

## Overview of agri- environment payments and water protection measures in selected EU countries

English summary of the TEHO project report  
7/2011, part I

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## **1. Introduction**

This is an English summary of a study that was conducted in order to compare the agri-environment payment systems of 10 EU countries with each other and with the Finnish system. The countries included in the study are Austria, Denmark, Estonia, France, Germany, Ireland, the Netherlands, Poland, Sweden and United Kingdom. The Finnish system is used as a reference. The countries were selected to represent the Baltic Sea Region as well as the important agricultural producers. Austria and Ireland were included since they have interesting measures.

The original and complete version of the study is available in Finnish:

Berninger, K. 2011. Maatalouden ympäristötukijärjestelmien yleispiirteet ja vesiensuojelutoimenpiteet eräissä EU-maissa. In: Härjämäki, K. & Lundström, E. (Eds.) TEHO-hankkeen raportteja, osa 4. Pp. 4-47. Helsinki. [www.ymparisto.fi/teho](http://www.ymparisto.fi/teho)

## **2. The intensity and coverage of agri-environment payments**

The extent of agri-environment payments can be described in different ways. One effective way of identifying differences across countries is comparing the intensity and coverage of agri-environment payments in each country. When the amount of support per supported area is concerned, Sweden stands out with the highest support intensity (Figure 1). The Netherlands and Estonia have the next highest support intensities. Ireland, France, Denmark and Germany have low support intensities, whereas in United Kingdom, Austria and Finland the support intensities are at medium level. The amount of agri-environment payment per supported area has grown considerably between 2003 and 2008 in United Kingdom and France (Figure 1). In Ireland the support intensity has crashed down during the same period

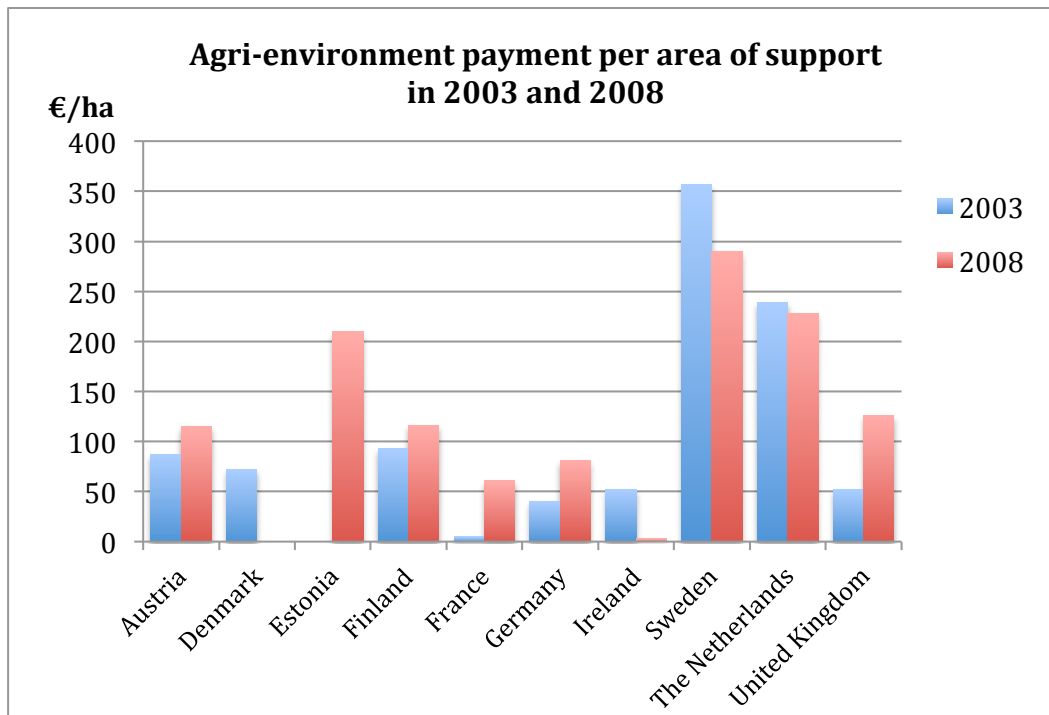


Figure 1. Amount of agri-environment payments per supported area in selected EU countries in 2003 and 2008 (European Commission 2006, Eurostat agricultural Statistics 2009).

In this study the coverage of agri-environment payments is described as the share of utilized agricultural area (UAA) enrolled in agri-environmental schemes. Table 1 presents data for 2002 and the most current information available. The Netherlands, Poland and Denmark reach the smallest coverage, whereas Finland, Austria, Sweden and Estonia have the highest coverage levels. In the other countries included in the study, the coverage is at a medium level between 25 and 40 percent.

The basic approach used for agri-environmental schemes in each country has remained unchanged since 2002, and the support coverage is in most countries approximately at the same level today as it was in 2002. United Kingdom has increased the support coverage considerably (Table 2). There are regional differences within United Kingdom. In England, the coverage of agri-environment payments is 66 % of utilized agricultural land, which includes it in the high coverage countries' group. The United Kingdom as a whole reaches a medium coverage. In France the support coverage seems to have decreased, but differences in calculation methods may also affect the result.

*Table 1. Coverage of agri-environment payments, % of utilized agricultural area in selected EU countries in 2002 (European Commission 2005) and currently.*

<b>Country</b>	<b>2002</b>	<b>Current</b>	<b>Year and source of the current information</b>
Austria	82 %	78 %	2009, AgrarmarktAustria
Denmark	11 %	10 %	2008, Government of Denmark 2010
Estonia	-	60 <sup>1</sup> %	2009, Agricultural Research Centre
Finland	99 %	95 %	2009, Ministry of Agriculture and Forestry
France	40 %	15 %	2009, Cemagref
Germany	25 %	28 %	2009, Bundesministerium für Ernährung, Landwirtschaft und Verbraucherschutz
Ireland	29 %	42 %	2009, Department of Agriculture, Fisheries and Food
The Netherlands	2 %	2,8 %	2009, Agricultural Economics Research Institute
Poland	-	7 %	2010, Ministry of Agriculture and Rural Development
Sweden	85 %	71 %	2009, Jordbruksverket 2010
United Kingdom England	18 %	37 % 66 %	2009, The Scottish Government 2010a 2009, Natural England 2009

1 = Estimate since different supports are partially paid for the same farms

Figure 2 shows a fourfold table classifying countries according to their support intensity and support coverage (Figure 2). Poland is not included in this figure since the information on the support intensity is missing. Half of the studied countries fall in the category of rather low support intensity and low support coverage. Finland and Austria are in the group of rather low support intensity and high support coverage, whereas Estonia and Sweden form the group of high support intensity and high coverage. The Netherlands is alone in the category of high support intensity and low coverage.

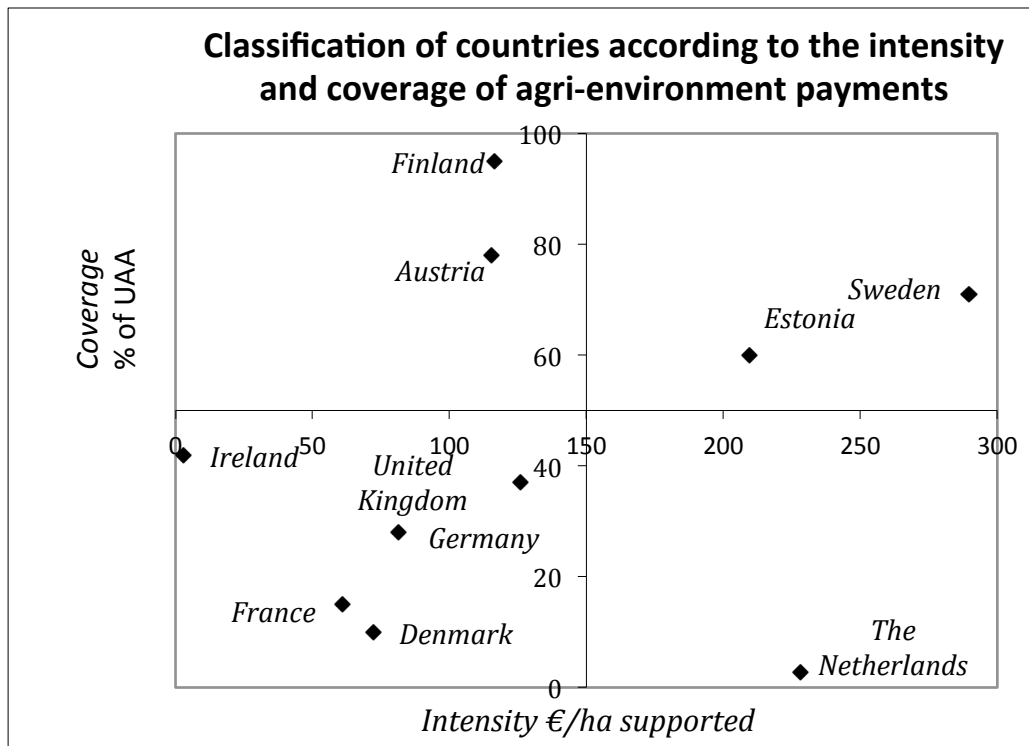


Figure 2. Classification of countries according to the intensity and coverage of agri-environment payments

It is also possible to study the extent of agri-environment payments by comparing the funds allocated for this purpose in the Rural Development Programmes. United Kingdom, Austria and Germany have budgeted largest absolute amounts for agri-environment payments for the programming period 2007-2013 (Figure 3).

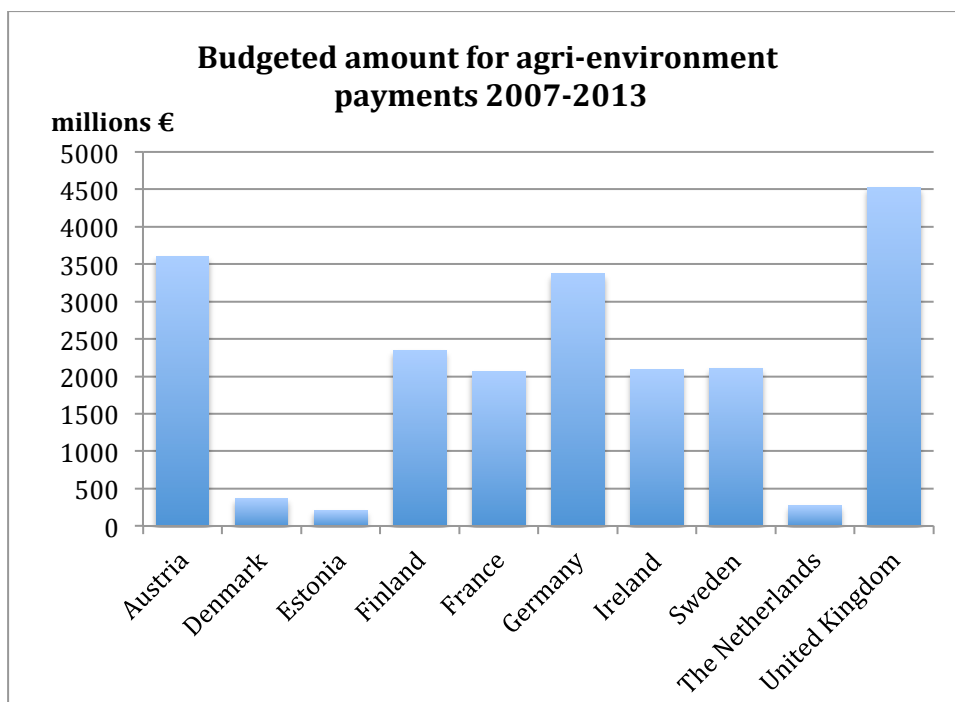


Figure 3. Amounts budgeted for agri-environment payments for the programming period 2007-2013 in millions of euros (Eurostat agricultural statistics 2009).

When agri-environment support in relation to the utilized agricultural area is concerned, Austria and Finland stand out as high support level countries (Figure 4). France, Denmark, the Netherlands and Poland have low support levels per hectare of agricultural land.

In five of the studied countries agri-environment payments constitute about half of the Rural Development Programme budget for 2007-2013 (Figure 5). In another five countries the share is much lower. Finland falls between these categories with a share of 38 %. Those countries with a low share of agri-environment payments in the Rural Development Programme budget put more emphasis on the axis 1 focusing on improving competitiveness. The Netherlands, Germany and Poland also direct 20-30 % of the Rural Development Programme budget to axis 3: quality of life in rural areas and diversification of rural economy. In the Finnish budget the share of natural handicap payments is higher than in other studied countries.

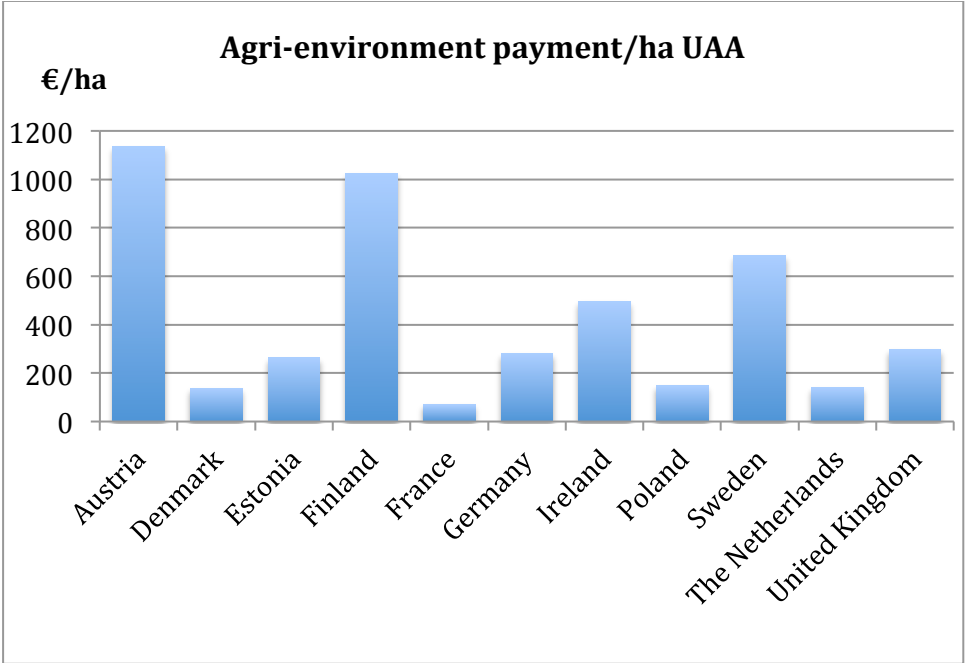


Figure 4. Amounts budgeted for agri-environment payments for the programming period 2007-2013 calculated per ha utilized agricultural area (Eurostat agricultural statistics 2009).

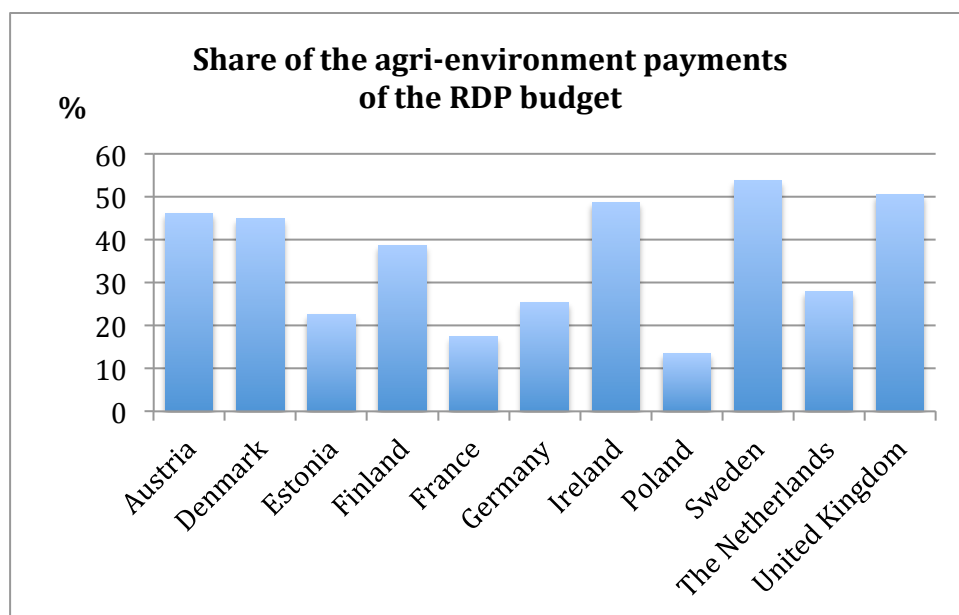


Figure 5. Share of the agri-environment payments of the total budget for Rural Development Programmes (Eurostat agricultural statistics 2009).

### 3. The structure and emphases of agri-environment payment schemes

The agri-environment programmes included in this study can be roughly divided into two groups: one-level and two-level programmes. One-level programmes are directly divided into measures or groups of measures, whereas in two-level programmes the measures are divided into basic or entry-level schemes and more advanced level schemes. United Kingdom, Ireland and Finland have two-level programmes. All other countries included in this study have one-level programmes. Also one-level programmes typically contain both broad measures targeted to all farmers and more specific measures targeted for certain regions. Exceptions are the Netherlands and Denmark, where the support is targeted to special areas only or the participants are subject to competitive bidding. Also in Denmark, support for buffer zones around water bodies is available for all farmers.

All farm measures typically contain sub-measures common to all participants and a set of optional sub-measures as in England, in the higher level of Wales, in the Irish REPS and in Finland. In Scotland, the all farm measure contains only optional sub-measures. In Austria, Estonia and Poland, the all-farm measure only contains sub-measures common to all participants.

The objectives of the agri-environment programmes are similar in many countries included in the study, but the emphases differ across countries. Some countries also have unique measures. The Netherlands focuses very strongly on biodiversity conservation: all measures are related to this objective. Also Sweden stresses biodiversity conservation, especially the management of semi-natural grasslands. Denmark aims at reducing pesticide use. United Kingdom has unique measures related to historical site maintenance, recreation routes and farm visits. Finland puts a strong emphasis on water protection measures.

The agri-environment programmes studied include a broad set of different measures. Some measures are in some form common to various countries, and some measures are applied in one country only. The most common measures among the studied countries are organic farming, support for traditional animal breeds and traditional cultivated crop varieties, which are in some form included in the agri-environment programmes of all countries except the Netherlands.

#### 4. Water protection measures

The share of water protection measures of all measures describes to some extent the emphasis each country puts on water protection in the agri-environment payment schemes. However, the structure of each programme also has an effect on this share. In most countries, the share of water protection measures falls between 20 and 33 per cent (Table 2). Finland has the highest share of water protection measures, and the Netherlands the lowest.

*Table 2. The share of water protection measures as a percentage of all measures in the agri-environment payment.*

<b>Country</b>	<b>Share of water protection measures %</b>
The Netherlands	8
United Kingdom	
England, Entry Level Stewardship	20
Scotland, Rural Priorities	8
Wales, Tir Gofal	21
Ireland	
REPS	27
AEOS	19
Austria	32
Poland	33
France	33
Sweden	38
Germany	
Schleswig-Holstein	30
Brandenburg	25
Denmark	50
Estonia	20
Finland	
Basic measures	67
Additional measures	90
Special measures	46

The studied agri-environment programmes have the following water protection measures (the number of countries applying each measure is shown in brackets):

- Buffer zones (9 countries)
- Catch crops and winter cover crops (8 countries)
- Extensive management of grasslands (5 countries)
- Management of wetlands (5 countries)
- Use of new technologies for slurry spreading (4 countries)
- Fertilization plan and bookkeeping (4 countries)
- Nutrient balance calculation (3 countries)
- Erosion control strips on fields (2 countries)
- Management of high erosion risk areas (1 country)
- Moving livestock away from water courses in winter (1 country)
- Alternative drinking places for livestock (1 country)
- Reduction of a high nutrient balance below a certain level (1 country)

In addition to the measures listed above, reducing fertilizer use or set limits for fertilizer use are part of the requirements in various measures, for example in the basic measures of Ireland, Austria and Finland.

Buffer zones along water courses is a widely used water protection measure. Of the 11 countries studied, only Austria and Estonia do not include this measure in their agri-environment payment schemes. It does not necessarily mean that they don't support the establishment of buffer zones at all. It is also possible that buffer zones are supported through other, national funding systems, which this study does not cover. The support levels and the width of buffer zones vary considerably across the countries applying this measure (Table 3). In the Netherlands, the buffer zone is primarily not a water protection buffer, but a natural shore area. In Finland, the support level per hectare is the third lowest of nine countries, if the highest level in each country is taken into consideration.

*Table 3. Support levels for buffer zones in different countries. If the support level is first given in meters, the support levels per hectare are given in brackets. The author of this report calculated these levels except those for Poland which are from the annex 10 of the Rural Development Programme.*

Country	Buffer zone width	Annual support level
The Netherlands	3 - 10 m (natural shore area)	52,31 €/100 m (523 - 1734 €/ha)
United Kingdom		
England	12 m	472 - 590 €/ha <sup>1</sup>
Scotland	6 - 24 m	418 €/ha
Wales	At least 7 m	212 €/ha
Ireland	2,5 m	0,14 €/m (560 €/ha)
	5 m	0,34 €/m (680 €/ha)
	10 m	0,74 €/m (740 €/ha)
	30 m	2,70 €/m (900 €/ha)
Poland	2 m	11 €/100 m (575 €/ha <sup>2</sup> )
	5 m	27 €/100 m (575 €/ha <sup>2</sup> )
France	At least 10 m	For grains max. 280 €/ha For legumes max. 450 €/ha
Sweden	6 - 20 m	322 €/ha
Germany		
Schleswig-Holstein	3 - 12 m	600 €/ha
Denmark	10 - 20 m	161 €/ha
Finland	At least 15 m	Max. 450 €/ha

1 = The support level is based on points gained from this measure. The total support level of the Entry Level Stewardship scheme is always the same and does not depend on the selected measures.

2 = The support level in Poland was first calculated per hectare and then converted to per meter levels in order to facilitate calculation.

Another common water protection measure in the studied countries is cultivation of catch crops or winter cover crops. Table 4 shows the support levels for these measures in different countries. In Finland, the support levels seem low in comparison to other countries, but they are additional measures, which the farmer can choose to complement the basic measures (the basic support is 93-107 €/ha).

Management of wetlands may be a water protection measure or a biodiversity measure. Five countries apply this measure. The highest annual support levels are in the Netherlands, about 641 €/ha, and in Sweden with the supplement for high yield cropland, about 540 €/ha. In Denmark, the basic support for a wetland created on cropland is 470 €/ha/year, but an additional support is available for its management. In Finland, the maximum annual support for management of wetlands is 450 €/ha, and in United Kingdom (Scotland) 330 €/ha. In the Netherlands, the support for wetlands is targeted to the most valuable areas, in Denmark it is available for certain priority watersheds or nature protection priority areas, and in Finland the support is meant for certain important river basins covering most of the country. In Finland, only watersheds with at least 20 % of the land area covered by fields are eligible for the support, which reduces the extent of the application of this measure.

Table 4. Support levels for catch crops and winter cover crops in different countries.

Country	Measure	Annual support level
United Kingdom England ELS	Winter cover crops	77 €/ha
Austria	Catch crop under maize Winter cover crops	50 €/ha 130 - 190 €/ha
Poland	Catch crop under grain  Winter cover crops	75 €/ha 0 - 100 ha, 37 €/ha 101 - 200 ha, 8 €/ha 201 - ha 100-105 €/ha 0-100 ha, 50-52 €/ha 101 - 200 ha, 10 €/ha 201 - ha
France	Cultivation of catch crops	48-86 €/ha/year with annual crops, final support levels defined locally
Sweden	Cultivation of catch crops Cultivation of catch crops and spring cultivation	97 €/ha 161 €/ha
Germany Schleswig-Holstein Brandenburg	Cultivation of catch crops Cultivation of catch crops	80 - 125 €/ha 45 - 79 €/ha
Estonia	Vegetation cover over winter on 30 % of land under cultivation	Support level for the whole “Environmentally friendly management” measure 80,53 €/ha on fields 51,13 €/ha on grassland
Finland	Vegetation cover over winter (Additional measure) Cultivation of catch crops (Additional measure)	30 - 45 €/ha  13 €/ha

Also the extensive management of grasslands is a common measure and it is applied in almost half of the countries included in this study. The lowest annual support levels for this measure are found in Finland and Sweden, 55 €/ha. In France the annual support level is 76 €/ha, in Brandenburg in Germany 120 €/ha, and in Poland 124 €/ha.

New technologies for slurry spreading are applied in four of the studied countries. The highest annual support level is found in Finland, 56 €/ha. In Ireland, Austria and Germany (Schleswig-Holstein) the annual support levels vary between 15 and 30 €/ha. The support levels of Ireland and Austria are defined by cubic meter of slurry, and the support levels per hectare were calculated using the maximum allowable slurry spreading quantities for Austria, 30 m<sup>3</sup>/ha.

Many water protection measures are applied in few countries only. However, several measures with a common objective of optimum fertilization can be grouped together. These measures are calculation of nutrient balances, fertilization plans and bookkeeping, and reducing nitrogen balance. Seven countries apply one or several of these measures. Table 5 describes the essentials of these measures and their annual support levels. The highest support levels are found in Austria, Poland and Denmark. In Denmark the availability of this measure is restricted, and mostly organic farms are

selected. The Danish agri-environment programme includes a specific organic conversion support, but no basic support for organic farming after conversion.

*Table 5. Measures designed for optimizing fertilization and their support levels in different countries.*

<b>Country</b>	<b>Measure</b>	<b>Are limits set for fertilizer amounts?</b>	<b>Annual support level</b>
Austria	Integrated crop production, includes fertilization bookkeeping, soil analyses, limits set for nitrogen fertilization, and phosphorus fertilization according to soil phosphorus levels	Yes	Support level for the whole measure, for potatoes and root crops 150 €/ha
Poland	Fertilization plan to be followed, maximum fertilizer amounts defined	Yes	Maximum 90 €/ha
Sweden	Nutrient balance calculation, includes also limitations for pesticide use	No	Maximum 27 €/ha
Germany, Brandenburg	Reduction of a high nutrient balance below certain level	Yes	65 €/ha
Denmark	Fertilization plan with bookkeeping, limits to the use of fertilizers and pesticides	Yes	101 €/ha
Estonia	Environmentally friendly management, includes a fertilization plan as well as nutrient analyses of soil and manure	Yes	Support level for the whole measure 80,53 €/ha on fields 51,13 €/ha on grassland
Finland	Nutrient balance calculation More accurate nitrogen fertilization Reduced fertilization	No Yes if soluble nitrogen levels above a set limit Yes	18 €/ha 23 €/ha 10 €/ha

## 5. Conclusions

This study has compared the agri-environment support programmes of 10 EU countries in comparison to the Finnish system. The comparison shows that each country has a different agri-environment support programme, but they also contain common structural characteristics and similar measures. Finland differs from other countries by its large coverage of support and a strong emphasis on water protection measures. On the other hand, Finland has less measures aiming at biodiversity protection and management than for example the Netherlands and Sweden. Commonalities are found in the two-level structure of the support schemes in Finland, United Kingdom and in Ireland. Austria and Finland are similar in their rather low support intensity with high support coverage.

The coverage of support is the lowest in the countries with high intensity agriculture, and the highest in countries with rather extensive agriculture. It is possible that in the latter type of countries environmental services are seen as a part of agricultural production. For example, the short description of the Scottish Rural Development Programme mentions that one of the objectives of agri-environment payments is the viability of agricultural and land management companies that are producing environmental services. On the other hand, the agri-environment payments in United Kingdom support also wider rural development measures like maintenance of historical buildings and recreational routes.

Of the water protection measures, the support levels of catch crops, management of extensive grasslands and measures designed for optimizing fertilization are relatively low in Finland in comparison to other countries included in this study. Also the support level for buffer zones is rather low, but it is higher than in other Nordic countries.

It is interesting that in Denmark and the Netherlands, where the highest livestock densities (livestock units/ha) of the studied countries are found, there are no agri-environment measures related to the manure management. However, the content of the agri-environment payments also depend on the legislative framework related to environmental issues in agriculture in each country, and other support mechanisms that are in use. Manure handling is regulated through national legislation, and certain practices or measures may be compulsory. Denmark has also invested strongly in manure handling, for example in biogas plants that have received public support.

The quantity of agri-environment payments has no direct link to environmental effects, but the support is based on the compensation of increased costs or lost gains. Support levels are calculated according to the local conditions in each country or region. Using this logic the largest support levels should be in the areas with best yields. On the other hand, the programme structure and set priorities also influence support levels.

As it has been stated in the Finnish discussion about further development of the agri-environment payments, better allocation of water protection measures to most critical areas could improve support effectiveness. For example in France local water protection measures are restricted to priority river basins, and in Sweden the measure is meant for the regions in Southern Sweden with intensive agriculture.

The voluntary water protection measure in Brandenburg is interesting, because it sets clear targets for nitrogen balance. In the measures applied in other countries, nitrogen balances are calculated, fertilization plans are made, or limits are set for nitrogen fertilization, but no numerical requirements for the reduction of nitrogen balance are set. This measure can be assumed to be efficient, but it may also be criticized for lack of equality, because it is restricted to those farms with a high nitrogen balance in the beginning of the programming period. If the farm has reduced its nitrogen balance and reached the target already before that, it is not eligible for this support.

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