program leading to difficulties to make investments

An evaluation of the Rural Development programme in Sweden 2000-2006 shows that the environmental payments and subsidies together have strongly contributed to halt the decrease in number of active farms (SLU 2008). The payment for management, restoration etc. has, similarly, had a profound positive effect on the amount of species-rich habitat managed by the remaining farms. The environmental payments have, in other words, made farmers allocating labour and grazing animals to species-rich but low-productive areas (SLU 2008).

The environmental payments have been strongly positive for biodiversity, compared to a scenario without compensations. There have, however, been considerable problems with the practical application of the payments, in particular regarding directives for management, restoration and resumed management. Both subsidies and environmental payments have changed several times since the beginning of the Swedish EU membership, both in terms of which classified land is included, definition of classified land and management, and economic level of payments. Single are payments have counteracted the environmental payment during some periods, such as when the definition of tree cover on agricultural land was introduced. The more complicated rules and demands for repayment of support have led to less grasslands being managed during the last few years.

In the current RDP period, there are a number of **good measures** in Sweden, that are important that they continue in the new period:

1. *Higher subsidies for HNV grasslands compared to regular grasslands.* It is important to create incentives and make it economically possible to manage HNV grasslands, which is where the highest biodiversity is found. These grasslands are usually more work intensive.
2. *Extra subsidies for Less Favored Areas.* It is harder for farmers in these areas to get an economy on their production as arable fields and grasslands are smaller and more spread out in the landscape.

3. *Extra subsidies for remote areas.* Incentives and economical possibilities need to exist for grazing of islands and other far away areas. These areas have usually been grazed historically and have a high biodiversity.
4. *Non-productive investment support for restoration of HNV grasslands and wetlands.* Restorations are expensive to carry out and need support. There are a lot of overgrown HNV grasslands and wetlands that can be restored.
5. *Possibility to de-couple Single area payments from HNV grasslands with for example too many trees (valuable trees connected to grazing).* This is important so that we do not lose high natural values that are connected to trees and bushes in grasslands.
6. *Forest grazing possible.* Historically a lot of forests have been grazed and therefore have a biodiversity connected to grazed forests.
7. *Mosaic grasslands possible.* A lot of grasslands have too many trees, bushes or rock to be able to qualify for single area payments. These areas have historically been grazed or mowed and have a high biodiversity connected to trees or bushes, such as hazel groves, alder marshes and coastal pastures.
8. *Possibility to adjust requirement for management of grassland in management plan.* This is important for areas with special requirements for certain species, e.g. late grazing, vegetation structure (e.g. leave parts of grassland un grazed/un mown, leave patches with certain plants e.t.c.) or leaving the pasture/meadow unmanaged 1 year out of 5.
9. *Possibility for exemptions of management of grassland/part of grassland during years of flooding when management is not possible*

Bottlenecks in Estonia

Major progress in managing semi-natural grasslands has been made in the last years, herds and areas under maintenance have grown larger. But quite a few **bottlenecks** have been found, of which the major ones are:

- investments for restoring semi-natural communities (where special machinery is necessary)
- investments for live stock buildings, forage areas, manure management facilities and contemporary manure spreading techniques
- lack of winter fodder and land due to many landowners collecting support without using the grass

Other bottlenecks that were mentioned by farmers during a survey 2012 were:

- marketing of products
- not enough land on islands
- absence of a proper workforce
- absence of proper machinery.
- need to improve the breeding stock

In the current RDP support is paid for the maintenance of semi-natural habitats and wooded meadows situated in Natura 2000 areas and registered in the environmental register only. HNV grasslands outside of Natura 2000 areas also need to be included so that the biodiversity in these areas are not lost due to the lack of economy in managing

these. In addition to increasing the managed area it is important to pay more attention to the quality of the management, taking into account specific needs of the species that inhabit the areas. *The management also needs to address the quality, not only the quantity. The RDP support system of semi-natural grasslands in Estonia is fairly simple making it difficult to focus on quality.*

Many farmers say that they would change the management method (cancel grassland management) if the RDP subsidies would cease. This response further confirms the fact the financial subsidies is the main driving factor of the management of the grasslands today. Dependence on subsidies does not provide a long term security for the management, and thus other solutions should be encouraged, especially inclusion of the grassland management in the daily farming practices.

In a survey carried out in 2012 a very dangerous train of thoughts came from several respondents, that they will stop keeping animals if additional rules for animal welfare (such as sheds) and water protection become obligatory (ELF 2012).

It is important to raise common awareness of water protection, but also of animal welfare and maintenance of semi-natural communities. Still, in several cases, it is not lack of awareness, but lack of investment opportunities that is lacking. Therefore it is crucial to have investment aid for farm facilities for livestock, manure management machinery and equipment for maintenance of semi-natural communities available for beef cattle and sheep farmers, including small producers.

Bottlenecks in Latvia

In Latvia the major bottlenecks are

- A shortage of funds for investments in cattle buildings, manure management systems and machinery
- bureaucratic burdens. Excessive bureaucracy in developing manure handling facilities and excessive rigidity in the building process
- exclusion of a lot of HNV grasslands from the RDP
- investments for restoring semi-natural communities
- lack of winter fodder and land due to many landowners collecting support without using the grass

The conservation status of semi-natural habitats subject to agri-environment measures is significantly better than would have been the case if the policy had not been in place. But agri-environment schemes of 2007-2013 aiming to maintain biodiversity have had some major flaws leading to a decrease in biodiversity. For example, the measure Maintaining Biodiversity in Grasslands has allowed mulching and postponed the mowing date resulting in a decrease in the vegetation diversity. In the future, requirements for management of both botanical and ornithological values should be harmonized. Heaths, scrub and wooded meadow habitats as well as wet grasslands and fens on deep turf soils has not qualified as agricultural land and has not been able to receive RDP payments. Furthermore, grey dunes and humid dune slacks (grasslands and fens) traditionally managed as extensive pastures, have not either been eligible for support under RDP. Also landscape elements important for biodiversity were not eligible for payments, hence farmers tried to eliminate them, thus decreasing landscape diversity and biodiversity.

Giving the fact that agricultural lands are continuously abandoned and leading to a drastic decrease of biodiversity, restoration of abandoned semi-natural grasslands, heaths, grey dunes, humid dune slacks and fens (clearing of shrubs, etc.) and other grasslands that need to be managed should be eligible for support under the Rural Development Program (RDP).

20-45 % of the area of EU important grassland habitats is not eligible for subsidies under agro-environmental schemes (e.g. not included into agricultural land blocks because they were not in good agricultural condition in 2003). Those areas are overgrowing by trees, therefore restoration activities are needed (tree cutting, restoration of herb layer vegetation etc.) before management can be resumed. Most of the alluvial meadow area is in a bad conservation status because of past regulations of the hydrological regime. To ensure a favorable conservation status for this habitat, restoration of hydrological regime in floodplains by naturalization of river flow and blocking of ditches is highly needed.

Only 50% of the biologically valuable grasslands in Latvia are managed with RDP subsidies (Annon. 2012a). This indicates that the RDP subsidies are not sufficient enough to encourage the landowners to resume the management of grasslands, other methods should be sought.

A survey of those applying for RDP was done in 2011, revealing that approximately 40% of the farmers who participated in the survey do not use the mowed grass from the grasslands, it is left, just chopped (LAEI 2011). 30% of the respondents replied that with the current support rate this is the only economically viable solution for management of the grasslands. It was recommended to increase the subsidies for those farmers that cut the grass and use it for agriculture. 63% of the respondents also agreed that they would change the management method (cancel grassland management) if the RDP subsidies would cease. This response further confirms the fact that the financial subsidies are the main driving factor for the management of the grasslands today. Landowners receiving EU area payments without farming, leads to a situation where large proportions of land are managed without it being integrated into farming (only mulching), thus leaving fewer areas available for farmers. Dependence on subsidies does not provide a long term security for the management, other solutions should be encouraged, especially inclusion of the grassland management in the daily farming practices.

A shortage of funds is frequently reported as a bottleneck for the development of farms. However bureaucratic burdens also act as bottlenecks for farms. Excessive bureaucracy in developing manure handling facilities and excessive rigidity in the building process obstruct farms from developing as economically and ecologically sound rural enterprises.

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Annex 1

Identifying and removing the bottlenecks

In order to identify bottlenecks, it is necessary to first decompose the goal into a few more specific sub-targets, see the table below. For each sub-target problems and suggestions for solutions have then been listed. The list has roughly been made according to importance. The problems may be related to economy, practice, legislations/policy, or biodiversity/ecology.

Examples of bottlenecks from Sweden, Estonia and Latvia

Overall goal:

Increasing animal production based on High Natural Value (HNV) pastures and hay-meadows.

Country (SE, EE, LV)	Sub-target	Problem	Problem description <i>Bottlenecks and near-bottlenecks highlighted</i>	Problem type. <i>Economy, Practice, Policy/legisl. Ecology/biodiv.</i>	Suggested solutions
SE, LV, EE	Facilitating the build-up of ecologically and economically sustainable animal farms based on HNV grasslands	Cattle buildings too small	Most farms are old dairy-farms with c. 10-15 cattle, and therefore old buildings can not be used for larger scale meat production. New buildings need large investment.	Economy	Governmental investment support for new buildings to farmers who aim at HNV-farming. Methods for coupling the support to the use of HNV grasslands.
LV, EE		No buildings at all	No buildings for cattle in winter and for collection of manure	Economy, practice, ecology	Support for cattle sheds and manure management facilities
LV, EE		Manure storage and collection	There are no sufficient manure storage and collection infrastructure in farms	Economy, practice	Investment support for manure storage and collection infrastructure, with emphasis on simple and cheap solutions
LV		A lot of bureaucracy for installing manure management systems	It is not reasonable with 16 signatures to get a permit to build a manure lagoon . This takes a lot of time and money. Usually an assistant is also needed that guide, even simple projects, through the bureaucracy. This hinders necessary changes.	Practice	Simplification of bureaucracy. To build a cattle building with manure handling system in Sweden only two signatures are needed. The County Administrative Board checks the animal protection and the municipality check the

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			environmental protection. In Sweden no building permission is needed for agricultural buildings.
SE, EE, LV	Buildings do not have rational management systems	Old buildings are not rational when feeding and handling cattle.	Economy, practice Investment support for new buildings to farmers who aim at HNV grassland-farming.
EE, LV	Lack of equipment, machinery (for hay-making, silage, manure management)	Old machinery is not rational for fodder, feeding, manure and handling of cattle. Even bigger farms have a lack of manure management equipment.	Economy, practice Investment support for new machinery to farmers who aim at HNV grassland-farming. Machinery such as manure spreaders can be used collectively by a group of farmers as it is used during a very short period on each farm.
SE, EE	Deficit of winter-fodder (hay and silage)	Land-owners keep the control over unused fields in order to keep the EU farm-support. Farmers who need fodder are not allowed to rent the land or apply for subsidies.	Policy Introduce a requirement where a harvest needs to be taken for single area payments (gårdsstöd) to be paid out
SE, EE, LV		Small fields and fields with irregular shape on many farms makes the harvest of winter-fodder expensive.	Practice, Economy Higher support for fields that are difficult to use. Investment support for efficient tools, possibly used by a group of farmers.
SE	No subsidies for grass leys/long laying grass leys	With no subsidies (except for organic farming) for grass leys/long laying grass leys the incentive for using grass for fodder is lower and the economy for these farmers lower. Nutrient run-off from fodder could be reduced considerably if grass leys were promoted, especially those who are ploughed more seldom.	Practice, economy, policy Subsidy for grass leys/ long laying grass leys. Information to farmers by advisors on how to improve grass leys (seed mixtures etc).
LV, EE	Problems with storing winter fodder	No hay sheds. Farmers are not aware of the losses of nutrients and reduced fodder quality when storing fodder outside.	Economy, practice, ecology Information on the benefits of proper fodder storage. Investment support for hay sheds
SE, LV, EE	Difficult for farmers to find enough area	Poor knowledge of where valuable (for production and biodiversity) grasslands	Practice, Ecology Inventories of restorable HNV grasslands of high economic and

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		of HNV grasslands	for restoration can be found. National inventories have mainly aimed at grazed HNV grasslands, not restorable ones.		conservation values.
SE			Lack of contact between farmers is a hinder for cattle-owners to rent HNV grasslands.	Practice	Regional conservation authorities serve as links between land-owners and animal-owners.
SE, EE		Short term contracts on land/grazing	Short term contracts of 1-5 years for renting land or grazing land makes it hard for farmers to invest. Hard to calculate on income from managing grasslands.	Practice	Information to landowners and clear guidelines on how you write contracts and divide the EU-subsidies fairly.
LV		Utilisation of other land than grasslands	E.g. heathlands, dunes and fens are not considered agricultural lands, although dependent on management	Practical, economy, policy	Promote the use of these other lands, by stimulating alternative uses, e.g. for hunting, yearly scout events, etc. Individual habitat/species based RDP support for most valuable HNVG
SE, LV, EE		Rental contracts	Difficult to agree on who manages what, how EU-support is divided and writing written contracts. Landowners often want the full EU-support and believe that the cattle owner is happy with just the possibility to graze.	Economy, practical	External organisation as a mediator. Clear guidelines on how you write contracts and divide the EU-subsidies fairly.
LV, EE		Land ownership issues, many landowners abroad	A lot of land is not managed due to the fact that their owners are not available, as they are abroad	Policy, practical	Support from Municipality in finding the landowners and encouraging contracting the land for farming
LV, EE		Grasslands not used in farm production	Large proportions are managed without using grass in farm production (just mulching), thus leaving less areas available for farmers	Policy, economy	Stimulate linkages to farming, except in very valuable HNVG, where support should be linked to habitats/spp.
SE		Only cattle owner can apply for LFA	If organisations or landowners manage grasslands by renting cattle, they cannot apply for LFA.	Policy, economy	Base LFA only on fields, pastures and hay-meadows, not on amount of cattle units.
SE		Payment entitlement for single area payments	Complicated system.	Policy	Drop the concept with payment entitlements.
SE		Complicated	Farmers themselves have to apply for the	Policy	Farmers apply for agri-

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	system for applying for agri-environmental payments	right agri-environmental support for their HNV grasslands. If they apply for the wrong support, the authority will refuse the application, even if the land qualifies for another kind of agri-environmental support.		environmental support and the administrative authority classifies what type of support is eligible (pasture, HNV pasture, meadow, HNV meadow, forest pasture, mosaic pasture etc).
SE	Delayed payment of agri-environmental support	Due to delay and inefficient administration by the administrating authority, the payment to farmers can be delayed 1-2 years.	Practice	Efficient administration, sufficient resources for administrating authority to work with HNV grasslands, simplify the rules for qualifying areas for support.
SE	Poor profitability of pasture meat.	HNV grassland farmers often have difficulties selling meat which remains identifiable as pasture meat through the entire marketing chain. This is largely due to handling problems at large butchereries together with lack of small-scale alternatives.	Practice, Economy	XX
SE	Lack of pasture beef on the market	Not big enough volumes with certified pasture beef to match the markets demand.	Practice	XX
SE	No large demand for pasture beef	No large demand for pasture beef, probably mainly as the consumer is not familiar with this product and do not know how most meat is produced.	Practice	XX
SE, LV, EE	Poor information of management for biodiversity	Urgent need for advisory service for many farmers, to manage HNV grasslands in a way that preserve or increase biodiversity.	Ecology	Obligatory advice on management and restoration for farmers. More resources for administrative authority to make adequate management plans for HNV grasslands
EE, LV	Pasture beef	Not developed as a concept - with cattle grazing HNV grasslands	Economy	Develop a market and concept.
LV, EE	Small consumption of beef	Pork and poultry is the cheapest and more common	Economy	Education, direct links between beef farmers and consumers
LV	Lack of local beef on the market	Local beef is not available in markets, as cheaper foreign beef are available	Economy	Support to local markets, favoured procurement for local/organic goods

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LV, EE		Sheep meat and wool in small demand	Local sheep meat is not available in markets and wool is not used to any large extent.	Economy	Support to local markets, favoured procurement for local/organic goods. Make laundering of sheep wool more effective and priorities cleaning of the laundry water.
SE, EE, LV		Wild boar damages	Increasing stock of wild boar are damaging both fields and HNV grasslands. Farmers might have to re-sow fields.	Practice, Economy, Ecology	More hunting is needed. Make support for fencing against wild boars possible.
SE, EE, LV	Encouraging younger farmers to start managing HNV pastures	Expensive to renew fences and pastures in poor condition	Many old farmers have not maintained fences and pastures for some time and renewing is costly. Restoration support is not given to grasslands already in use, and it is therefore less expensive for farmers to restore abandoned grasslands (with lower biodiversity values) than grazed grasslands.	Policy, Economy, Practice	Support to bush clearing and new fences in grazed HNV grasslands when taken over by a new farmer.
LV, EE		Young people leaving countryside	Due to intensification of farming processes, less people are needed on country side.	Policy	Encourage other activities, farming supporting activities in rural areas, to increase the employment in rural areas.
LV, EE			Large emphasis on farming as the only occupation, while part-time farming is not really encouraged.	Policy	Part-time farming concept, encourage and promote it, and support it on national level.
LV			Farming education as obligatory requirement for farming.	Policy	Do not limit the education requirements for part-time farming.
LV, EE		Young farmer definition	Young farmer definition is 40 years , that does not really correspond to today's reality.	Policy	Increase the age limit.
SE, EE	Encouraging farmers with grazing animals to utilise all their available HNV grasslands	Unsecure agreements for agri-environment payment	New rules after agreements were signed forced many farmers to after several years repay their agri-environment payments received 2008-2010 for pastures that were then considered eligible for payment.	Policy	Make governmental agreements as juridical sound as other agreements, to avoid that farmers have to pay for the mistakes made by the authorities.
LV		Inconsistent	Wet, wooded, bushy, flooded areas are	Policy	Consistency in requirements, do

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	requirements for management	excluded from RDP payments, also in the middle of the commitment period, resulting in payback of funds received. Support only available for areas entitled for single area payment (SAP), lands in good agricultural and ecological conditions (GAEC)		not change rules in the middle of the commitment period, define 2 different "GAEC" - for farming priority and for biodiversity priority
SE, LV, EE	Unsuitable definitions of eligible semi-natural grasslands in the RDP programs	Grasslands need to reach certain levels of productivity indicators, such as grass cover or maximum number of trees and bushes per hectare. The productivity requirements for semi-natural grasslands are basically determined by the rules for arable land. Many ecologically and economically important grasslands are therefore not eligible for payment.	Policy	Base the definitions on ecology and economy, not on irrelevant and inaccurate criteria. Use the possibilities for exceptions that are available in CAP according to the EU commission.
SE, EE, LV	Pastures with high productivity such as wet, lake-side pastures are given the same subsidies as pastures that need less grazing	On pastures that have a high productivity (such as wet meadows) more grazing animals are needed/ha to manage the land according to the rules for the subsidies (well grazed at the end of the season). This gives a lower economy for the farmer who cannot utilise these extra live-stock to manage other land with subsidies.	Policy	A higher subsidy is needed on HNV pastures with a high productivity where more live stock is needed/ha for its management.
EE	HNV grasslands outside of Natura 2000 are not eligible	HNV grasslands outside of Natura 2000 are not eligible for support. A lot of land with HNV is not managed due to this criteria.		Make HNV grasslands outside of Natura also eligible for support.
SE	Restoration support (non-productive investment) complicated	The application procedure for restoration support for HNV grasslands is complicated.	Policy, Economy	Simplify the procedure or have advisors that help with the work or good, simple information material.
SE	Support for restorations (non-productive investment) is too strict.	Own work is not paid for, in spite of this being the major cost in a restoration.	Policy, Economy	Make own work eligible for payment.

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LV, EE		No support for restorations in RDP	No support for restoration of grasslands, also linkage to GAEC	Policy	Include restoration support in RDP
LV		HNV grasslands defined as forest	Overgrown HNV grasslands are in many cases defined as forest. This complicates restoration as permits are needed to clear away the overgrowth that has now been defined as forest.	Policy	Simplify possibility of restoring overgrown HNV grasslands.
LV, EE		Forest grazing and landscape elements not managed	Forest grazing and landscape elements are excluded from agricultural areas	Policy	Include forest grazing and landscape elements in RDP support
EE		Restorations of HNV grasslands not carried out on a large scale	Need for special machinery for restoring sensitive dry areas (alvars). Lack of specific machinery suitable for HNV grasslands	Practical, economy, policy	Include restoration support in RDP to create a market for entrepreneurs, who can invest in special technical machinery and carry out restorations.
SE, EE	Encouraging continued use of HNV pastures among small-scale farmers	Old cattle buildings	Old buildings not approved by EU regulations.	Practice, Economy	Give exemptions to old farmers to use old buildings until retirement
LV, EE		RDP focuses on large scale farming	Focus of RDP on large scale farming, especially regarding the investment support, therefore a huge administrative burden for smaller farms	Policy	Differentiation of support measures and related administrative requirements per size of farm
LV, EE		Investments, sustainability	Investments in small scale farms are not cost effective due to a low number of cattle	Policy	Differentiate investment support
LV		Market limits	Small farms are paid less for milk, weak local market for organic/local products. Lack of marketing skills among farmers.	Policy, Economy, Practice	RDP support for production in small farms, cooperation of the farmers in processes, on farm processing and individual farm labels. Improve marketing skills for farmers, encourage them. Support for direct food links.
LV, EE		Subsistence farming	Farming is not related to production in many farms, thus not very sustainable	Practice, policy	Support local markets, on farm processing and selling, niche products
LV		Lack of cooperation	No cooperation among farmers in ensuring the product chain, processing,	Practice, economy	Encourage cooperation, on local and regional level for all stages of

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			selling.		production, processing, selling.
LV		Lack of information	No information about possibilities offered in local vicinity.	Practice	Information services, local initiatives encouraging information and cooperation
SE	Utilizing of HNV grasslands far away from the farm	Daily check of grazing cattle	Time consuming due to need to travel far away or big cost if paying someone to do the check.	Economy, practical, policy	Introduce extra support for HNV grasslands far away.
SE, EE		Fences and pastures often in bad conditions	Pastures far away tend to be in worse condition. Also if the cattle escape, it is a bigger problem far away.	Practical, economy, policy	Introduce extra support for HNV grasslands far away.
LV		Not possible to integrate some remote HNV areas in farming	Not possible to integrate the most valuable HNV areas in farming practices, but other goals for management could be applied, e.g. NGO activities, hunters etc.	Practical, economy, policy	Encourage other use of remote grasslands, e.g. for hunting, yearly scout events, etc. Individual habitat/species based RDP support for most valuable HNVG
SE, LV, EE		Large predators	Harder to keep an eye on the cattle if there are large predators in the area. A larger risk in areas further away from the farm. Sheep killed.	Practical, economy	Make support for fencing against large predators possible in LV.
LV		Feral dogs	Especially in sheep farming	Practical, economy	Make support for fencing against feral dogs possible.
SE, LV	Achieving good management status in managed HNV grasslands	Poor flexibility of the agri-environment framework	Lack of resources for proper handling of agri-environment payments at the administrative authority makes it difficult for farmers to receive the right payment, and makes the grassland management uniform, with deteriorated biodiversity as a result.	Policy, Ecology	Increased resources to enable proper handling of the NRDP-system, and individual treatment of HNV areas with special needs.
SE, LV		Poorly qualified administrators, advisors and controllers	Poor continuity and fast turnover of employees at the administrating agency causing an uncertainty and alienation among farmers, making many hesitate to apply for RDP subsidies.	Practical	Training for employees
LV, EE		40% (LV) of farmers managing HNV grasslands not	Grasslands mown and mulched, grass not utilized, due to subsidies or due to late mowing	Policy	Replace late mowing requirement with requirement to mow once a year in subsidies, encourage

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		connected to production			linkages to production. Not to subsidize mulching (or less subsidy).
LV, SE		60% (LV) of known HNV grasslands not managed at all	Grasslands not managed due to complex factors, problems also for those that do not qualify for SAP, due to linkages of semi-natural payments to SAP	Policy	Stimulate farming on farm level, support grassland management, separate support for semi-natural grasslands from single area payments. Stimulate local initiatives, in the format of working events etc.
SE		Intense management that is often ecologically and economically too intense.	A general rule that grasslands need to be grazed or mown “intensively enough to counteract deleterious litter accumulation”, earlier accompanied by recommendations for certain vegetation heights. Since both these quality measures are difficult to define unambiguously, quality of the farmers’ activities have been rather subjectively estimated, generating an unpredictable risk for a farmer of being rejected at a quality field control. This has further increased the uncertainty and forced the farmers to a management intensity that is often ecologically and economically too intense – “better safe than sorry”.	Ecology	Training for employees. Advisory work and simple, clear information to farmers of what criteria they have to meet concerning management of grasslands. Advisory work to farmers.
SE, EE, LV		Too much clearing of trees and bushes	The amount of trees and shrubs that are allowed in semi-natural grasslands has varied over time, but has during some periods been low, leading to considerable bush clearing giving negative effects on biodiversity. If pastures are cleared more trees and bushes are often taken away than is necessary- “better safe than sorry”.	Ecology	Advisory work and simple and clear information to farmers of how much trees and bushes that can be left in pastures.
SE, EE, LV		Semi-natural grasslands with too many trees and shrubs are left out	The limits for acceptable cover of trees and shrubs need to qualify for both the single area payment and the environmental payment for management.	Ecology	Semi-natural grasslands with “too many” trees and shrubs that have a high biodiversity connected to these in combination with grazing

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		of the system or paid less, despite the high biodiversity connected to the trees and shrubs and grazing/mowing	A major reason is that the EU definition of agricultural ecosystems does not include pastures and meadows with more than a few scattered trees and shrubs. This implies that the EU definition rejects a very large proportion of the management depending red-listed species, namely those dependent on sun-exposed trees and shrubs in semi-natural biotopes. A brief interview survey among regional authorities prove that considerable areas are at present forced to either being left out from the CAP system or being paid less.		should be paid the same subsidies as semi-natural grasslands with less trees and shrubs.
SE, EE		Ecologically necessary variation is not applied to grasslands where it is needed	Today it is theoretically possible for administrators to make exceptions from a number of the strict directives if it is ecologically motivated. For example, one year without grazing per five-year-period is allowed, as well as weaker grazing intensity. In practice, however, resources for such expanded administration are lacking since the resources have decreased while the needs, due to more connected farmers and more diverse management directives, have increased. A survey among about 40 administrators in Sweden (November 2008) showed that the advantages of the new directives cannot, due to lack of resources, be sufficiently implemented.	Ecology	More resources to the administrating authority
SE, EE, LV		Lack of knowledge about management ecology	For many species-rich grassland types we do not know the management requirements, as proved by continued loss of biodiversity in managed grasslands.	Ecology	Knowledge-building applied research based on local conservation problems, financed by FoU-grants from the Board for Agriculture
SE, EE,	Economical sustainable	Economical	The support is too low to cover costs for	Ecology,	Increase the support for HNV

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LV	management of hay-meadows	support for meadows is too low	manual mowing and removing of grass.	economy	meadows, that cannot be managed by tractor mowing, to at least 15000 SEK/ha.
SE, EE, LV		No market for meadow hay	Transport costs are often too high.	Ecology economy	XXX

Overall goal: Increasing number of wetlands

Country	Sub-target	Problem	Problem description <i>Bottlenecks and near-bottlenecks highlighted</i>	Problem type. <i>Economy, Practice, Policy/legisl. Ecology/biodiv.</i>	Suggested solutions
SE, LV	Encouraging farmers and landowners to recreate wetlands	Information	Good examples and information about investment support and support for managing wetlands is not reaching out to landowners	Practice	XXX
LV, EE			Information is not available on benefits (economical, ecological) of wetlands	Practice	More information should be provided on benefits of wetlands
LV, EE		No support for recreating of wetlands	No support for recreating and maintenance of wetlands	Policy	RDP measure needed to create possibilities to recreate wetlands
LV, EE		Administrative burdens	Large number of institutional permissions required	Policy	Simplifying of procedures
LV, EE		Expensive	Lack of information about cheaper solutions, lack of examples	Practice	Examples should be provided on cheaper solutions
EE, LV, SE		Management is complicated in wet areas	In many cases the management is difficult in wet areas which are too wet for animals or machinery- not possible to graze early in spring; not possible to mow etc). Lack of specific machinery suitable for wet HNV grasslands	Practical, economy, policy	Higher support from RDP creating a possibility to use special technical machinery.
LV, EE		Information	Lack of possibilities to organise study trips etc to wetlands to see good examples.	Policy, practical	Make it possible for NGO's, groups of farmers etc to organise study trips and works shops about

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					wetlands to see good examples.
LV, EE, SE		Information	Information is not available on benefits (economical, ecological) of naturalising the drainage systems (2 step ditch), good examples are not reaching out to landowners	Practice	More information should be provided on benefits of naturalising the drainage systems
LV		Administrative burdens	Large number of institutional permissions required.	Policy, practice	Simplifying of procedures

This report covers bottlenecks found, during the Snowbal-project (2011-2013), in the management of semi-natural grasslands and wetlands through animal production. The bottlenecks have been pin-pointed and solutions to these suggested. A range of hinders, bottlenecks, have been found that cause both large and small problems for farmers. The bottlenecks that have been found are in many cases the same for Sweden, Estonia and Latvia.



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