European Commission
Government of the Republic of Estonia
Ministry of Agriculture

ESTONIAN RURAL DEVELOPMENT PLAN 2004–2006

Tallinn 2004

CONTENT

1 INTRODUCTION

The Estonian Rural Development Plan 2004–2006 (hereinafter ERDP) covers the period from 1 March 2004 to the end of 2006. The ERDP was prepared to support the regionally balanced development of rural areas via the European Union (hereinafter EU) Common Agricultural Policy measures.

The Common Agricultural Policy is financed from the Guarantee Section of the European Agricultural Guidance and Guarantee Fund (EAGGF) and co-financed from the state budget of Estonia. The EU Council Regulation (EC) No 1257/1999 (hereinafter Regulation 1257) as last amended by the EU Council Regulation (EC) No 1783/2003 sets out a common legal framework for rural development support applicable throughout the EU. Title II of Regulation 1257 specifies the rural development measures, their objectives, and the eligibility criteria.

The EU Structural Funds have been available to the Republic of Estonia (hereinafter Estonia) in the form of the SAPARD programme (Special Accession Programme for Agriculture and Rural Development for Central and East European countries) since 2001 under the SAPARD financing agreement between the Commission of the European Communities and the Republic of Estonia.

The rural development measures financed from the EAGGF Guarantee Section that Estonia plans to implement are the following:

- support for less-favoured areas;
- agri-environmental support;
- support for afforestation of agricultural land;
- support for semi-subsistence farms undergoing restructuring;
- support for meeting standards;
- additional direct aid payments;
- technical assistance (supportive measure).

The present document describes the current situation in the rural areas of Estonia and the rural development strategy and the measures arising from it.

2 MEMBER STATE AND ADMINISTRATIVE AREA

The Republic of Estonia is located between the 57th and 60th latitudes and the 22nd and 28th longitudes. Estonia shares a common sea and land border with the Republic of Latvia and the Russian Federation (the latter will become the border of the EU) and a sea border with the Republic of Finland and the Kingdom of Sweden. Estonia stretches 240 km from north to south and 350 km from east to west.

The total area of Estonia is 45,227 km^2, including 43,200 km^2 of land area. More than a half of the land area is forest land[1], one-third is agricultural land[2], and one-fifth is covered by mires and bogs.

[1] Forest land is understood as forest land covered with forests and without forests (clear areas). Forest land without forests means clear cut areas, glades, thin forests, burnt woodlands, perished stands, non-assimilated forest plantations and nurseries, as well as land under facilities relating to forests (forest roads, log storage areas, etc.).

3 AREA OF APPLICATION

Territorial coverage

The ERDP covers the rural area of the entire Republic of Estonia and is a horizontal plan in this respect. The territories of villages, towns, and small towns are regarded as rural areas.

Objectives

The entire territory of Estonia belongs to Objective 1, because in all administrative levels of the NUTS[3] second level, the GNP is below 75% of the EU average.

4 PLANNING

For the pre-accession period, Estonia prepared the long-term framework document titled the Rural Development Plan 2000–2006, which was approved at the end of 2000. The SAPARD programme was launched on its basis in 2001[4].

Two framework documents were prepared in Estonia for the period 2004–2006:

- The National Development Plan for implementation of Structural Fund measures — the Single Programming Document 2003–2006 (hereinafter SPD);
- Rural Development Plan 2004–2006 for implementation of the EU Common Agricultural Policy accompanying measures.

Both plans continue that which was started under the SAPARD programme, paying more attention to issues of balanced regional development.

The Ministry of Agriculture with the involvement of third sector representatives and area specialists prepared the ERDP. The task to implement the ERDP measures lies with the Ministry of Agriculture and the agencies within its area of administration; units of the area of administration of the Ministry of Environment are involved in the implementation of relevant measures.

The ERDP focuses on the issues concerning the implementation of the EU Common Agricultural Policy accompanying measures, i.e. the measures financed from the EAGGF Guarantee Section. The ERDP gives an overview of the intended combined use of the measures in Estonia based on the current situation in the Estonian agricultural and rural life, and the objectives that have been set. The ERDP is closely related to the measures applied under Priority 3 of the National Development Plan[5] 'Agriculture, Fisheries and Rural Development', as well as the Estonian and EU agricultural policy decisions.

The framework of Regulation 1257 is supplemented by the detailed rules set out in Commission Regulation No 445/2002 replaced by Commission Regulation No

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[2] Agricultural land is understood as used agricultural land, i.e. land under planted and harvested crops (field crops, greenhouse crops, fruit and berry plantations, nurseries, natural grasslands, orchards, vegetable gardens, and fallow land).

[3] Nomenclature of Territorial Units for Statistics.

[4] SAPARD – Special Accession Programme for Agriculture and Rural Development, the programme for Central and East European countries for 2000–2006, whose implementation is based on the Rural Development Plan, prepared by each Member State, in Estonia the 'Investment support programme for agriculture and rural life'.

[5] The Estonian National Development Plan — the Single Programming Document 2003–2006

817/2004, from 29. April 2004. The structure of the ERDP takes account of the requirements prescribed in Annex II of Regulation 445/2002. The ERDP is submitted to the European Commission according to the regulated procedure.

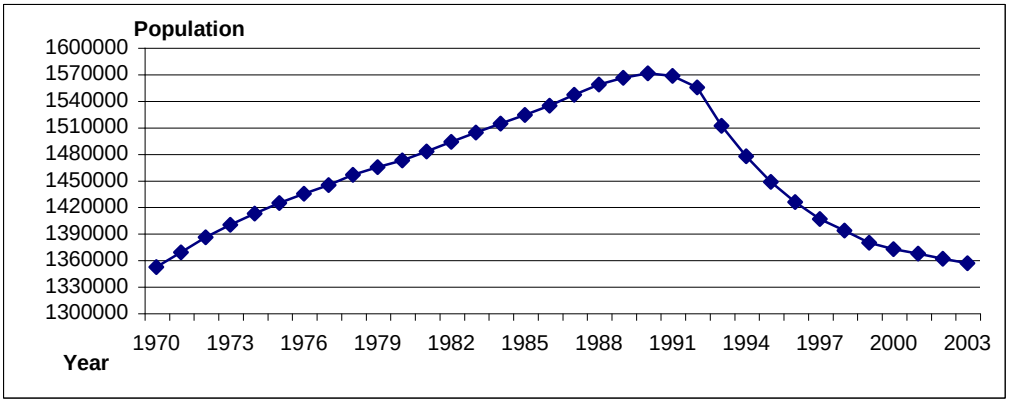
The financial provisions of Council Regulation (EC) No 1258/1999 and Commission Regulation No 27/2004 regulate the financial management details of the measures applied under the ERDP. Council Regulation (EC) No 1260/1999 regulates monitoring and evaluation, as well as compatibility with other Community support measures.

5 QUANTITATIVE DESCRIPTION OF CURRENT SITUATION

5.1 POPULATION DYNAMICS

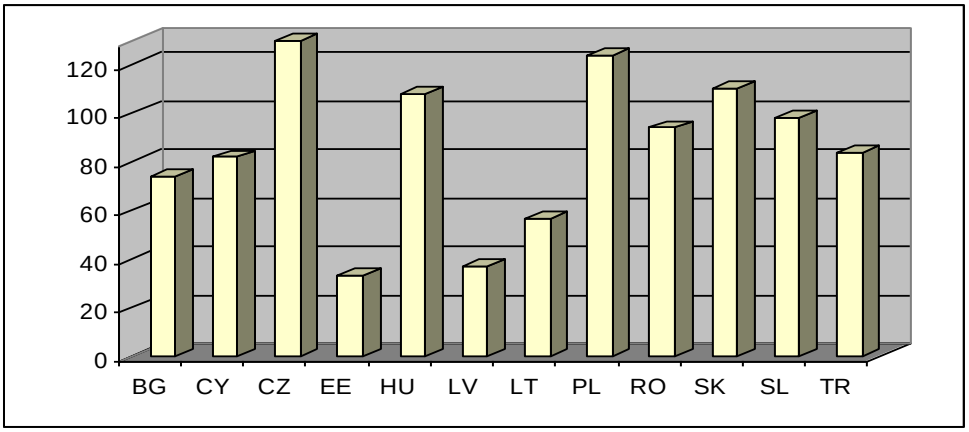
The population of Estonia was 1.361 million as of 1 January 2002. The population has significantly decreased after the country re-gained its independence (see Figure 1); at first mainly because of migration, after that because of the negative birth rate.

Figure 1. Estonian population dynamics 1970–2003



The population density in Estonia is very low compared to the EU; the average population density (on the land area of the country) is 31,3 person per km^2, while the rural population density is 10,4 person per km^2. Estonia's population density is also lower compared to the other EU candidate states (see Figure 2).

Figure 2. Population density in candidate states



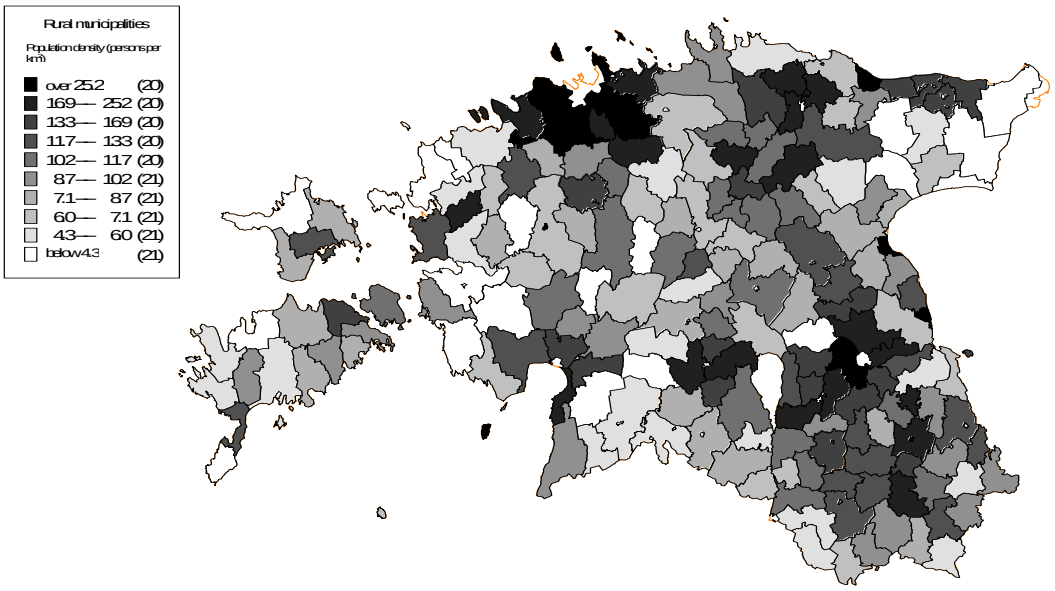
5.2 ADMINISTRATIVE STRUCTURE AND POPULATION

Estonia is a parliamentary republic with a two-level representative democracy: the *Riigikogu* (Parliament) and local government (rural municipality, city) councils are elected. In administrative-territorial terms, Estonia is divided into counties and rural municipalities and cities. The government structure has three levels: the Government of the Republic, county governments, and local governments.

There are fifteen counties in Estonia. Each county has a county government led by a county governor, who is appointed by the Government of the Republic in coordination with the local county government representatives. One of the main duties of a county governor is to represent the state's interests in the county and see to the integral and balanced development of the county.

There were 39 self-governed cities and 202 rural municipalities in Estonia as of 1 July 2003.

Map 1. Density of rural municipality population

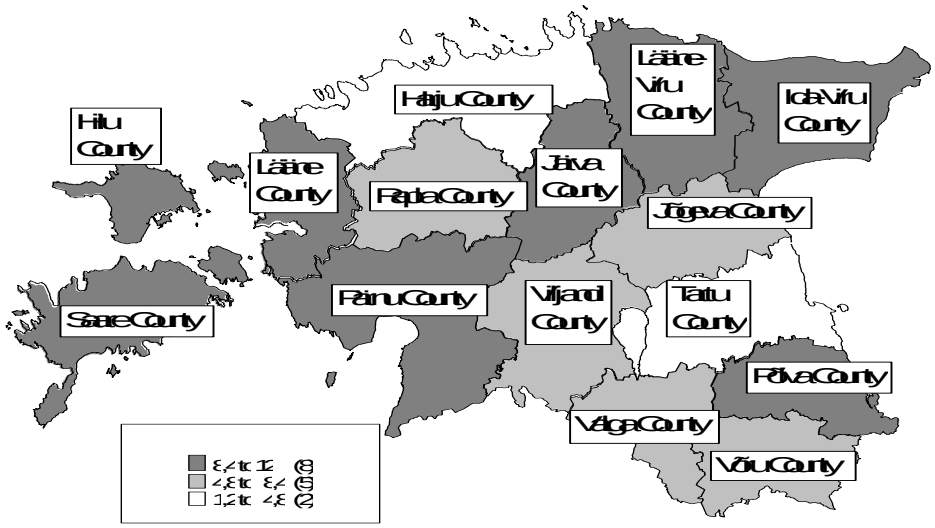


According to the 2000 census data, the population of Estonia was 1,370,052, including a total of 803,489 in the 14 cities whose population is at least 10,000 and

whose total area is 475.5 km^2. According to the OECD[6] criterion, the rural population was 566,563 with a population density of 13.2 persons per km^2 in 2000. Of these, 284,304 people lived in 4424 villages.

Population is denser in the vicinity of major cities: Tallinn, Tartu, Pärnu, Viljandi, Rakvere, and the North-East Estonian industrial cities (Narva, Jõhvi, Sillamäe), where the cities provide a substantial part of employment. The human settlement pattern has been historically influenced by the railway: population is denser along the Tallinn–Tapa–Narva, Tapa–Tartu, Tallinn–Pärnu and Tallinn–Haapsalu railway lines. Population density is lower on the islands, the west coast, and the areas near the southern border.

~~Map 2 . Population decrease in 3 years, %~~



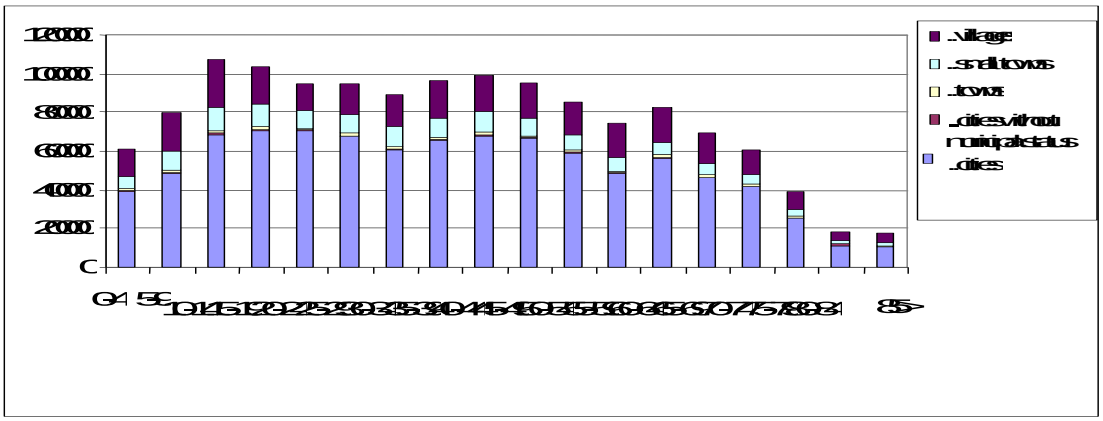
Differences between urban and rural areas

The Estonian urban population has decreased over the last ten years mainly on account of emigration. Rural population has remained relatively stable: 1989 — 446,800; 1999 — 437,566; 2002 — 443,256 according to the Statistical Office data. The positive dynamics of recent years is directly related to the movement of the inhabitants of Tallinn and Tartu to the surrounding areas of these cities, while maintaining close relations to the city (work, school, services).

However, demographic situation is less favourable in rural areas because of the bigger number of dependants (see Figure 3). The ratio of people below and above working age to the population of working age is 54.6% in rural and 46.7% in urban areas. The reason behind this is the migration of young people to cities where the labour market has more to offer them.

[6] According to the OECD 1994 methodology (renewed in 1997), local governments with less than 10,000 inhabitants were regarded as rural areas. Areas where at least one-half of the inhabitants live in rural areas (urban regions/rural municipalities with less than 10,000 inhabitants) and the population density is less than 100 persons per square kilometre were regarded as predominantly rural areas.

Figure 3 Age structure of Estonian population



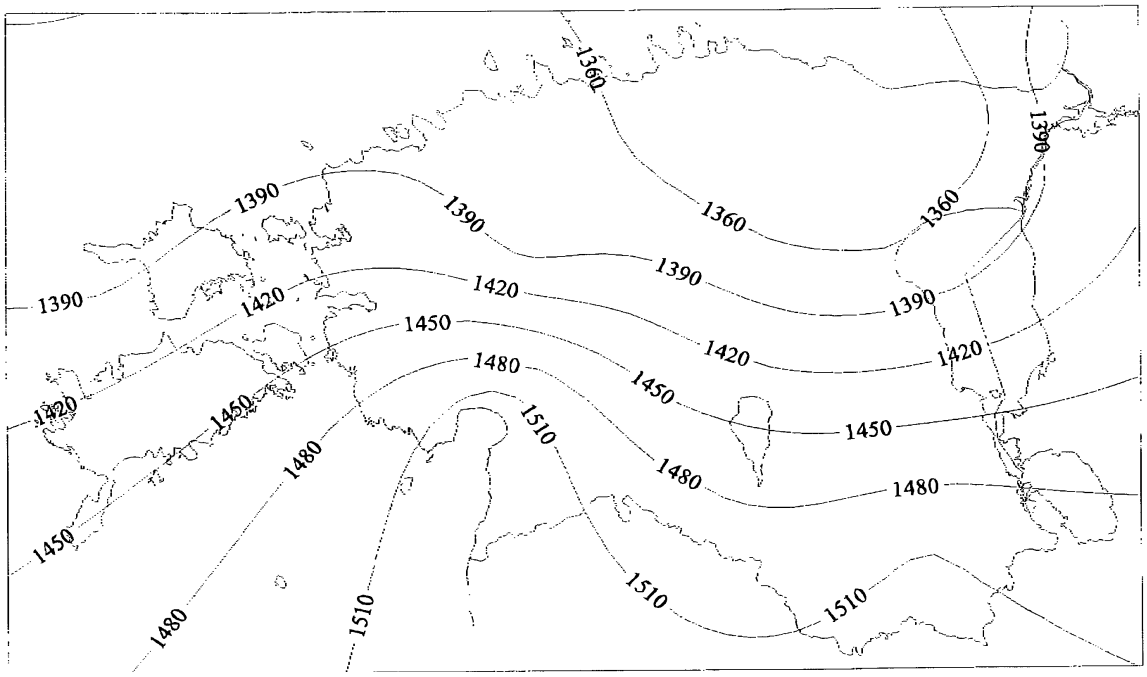
Source: Population, census data of 2000.

5.3 NATURE

5.3.1 Climate

Estonia is located in the same climate zone with Southern Finland (the Helsinki area) and Central Sweden (the Stockholm area). The climate ranges from maritime to continental: coastal areas and islands have maritime, and South-Eastern Estonia has continental climate. Sun shines 1600–1870 hours a year. The sum of effective temperatures (over 5°C) is up to 1350°C in Northern Estonia and up to 1500°C in Southern Estonia and the West Estonian islands (see Map 3).

Map 3. Sum of effective temperatures

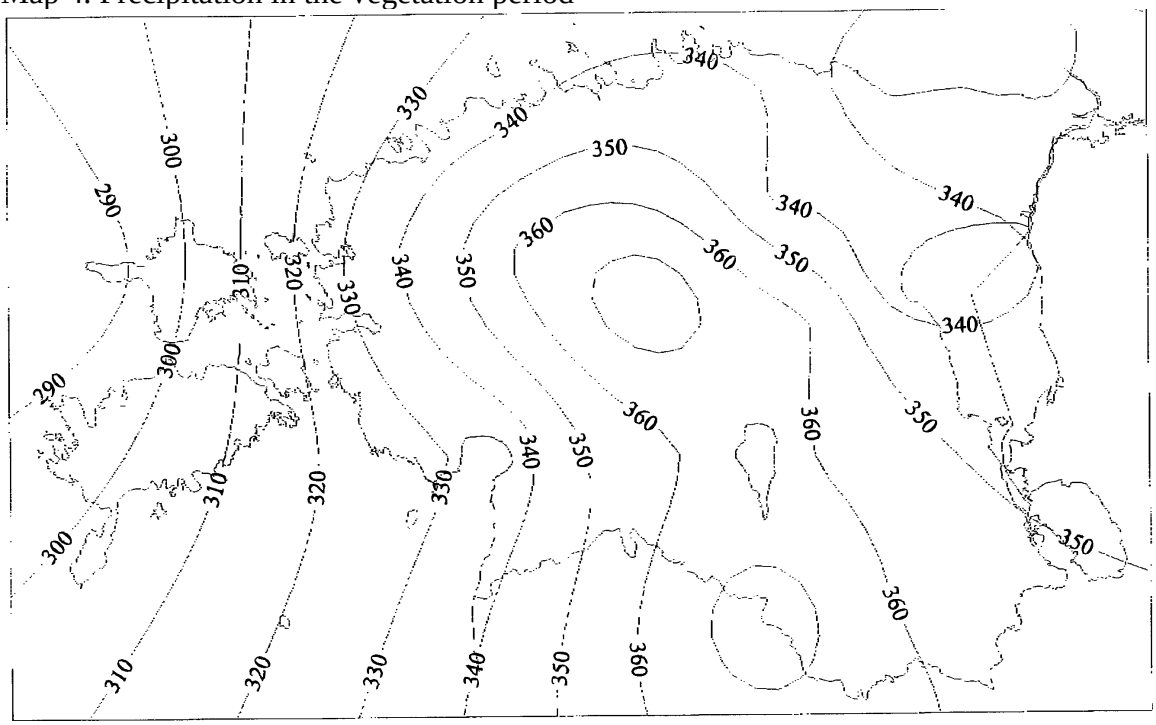


Source: Estonian Meteorological and Hydrological Institute

The average vegetation period lasts for 183 days; 189 days on the coast and 174 days on the Pandivere highland. The average air humidity is 80%. The average precipitation is 650 mm; 500 mm in Eastern Estonia and 700 mm in South-Eastern

Estonia. Precipitation is heavier in higher areas (Central and Southern Estonia) and lower on the coast. From 1 April to 30 September, precipitation is 290–380 mm, which barely covers the water need of field crops (see Map 4). Precipitation is insufficient for field crops in May and June and the yields of grasslands are lower. In the harvesting period, August and September, there are 15–20 days, which are not suitable for harvesting works, as the ground is wet, or precipitation exceeds 5 mm.

Map 4. Precipitation in the vegetation period



Source: Estonian Meteorological and Hydrological Institute

Estonia has 1521 islands with the total area of 4130 km² (9.1% of the country's area) in the Baltic Sea. The largest islands are Saaremaa (2922 km²), Hiiumaa (1023 km²) and Muhu (206 km²). The coastline of the Baltic Sea is variable. The number and area of islands is slowly increasing because of the slow rising of land — up to 3 mm a year.

5.4 CULTIVATED AREA

5.4.1 Land reform

The land reform started in 1991, but the first returned cadastral units of land were registered only in 1993. The privatisation process intensified from 1996 and the privatisation of free agricultural and forestlands started in 1999.

As of February 2003, 316 million ha, i.e. 73.1% of the Estonian land area had been entered in the land cadastre.

Over a half of the land has been entered in the cadastre in all counties, and at least three-fourths of the land has been registered in eight counties.

5.4.2 Agricultural land use

On 15 July 2001[7], 1,738,707 hectares of land were in the possession of 83,808 operating and non-operating holdings and 176,686 households.

1,705,136 hectares of land were in the possession of holdings (operating and non-operating), of which agricultural land made up 875799 hectares, woodland 32.1%, other land 16.1% and land under inland waters 0.4%. The major part of other land was unutilised agricultural land (62.7% or 172,421 hectares).

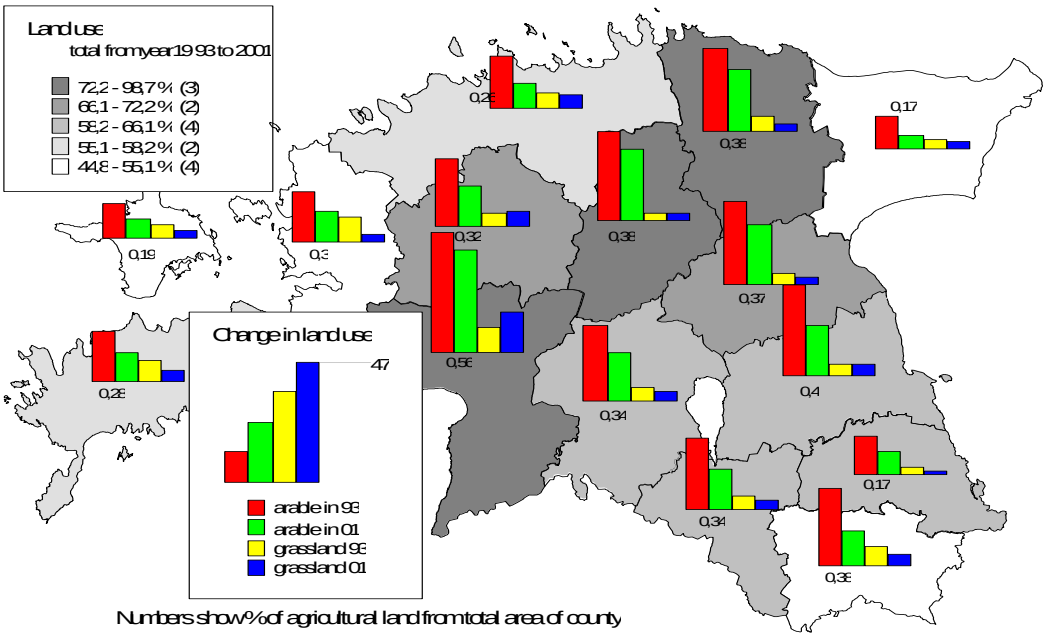
82% of the total number of holdings had 1,460,935 hectares of land in their possession, of which 75.9% belonged to the holdings of natural persons and 24.1% to the holdings of legal persons.

Table 1 Agricultural land in agricultural holdings by size class of agricultural land, 2001

	Tot	Cla	0-1 ha	1-2 ha	2-5 ha	5-10 ha	10-20 ha	20-30 ha	30-50 ha	50-100 ha	>100 ha
Number of agricultural holdings											
Tot	83	18	14	14	15	18	7	2	1	9	1
Natural person	63	7	13	14	13	10	7	2	1	9	5
Legal person and the	10	4	8	6	7	4	7	2	5	6	4
Agricultural land, ha											
Tot	87	0	4	19	52	76	103	60	62	66	42
Natural person	53	0	4	19	52	76	106	62	62	69	10
Legal person and the	33	0	3	7	27	32	11	7	20	48	33

Source: Results of agricultural census of 2001

Map 5. Changes in agricultural land use in 1993–2001



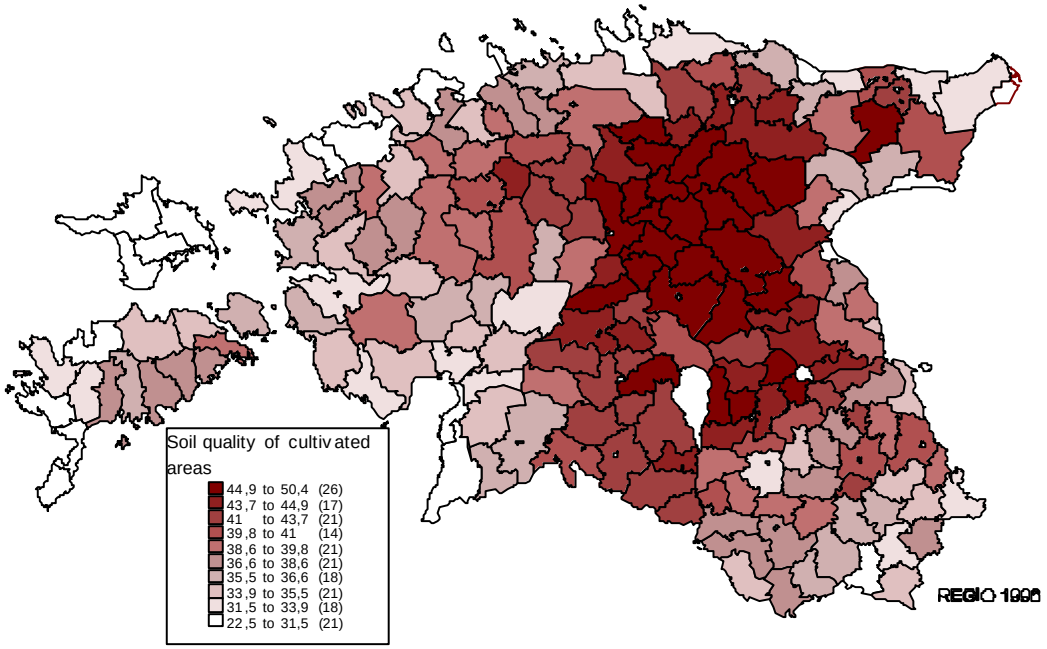
The use of cultivated area has decreased the most in the Põlva, Ida-Viru and Hiiu counties (see Map 5). Abandoned agricultural lands are degrading, overgrowing and becoming covered with weeds. A large part of unused lands is turning into forests in South-Eastern Estonia, while the natural afforestation process is slower on the west coast and islands.

According to the assessment of landscape ecologists, agricultural land should form 20–80% of the total area of a region in order to ensure landscape diversity. The share of forests should not exceed 60% of the total area if recreational quality is to be maintained, while the preservation of open landscape is important on the islands and in coastal areas as well as in mainland areas also for bird protection purposes; coastal areas often have significant botanical value.

5.4.3 Soils

Map 6. Quality rating of cultivated area

The quality of Estonian soils is uneven. Map 7 illustrates the quality rating of arable



land and planted grasslands. The soil quality rating is higher in Central Estonia and lower in the coastal areas, on the islands and in South-Eastern Estonia.

Soil formation is influenced by the different distribution of rainwater between different elements of relief. Soil and subsoil water accumulates in lower lands and causes paludification.

About 640,000 ha of land are drainaged. The share of drainaged lands is particularly high in coastal areas and in the vicinity of major rivers (the Pärnu, Kasari, and Emajõgi rivers) and lakes (lakes Peipus and Võrtsjärv). Drainage systems were mainly built in 1970ies–1980ies.

5.5 MACROECONOMIC OVERVIEW

5.5.1 Gross Domestic Product and agriculture

In the first years after Estonia restored independence, in 1991–1994, the gross domestic product (GDP) of the country fell sharply due to the transfer to the new economic system. Estonia carried out a monetary reform and transferred to the monetary committee system. Enterprises were privatised and other economic reforms were carried out during a short period, and a stable macroeconomic framework was created.

Estonia's GDP has increased over the past six years (1997–2002) by about 70%. At the same time, the value added by agriculture has increased only 6.4%, which is nearly 10 times less than the average of the Estonian economy, and the value added in forestry has increased by 47.7%. The change in GDP growth in fixed prices (real growth) has been positive over the years, except for 1999, when economic growth was negative because of the Russian crisis. Agricultural production decreased, particularly in 1999, when the GDP in agriculture decreased by 8% compared to the previous year. The output of the forestry sector decreased during 2000–2001, but has increased again since 2002 (see Table 2).

Table 2 GDP growth in 1997–2002

	1997	1998	1999	2000	2001	2002
GDP growth in current prices, EUR '000,000	3613	4221	4411	4995	5608	6148
including agriculture and hunting	178	180	165	171	190	189
forestry	86	103	116	121	114	127
GDP real growth compared to previous year in fixed prices of 2000, %	9.3	4.9	-0.1	7.3	6.5	5.9
including agriculture and hunting	-3.3	-3.9	-7.9	0.1	-0.6	-1.8
forestry	23.9	8.2	10	-1.5	-11.2	7.4

Source: Statistical Office

The negative real growth in the value added by agriculture has affected the relative share of agriculture and hunting in the GDP growth. While agriculture accounted for about 5% of the GDP growth in 1997, it had fallen to 3% by 2002. The relative share of forestry has been relatively stable at about 2% (see Table 3).

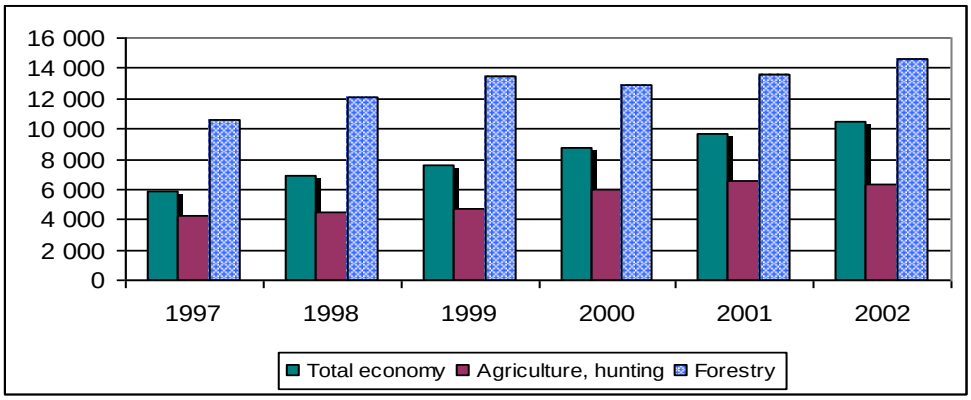
Table 3 Percentage of agriculture and forestry in GDP in 1997–2002

	1997	1998	1999	2000	2001	2002
Agriculture, hunting	4.9	4.3	3.7	3.4	3.4	3.1
Forestry	2.4	2.4	2.6	2.4	2	2.1

Source: Statistical Office

Compared to the GDP growth in the total Estonian economy in 2002, the growth per employed person in agriculture is about 40% smaller than in the total economy; in 1997, the growth per employed person was only about 27% lower in agriculture than in the total economy. The growth in forestry was nearly 40% and over 80% higher than in the total economy in 2002 and 1997, respectively (see Figure 4).

Figure 4 GDP growth per employed person in current prices, EUR



Source: Statistical Office

The GDP has grown in Estonia over recent years, but the GDP per capita is a half of that of the EU-15 levels. The GDP growth has decreased in forestry in recent years, but the value added per employed person is about 40% higher than in the total of other economic sectors. In agriculture and hunting, production and the income from it have constantly decreased, as illustrated by the negative annual real growth indicators, the ten times lower growth in value added in 1997–2002 compared to the entire economy, and the 40% lower value added per employed person.

The value of exported goods has increased from EUR 1891 million in 1997 to EUR 3638 million in 2002 or by 92%. At the same time, the value of imports has increased from EUR 3127 million to EUR 4887 million, or by 62%. Foreign trade balance has remained negative and was the largest in 2002: EUR 1,4 billion. Export and import of agricultural products constitute about 5% of the total foreign trade turnover; ready-made food products account for 3–4% of export and 5–6% of import; forestry accounts for nearly 15% and 2% of export and import, respectively.

5.5.2 Employment

There were 585.500 employed persons in Estonia in 2002, which is 5% less than in 1997. Agriculture employed about 30,000 people in 2002, which is 28% or 10,000 people less than in 1997. The number of people employed in forestry has increased compared to 1997 (see Table 4).

Table 4 Employment 1997–2002

	1997	1998	1999	2000	2001	2002
All activities, '000 people	617.2	606.5	579.3	572.5	577.7	585.5
including agriculture and hunting	41.9	40.5	35.3	28.9	29	30.1
forestry	8.1	8.5	8.6	9.4	8.4	8.7
Actual activity rate, %	78.8	78.2	76	76	75.2	73.5
Unemployment rate, %	9.6	9.8	12.2	13.6	12.6	10.3

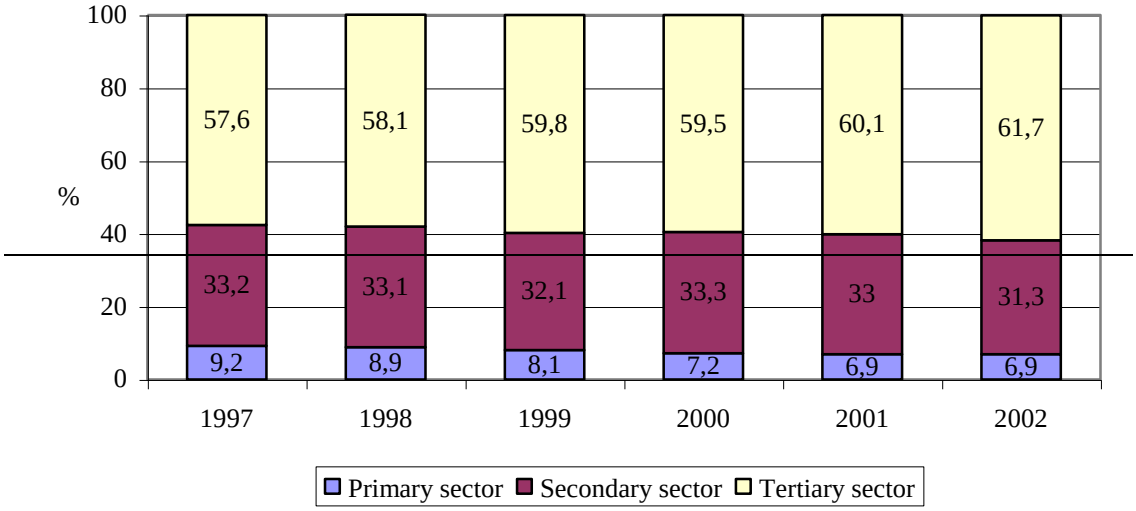
Source: Statistical Office

The employment structure has changed over years. The share of primary sector has decreased from 9.2% to 6.9% or from 56,800 to 40,700 employed persons; the share of tertiary sector has grown. In 2000, employment was divided between economic sectors in the EU as follows[8]: 4.3% of employed people worked in the primary sector,

[8] Estonian Statistical Office Yearbook 2002

29% in the secondary and 66.8% in the tertiary sector. The relative shares of the primary and secondary sectors are thus about 3 and 2 percentage points larger than in the EU, respectively (see Figure 5).

Figure 5 Structure of employment by economic sector



Source: Statistical Office

In the EU[9] the actual activity rate was 68.9% in 2000; in Estonia it has been over 70%, reaching 73.5% in 2002. In Estonia the peak of unemployment fell on the years 1999–2001, when it was more than 12%. Unemployment fell to 10.3% in 2002. Compared to the EU, in Estonia the unemployment rate were about 3 and 5 percentage points higher than in the EU in 2002 and 2001, respectively[9] (see Table 4).

In Estonia the actual activity rate has dropped in recent years, but is still higher than in the EU. Unemployment rate is relatively high in Estonia, over 10%, and about 7% in the EU. The share of employed people has decreased by nearly 5% in Estonia over the past six years and the structure of employment has changed. The greatest changes have taken place in the primary sector, which has shrunk by 16,000 employees. Low wages in agriculture and forestry are probably one of the reasons for this.

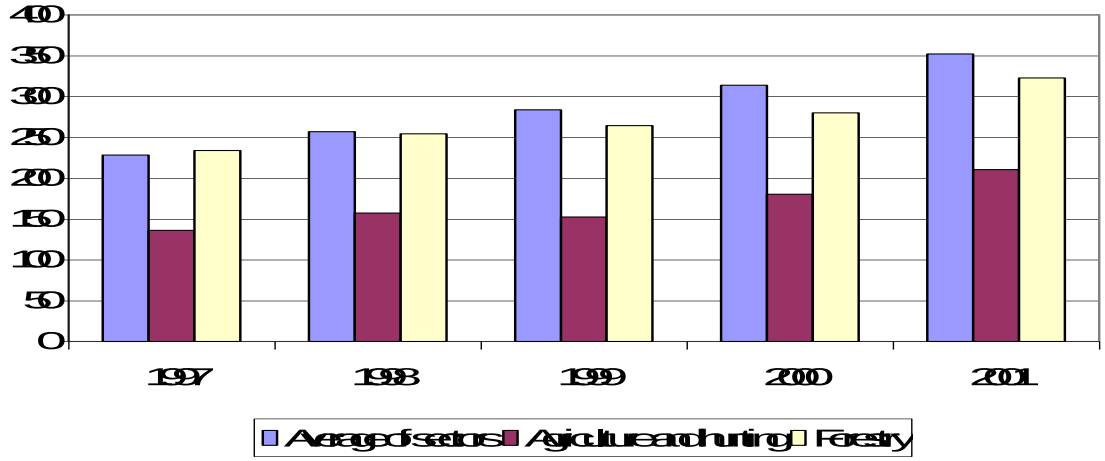
The monthly average gross wages have increased nearly 11% a year in the Estonian enterprises. The monthly average gross wages of paid labour in agriculture have been about 40% lower than the average of all enterprises. The gap was the largest in 1999, when an agricultural worker was paid 46% less than the average wages of enterprises.

The growth of wages in forestry has been uneven over years: in 1998–2001, the average wages grew by up to 8% a year, but in 2002, the average wages increased by 15% compared to the previous year.

The different rise of wages has had its impact on the economic sector: while in 1997, a forestry worker was paid 2% higher wages than the Estonian average, the forestry workers' wages were nearly 8% below the national average in 2002 (see Figure 6). The lower average wages in agriculture and forestry are one of the reasons for reduced employment in the primary sector.

[9] Basis: OECD standardised unemployment rates – July 2003; EU 2001 – 7.4% and 2002 – 7.7%.

Figure 6 Monthly average gross wages in 1997–2002, EUR



Source: Statistical Office

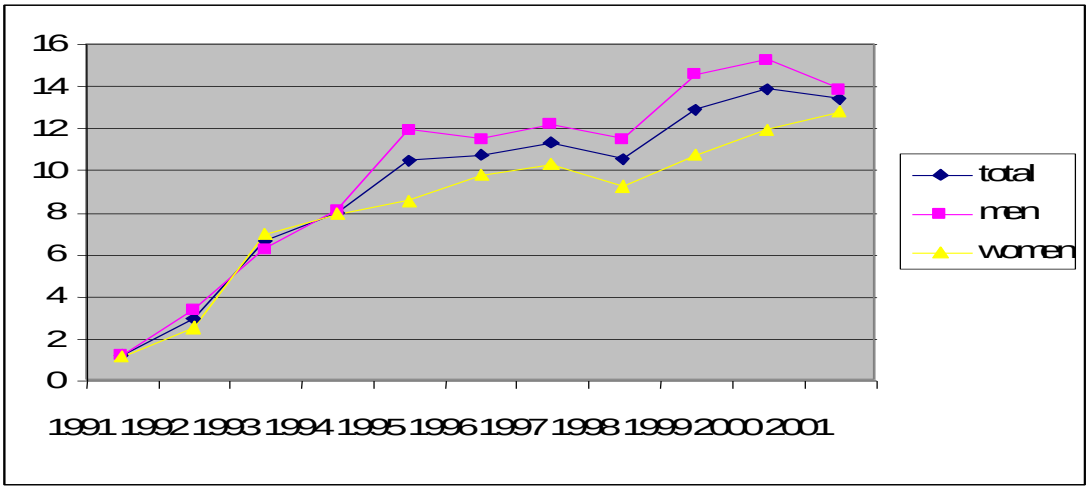
Studies show that the difference between the income of urban and rural households has constantly increased in recent years. The structure of urban and rural households' income is also different: wages accounted for less than a half (45.8%) of the income of rural inhabitants, but 66.5% of the income of urban inhabitants in the fourth quarter of 1999.

In 1998, of all employed inhabitants of rural areas, 55,372 (33.5%) worked outside their home rural municipality; the same indicator for 2001 was 71,200. The number of rural inhabitants working outside their home rural municipality grew by 29% from 1998 to 2001. The reason lies in better working conditions and remuneration in the cities.

In 2001, about 87% of working rural inhabitants were paid labour, 6.4% made products for their own consumption, 8.1% were self-employed, 2.6% were entrepreneurs who hired workers, and 2.5% were family workers. Of all rural inhabitants, 6.2% worked on their own farm, 3.1% in their own enterprise, and 1.2% were self-employed or freelancers.

According to the ILO definition, there were 24,100, 28,500 and 25,300 unemployed people in the Estonian rural areas in 1999, 2000, and 2001, respectively. In rural areas, unemployment has grown from 1.2% to 13.4% over the past 11 years.

Figure 7 Unemployment rate in rural areas in 1991–2001, %, '000



In 2001, the unemployment rate in rural areas was slightly higher among men (13.8%) than among women (12.8%) and the difference has remained stable over the past five years. The length of unemployment in rural areas has increased, which complicates the situation on the labour market. It is much harder to return to the labour market after long-term unemployment.

The number of people with an undefined employment status among the population of working-age has grown. The household records of rural municipalities have only negative information on every sixth person of working age: they do not work or study full-time, they are not on parental leave and do not receive disability pension. According to the data of the 2001 labour force survey, about one-tenth of the rural non-active job seekers aged 15–74 had given up the search, while the respective figure in urban areas was only 5%.

The low employment rate has a negative impact on the revenue base of local governments and reduces their possibilities to provide rural population with adequate services. The high unemployment rate and the low quality of services make young people leave rural areas and the local social environment becomes even less attractive.

5.5.3 Producers' organisations, third sector

Since the end of the 1980s, the third sector developed rapidly everywhere in Estonia, including rural areas. Owing to non-governmental organisations (NGOs), rural inhabitants now have new opportunities to develop and state their positions, find jobs, and spend leisure time. The activities of NGOs in rural areas give rural population a chance to take active part in local development.

In Estonia, the third sector has been supported by the EU (PHARE projects), the UN Development Programme, and USA via its embassy, Scandinavian organisations, the Open Estonia Foundation, and many others. Foreign partners have brought know-how and resources to Estonia; some NGOs have by now turned from trainees into trainers.

Agricultural producers are united by the Estonian Chamber of Agriculture and Commerce - ECAC (~~http://www.epkk.ee/~~), to which the Estonian Federation of Agricultural Producers and the Estonian Farmers' Federation (~~http://etkl.antnet.ee/etkl/~~) belong as the largest members.

The aim of the ECAC is to promote cooperation between the Estonian farmers and producers of agricultural products, to develop trade in agricultural products and foodstuffs on the domestic and foreign markets, to organise communication with the EU farmers' associations and defend the positions of its members. The ECAC offers its member's assistance in finding business partners, processes and intermediates market and price information, holds fora and information days, and organises participation in foreign fairs. The ECAC conducts assessments of the quality of foodstuffs and issues the label 'Approved Estonian Taste'. The ECAC also organises the work of the information dissemination system for rural inhabitants, which consists of county information centres and an Internet portal.

The Estonian Dairy Association is a voluntary association of companies and individuals engaged in dairy business. Its aims are to develop and coordinate dairy activities and cooperate with international dairy organisations such as the International Dairy Federation (IDF) and others.

The Estonian Meat Association is a non-profit association of legal and natural persons engaged in the processing of meat and poultry and production of meat products, as well as those contributing to these activities. The Estonian Meat Association unites 19 meat industries (owning three animal and poultry farms), three companies contributing to meat industry, three educational and research institutions, and nine individual members. The Estonian Meat Association intermediates its members' positions to state authorities, holds information and contact days, offers complementary training, participation in domestic and foreign fairs and exhibitions, and supplies member companies and also non-members, for a charge, with the product standards of the Estonian Meat Association. The Estonian Meat Association belongs to the EU professional organisation for meat processing industry (CLITRAVI) and the European Livestock and Meat Trading Union (UECBV).

The Estonian Cooperative Association (~~http://www.eca.ee~~) unites both commercial and non-profit associations and its main aims are to propagate the principles of cooperative activities approved by the International Cooperative Association (ICA) and to protect the interests of the Estonian cooperative organisations.

The Estonian Horticultural Association is an organisation uniting over 90 farmers, traders, research institutions and schools engaged in horticulture. The Association holds training days to promote horticultural skills, protects the interests of its members, organises cooperation with domestic and foreign horticultural companies, drafts and supplements horticultural plant standards corresponding to the EU requirements, organises the approval of nurseries, and publishes special literature.

The Estonian Chamber of Environmental Associations (http://www.rohelised.org) unites environmental organisations of the third sector.[~~10~~] The Chamber is not registered as a legal person, but cooperates under the mutual agreement of environmental organisations and prepares and presents common positions.

[10] Estonian Youth Society for Nature Conservation, Estonian Ornithological Society, Estonian Green Movement, Sorex – Estonian Student Society for Environment Protection, Estonian Fund for Nature, Nõmme Road Society, Society for the Protection of Habitats Heritage, Estonian Institute for Sustainable Development, Tartu Students' Nature Protection Circle, Artificial Environment Institute.

Kodukant, the Movement of Estonian Villages and Small Towns (http://www.kodukant.ee), which has been registered as a non-profit association, is the most influential among the organisations to develop rural community activities. Via the country centres and member organisations of *Kodukant*, thousands of people all over Estonia participate in activities aimed at the development of local affairs. Besides supporting local initiative and creating cooperation networks, *Kodukant* is behind the nationwide Rural Parliament. In Estonia a wide-scale preparation of village development plans has started on the initiative of *Kodukant*.

5.6 AGRICULTURE

The Soviet agricultural policy was characterised by a great degree of interference; the income of agricultural producers was relatively high. Investments in fixed assets and rural infrastructure were possible. A remarkable part of the social infrastructure of rural areas was funded from agricultural income — cultural centres, schools, roads, etc.

At the beginning of the 1990s, agricultural production, which was highly subsidised in the Soviet period, became practically unsubsidised and prices began to form freely. Estonia opened its markets and applied a liberalised trade policy, while the major trade partners continued to subsidise their exports. The Estonian agricultural products had no access to the EU market for a long time. The Soviet markets were lost (but about a half of the former output volume was oriented to them); the Russian market closed almost completely for the Estonian agricultural products in the second half of 1998.

Because of the situation described above, agricultural output has decreased year by year. This is characterised by the agricultural produce index, calculated on the basis of quantities of agricultural products weighted by their value, less the quantities used as seeds and animal feed. The quantities of agricultural products were weighted by the average international prices of 1989–1991. The Estonian agricultural produce index was over 40 in 1997–2001, while in the EU it was 102–105 during the same period (see Table 5).

Table 5 Agricultural produce indexes 1997–2001 (1989–1991=100)

	1997	1998	1999	2000	2001
Estonian	44.3	41.1	43.5	43.3	43.3
EU	102.2	102.6	105.2	104.6	102.5

Source: Statistical Office

In 2001 the total agricultural output was EUR 441 million, which is less than in 1997 by EUR 15,4 million or 3%. Livestock farming accounts for a bulk of the value of output — it formed nearly 57.7% in 2001. The total value of agricultural output has increased since 2000 (see Table 6).

Table 6 Total agricultural outputs in current prices 1997–2001, EUR '000,000

	Plant production	Livestock farming	Total
1997	215166	241021	456187
1998	196334	224233	420566
1999	185460	172484	357944
2000	216557	205985	422542
2001	186561	254218	440778

Source: Statistical Office

5.6.1 Farm structure and ownership

According to the 2001 census there were 68,869 operating farm holdings in Estonia with a total of 875,799 hectares of agricultural land. Out of these 67,984 holdings were in the ownership of natural persons, 927 holdings in the ownership of legal persons and 76 holdings were in state ownership (see Table 7). In the possession of one holding was on an average 12.7 hectares of agricultural land.

Table 7 Agricultural holdings by type of ownership, 2001

Type	Number of holdings	Total agricultural land, ha	Average size of holdings, ha
Natural person	67 984	548 130	8
Legal person	927	320 398	346
State	76	7 271	96
Total	**68 987**	**875 799**	12.7

Source: Results of agricultural census of 2001

In Estonia, the structure of agricultural land-by-land size is quite similar to the respective structure in the EU. The farmers who have more than 100 ha use a majority of agricultural land in both the EU and Estonia, and the percentage of land in size class under 2 ha is relatively small in both cases. However, smaller holdings have a relatively higher share in land use in Estonia: the farmers who use up to 20 ha of agricultural land use nearly 30% of all agricultural land in Estonia and 19% in the EU (see Table 8).

Table 8 Structure of agricultural land, %

	Less than 2 ha	2<5 ha	5<10 ha	10<20 ha	20<30 ha	30<50 ha	50<100 ha	Over 100 ha
Estonia	2.8	6.0	8.7	12.3	7.0	7.4	7.6	48.2
EU	1.7	3.7	5.1	8.3	7.3	12.4	20.0	41.3

Source: 1997 EU census data, 2001 Estonian census data
Grüne Bericht 2001 agricultural census

However, when distributing agricultural holdings by size groups the situation is different. In Estonia, there are a relatively large number of very small holdings of less than 2 hectares. At the same time, there are 1,020 large farms of more than 100 hectares and only about 5,000 farms of 20-100 hectares in Estonia.

Table 9 Agricultural holdings by size class of agricultural land

	<2 ha	2-5 ha	5-10 ha	10-20 ha	20-50 ha	50-100 ha	>100 ha	Total
No of holdings	27515	16545	10818	7759	4239	973	1020	68869
Agricultural land, ha	24325	56658	76356	107814	125751	66346	422549	875799

Source: Results of agricultural census of 2001

75% of farmers are only farming the land they own, but its share of total agricultural land is only 32%. On the other hand, 16% of farmers have only rented land in their possession but this responds to 29% of the total agricultural land (see Table 10).

Table 10 Share of agricultural land in ownership

		Share of agricultural land in ownership				
	Total	100% owned	75-100%	50-75%	1-50%	100% rented
Farms	**68 869**	52 620	943	1 460	2 729	11 117
Land	**875 799**	286 790	28 498	56 463	248 996	255 052

Source: Results of agricultural census of 2001

5.6.2. Crop production

Out of the 875,799 ha of agricultural land 31% of agricultural land was under cereals, 30% under permanent grassland, 26% under forage crops, 8% in other use (berries, kitchen gardens, nurseries etc) and 4% was left fallow (see Table 11)

Table 11 Land use under different crops

	Cereals	Forage	Permanent grassland	Fallow	Other use	**Total**
No of holdings	21 134	15 541	47 995	6 288		
Agricultural land	273 501	231 684	265 200	33 230	72 184	**875 799**

Source: Results of agricultural census of 2001

Barley is the most important cereal sown in Estonia and it corresponds to 50% of the sowing area. Oats corresponds to 20% of the sowings and winter and spring wheat and rye 10% of each. Forage crops consist 95% of perennial grassland.

5.6.3. Animal production

Due to natural conditions, a cattle breeding with its long traditions is the priority area of the Estonian agriculture. Dairy cattle farming is the main branch of cattle farming. High-yield grasslands provide the bulk of the feed, and also the cheapest feed, for dairy herds. Pig, sheep and poultry farming are also important sectors of production.

Milk output has been in decline for several years and it was 620,700 tons in 2002. According to the agreement achieved in the accession negotiations of Estonia and the EU, Estonia was given a milk production quota of 624,483 tons for 2004. Deliveries to dairies in 2003 correspond to 485,100 tons of milk.

The yields of dairy herds started to grow in Estonia from the mid 1990s. In 2001, the annual average yield was 5152 kg per cow. The annual average yield of performance-tested cows[11] was 5642 kg in 2002; the best cows yielded over 10,000 kg in 2001 and 2002.

Pig meat production is the second important branch of livestock farming in Estonia. Pig meat accounts for over a half of all meat output. According to the Statistical Office, 24,800 tons of pig meat was bought in 2003. The corresponding figure for beef was 9,300 tons.

However, animal production has been decreasing for several years. The number of farm animals decreased between 1997 and 2003, except in pig and horse farming.

[11] As of 1.01.2003, performance testing covered 101,504 dairy cows, i.e. 83% of all cows.

Table 12 Number of animals as of 31 December 1997–2003, '000

	Bovine animals	including cows	Pigs	Sheep and goats	Horses	Poultry
31.12.1997	326	168	306	36	4	2602
31.12.1998	308	159	326	31	4	2636
31.12.1999	267	138	286	31	4	2462
31.12.2000	253	131	300	32	4	2366
31.12.2001	261	129	345	32	6	2295
31.12.2002	253	113	345	35	5	2091
31.12.2003	260	113	340	36		

Source: Statistical Office

The animal production is versatile in Estonia. In 2001, 35,388 holdings of total 68987 had animals in Estonia (see Table 13), i.e. 51% of the farms had animals.

Table 13 Number of holdings having livestock

	Cattle	Pigs	Poultry	Sheep	Goats	Total
No of holdings	20 281	12 136	25 789	5 054	1 267	35 388

Source: Statistical Office

In 2001, there were 20,281 holdings that had cattle. Out of these, 17,775 had dairy cows (see Table 14).

Table 14 Number of dairy holdings and number of dairy cows in 2001

	1-2	3-9	10-19	20-49	50-99	100-199	>200	Total
No of holdings	13 309	3 190	621	298	109	112	136	17 775
No of cows	16 726	1 4617	8 174	8 648	7 674	16 045	56 374	128 258

Source: Statistical Office

The number of dairy cows decreased by 14% during 2002. The main reason for this was that many small producers gave up the dairy business because of their inability to make the investments crucial to the continuation of business, or the buying-in policy of milk processors who preferred large-scale farmers. Stricter quality requirements were applied to bought-in raw milk in 2002 and many farmers decided to switch to beef cattle farming. For the establishment of pedigree beef cattle herds, 130 pedigree animals of the Hereford, Aberdeen-Angus, Charolaise and, for the first time, d'Acquitaine breed were imported to Estonia in 2002. The number of dairy farms is also rapidly decreasing.

Only 2,786 dairy holdings of total 17,775 registered their dairy cows in the Animal Recording Centre (ARC)[12] (see Table 15). All the bigger farms (50 and more dairy

[12] ARC is a government institution under the administration of the Ministry of Agriculture. The main task of ARC is the improvement of the efficiency of animal husbandry by performing animal recording and independent testing of the quality of raw milk.

cows) are clients of the ARC but most of the holdings with one ore two dairy cows are not.

Table 15 Number of dairy holdings in performance testing and number of dairy cows in 2003

	<5	5-10	11-50	51-100	101-300	>300	Total
No of holdings	1151	637	643	102	164	81	2786
No of cows	2444	4534	14124	7181	29947	45031	103261

Source: Animal recording centre (07.03.2004)

12136 holdings of 35,388 holdings had pigs in 2001, i.e. 34% of the farms with animals had pigs (see Table 16).

Table 16 Number of pig holdings and number of pigs

	1-2	3-9	10-49	50-99	100-199	200-399	>400	Total
No of holdings	7 675	3 487	732	62	42	23	115	12 136
No of pigs	12 597	14 906	13 827	4 145	5 761	6 235	272 314	329 785

In 2001, there were 25,789 holdings having poultry in Estonia. In total Estonia had 2,263,457 birds, out of these 44% were laying hens, 27% broilers and 29% geese, ducks, turkeys and other poultry.

74% of birds (1666769) were on holdings of less than 1 hectare of agricultural land.

Animal breeding

The Estonian animal breeding system ensures the availability of reliable performance and parentage data. Estonia participates in the work of INTERBULL, a sub-committee of the International Committee for Animal Recording (ICAR). Estonian Holstein bulls belong to the international bull assessment system that covers 65,000 bulls in Europe. Performance testing data can be used for imposing additional conditions to eligibility to state benefits.

Approved animal breeding associations apply various breeding programmes to ensure efficient production. Reliability is confirmed by the fact that more and more pedigree animals are sold from Estonia to other countries.

The development of pig breeding is supported by the hybrid breeding programme applied in grandparent stocks; the DB-Planer programme is applied to performance testing and the determination of breeding value; a new system of valuation of carcasses was launched under the ‘Marble Meat’ breeding programme, and Landrace, Yorkshire, Pietraine and Hampshire pigs are bred. As a result of all these activities, the quality of Estonian pig meat has improved. While the lean meat content of fattening pig carcasses was only 50.1% in 1995, it has increased to 56% by now.

5.6.4 Agricultural economy

The Ministry of Agriculture in cooperation with the Statistical Office estimated the results of the agricultural sector for 2002 using the EAA[13] methodology. According to calculations, the income of agricultural enterprises decreased by 10.3% in 2002 compared to the previous year. The aggregate income of agricultural enterprises was EUR 81,17 million in 2000, EUR 88,7 million in 2001, and EUR 79,6 million in 2002.

The value of meat and industrial crops increased substantially. The value of meat output increased by EUR 10 million or 11%, and the value of industrial crops increased by EUR 6,4 million or 56% in 2002 compared to the previous year. Cereals were the largest component in the value of plant production (31%) in 2002. Another large component was potato production (22%), contributed by the rise in potato prices (35% in one year).

Labour expenses increased by 10% in 2002 compared to the previous year, particularly on account of higher wages. Agricultural contractors were paid EUR 50 million in 2000, EUR 63,8 million in 2001, and EUR 70 million in 2002.

The data in Table 17 show that the net value added in agriculture correlates to the area of agricultural land used — value added increases as the area of land increases. The table also characterises the efficiency of labour force utilisation — labour force can be utilised more efficiently when the land area is large.

Table 17 Net value added per worker per year by farm size, EUR

	Crops, ha		
Area of production	0-40	40,1-100	100,1-
Field crops	2791	3346	6146
Milk	1713	2838	4131
Mixed	1902	2174	4034

Source: FADN 2001:15

Production units using more than 40 ha of land have much better prospects of adapting their operations to the market needs, as greater turnover helps to plan investment needs more flexibly and improve the profit margin. Agricultural holdings, smaller than 40 ha, are unable to respond to market changes quickly. Holdings that mainly produce for their own consumption are in the most difficult situation.

However, smaller holdings are of strategic importance in terms of the viability of rural activities, as they provide jobs in rural areas and sustain rural culture and population. They can develop into viable production units through specialisation or alternative rural enterprise in the first place.

The efficiency of labour force utilisation depends not only on the farm size, but also on the field of production (see Tables 17-18). The labour need of field crops production as a seasonal activity is smaller than that of mixed and dairy farms. Labour force utilisation is 1.5 times more efficient in field crops production than in livestock farming.

[13] EAA – Economic Accounts for Agriculture. The methodology was developed by Eurostat to characterise the agricultural production process and its results.

According to the FADN methodology there are three main type of farming: field crops, milk and mixed production. Field crops production contains cereals, oil seeds and protein crops, principal field crops, cereal mixes. Milk farming is dairy cattle production. Mixed production covers various combinations of field crop and livestock production and it is difficult to determine which of the two types of farming predominates. Mixed livestock and mixed field crop production is differentiated, whereas in the first case livestock production and in the latter case field crop production prevails. 34,7% of agricultural holdings included in the population of agricultural producers account for mixed type of farming whereas 73,2% of these holdings belong to the smallest economic size group of 2 to 6 ESUs.

Table 18 Labour force utilisation by area of production per 100 ha of land, annually

Area of production	Groups, ha		
	0–40	40.01–100	100.01–
Field crops	3,91	2,52	1,39
Milk	6,71	3,76	2,68
Mixed	6,71	3,03	2,69

Source: FADN 2001:15

The subsistence level of rural households is assessed using the procedure for classification of agricultural holdings, established by the EU in 1985, under which the holdings are grouped according to the main type of production and size in Economic Size Units (ESU). The smallest viable unit that can earn an income from economic activities by marketing the bulk of its produce is a producer whose economic size is 2–6 ESU. In Estonia, the main characteristics of this size group, according to the FADN 2000 data, are as follows:

- average used agricultural land: 35–45 ha;
- annual average labour need: 1.4–2 LU (Labour Units);
- average economic size; 3.5–4.2 ESU;
- average number of animals: 12.9 LU (Livestock Units).

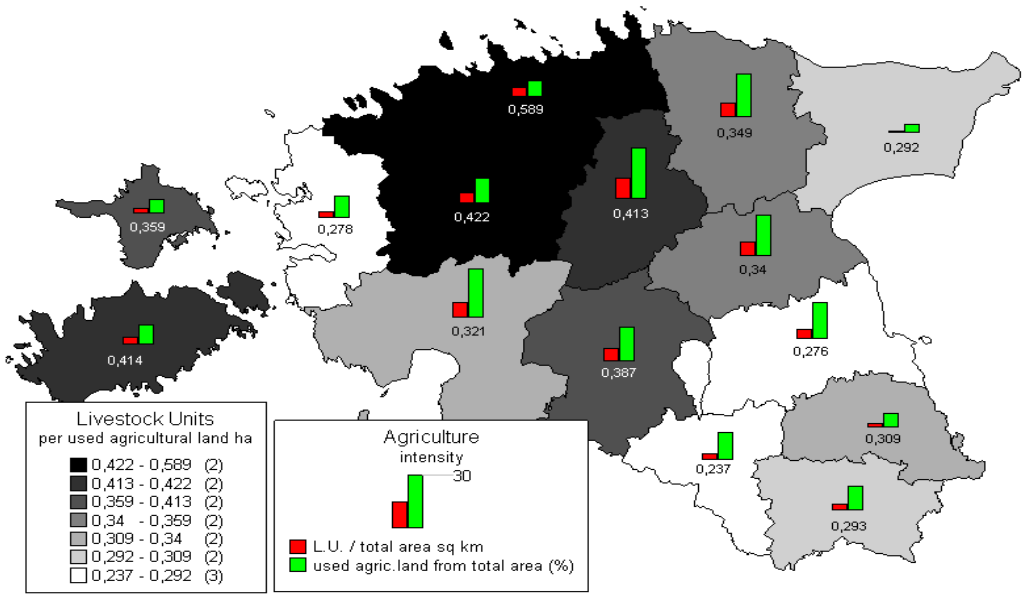
Statistical reviews indicate that small economic units are not able to make investments and restructure their production without support from the state. Although larger producers have undergone a lengthy reformation period during which the most viable units have been selected, even the latter are not able to make sufficient investments because of the unfavourable market situation — the amount of investments per unit of production is more than three times lower than the EU average.

5.7 ENVIRONMENTAL IMPACT OF AGRICULTURE

Agriculture is the main factor that influences the environmental condition in rural area. In the 1970s and 1980s, Estonian agricultural production mainly specialised in the production of meat and milk, based on imported concentrated feed (grains), for the needs of other areas of the Soviet Union. Intensified and concentrated livestock production caused groundwater pollution in areas where Quaternary deposits are thin. Surface water and air were also polluted; the condition of soils was impaired; landscape diversity suffered and valuable natural habitats were damaged.

The intensity of livestock breeding remarkably decreased. The environmental load from livestock breeding in 2002 by counties in Livestock Units (LU) per hectare of used agricultural land and per one km^2 of total area in % is shown in Map **7.**

Map 7 . Environmental load of agriculture by counties in year 2002



5.7.1 Water

Water resources in Estonia consist of ground and surface water bodies. There are more than 7,000 rivers in Estonia, only 420 of them longer than 10 km. There are 935 lakes, of which 225 are between 10 and 100 hectares in the area. The annual surface water supply is approximately 7.040 m^3 per inhabitant. Most of the Estonian water bodies (rivers, lakes, and coastal waters) are rather shallow and therefore sensitive to pollution. In Estonia, groundwater is divided between five aquifers, the uppermost being insufficiently protected in most areas. The groundwater supply in the country amounts to approximately 2000 km^3.

Estonia gets its drinking water supply from:

- groundwater (all the rural settlements and most towns — 65% of inhabitants);
- surface water (two large cities, Tallinn and Narva — 35% of inhabitants).

In Southern Estonia, the natural parameters of groundwater fail to meet the quality requirements established for drinking water (high iron content). In the western part of the country, a high level of fluorine content is seen as a problem. The water supplies in these areas can be used only after treatment (iron removal). The groundwater of Estonia is hard, corroding pipelines and thus also having a negative influence on the chemical composition of drinking water.

Approximately 77% of the population of Estonia can use water from public water supplies. In bigger settlements, 80-95% of the inhabitants have the opportunity to use public supplies.

Leakage from manure and waste storage facilities and silos that do not comply with environmental requirements, and the use of large quantities of mineral and organic

fertilisers and plant protection products in arable land, cause pollution and eutrophication of water bodies.

Big farms with manure handling that does not yet meet environmental requirements and the intensity of land use that causes diffuse pollution are the main point source pollution.

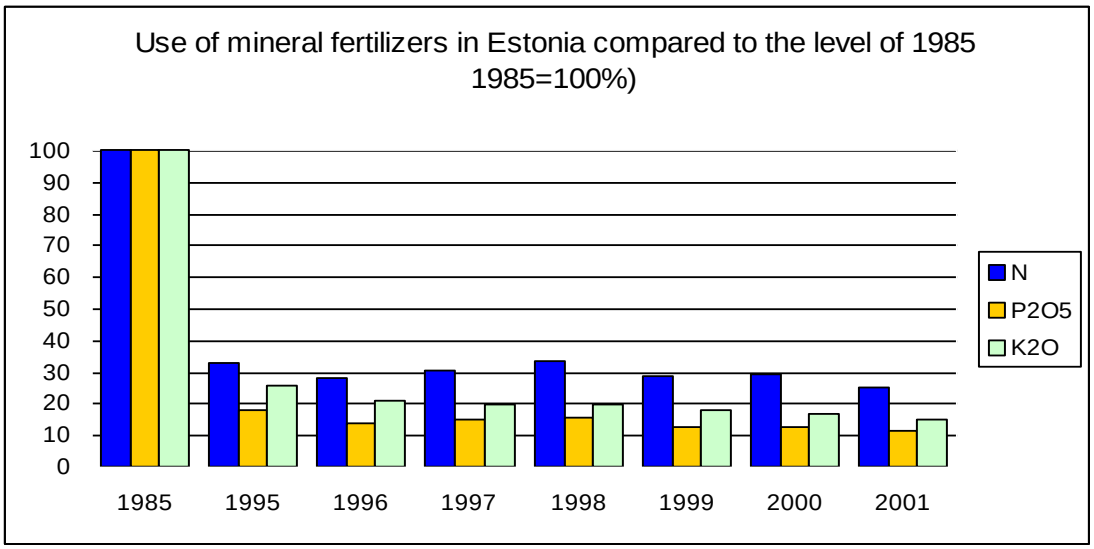
The overall livestock density by counties by species in Livestock Units per ha of used agricultural land and total area sq km is shown in the map above.

The main diffuse sources of pollution of nitrogen compounds in water bodies are the mineral and organic fertilisers used in agriculture. In 1997–2000, 77–89 kg/ha of active substances (N+P2O5+K2O) of mineral fertilisers were applied to fertilised fields.

The quantities of nitrogen taken to the agri-ecological systems have decreased 3–5 fold. While 72,000–112,000 tonnes of active substances of nitrogen fertilisers were used to fertilise field crops in 1980–1990, the quantity has dropped to only 20,000–25,000 tonnes in recent years (1997–2000). Nitrogen quantities applied to the soils in the form of fertilisers form the largest part. The phosphorus quantities applied to the soils with mineral fertilisers have decreased from 49,000–62,000 tonnes in 1980–1990 to 3000–4000 tonnes in 1997–2000.

The levels of the use of mineral fertilisers in Estonia compared to the level of year 1985 (where 1985 level is 100%) are shown in figure 8.

Figure 8. Use of mineral fertilisers in Estonia in 1985–2001



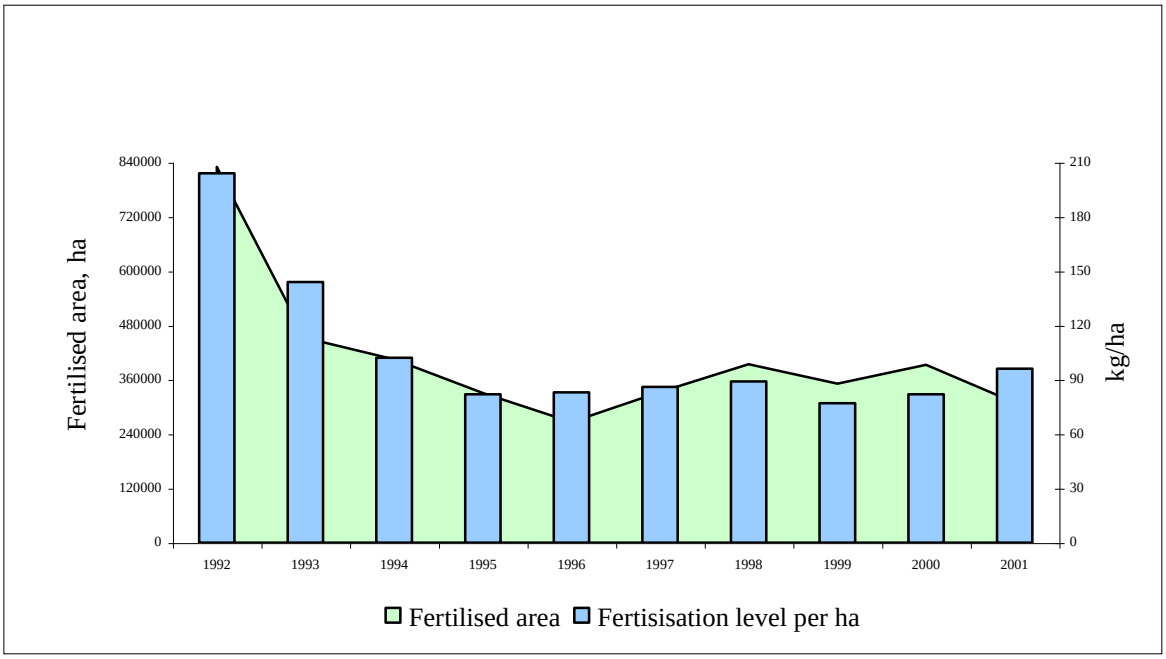
Source: ESA

The figure above does not reflect the changes in fertilising intensity by area of fertilised land, which is presented in the figure below.

Besides fertilising, in the previous decades great pollution problems were caused by the concentration of livestock production in large farms. The reasons for the pollution were the inadequate arrangement of manure handling, usually the lack of proper manure storage facilities, the poor manure spreading methods, and inefficient machinery. The production and use of organic fertilisers (manure) has significantly decreased owing to the smaller number of animals, but because of the smaller number

of small farms and overall intensification of livestock farming in industrial enterprises, the use of manure is more concentrated. Concentration is particularly apparent in pig farming, where a large part of production is concentrated in the hands of a small number of owners and large farms. Such pig factories cannot always spread liquid in compliance with environmental requirements.

Figure 9. Area of application of mineral fertilisers in Estonia in 1992–2001



Source: ESA

In 1970–75, organic fertilisers were used in a quantity of 10.7 t/ha; by the year 2000, the quantity had decreased to 2.3 t/ha and the spread area formed only 7% of arable land, i.e. 31 tonnes of manure were applied per hectare of fertilised arable land. Some manure is not spread at all, or is not spread in due course.

The uneven regional distribution of fertiliser application poses a risk to the environment, including the soil, in certain areas. The intensively used, more fertile soils are often located in areas where the groundwater is less protected (karst areas and the Pandivere water protected area). At the same time, the soils are becoming poorer in plant nutrients and the soil quality rating decreases, as a greater quantity of plant nutrients is taken away upon harvesting than is added by fertilisers. The nitrogen, phosphorus and potassium balance of soils was negative in 1996–2000.

Due to the shortage of financial resources, agricultural producers have not made sufficient investments in manure handling. Because of that, the lack of proper manure storage facilities and the small size of the facilities are still a problem — the facilities sometimes reach their capacity already in the winter period.

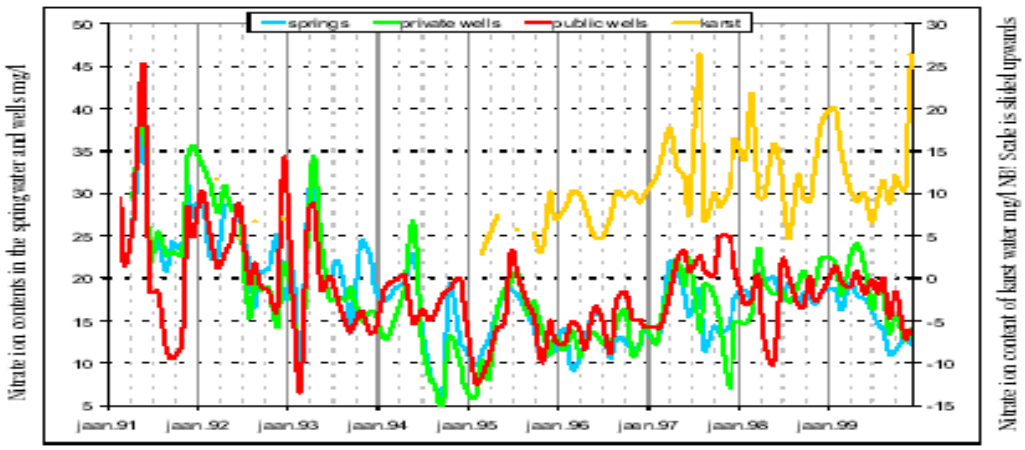
Therefore, manure is sometimes spread on frozen land or snow. Manure storage in field areas often results in the pollution of nearby wells with organic matter, microorganisms, and ammonium ions. The poor manure handling endangers aquatic organisms.

In accession negotiations with the EU, Estonia undertook to bring all manure handling into compliance with the requirements arising from or established on the basis of the water policy framework directive (2000/60/EC).

Most of the existing manure storage facilities are too small considering the number of animals in the holding, and many facilities are deteriorated. Over 80% of manure storage facilities are older than 10 years. Therefore, livestock farmers will have to make major investments in manure handling in the near future.

Land improvement has been minimal in the past ten years and the main emphasis has been put on the maintenance of the existing land improvement systems. In the course of cleaning the drainage ditches, the sediment of waste is removed and sediments in water conduits are reduced. Sedimentation basins and buffer swamps, which greatly reduce the risk of transfer of agricultural pollution, have been established in many places in the course of restoration work.

Figure 10. Monthly average nitrate ion contents of uppermost groundwater in different observation sites



The figure shows that if the use of nitrogen fertilizers will not increase suddenly, the fluctuation of nitrate ion concentration will remain within the range of 10-20 mg/l in the group of springs and wells.

The pollution load has decreased substantially and the condition of the Estonian aquatic environment has improved. The condition of the upper groundwater layer is still poor in some areas, and so is the condition of certain local river basins (upper courses of rivers, small rivers and small lakes), particularly in the areas of intensive agricultural production.

As a result of intensive economic activities, the groundwater quality has significantly impaired and is constantly poor (in spots over 50 mg/l NO_3) in the Adavere area. The natural nitrate level in groundwater is 1–3 mg/l.

As a result of the decrease in industrial and agricultural production and the construction or reconstruction of wastewater treatment plants, the surface water quality in Estonia has significantly improved. This is expressed in the water quality indicators measured in rivers. The main changes in the water quality indicators in 1992–2000 are shown on following figures.

The nitrogen content of the Estonian rivers is generally quite high in spite of the fact that the average concentration of total nitrogen in water bodies decreased at the

beginning of the 1990s. During 1992–2000, the concentration of total nitrogen in river water was between 1.9 and 3.0 mg/l, which is higher than the natural background. Average values of 1.25 mg N/l were measured in background rivers in 2000.

The phosphorus content of Estonian rivers is generally quite high. In natural river water its content is usually below 0.05 mg P/l. During the nine-year period that river water quality has been monitored at the state level, the total phosphorus concentration has decreased from 0.107 mg P/l in 1992 to 0.061 mg P/l in 2000.

Figure 11. Average BOD7 concentration in rivers in 1991–2000

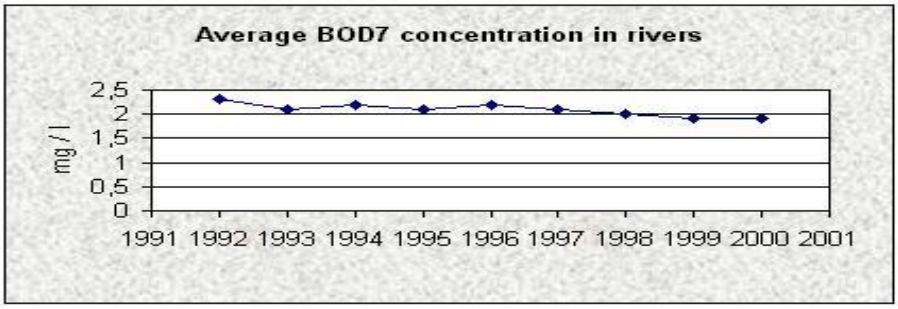


Figure 12. Average N concentration in rivers in 1991–2000

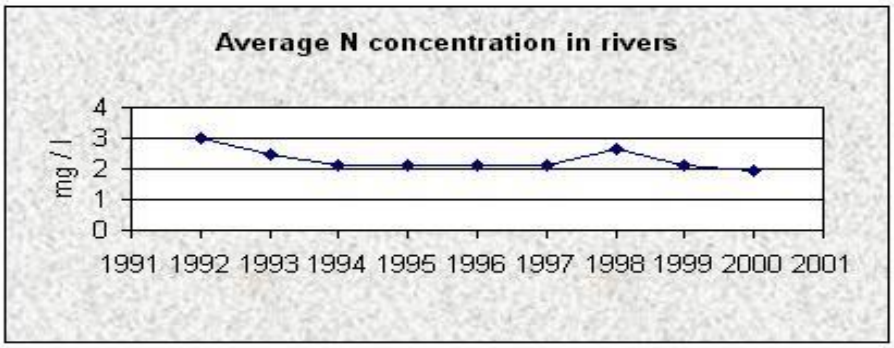
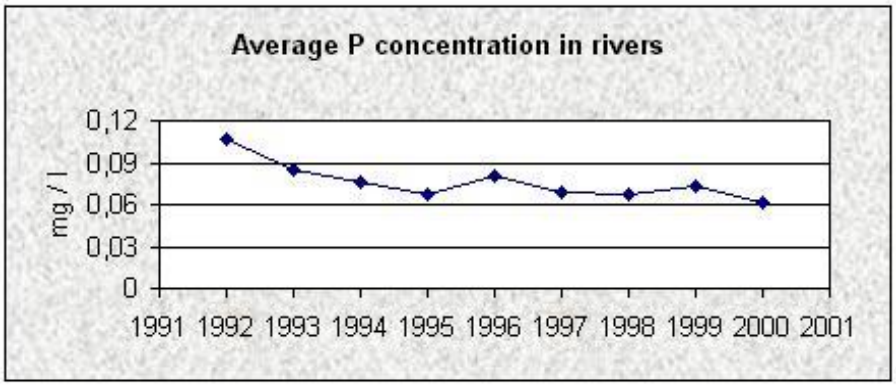


Figure 13. Average P concentration in rivers in 1991–2000



5.7.2 Plant protection

The peak period of using plant protection products in Estonian agriculture was 1981–1989, when plant protection chemicals were used on almost all arable land and 0.9–1.1 kg of plant protection products were applied to each hectare of cultivated land annually. The use of plant protection products has significantly decreased since 1990. More efficient preparations are now used and their application rate per hectare is much smaller.

In 2001, agricultural enterprises and farms used 328 tonnes of plant protection products, i.e. 7% more than in 2000. 54% of agricultural enterprises and 30% of farms used plant protection products; 90% of the plant protection products used were weed control preparations.

5.7.3 Soil

A majority of fertile lands have been put into use and it is important to use these soils reasonably. Unfortunately there has been a break for more than 10 years where there was no large-scale soil monitoring. Therefore there is no detailed information or the relevant figures of the soil situation. Since the year 2002 the National Environmental Monitoring System included also the soil monitoring part and the Agricultural Research Centre started to take samples in the framework of soil fertilisation programme. Based on experts opinion the main problems concerning soils are:

- **decrease in organic matter and nutrients in soil**, caused by the lack of classical crop rotation, the lack of nutrient balance records and the related fertilising plans, single crop cultivation, a reduced use of manure;
- **water erosion** occurs in uneven areas where soil particles are easily drained with flowing water. In Estonia where climate conditions are not favourable for erosion relief is one of the basic preconditions for it. The Otepää and Haanja areas of hilly relief are the main areas where erosion occurs. Erosion is less prominent in the Sakala and Pandivere upland and elsewhere. As in Haanja and Otepää many fields have been left fallow and scrub, fast erosion from those areas has stopped. Of overburden and soil properties, water-carrying capacity and particle size distribution have the biggest impact on erosion intensity. The bigger the water-carrying capacity the smaller surface water collection and erosion. Table 1 indicates the areas potentially affected by erosion. However, according to the Agricultural Research Centre actual erosion can only occur on 20–30% of the referred areas. In the future, when the areas will be more precisely specified, grassland management and the agrotechnologies diminishing exposure to erosion should be preferred there (ploughing perpendicular to the slope, selection of correct soil preparation times etc.);
- **wind erosion** occurs in the big fields of Central Estonia and in coastal regions mainly in dry springs and in areas without plant cover or of small particle size distribution. The problem is of local nature and depends on the weather conditions of a specific year;
- soil **acidification** particularly occurs in Central and Southern Estonia. It is not possible to avoid the process mainly arising from the properties of parent rock. The topsoil properties can be improved by liming of soils, by the establishment of crop rotation and by the restriction of the use of acid fertilizers;

Soil compaction is caused by the use of heavy machinery and lack of crop rotation. Nowadays, the problem is not actual any more. Therefore, grass plants and suitable agrotechnologies (adequate machinery, right soil preparation times etc.) should be used in crop rotation.

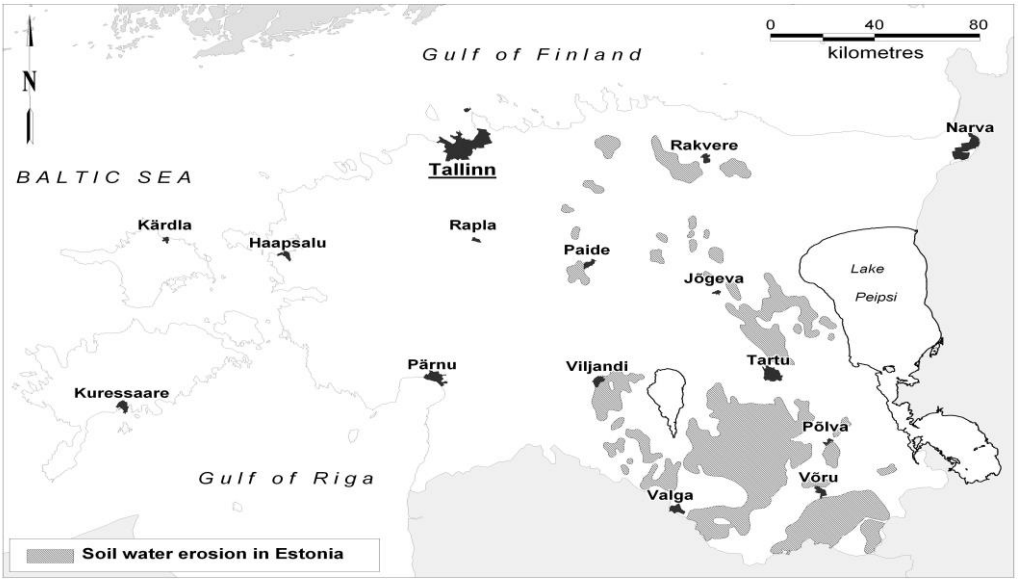
Soils buffer the potentially harmful effect of agriculture on the aquatic environment. Great attention has to be paid on maintaining the organic matter content of soils in order to prevent exhaustion.

By the beginning of 1950ies most food products were produced using chemical fertilizers and toxic chemical agents, out of which several entered into natural circulation, causing death to insects and birds and health disorders to people.
In Soviet Estonia, cheap fertilizers enabled the farming of same crops in the same fields within several years. This filtered nutrients out of soil so that in time the soil grew poorer and more exposed to erosion. The soils eroded and exposed to erosion make up 1,2% of the Estonian mainland and 3,1% of the whole arable land reserves. In the hilly areas of Southern Estonia and in coastal areas field soils are exposed to wind erosion. Technogenic erosion is caused by the land cultivation machinery and technologies unsuitable for certain types of soil.

One of the objectives of the agri-environmental support is to enhance by promoting the introduction and continued use of environmentally friendly agricultural methods also the soil situation. Among others, the following activities and requirements related to soil-protection have been worked out:

1) Environment-friendly Production Scheme – a farmer has to prepare and follow the nutrient management plan and crop sequence plan. In addition, a farmer has to participate in the training where soil protection questions will be discussed;
2) Environment-friendly Management Scheme – a farmer has to keep the plant (crop) cover of 30% of the land on which crop rotation is applied and follow the crop rotation plan;
3) Organic Farming – a farmer has to comply with the Organic Farming Act;
4) Winter Plant Cover – a farmer has to keep the plant (crop) cover of respectively 30% or 50% of the land on which crop rotation is applied.

Map 8 . Map of water erosion



On the water erosion map the main part of the territory of Estonia has been separated as an area that is characteristic of a slightly wavy or level relief. Water erosion only occurs in limited areas (map 8) and as usual very slightly or slightly. Out of the former ploughed areas, the fields located on steep slopes and strongly touched by erosion have remained untilled. Due to their exclusion from cultivated areas, the importance of strongly eroded soils in the soils used has decreased.

In the Otepää and Haanja uplands in the main zone of the occurrence of eroded soils, fields have been cultivated in the way similar to the remaining part of Estonia. Prevention of erosion (afforestation of areas vulnerable to erosion, establishment of permanent grasslands) is considered to be very important among the measures to increase the fertility of eroded soils.

5.7.4 Air pollution

In 1994, Estonia has ratified the United Nations Framework Convention on Climate Change and in 1998 signed the Kyoto protocol of the UNFCCC. In this protocol Estonia, like the European Union, committed to reduce greenhouse gas emissions by 8% 2001-2012 against 1990.

This overview based on the information of *The Estonia's Third National Communication under the UN Framework Convention on Climate Change, 2001.*

Estonia's share in global anthropogenic greenhouse gases (GHG) emission is naturally insignificant, but according to GHG emission per capita, Estonia belongs among intensively emitting countries. In aggregated carbon dioxide (CO_2) equivalents the GHG emission per capita was 27 t in 1990 and 8 t in 1999. The essential decrease in the GHG emission during the last decade is typical of all countries in transition. It was mainly caused by the decrease in energy consuming economic activities and demonstrates the effectiveness of the transformation of economic systems.

Table 19 Sources of CO_2 emissions/removals, Gg

Sources/Sinks	CO_2 emissions, Gg	
	1990	1999
Total fossil fuel consumption	**37493**	**16424**
Energy industries	29753	13478
Manufacturing	2655	660
Transport	2693	1203
Residential	1556	1036
Agriculture	386	13
Commercial	450	34
Industrial processes	**614**	**347**
Cement production	468	321
Lime production	146	26
Land use change and forestry	**-6320**	**-8107**
Total net emissions	**31787**	**8664**

Source: Ministry of Environment and Institute of Ecology

Energy related activities are the most significant contributors to GHG in Estonia, particularly to carbon dioxide emissions.

In the following tables amounts of the emissions (methane, nitrous oxide (N_2O), ammonia (NH_3)) are calculated in CO_2 equivalents where the global worming potential index (GWP) are used.

In Estonia, the major sources of methane emission are waste management, particularly landfills, domestic and commercial wastewater treatment, industrial wastewaters and agriculture. The structure of methane emissions by sources has changed since 1990. In 1990, the share of methane emitted from agriculture was ca 30 % from the total, in 1999, it was 20% and the methane from waste management gave ca 52% of the total emission. (Table 20)

Table 20-Sources of methane emissions, Gg

	1990	1999
Waste management	76.57	62.10
Agriculture	69.89	25.54
Energy, incl.		
fugitive emission	57.13	27.50
fuel combustion	4.13	5.33
Total	**207.72**	**120.47**
Total (CO_2 eq: GWP=21)	**4362.12**	**2529.87**

Source: Ministry of Environment and Institute of Ecology

Nitrous oxide emissions (N_2O) contribute about 3% to Estonia's total GHG emissions. In Estonia, main emissions of N_2O are connected with agriculture. Restructuring of agricultural production, loss of the traditional eastern market for agricultural products and rising prices of fuel and fertilizers have influenced immensely the whole

agricultural sector. Thus, the total area of growing field crops decreased. As a consequence N_2O emissions have decreased about three times (Table 21.)

Table 21 Sources of nitrous oxide (N_2O) emissions, Gg

Source	1990	1999
Fuel combustion	0.15	0.13
Agriculture	3.15	1.02
Total	**3.30**	**1.15**
Total (CO_2 eq GWP=310)	**1023.0**	**356.5**

Source: Ministry of Environment and Institute of Ecology

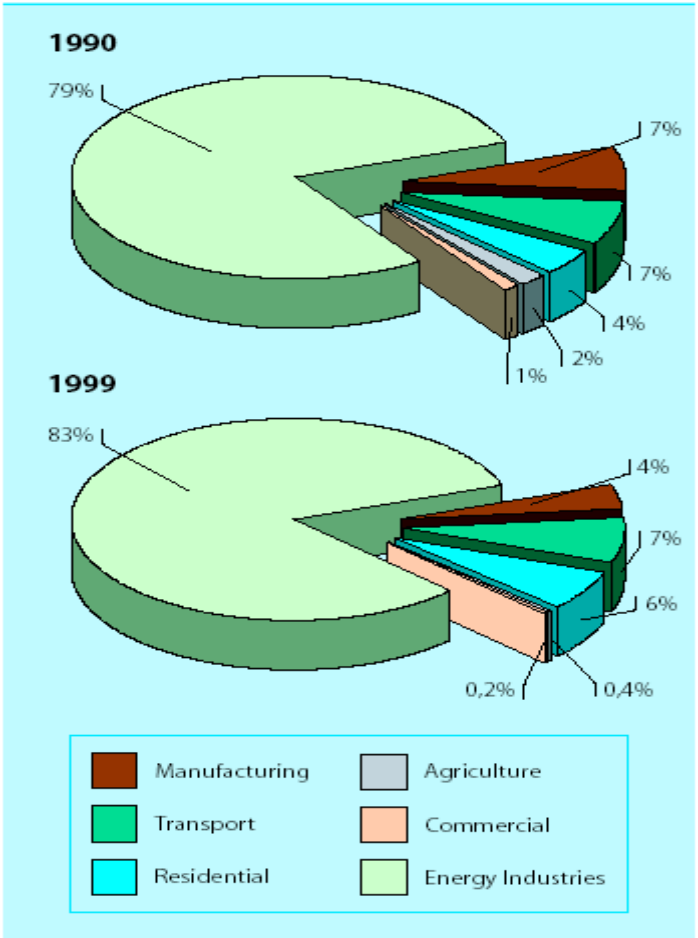
In Estonia the overall air pollution has decreased significantly in recent years. It concerns also ammonia (NH_3) emissions from agriculture. Comparing NH_3 emission levels from agriculture in 1990 and 1999 we see the decrease of about 2,8 times (Table-**22**).

Table 22 Sources of ammonia (NH_3) emissions, tons

Source	**1990**	**1999**
Cattle	12780,9	4990,1
Pigs	2920,9	935,3
Sheep and goats	64,3	14,2
Horses	43,9	19,9
Poultry	2315,2	870,5
Use of fertilizers	5223,9	1449,5
Total NH_3 emission	**23349,1**	**8279,5**

Source: Information Centre of the Ministry of Environment

Figure 14 Total CO_2 emissions by sector in 1990 and 1999



Source: Ministry of Environment and Institute of Ecology

5.7.5 Biological and landscape diversity

The natural diversity of the agricultural environment is measured on the genetic, species and ecosystems levels. In agriculture, they are viewed separately for production-related organisms and the living environment and for habitats of rare and endangered species.

5.7.5.1 Preservation of genetic resources

Genetic diversity in agriculture pertains to plant breeding and animal breeding.

A majority of Estonian fruit and berry varieties have been bred in the 20th century. The 'Sangaste' rye, bred by the owner of the Sangaste manor, the count Friedrich Berg (1845–1938), is one of the oldest Estonian cereal varieties that has preserved.

The genetic material of the most common crops is preserved in the gene pool of the Jõgeva Plant Breeding Institute, the Estonian Plant Biotechnical Research Centre EVIKA of the Estonian Agricultural University, and the Polli Institute of Horticulture.

Additional support is needed for the preservation of some varieties (the ‘Saaremaa kohalik’ sickle medick, the ‘Väike verev’ potato, and the ‘Sangaste’ rye).

The Estonian cattle breed was the predominant breed on the territories of Estonia and Livonia in the previous centuries. It has been bred by Estonians and can be considered as the cultural heritage of the Estonian nation.

The origin of the Estonian horse is not known, but written information on the Estonian horse is more than 1000 years old. The Estonian horse has adapted to the local plants and climate over the hundreds of years. The Estonian horse played an important role in the Estonian farm culture.

According to the FAO classification, the Estonian cattle breed and the Estonian horse belong to the category of endangered breeds that need to be preserved, and an active preservation programme has been launched for both of them. The number of Estonian cattle breed bovines has remained stable during the last decade owing to state aid. The number of Estonian horses has increased as they are actively used for riding and on tourist farms. There are currently nearly 700 Estonian horses (about 450 mares) and 700 bovines of the Estonian cattle breed (about 500 cows) in Estonia.

5.7.5.2 Biodiversity

Comparing to other areas north of the 57th parallel, the diversity of Estonian flora and fauna is one of the world’s richest. The Estonian diverse flora consists of about 5000 different species of plants and 3500 species of mushrooms and fungi, of which many are protected. There are about 11,000 species of invertebrates and 500 species of vertebrates. This diversity is due to the varied natural conditions in Estonia:

- Estonia has a continental and maritime area; the sea and inland water bodies affect the climate;
- soils have formed on the basis of Silurian limestone and Devonian sandstone, resulting in neutral soils, soils rich in lime and soils poor in line;
- there is a large share of natural landscapes and semi-natural habitats are widely spread.

Estonian semi-natural habitats, wooded meadows and alvars, are especially rich in species. The Laelatu wooded meadow in the Lääne county has the highest biodiversity of all plant communities in Estonia and one of the highest in the Europe — 76.7 different vascular plant species can be found in a square kilometre. Compared to other grassland communities, wooded meadows are also rich in other classes of organisms, such as beetles and snails. The extraordinary biodiversity can be explained by the extremely long tradition of annual mowing.

Drainage has damaged mires in the recent past, while drainage has had a positive effect on forest growth and it has improved forest habitats. Forest habitats are in a good condition; the relative share of wet woodlands has decreased.

The inventory of habitats indicates a significant decrease in the area of grassland habitats — wooded meadows, limestone grasslands, floodplain grasslands and coastal grasslands — caused by the loss of traditional agricultural activities such as mowing and moderate grazing. The grasslands that were once constantly managed are now overgrowing and eventually becoming forests. Drainage has been the main reason for the loss of floodplain and coastal grasslands. It takes decades to restore the diversity of a grassland habitat; restoration of natural diversity is often completely impossible after land improvement.

The decrease in land use with respect to fields and natural grasslands impairs the nesting and feeding conditions of migrant birds, particularly in Saaremaa, Hiiumaa, and the Lääne county, where the largest bird sanctuaries are located.

Table 23 Changes in areas of semi-natural habitats in Estonia, ha

Habitat	1950s	2000
Wooded meadow	800,000	1,500
Alvar	44,000	9,000
Floodplain grassland	100,000	15,000
Wooded pasture	200,000	3,000

For the preservation of coastal meadows, alvars and wooded pastures, they have to be stocked at the following rates: 0.4–1.3 LU/ha on coastal meadows, 0.2–1.0 LU/ha on alvars and 0.3–1 LU/ha on wooded pastures.

Coastal grasslands are an invaluable feeding place for geese during spring and autumn migration. The overgrowing of coastal areas causes damage to farmers, as barnacle geese raid their young crops when they have no food in their usual feeding places. As coastal grasslands are best suited for grazing cattle, particularly little-demanding beef cattle, beef cattle farming is an important remedy in preserving these valuable semi-natural habitats.

The Red Book of rare and endangered species contains 1318 different life forms. There are 401 endangered species in forests, endangered by the changing composition of tree species, drainage of forest lands and the reduced share of rotted wood as forests are managed. In water bodies there are 314 species endangered by pollution, eutrophication and building activities. In grasslands there are 114 species endangered by overgrowing due to termination of mowing and grazing. The number of endangered species is somewhat smaller in other habitats.

Compared to many of the Central European Member States of the EU, the natural diversity of Estonia has relatively well preserved. More than 10% of the territory is protected as different habitats. The plenty of landscapes in a nearly natural condition and protected areas is an important resource of Estonia and its importance is growing.

5.7.5.3 Impact of agriculture on landscape

Estonian landscapes are highly diverse. The sources of this diversity are the variety of:

- the geochemical and physical properties of the geological bedrock and Quaternary deposits;
- the thickness of the quaternary Quaternary deposits (relief);
- distance from the coastline and height above sea level (weather);
- the condition of natural vegetation;
- the development stage of ecosystems;
- the effect of human activities.

Traditional agricultural landscapes have formed as a result of centuries of land use. Their landscape diversity in turn offers valuable habitats for many organisms that cannot exist outside such landscapes. The intensity of land use is directly related to the preservation of natural habitats.

The greatest problems in this area may be caused by the destruction of natural habitats because of intensification of land use; the loss of semi-natural habitats because of discontinuation of active land use; and simplification of the landscape structure.

Large-scale production with its extensive field areas has rendered the overall appearance of agricultural landscapes poorer and destroyed the traditional landscape pattern in many places. In semi-natural areas, which are particularly common in west Estonia, extensive agricultural production has proved to have a positive impact on biodiversity. The examples include wooded grasslands, coastal grasslands and bottomland meadows with their great biodiversity.

5.7.5.4 Protected areas in Estonia

Protected areas covered 484,144 ha of the Estonian territory as of 1 January 2003 that is 10.7% of Estonia's territory (exclusive of the sea area); there were a total of 363 protected areas in Estonia (as of the same date).

According to the protected Natural Objects Act protected areas are divided into different categories:

- **National parks** are protected areas of special national importance designated for the purpose of preservation and protection of, research on, and promotion of awareness of, the natural and cultural heritage of the area, including ecosystems, biological diversity, landscapes, national culture and sustainable ways of nature management. The territory of a national park is divided into a strict nature reserve, a special management zone, and a limited management zone. There are four national parks in Estonia: Lahemaa National Park, Karula National Park, Soomaa National Park, and Vilsandi National Park.

- **Nature reserves** are protected areas of nature conservation or scientific value designated for the purpose of preservation and protection of and research on natural processes; rare, endangered and/or protected plant, animal and fungus species and their habitats; abiotic objects: as well as landscapes and protected single natural objects. The territory of a nature reserve is divided into a strict nature reserve, a special management zone and a limited management zone. The best-known nature reserves are Matsalu, Viidumäe, Nigula, and Endla.

- **Landscape reserves** (protected landscapes) are areas that are of natural or cultural heritage value, are rare or typical of Estonia, and are designated for nature conservation, cultural or recreational purposes. Parks, arboreta and botanical gardens that have been designated as protected natural objects are also regarded as protected landscapes. The territory of a landscape reserve is divided into a special management zone and a limited management zone. The best-known landscape reserves are Kõrvemaa, Vooremaa, Paganamaa, Hiiumaa islets reserve; Haanja, Otepää, and Naissaare landscape reserves. The list of landscape reserves and protected landscapes will be extended as the protected areas are put in order.

Protected areas are divided into zones as follows.

- A **strict nature reserve** is an area that is in its natural state and is free from direct impact of human activity, where preservation of natural communities is left subject to natural processes only. Any economic activity and use of natural resources, as well as human presence (except for carrying out inspection, scientific or rescue activities) are prohibited. Relatively small areas, which are often poorly accessible and contain the habitat of a fauna or flora species of Protection Category I, are designated as strict nature reserves.

- A **special management** zone is a part of a protected area where activities are carried out that support the preservation of the natural or semi natural

communities developed or developing therein. Otherwise said, everything not permitted by law or protection rules is prohibited in such a zone.

Certain activities may be permitted by protection rules provided that they are necessary for the preservation of a protected natural object or do not cause damage to it, such as maintenance works of the existing land improvement systems; improvement cutting and selection cutting, gathering of berries, mushrooms and other side-products of forest; regulation of the numbers of game; fishing. In semi natural communities of special management zones it may be mandatory to carry out activities necessary for preservation of the specific features and species composition of the communities, such as mowing, grazing, thinning and shaping of tree and bush storey, in the scope set out in protection rules.

Therefore, it is often expedient to designate two sub-zones in the special management zone:

• a sub-zone with full economic restrictions, i.e. without alleviations — the "natural special management zone";

• a sub-zone with partial economic activities or with alleviations — the "managed special management zone".

Areas where human activities are planned to continue, such as wooded grasslands or managed recreational forests, are designated into the latter sub-zone.

- A **limited management zone** is a part of a protected area used for economic purposes, with the economic activity being subject to the established restrictions. The Act lists the kinds of activities that are usually prohibited in the limited management zone. Unless otherwise specified in the protection rules, the following is prohibited in a limited management zone: construction of new land improvement systems; alteration of water level and causing of damage to banks of water bodies; extraction of surface materials and mineral resources; shaping of pure stands and planting of mono-species cultures and energy forests; final cutting, except final cutting in narrow cutting areas and shelter wood cutting; disposal of wastes; use of fertilisers and toxic chemicals; construction of roads, overhead transmission lines and other communication lines; construction of new buildings; hunting and fishing. In semi natural communities occurring within limited management zones, it is mandatory to carry out activities necessary for preservation of the specific features and species composition of the communities, such as mowing, grazing, thinning and shaping of tree and bush storey.

Regeneration cutting (i.e. clear cutting) is prohibited in all the zones.

The division of a protected area into zones and the specific restrictions on use that arise from the location and peculiarity of the area are established in protection rules. A management plan may be drawn up to plan protection activities in a protected natural object.

A higher support rate is intended to be applied to NATURA 2000 areas which constitute less-favoured areas and areas with environmental restrictions from the year 2005.

5.7.5.5 NATURA 2000

The EC nature conservation policy is based on two directives, of which one concerns wild birds (the so called wild birds directive)[14] and the other the rest of wildlife (the so called wildlife directive).[15]

The requirements of the directives have been incorporated into the Estonian legislation, and upon accession, Estonia had to submit the following documents:

- the national list of areas corresponding to the areas of Community importance under the wildlife directive;
- the national list of bird sanctuaries under the wild birds directive;
- the NATURA 2000 database, including the whole relevant scientific information on the above areas under Article 4 (1) of the wildlife directive.

To create the NATURA network, Estonia launched a national programme, in the course of which the results of the plant community inventories (including forests, wetlands, semi-natural grasslands) and projects (including major bird areas) carried out during the last ten years were compiled and inventories of protected areas and other valuable areas in terms of nature conservation were carried out to compile the data needed for the compliance with the wildlife and wild birds directives.

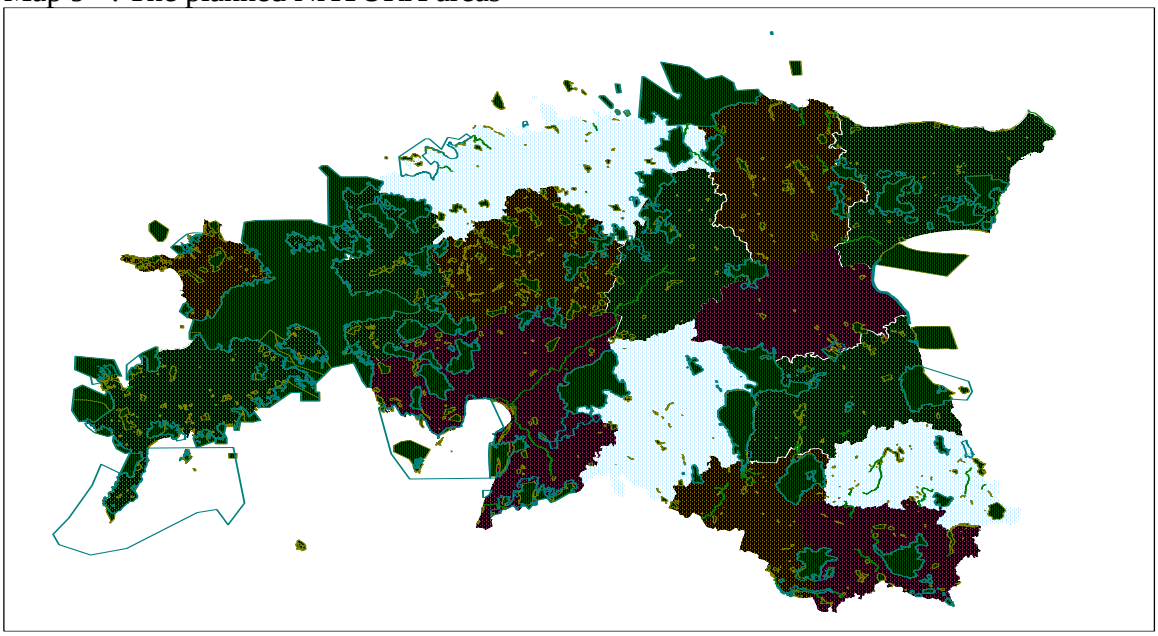
The data collected in the course of inventories have been digitalised and were used to compile the NATURA 2000 database delivered to the European Commission.

By May 2004, Estonia submitted to the European Commission both on paper and digitally the list, database and maps of the Estonian NATURA 2000 areas – natural habitats and bird areas, approved by the decision No 30 (to be recorded in the minutes) of the Government of Estonia. In all, 509 natural habitats and 66 bird areas with the total area of 1,4 million hectares were submitted to protect 60 different types of habitat, 51 animal and plant species and 136 bird species. Marine areas make up half of the total area. The present protected areas with the new areas of high nature protection value make up the main part of the NATURA areas. Nowadays, 12% of mainland is covered by nature protection restrictions in Estonia. The NATURA 2000 selection areas will add 4%. According to the regulation of the minister of environment, temporary mild restrictions to economic activities in the new areas located beyond the protected areas were established for one year to ensure the maintenance of habitats of great value there. Within a year those areas will become either protected areas or maintenance areas. To compensate for the limitation of economic activities, land owners are offered different supports, land tax incentive, the options of land exchange or sales to the state.

[14] EU Council Directive 79/409/EEC on the conservation of wild birds.

[15] EU Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora.

Map 9 . The planned NATURA areas



The implementation of ERDP measures will not cause damage to NATURA areas. On the contrary, in the framework of ERDP it is intended to start support payments to compensate for adhering to environmental restrictions.

5.7.5.6 Framework for Community action in the field of water policy

The main goal of the Estonian water policy is to ensure the economical, i.e. sustainable use of water and the good status of water.

The Helsinki Convention on the Protection of the Marine Environment of the Baltic Sea Area (HELCOM) is an important document for Estonian Water Protection Law. The Convention defines concepts relevant to the Estonian Water Protection Law in the areas such as pollution, pollution from land-based sources, oil, harmful substance and hazardous substance. The Convention sets out the main principles of Baltic Sea protection and the obligations of the contracting parties.

The Convention sets out obligations and legal provisions to prevent the spread of harmful substances and measures to be taken with respect to land-based and marine sources of pollution.

The Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000, establishing a framework for Community action in the field of water policy, prescribes a common framework for the protection of the water of inland water bodies, transient water, coastal waters and groundwater. The aim of the directive is protect and improve the status of aquatic ecosystems and preventing their further deterioration. Also, to promote the sustainable use of water, protect the aquatic environment from discharges, emissions and other damage and from priority hazardous pollutants, so as to ensure the availability of a sufficient quantity of surface water and groundwater as needed for sustainable and balanced water use. Priority hazardous substances are listed in Annex VIII to European Parliament Decision

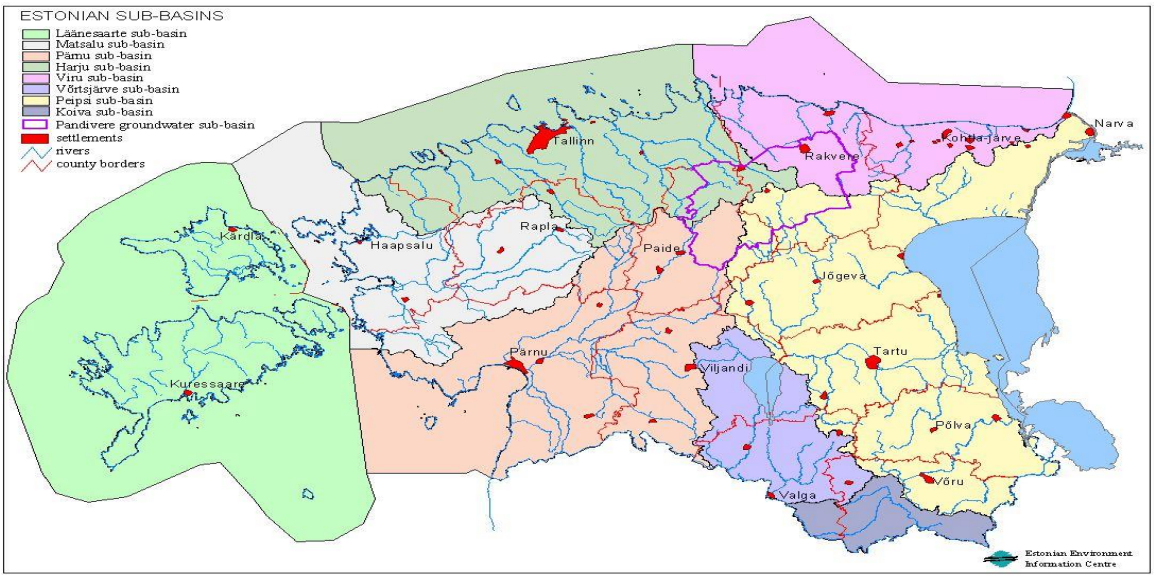
2455/2001/EC, establishing the list of priority substances in the field of water policy and amending Water Policy Framework Directive 2000/60/EC.

According to a resolution of the Government of the Republic, the Estonian territory is a part of the Baltic Sea hydrographic basin and forms a single integral basin divided into nine sub-basins.

Each sub-basin has to be managed according to a specific water management plan, which collectively form an integral water management plan.

Protection of a water body and achievement of a good status of the water quality will be planned for the catchments area that affects the status of the water body.

Map 10 . Estonian sub-basins



The water management plan of a river basin is an activity plan providing for goals (good status of water), activities or measures (for achieving the good status), and control or monitoring (to assess the effectiveness of the measures).

All sectors of economy should contribute to the implementation of water policy. As agricultural production is one of the most important water resources factors, the Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources will also be valid besides the Water Policy Framework Directive 2000/60/EC.

5.7.5.7 Protection of waters against pollution caused by nitrates from agricultural sources

The Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy unites other water protection directives, including the Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources and their goals under a single goal and provides for their achievement by implementing a water management plan.

According to the requirements of the directive on nitrates all countries should designate in their territories the area of intensive agricultural production and

vulnerable to pollution from nitrates, where according to water monitoring data waters are polluted or vulnerable to nitrate pollution. In Estonia a thorough survey to specify the area vulnerable to nitrates was conducted, in which the existing water survey results, natural conditions and risks from production sources were considered.

In Estonia the area vulnerable to nitrate pollution was designated under article 3 (2) of the directive on nitrates and under the Water Act by the Government Regulation no 17 of 21 January 2003 (Protection rules for the Pandivere and Adavere-Põltsamaa area vulnerable to nitrate pollution). The regulation designated the Pandivere and Adavere-Põltsamaa area as vulnerable to nitrate pollution (map 11), its division into the two areas referred and the limestone and karst areas of unprotected groundwater within the boundaries of the area vulnerable to nitrates. Limits to restrictions in the surroundings of springs and sinkholes and in the areas of unprotected groundwater were also established.

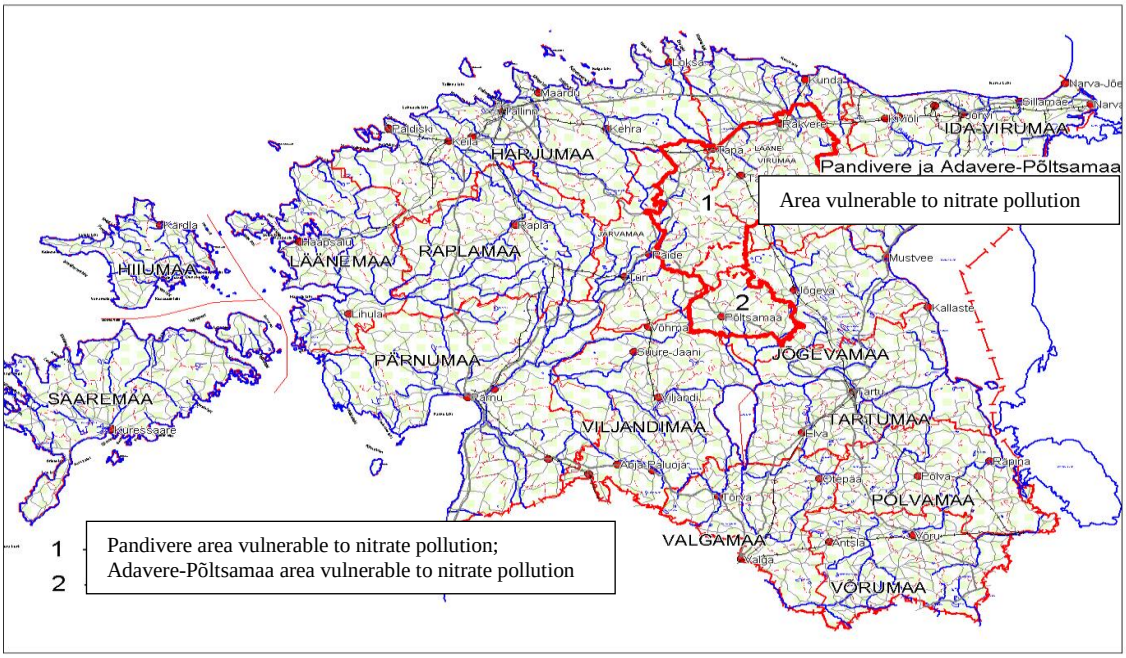
The total area of the Pandivere and Adavere-Põltsamaa area vulnerable to nitrate pollution is 3250 km² or about 8% of mainland Estonia. These two areas differ in their natural conditions:

1) Pandivere heights – 2382 km^2,

2) Adavere-Põltsamaa area in the plain of Central Estonia – 667 km^2,

3) Intermediate zone (Endla bog system) – 201 km^2

Map 11 . Zones vulnerable to nitrates, layout plan



The Pandivere heights where there are no permanent water bodies in the middle of the heights over the area of 1375 km² is the most vulnerable zone because of its hydrogeological conditions. There are also 135 sinkholes in the Pandivere area vulnerable to nitrate pollution. It is the biggest karst area in Estonia with good conditions for the formation of groundwater but easily polluted by rainwater draining into bedrock.

The Adavere-Põltsamaa area vulnerable to nitrate pollution lies in the morainic plain of Central Estonia; where the overburden is narrow everywhere, ranging from 1 to 7 meters (mostly 1–3m, in some places less than a meter). For the most part, groundwater is not or is poorly protected from pollution. The speed of water in aeration zone is great, for which reason diffuse pollution originating from fields and pollution from point sources easily gets into groundwater.

Agricultural production in the area vulnerable to nitrate pollution is complicated due to the soils of higher fertility in this area. Therefore, land use is about 50% more intensive there, compared to the average of the country. The same can be noticed in the sector of livestock farming – 35% of cattle, 30% of pigs and 12,5% of poultry are being raised in the mentioned area.

In the course of reforms agricultural production has decreased considerably also in the area vulnerable to nitrate pollution, which is the most important reason why groundwater quality has improved.

In the Pandivere area, groundwater quality has also improved. The main objective is to maintain water quality in the conditions of increased production, as it is not possible to considerably improve it.

In using groundwater for drinking more problems can be observed in the Adavere-Põltsamaa area. As a whole the average nitrate concentration in the territory is lower than 50 mg/l, however, due to nitrates the water of more problematic wells is not suitable for drinking. This problem can only be solved by the improvement of manure sector and by the replacement of intensive field cropping for a more nature friendly system.

In the slopes of the Pandivere heights groundwater flows out in the form of springs, which are the source of many rivers. The groundwater so formed in the Pandivere heights has a significant impact on the water quality of the rivers starting there, particularly in their upper course. Preparations for the full application of the EU nitrates directive (91/676/EEC) have been made since 1998. The process has been greatly assisted by the PHARE Estonian–Finnish cooperation project ‘Environmental management plans of agricultural enterprises (agricultural producers) in Estonian karst areas’ (Project No. 98–5061), and the PHARE project ‘Support for Estonia’s accession to the European Union’ (ES No. 9620.01.01) that was launched in the year 2000.

Rules for the protection of zones vulnerable to nitrates and an activity programme are being prepared, on which basis mandatory restrictions will be established for the operations of agricultural producers in vulnerable zones.

Based on the provisions of Article 4 of the nitrates directive, Estonia has prepared the Code of Good Agricultural Practice, defining the commonly accepted production techniques and methods in agriculture, observance of which ensures that the environment is not harmed. Producers’ organizations approved it in 2001. Observance of the Good Agricultural Practice is recommended under the Water Act. According to the water policy framework directive, the achievement of the goals set for the year 2015 (good water status) must be ensured.

5.7.5.8 International environmental agreements

Since 1991, Estonia has entered into 37 bilateral or trilateral environmental protection agreements and joined 26 environmental protection conventions or protocols.

These international agreements concern the following areas relating to the ERDP:

- protection of internal waters;
- nature conservation;
- pollution of the atmosphere.

Helsinki Convention on the Protection of the Marine Environment of the Baltic Sea Area (1992)

The convention, adopted in 1974, was supplemented in 1992. The main aims of the convention are:

- to reduce the pollution of the Baltic Sea originating from land, the air, and ships, so as to ensure a tolerable ecological condition of the marine environment;
- to cooperate in the field of research and technology in the development of modern environmental protection measures;
- to coordinate scientific research in the marine environment and atmosphere;
- to develop and implement a single environmental protection strategy for the Baltic Sea area.

The Ramsar Convention on Wetlands (1971)

The goal of the convention is to protect the wetlands of the whole world, as their area and value constantly decrease due to drainage, pollution and economic utilisation. The convention stresses the great ecological role of wetlands, particularly as the migration, rest and nesting areas for waterfowl. All the participating states must take measures to protect wetlands and submit at least one wetland for inclusion in the List of Wetlands of International Importance.

Estonia has included eleven wetlands in the list.

Bern Convention on the Conservation of European Wildlife and Natural Habitats (1979)

The Bern convention aims at the protection of European flora and fauna and their natural habitats and at the promotion of international cooperation for the protection of wildlife, paying special attention to the protection of endangered species, including endangered migrant species.

To achieve these aims, the convention provides for the protection of all species of flora and fauna and their natural habitats, and for the special protection of some wildlife species. The species subjected to special protection are listed in Annex I (strictly protected flora species), Annex II (strictly protected fauna species), and Annex III (protected fauna species). Annex IV lists the prohibited means and methods of killing and capture of animals.

Rio de Janeiro Convention on Biological Diversity (1992)

One of the first obligations of every signatory is the implementation of state-sponsored planning for the protection of biological diversity and the sustainable use of nature. As besides the environmental sector, there are a multitude of institutions involved with issues connected with biological resources, it is inevitable that all these

institutions and interest groups participate in the protection of biological diversity and the sustainable use of nature.

Biological diversity means the abundance of certain objects (species or habitats); the diversity of species means the abundance of species in a community; landscape diversity means the intricacy of the landscape pattern.

For the purposes of the convention, natural diversity means the diversity of all nature, from the gene level to the level of ecosystems, including diversity within species, between species and of ecosystems.

New York United Nations Framework Convention on Climate Change (1992) and the Kyoto Protocol (1997)

The convention is a framework convention aiming at the promotion of global cooperation to stabilise and reduce the emissions of greenhouse gases causing climate changes.

The convention endeavours to stabilise the concentration of greenhouse gases in the atmosphere at a level that prevents a dangerous human intervention with the climatic system. Such a level should be attained over a time period sufficient for the natural adaptation of ecosystems to the climate changes, ensuring the production of food and enabling sustainable economic development.

The Kyoto Protocol sets out specific goals for the reduction of greenhouse gases for developed and transitional economies.

Vienna Convention for the Protection of the Ozone Layer (1985) and the Montreal Montreal Protocol on Substances That Deplete the Ozone Layer (1987)

The framework convention sets the basis for further specific cooperation and is aimed at developing international voluntary cooperation to protect the ozone layer from changes caused by human activities. The main fields of cooperation concern scientific research and monitoring; cooperation in legislative drafting and cooperation in the field of research and technology; and information exchange.

The main goal of the Montreal Protocol is cooperation between states to reduce the emissions of substances that deplete the ozone layer and to eventually terminate the use of such substances. The signatory states undertake to terminate the production and use of the CFC substances listed in Annexes A, B and C by 1 January 1996. More lenient restrictions apply to developing countries. Certain restrictions are also imposed on the export and import of CFC substances.

Arhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (1998)

The Convention makes wide-scale public access to environmental information mandatory in the form of replying to environmental inquiries and active dissemination of information, and obliges authorities to involve the public in the decision-making process at an early stage when all the decisions are still open and can be influenced; reasonable deadlines should be provided for participation; all the relevant information necessary for decision-making is to be made accessible; the comments of the public have to be taken into account as much as possible and any decisions taken have to be reasoned. Among other things, authorities have to identify the interested public and encourage them to participate in the decision-making process.

According to the convention, non-governmental environmental organisations always have justified interest upon recourse to the courts.

5.7.5.9 Estonian environmental legislation

Constitution of the Republic of Estonia (1992)

Section 53: 'Everyone has a duty to preserve the human and natural environment and to compensate for damage caused to the environment by him or her. Law shall provide the procedure for compensation.

Water Act (1994)

The purpose of the Water Act is to guarantee the purity of inland and transboundary water bodies and groundwater, and ecological balance in water bodies, as well as the relations between landowners and water users in catchments areas.

The Act and the related legislation provide for the protection of the surface water and groundwater of catchments from water pollution, including pollution from agricultural production, by establishing requirements for the handling and storage of mineral fertilisers, manure and silage.

Nitrate sensitive areas and limestone and karst areas which are located therein and which have unprotected groundwater and a soil depth of less than 2 m have been designated on the basis of § 26^3 of the Water Act by a regulation of the Government of the Republic, and the extent of restrictions which apply in such areas will be established by the protection rules.

Pollution Charge Act (1999)

The Pollution Charge Act provides the rates of the charge to be paid for release of pollutants or waste into the environment and the procedure for calculation and payment of the charge.

The objective of establishing a pollution charge is to prevent and reduce possible damage caused by the release of pollutants or waste into the environment. The pollution charge shall be paid for the release of pollutants and waste specified in this Act into the environment.

The pollution charge is not imposed if pollutants or waste are released into the environment in quantities or in a manner for which a permit is not required. The Water Act establishes requirements for the handling and storage of mineral fertilisers, manure and silage for agricultural producers.

Forest Act (1999)

The aim of the Forest Act is to ensure the management of forest as a renewable resource so as to ensure a living environment that satisfies the population and the resources necessary for economic activity without unduly damaging the natural environment. The Act and legislation established in its basis regulate forest management, organisation of the use of forests, directing of forestry and accounting for forest resources, and establishes the organisation of state forest management.

Building Act (2002)

The Building Act provides the requirements for construction works, building materials, construction products, building design documentation and as-built drawings of construction works, and the basis and procedure for the design, building and use of

construction works and for the registration of construction works, liability for violations of this Act, and the organisation of state supervision and construction supervision.
The Act provides the requirements for construction works of different types, for the building and use thereof and for persons building them, in so far as this is not regulated by other Acts, as well as the procedure for application for and issue of written consents and building permits required for construction works the and authorisation for use of buildings.

The Government of the Republic establishes requirements for buildings or parts of buildings according to the characteristics of the construction works and the safety requirements for their use.

Other legislation regulating the use and protection of environment in the sector of agriculture:

- Estonian Environmental Strategy (1997);
- Sustainable Development Act (1995);
- Fertilisers Act (1997);
- Organic Farming Act (2001);
- Plant Protection Act (2000);
- Land Improvement Act (1994);
- Waste Act (1998);
- Nature Protection Act (2004);
- Environmental Impact Assessment and Environmental Auditing Act (2000);
- Integrated Pollution Prevention and Control Act (2001);
- Environment Supervision Act (2001).

Table 24 Supervisory authorities concerned with environmental legislation

Title of legislation	Supervisory authority
Water Act	Environmental Inspectorate
Government of the Republic Regulation No 288 'Water protection requirements for fertiliser and manure storage facilities and silage storage facilities, and requirements for use and storage of mineral fertilisers, manure and silage' of 28.08.2001	Environmental Inspectorate
Plant Protection Act	Plant Production Inspectorate
Fertilisers Act	Plant Production Inspectorate
Animal Protection Act	Veterinary and Food Board, Environmental Inspectorate and Police Board
Nature Protection Act	Environmental authorities, managers of protected areas
Chemicals Act	Environmental Inspectorate, rescue authorities, and the authorities and inspectorates in the area of government of the Ministry of Economic Affairs and Communications, Ministry of

	Internal Affairs, Ministry of Social Affairs
Waste Act	Environmental Inspectorate, local government or its agency
Heritage Conservation Act	Heritage Conservation Board

5.7.5.10 Forest fires

Estonia has classified its forests at rural district levels (NUTS IV) as areas of high, medium and low fire risk. Of fire risk categories, Harju, Hiiu, Põlva, Saare, Valga and Võru counties are the areas of high risk, accounting for 35% of the total forest area. Ida-Viru, Lääne-Viru, Pärnu and Rapla counties (26%) are the areas of medium risk, while Jõgeva, Järve, Lääne, Tartu and Viljandi counties (39%) are the areas of low fire risk. In Estonia, tasks related to the prevention of forest fires are divided between different institutions. Putting out fires and the administration of forest-fire information systems is the task of the Rescue Board. Institutions of the Ministry of Environment administrate preventive forest fire protection measures and monitoring. Estonia has devised a draft forest fire prevention plan that is going to list activities related to forest fire prevention (not endorsed yet). In most cases, people cause forest fires, directly or indirectly. The number of fires and burnt areas fluctuate year by year (Table 25), but the average area has not exceeded 10 ha over the last five years.

Table 25 Forest fires in 1997-2001

Year	Number	Area (ha)	Average
1997	359	1145	3.2
1998	61	340	0.9
1999	160	1034	8.5
2000	158	683	4.3
2001	91	68	0.7

Source: Rescue Board

5.8 FORESTS

5.8.1 Historic developments

The Estonian forest area has changed over time. In the 20th century, forests were the most affected by wars, revolutions and the accompanying changes in the structure of the economy and the population pattern. Before World War 2, the area of state forests (cadastral, pasture and shrub forests) was 1.45m ha or about 30% of the country's territory of the time. As a result of World War 2 and forced collectivisation, the forest area started to grow, mainly due to natural afforestation, forest planting, and also the draining of marshes.

Estonia is one of the four European countries where the forestry sector accounts for aprrox.10% of the total economic output. According to the statistical forest inventory (SFI) data of 2002[1], the area of forests is 2.21m ha or 50,5%, and together with other wooded land 52,3% (2,29m ha) of Estonia's mainland territory, including about 830,000 ha of state forests. As the density of population of Estonia is rather low (31,2

[1] Statistical forest inventory data collected every year by OÜ Eesti Metsakorralduskeskus.

inhabitants per km^2), there are 1,63 hectares of forestland and 342 m^3 of growing stock per capita. These indicators surpass the World and European average. Forest area available for wood supply is 2,07m ha (about 94% of total forest land area) and rest of the forestland has been classified as forest not available for wood supply due to conservation reasons and other wooded land. The growing forest stock is 444m m^3 and the stock growth is approx. 11.6m m^3 a year.

Production farms were lost as a result of the forced collectivisation in 1949, during the Soviet occupation, and former farm owners were deprived of land. Agricultural production was intensified in collective farms and state farms; small parcels of fields were merged in the course of land improvement and land readjustment. Central settlements of collective and state farms were built, into which a majority of the rural population moved. Many wooded meadows and eutrophic alvar grasslands, which were formerly cultivated by horse-drawn machinery, were abandoned — these areas have been covered with forests during the 60 years. On average, the Estonian forest area has increased by 14,000 ha annually over the 60 years; the total growth amounts to nearly 20% of the Estonian territory.

The area of forests is still growing and the area of arable land is decreasing. At least 30–40% of formerly used fields were abandoned after Estonia became independent again; these lands will be covered with forests sooner or later. Thousand of hectares of former fields are already covered by young forests; tens of thousand of hectares are showing signs of forestation.

Changes in the area under forests have brought about changes in the forest species composition: the relative share of coniferous stands has decreased from 65% in 1958 to 52% in 2000. As regards broad-leaved stands, the share of aspen and grey alder stands has increased relative to other hardwood stands (from 2.3% to 5.4% and from 3.7% to 7.7%, respectively). The dominant species of tree in Estonia is the pine 32.5%, followed by birch 31.6%, spruce 17.6%, alder, etc. As concerns cutting, spruce forests have been cut the most: 46% of the entire growing stock. The share of grey alder stands should form up to 20% of the annual timber cutting, but most grey alder stands are not cut at all, although grey alder and other less valuable trees could be used for energy and wood panel board production. The increasing share and area of broad-leaved stands, particularly birches and grey alders in private forests is the result of natural reforestation of coniferous clear cut areas with broad-leaved species

The annual cut has grown from 2.6m m^3 in 1993 to about 12,6m m^3 over bark in 2002. While the cut of state forests has remained quite stable (about 3m m^3 a year), the cut of private forests has increased remarkably over the last years. The cut in 1999 exceeded that of 1994 four-fold. At the same time, renewal has been very poor in private forests compared to state forests. State forests have been renewed on 5500–7000 ha a year on average; the renewal of private forests has not kept up with the increased regeneration cutting. While the volumes of regeneration cutting in private forests exceeded the respective indicator for state forests more than two-fold in 2000 (17,600 and 7900 ha, respectively), the scope of forest renewal in private forests was 3.6 times smaller than in state forests (1987 and 7129 ha, respectively). The scope of cleaning in private and state forests is on the same order of magnitude.

From the aspect of social development, forestry is an especially important provider of employment in rural areas. In many rural areas, forestry is the main branch of industry, if not the only one, that offers job places. A large part of the budget revenue of local governments comes from taxes from forest management. Firewood, which is

relatively easily available and cheap for rural inhabitants and presents an important source of energy, is also worth mentioning. The industrial use of firewood has grown over the last years. Because of the minor financial possibilities Estonian forests have formed onto important recreational environment for the people, where they can spend their spare time and also long-term holidays.

5.8.2 Forest policy

Forest policy is laid down in the Forest Act and other legislations. The Estonian Forestry Development Programme until 2010 (FDP) was drafted, proceeding from various domestic and international processes and the Forest Policy approved by the *Riigikogu* in 1997. One of the activities applied in the framework of FDP, in the period of 2001-2010, is the afforestation of abandoned agricultural lands, using the assistance of the EU Structural Funds. Forest Policy acknowledges forests high environmental and ecological value, which will be protected in accordance with ratified international resolutions and conventions. At the same time forests have also a strong economic potential for the production of both tangible and social benefits, which must be made maximum use of while preserving the environmental protection values and other benefits. Today's activities in the forests must not reduce the quantity or scope of benefits left to the future generations.

The two integral and interrelated general objectives of the Estonian Forest Policy, which were also taken into account in the preparation of the FDP, are the following:

- sustainable (i.e. even, continuous and diverse) forestry – forest management in such methods and scope ensuring at the same time biodiversity, productivity, renewal ability, viability and potential of the forests now and enable the performance of ecological, economic and social functions on the local, state and global level without damaging other ecosystems in the now and in the future;
- efficient forest management - economic production and use of all benefits arising from forests in the short and long term.

In connection with EU accession, Estonia will have to start follow and guide forestry according to EU Forest Strategy, by preparing a national forest strategy based on the applicable EU programming period, on the one hand, and adopting it to its national peculiarities and needs, on the other hand. The Forest Strategy should rely on the Single Programming Document and Rural Development Plan, national forestry and forestry-related programmes, international agreements. The aim of the strategy is to link the multifunctional role of forests with sustainable forest management, based on the social, economic, ecological, and cultural functions of forests in social development, particularly in rural areas, and stressing the relation of forests and forest management to other policies. Implementation of the forest strategy is evaluated on the basis of a national forestry report to be prepared at least after every five years. According to the structure developed by the EU, the Ministry of Agriculture prepares the strategy and monitors its implementation.

A number of measures are being launched at present to solve forestry problems:

- the legislation is being improved, elaborated, and also rendered stricter;
- strengthening environmental inspection ;
- improving the information basis and information movement.

In summer 2003 the Forest Act working group gathered. As the result of the WG work the Law was amended in respect of licensing of forest survey, compulsory forest management plan and juridical status of forest notification. Additionally was reviewed and the proposal was made to change the Income Tax Act in relation to forestry taxation matters. The Act was changed so that forest owner is able to deduct forest management costs from taxable income.

5.8.3 Support for afforestation of agricultural land

The EU is known for its agricultural overproduction; hence, finding alternatives to agriculture and agricultural production is an important subject in guiding and developing the EU Common Agricultural Policy. One of the alternatives to reduce the agricultural production is the support for afforestation of agricultural lands in use. The support covers establishment and maintenance costs up to 5 years and loss of income from the agricultural production up to 15 years.

Considering the peculiarity of the Estonian natural environment, changes in the land use structure owing to the economic situation, and decrease in land use, afforestation of agricultural lands that have already been abandoned is in particular need of support, especially lands that have little agricultural potential. Estonia applied for derogation with respect to afforestation support up to the year 2010 also for the afforestation of such lands in particular. At Estonia's accession negotiations with the EU, it was agreed that as an exception, the EU support to Estonia in 2004–2006 would also cover, additionally to the agricultural land, the afforestation of lands that have been abandoned by agriculture up to five years previously. The support makes it possible for Estonia to cover the costs of establishment and maintenance, but not loss of income from the agricultural production.

Agricultural land forms 30% of Estonia's territory. According to the Statistical Office and the agricultural census of 2001, the end of 2001 ha of agricultural land of the total 1.33 mln ha of cultivated area had abandoned an area of 441,977. The soil quality rating is below 35 points in 376,750 ha. According to the SFI analysis, up to 150,000 ha of land is suitable for afforestation. In addition to agricultural land, 25,000 ha of shrubs (mostly willow plots), which were fields or grasslands before overgrowing, have been classified as suitable for afforestation. In 20–30 years, a quarter of the current 25,000 ha of overgrown (mostly by hardwood: grey alder 20%, birch 30%) agricultural land may become forestland. In the case of such a development, the forest area of Estonia would be 2.6 mln ha, accounting for 57–58% of the country's territory, in a quarter of a century.

Abandoned agricultural lands can be found everywhere in Estonia, but South-Eastern Estonia is the most problematic, as the abandoned fields in these areas are particularly large and are showing the first signs of natural afforestation. If the process is not interfered with, landscape diversity may suffer. Beside it other negative aspects of unmanaged afforestation are: the quality of timber is poorer than usual, low stand density, unsuitable composition of species, and slow growth.

Abandoned agricultural lands are often strongly sodded and covered with vegetation of little value. The restoration of land for agricultural production is difficult and often unjustified: the location and soil quality of these lands are not favourable for agricultural production. When deciding in favour of afforestation, the former land use, size of the plot, similarity with the soils of adjacent forests, granulometric composition and humidity level of the soils have to be taken into account.

The afforestation of all lands suitable for it would increase Estonia's forest area by 3.3%. Such lands are located in the following counties:

- Jõgeva, Tartu, Põlva, Valga, and Võru counties: 57,000 ha (4.7% of the area of these territories);
- Ida-Viru, Lääne-Viru, and Järva counties: 32,500 ha (3.4% of the area of these territories);
- Harju, Lääne, and Rapla counties: 28,300 ha (2.9% of the area of these territories);
- Pärnu and Viljandi counties: 18,500 ha (2.2% of the area of these territories);
- Saaremaa and Hiiumaa: 8800 ha (2.2% of the area of these territories).

Besides the aforementioned reasons, afforestation support would promote the interest of landowners and agricultural producers in the creation of quality stands, which in turn would encourage a more sustainable use of natural resources.

5.9 KNOWLEDGE AND INFORMATION

One of the obstacles to rural development is the small number of professionally educated people involved in agriculture. The survey of agricultural producers, conducted in 2002 by the market research company Saar Poll, showed that nearly one-fourth of the respondents had no special education (Table 26).

Table 26 Education of agricultural producers

	Number of respondents	%
No special education	267	26.7
Agricultural	427	42.7
Technical areas	117	11.7
Humanitarian	75	7.5
Economics	67	6.7
Other areas	48	4.8

Source: Ministry of Agriculture

The agricultural advisory system was initiated in Estonia by a EU PHARE project. The agricultural advisory service component of the World Bank agricultural loan project launched in August 1996 continued the process of building the system. The component consisted of support scheme for the private advisory system; strengthening of the public advisory system (technical assistance and training); and support for rural information centres.

The project that ended in 2002 provided many training sessions in different areas: introduction to the principles of the participation method, efficiency training, group advising and project management training, and training for economic advisers and other specific advisers (livestock farming, plant production, economics, including marketing, alternative rural activities, environmental protection, forestry).

The advisory service supplemented by the county information centres of the Estonian Chamber of Agriculture and Commerce (ECAC) and the Internet portal for rural undertakings (~~http://www.pikk.ee~~).

5.9.1 Advisory service

The goal of the advisory service is to develop agricultural producers by competent advice, to disseminate the information necessary for rural entrepreneurs, and to introduce the topics relating to accession to the EU.

Advisory support granted as state aid means financial aid to an agricultural producer or fish farmer, covering the cost of the individual advice in full or in part.

200–2500 producers on average use the individual agricultural advisory service every year. In June 2003, there were 96 attested advisors in Estonia, who can provide advice with support from the state. Information on attested advisors is available at the Ministry of Agriculture, the Agricultural Registers and Information Board (hereinafter ARIB), farm associations, the Estonian Advisors Association, county governments, ad the ECAC information centre. A farmer has to pay a part of the price of advice — the farmer selects a suitable advisor and defines the details of the service needed. The farmer and advisor agree on the price according to the scope and quality of the service.

Individual advisory support has been administered by the ARIB since 2001. ARIB received 1550 applications for advisory support in 2001, of which 1410 were approved for payment. In 2002, ARIB received 1423 applications for advisory support, of which 1134 were approved for payment. In 2003 advisory support was paid to 747 farmers. Studies have shown that farmers appreciate the activities of advisors highly.

The state finances group advice and county advisory projects via county governments; county specialists decide on the need for projects. Group advice is mainly carried out as one-day training courses. County projects also include several days' training sessions, information publications, and other activities. 147 group advice contracts were made and 3368 people participated in the events in 2001. The average length of an event was six hours; the average number of participants was 24. In 2002, a total of 156 group advice contracts were concluded and 3608 people participated in the events. An average event lasted 6 hours and had 23 participants.

Special attention was paid also to disseminate the information and advice farmers on national agri-environment support in 56 municipalities. In 2003 there were organised 28 information days where the principles and the requirements of the support were introduced. During the 33-group advice days through the practical seminar the environment-friendly management plans were prepared in farmer-adviser co-operation. There was also requirement for the 6-hours compulsory training under the environment-friendly management scheme in the 2 special pilot areas. In addition to the aforementioned activities, the special supplementary measures training, field days and common seminars of farmers, advisors, representatives of ministry and inspectors were held. National implementation of the agri-environment support has shown very clearly the need of the good advisory and training service on the successful implementation of the support.

After EU accession, Estonia will launch a measure to support farm advisory and extension services under the SPD. This will provide new opportunities for farmers and new challenges for advisors. The measure promotes an enhancement in the knowledge and skills of farmers via advisory, information, and support services.

5.9.2 Information dissemination system

Discussion of the cooperation groups of advisors in 2000 and 2001 reached the conclusion that farmers and advisors themselves need a large-scale system of dissemination of information that would ensure quick access to state, research, and market information.

To reach this aim, a web site of agricultural advisors was launched (~~www.epk.ee~~), a development plan was prepared for agricultural sciences, attention was paid to the organisation of advising private forest owners, development of agricultural vocational schools into in-service training centres, development of the services of public Internet access points; the Estonian Farmers' Federation started to publish the information paper *Hüva Nõu* (Good Advice). Advisors and their support centres have been assisted by procurement of the equipment they need for providing their services.

At the end of 2001, the Ministry of Agriculture launched a project (PIKK project) to improve the efficiency of dissemination of agricultural and rural information and advisory activities. The Rural Development Institute together with the Estonian Agricultural University were selected by competition as the implementers of the project that had been launched with help from the World Bank loan. An Internet portal for rural undertakings (http://www.pikk.ee) and an information dissemination system with the coordinating national centre and county centres were launched in the course of the project. The information system helps farmers and rural undertakings to find and understand information, and gives the Ministry of Agriculture regular feedback on the information needs of rural undertakings.

In 2002, the coordinating function was performed by the Rural Development Foundation[~~16~~], which guided the county units. The Ministry of Agriculture selected county farm associations as the county units as a result of a competition. The county information units helped those interested to find information and held training days.

The ECAC[~~17~~] acts as the national coordinating centre from 2003, and the county units continue to act under the guidance of the information dissemination centre set up at the ECAC. The local farm associations are still the information units in most counties. The aim of the county units is to make the necessary information available to rural undertakings and to keep the Ministry of Agriculture in touch with the information needs of rural undertakings. Besides daily informing activities, the information units organise training days for rural undertakings.

Since 2003, the ECAC information dissemination centre also administers and updates the Internet portal for rural undertakings that was launched under the PIKK project. Information materials needed by rural undertakings are published in cooperation between the EACAC information dissemination centre and the Ministry of Agriculture.

The activities of the ECAC information dissemination centre and the Rural Development Foundation finances the county units, as well as the maintenance of the Internet portal, in 2003; the Ministry of Agriculture finances the production of information materials in part.

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16 RDF supports farmers and other entrepreneurs in rural area to find necessary financial resources to develop entrepreneurship.

17 Estonian Chamber of Agriculture and Commerce

5.10 EQUAL OPPORTUNITIES

The equality principle has been taken into account in the preparation of the Agricultural and Rural Development Plan. According to the Constitution of the Republic of Estonia, everyone is equal before the law. No one must be discriminated against on the basis of nationality, race, colour, sex, language, origin, religion, political or other opinion, property or social status, or on other grounds.

Estonia signed the Universal Declaration of Human Rights on 2 April 1996 and law also protects equality. Estonia's accession to the respective international conventions, taking into account the respective recommendations and resolutions of the EU, and support of the activity platform of the Fourth World Congress of Women implies the acceptance of the equality principles in Estonia. Estonia recognises the necessity to incorporate the equality principle into all its national programmes, including the ERDP.

As mentioned in Chapter 5, the rural unemployment rate in Estonia is lower among women than men, which is why the solutions to be found for the greatest rural problem of Estonia, unemployment, should be available to both genders. It is important to take account of the principle of equal remuneration.

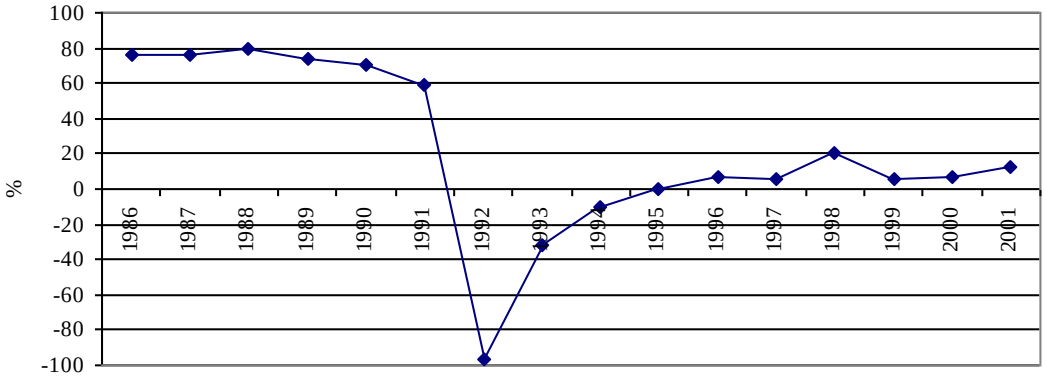
Several programmes have been launched in Estonia to deal with the problems of rural women and equality. The largest among them are the ILO project 'More and better jobs for women' and the PHARE project 'For the support of rural women'. Both projects stress the importance of education and training activities.

5.11 SUPPORT FOR AGRICULTURAL PRODUCERS

5.11.1 General overview

Agriculture was supported to a minimum degree at the beginning years of Estonia's new independence. As a result of low prices and little support, the income of farmers decreased greatly. This is also evidenced by the farmers' support equivalent, which was negative in 1991–1994. Since 1995, the state started to make the first support payments and the volumes of support have grown since then (see Figure 15).

Figure 15. Agricultural support equivalent in 1986–2001



Source: Ministry of Agriculture

Agriculture has been more intensively supported since 1998 so as to ensure a supply of food products on the Estonian domestic market and the income of producers. In

2002, agriculture and rural development were supported with 39 million EUR, which is four times more than in 1997.

Estonian support measures are divided into three: income support, support for reducing input prices, and general support. Income support is the largest, forming over a half of total support. In two years, 1998 and 2002, the Estonian state paid extraordinary support to compensate for the damage incurred because of weather (see Table 27).

Table 27. Agricultural and rural development support in 1997–2003, million, EUR

	1997	1998	1999	2000	2001	2002	2003
Direct aid / income support	**0.0**	**26,50**	**15,40**	**15,30**	**14,50**	**21,10**	**16,52**
Support for dairy cow breeding	-	4,50	5,70	7,20	7,10	7,00	7,03
Support for cereal production	-	7,50	9,00	7,80	7,00	7,00	7,03
Support for sow breeding	-	-	0,20	-	-	-	-
Suckler cow premium	-	-	-	-	0,05	0,20	0,26
Support for young and meat cattle breeding	-	-	0,40	-	-		1,83
Support for ewe breeding	-	-	0,10	0,10	0,20	0,20	0,24
Support for certified seed production	-	-	-	0,10	0,10	0,20	0,14
Compensation for damages	-	14,5	-	-	-	6,5	-
Reduction of input prices	**7,6**	**13,2**	**13**	**4,9**	**4,5**	**14,1**	**30,24**
Interests	0,70	1,00	1,80	1,70	1,10	1,30	0,84
Investment aid / SAPARD	1,30	3,20	4,70	0,80	0,40	10,30	24,92
Insurance aid	-	-	0,04	0,04	0,03	0,06	0,03
Liming aid	0,30	0,90	1,10	0,90	1,00	1,00	0,91
Excise, transport	3,8	5,7	3,8	-	-	-	-
	1997	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
Co-financing of land improvement works	1,5	1,6	1,4	1,3	1,4	0,04	1,00
Loan guarantee	-	0,8	0,2	-	-	-	-
Agri-environmental aid *	-	-	-	0,2	0,6	1,4	2,55
General support	**1,5**	**1,5**	**1,4**	**2,6**	**2,1**	**3**	**2,43**
Research, training and advisory aid	0,6	0,6	0,6	0,4	0,4	0,6	0,30
School milk	-	-	-	-	0,6	0,9	1,18
Animal breeding	0,8	0,7	0,6	0,8	0,8	1	0,93
Infectious animal disease control	0,2	0,2	0,1	0,1	0,2	0,1	
Cooperative activities aid	-	-	-	1,3	0,3	0,5	0,02
TOTAL	**9,1**	**41,2**	**29,7**	**22,7**	**21,1**	**38,6**	**49,19**

Source: Ministry of Agriculture

5.11.2 EU Common Agricultural Policy

5.11.2.1 Nature of the EU Common Agricultural Policy

The EU Common Agricultural Policy (CAP) was one of the first common policies of the Member States, which was also financed commonly. Articles 32–38 of the Treaty establishing the European Union, provides the legal basis for the implementation of the CAP in the EU. The CAP was launched to achieve the goals set out in paragraph 1 of Article 33 and to secure the functioning and development of a common market in agricultural produce. According to Article 33 of the Treaty, the goals of the EU CAP are:

- to increase agricultural productivity by promoting technical progress and by ensuring the rational development of agricultural production and the optimum utilisation of the factors of production, in particular labour;
- to ensure a fair standard of living for the agricultural community, in particular by increasing the individual earnings of persons engaged in agriculture;
- to stabilise markets;
- to assure the availability of supplies;
- to ensure that supplies reach consumers at reasonable prices.

The CAP is largely governed by regulations, which are binding in their entirety and directly applicable in all Member States. The CAP implies fully free trade between the EU Member States without applying any customs barriers or other market distorting measures.

Another main element of the CAP is the common requirements for food safety, veterinary medicine, plant health, environmental protection, and animal welfare. These requirements are established in Estonia on the basis of the Infectious Animal Disease Control Act, Veterinary Activities Act, Food Act, Plant Protection Act, Feedingstuffs Act, Fertilisers Act, Seed and Plant Propagating Material Act, Plant Variety Rights Act, Organic Farming Act.

The third main element of the CAP is a common agricultural products price support policy, which on the one hand aims to ensure a stable and satisfactory income for agricultural producers, and on the other hand, compensates exports of agricultural products for the lower competitiveness on the world market, caused by the higher internal market prices in the EU. Although price support has significantly lost its relevance in the latest reforms of the CAP and the EU internal market prices have been gradually approximated to world market prices, it still has a noticeable impact in sectors such as milk, beef, and sugar production.

One of the main pillars of the EU CAP is internal market protection, which has been achieved by import duties on the one hand, and intervention and private warehousing mechanisms on the other hand. Essentially, this means that the competitive power of goods originating from foreign markets is reduced by import duties and, at the same time, if internal market production has reached a level that results in a price fall unfavourable for the maintenance of sustainable agriculture, the ‘surplus’ produce is bought up and exported or the warehousing agents are compensated for the costs of storing the surplus goods until prices normalise. The main products to which such measures are applied are cereals, milk products, and meat.

The fourth main element of the CAP is a common application of financial support. This type of support is also financed mainly from the EU budget. Financial support

can be divided into three groups: direct aid, measures accompanying the agricultural policy, and development support.

Direct aid is applied to support the agricultural produce whose EU market price has been significantly reduced over the past decade. These are: field crop support (for cereal, legume, and oil crop producers), beef, and sheep meat support.

The main agricultural and rural development instruments applied under the EU CAP according to EU Council Regulation (EC) No 1258/1999 are:

- regulation of export and import of agricultural produce;
- agricultural market organisation measures;
- direct payments to agricultural production;
- agricultural and rural development support (from the EAGGF Guidance Section);
- the EU CAP accompanying measures (from the EAGGF Guarantee Section).

Besides, the EU Member States apply national agricultural and rural development support measures coordinated with the European Commission.

The EU has treated agriculture as a multifunctional branch of economy, which is why the CAP has assured a good quality of life for most rural inhabitants of the EU Member States. This 'European agricultural model' continues to develop, but will probably remain one of the cornerstones of European identity.

5.11.2.2 Developments of the EU Common Agricultural Policy

On 26 June 2003, the ministers of agriculture of the EU Member States agreed on the (new) reform package of the CAP. The agreement will shape the CAP up to the year 2013 (and in some issues, up to 2015).

The main trigger for changing the CAP is the WTO negotiation round. The goals in parallel with that are:

- improvement of the competitiveness of the EU agriculture on the internal and world markets;
- improvement of the quality, food safety, and diversity of agricultural produce;
- reduction of the negative impact of agriculture on the environment and improvement of welfare;
- sustainable development of agriculture, prevention of an increase in unemployment in rural areas and the formation of wastelands;
- continuous supply of the EU with the main foodstuffs.

During the previous reforms of the CAP, the prices of cereals and beef have been significantly reduced, whereas a large part of the price fall was compensated for by the introduction of the respective direct aid. In the current reform, it was decided to reduce the internal market price of butter and milk powder in the dairy sector by reducing the intervention prices (by 25% and 15%, respectively, over four years). This will reduce the internal market prices of raw milk and the competitiveness of the EU on the world market will increase. Farmers are compensated for about 80% of the price fall by additional support. At the same time, it was decided not to increase the milk quota of the Member States and to extend the milk quota regime up to the year 2015.

A partial untying of direct aid from production is one of the key elements of the reform. So far, direct payments were made to producers for specific crops or animals

to compensate for the internal market price falls resulting from the previous reforms. In the future, a farmer will receive an equivalent amount of direct aid, but the payments will not be related to a specific area of production. A farmer will produce what the market demands, not what payments are (were) made for.

A EU Member State may tie a certain part of support to a specific area of production (such as the number of sheep or suckler cows). This enables regional support to the appropriate areas of production; in Estonia, preferential development of sheep farming in suitable regions could be one of such areas.

Although direct aid is gradually disassociated with the area of production, it is being tied to compliance with the environmental protection and other requirements. A mechanism will be applied that ensures a proportionate reduction of aid to farmers who do not meet the requirements. Upon violation of crucial requirements, aid may be reduced by up to 100%.

The EU CAP is directly related to overall rural development, which is why the ministers decided to direct a part of the direct aid funds to strengthening of rural development measures. According to this decision, a part of the direct aid budget (up to 5%) will be transferred to financing rural development measures. Of the current measures, more attention will be paid to financing agri-environmental programmes, and several new measures are planned.

Upon ERDP planning for the following programme period, it is very likely that amongst others, the following new measures can be financed:

- support for meeting standards for temporary assistance to farmers to comply with the new EU environmental, public health, animal health, plant health, animal welfare, and occupational safety standards (similar to the support for meeting standards that has been offered to the EU candidate states, but with a broader area of application);
- support for the welfare of farm animals;
- support for the improvement of food quality for the participation of farmers in food quality schemes, improving the possibilities of marketing final products, and informing consumers of the availability and peculiarities of the products.

5.11.3 World Bank loan project

Estonia borrowed 22 million German Marks from the World Bank, used in 1997–2002 in the following areas:

- land reform — the performance of land surveying and land readjustment works in larger areas by competitions;
- land improvement — reconstruction of land improvement systems in major objects; mandatory establishment of land and water associations to take over the object and the subsequent maintenance; the beneficiaries had to provide 20% own funding in money or in the form of work;
- environmental protection — cooperation in selecting land improvement objects, technical requirements for planning and later monitoring;
- agricultural advisory service — establishment of the private advisory service and improvement of information dissemination;
- food and veterinary inspection — training and laboratory equipment for the national food and veterinary inspection system, so as to protect local

consumers from inferior quality imports and ensure the necessary control procedures for local producers to prove the export quality of produce.

Effective use was made of the World Bank loan. It helped regenerate cooperative activities with environmental and other organisations in rural areas.

5.11.4 SAPARD

The pre-accession programme SAPARD (Special Accession Programme for Agriculture and Rural Development) was launched in Estonia in 2001. Estonia aimed the payments given under the SAPARD programme at improving the competitiveness of agriculture, rural development and enterprise, and rural infrastructure so as to help the agriculture sector adjust to the EU requirements and solve rural development problems.

The implementation of SAPARD has also helped Estonia to prepare its administrative capacity for implementing the EU Common Agricultural Policy and the accompanying support measures after the accession to the EU. ARIB administered SAPARD support measures.

Estonia applied the following SAPARD measures:

- support for investments in agricultural production;
- support for investments in production and marketing of agricultural and fishery products;
- support for investments in developing and diversifying alternative rural activities;
- support for investments in rural infrastructure;
- support for investments in reconstruction and development of villages.

More than 40% of the programme funds have been directed to the adaptation of agricultural production to the EU requirements or to the diversification of agricultural production (Measure 1). The main investments supported were made in milk production, animal barns, and plant production.

To compensate for the decreasing rural employment rate, support is paid for investments in the development of non-agricultural enterprise (Measure 3). The supported activities include rural tourism, handicraft, services, crayfish and fish farming, and food processing in small enterprises.

To solve rural infrastructure problems (Measure 4), support is granted for the construction and reconstruction of private infrastructure, including roads, power networks, and telephone and data communication, water supply and wastewater treatment in rural enterprises, including agricultural holdings. Enterprises in which the state may have a maximum shareholding of 25% are eligible to support.

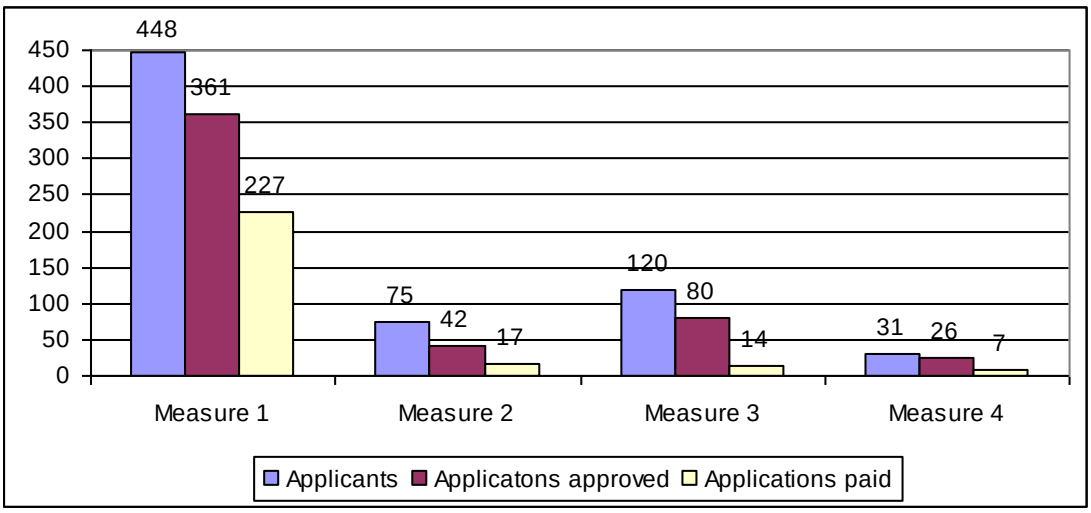
In 2003, support for local initiatives of village development was launched (Measure 6). The aim of this measure is to promote village development, encourage the initiative of the inhabitants and their willingness to cooperate and improve the overall life quality in villages. For example, support is granted for investments in public buildings, information points with Internet access, etc. Non-profit associations, local governments, and undertakings may apply for support. Committees have been set up with county governments to assess the applications.

Map 12. Investments under SAPARD programme, 2001–2002

Map 12 indicates the number of applications, approved projects and approved payments in millions of EEK. For example in Hiiumaa, 11 applications were submitted and 8 of them were approved with a total amount of 830 000 EUR.

The differences between counties are due to regional differences in economic activity and the project formalisation skills.

Figure 16 Processing of SAPARD support applications across measures



Food processing enterprises with at least 10 employees were ready to use the support to make larger investments than provided in the budget of Measure 2 of SAPARD, i.e. 129%. Support for investments in infrastructure development (Measure 4) was used the least: the amount applied for and approved, and the actual payments form only 4–5% and 1% of the potential maximum, respectively.

In 2001, a total of 248 applications for investment support were received, of which 36 were repeated applications after the initial application had been rejected. By 31 December 2001, approval had been given to 130 applications and payments were maid to 16 applicants.

A total of 426 applications were received in 2002. A positive financing decision, i.e. approval, was given to 379 applications (89% of all applications). SAPARD payments

were made for 249 investment projects over the year. The total amount of support was the largest in the Saaremaa county: 1,34 million EUR.

Since year 2001 to 26 September 2003 altogether 1 620 applications were received under all measures and approval was granted to 1 215 applications. The amount of support in the approved applications totalled EUR 60,91 million (953 million EEK), which will be paid after investments. As of November 2003 payments were made in a total amount of EEK more than 400 million (25,56 million EUR).

The popularity and success of Measure 1 was chiefly contributed to by two factors: the sufficient number of appropriately trained agricultural advisers and the pilot project implemented before SAPARD, which mainly focused on a similar measure.

As concerns Measure 3, the success of rural tourism-related enterprise is noteworthy. Its guarantee is the efficient umbrella organisation that helped the applicants by providing information and assisting in the preparation of applications.

As investments supported under Measure 4 are not aimed at profitability, but rather enable a long-term improvement of rural production and living conditions, such investments are probably not a priority for undertakings.

5.11.5 EU PHARE projects for updating ARIB registers

As upon Estonia's accession to the EU, primarily ARIB will administer the EU CAP accompanying measures, one of the important tasks is to prepare ARIB for performing these functions.

By the end of 2002, the data coverage reached more than one-half of the country: 73,304 field contours with a total area of 561,373 ha had been digitalised. Digitalisation of the Saare, Hiiu, Tartu, Valga, Lääne, Lääne-Viru, Ida-Viru, and Viljandi counties was completed. The rest of the Estonian territory was covered by orthophotos during the project, field contours were digitalised and an application of the digital data was developed — farmers have access to their field maps on the Internet.

Biggest Phare project for ARIB (EE02/IB/AG-03) was signed recently and amounts ca 2 MEUR. The EE02/IB/AG-03 project was aimed at the creation of an integrated data control system. The Finnish IACS (Integrated Administration and Control System) software was adapted to the Estonian needs and software was developed for the register of animals.

5.11.6 EU PHARE projects and bilateral cooperation projects developing agri-environment support scheme

1. PHARE CBC project 'Development of an Agri-Environmental Scheme in Estonia' (OSS No 9507.03.01.001)

The specific objectives of the project were to make detailed proposals for:

1) a national AEP for Estonia that is compatible with the requirements of the EU legislation, notably the forthcoming Rural Development Regulation, including proposals for general programme structure, detailed agri-environment measures, associated training and information programme and administrative arrangements, including control, monitoring and evaluation; financial and legal considerations;

2) a pilot AEP Project that is implemented in two contrasting regions of Estonia for the purposes of:
   a) testing the practical implementation of an AEP in the Estonian context;
   b) evaluating the effectiveness of the proposed national AEP measures;
   c) finding out the detailed management prescriptions of the AEP measures to deliver more fully the objectives of the scheme;
   d) gaining an indication of the average AEP payments per farm business;
   e) demonstrating and promoting the concept of an AEP in Estonia.

All the activities were performed in partnership between local and foreign experts. The joint everyday work included extensive consultations with the Ministry of Agriculture. Preparation of proposals for the national AEP also included more broad-based consultations outside the Ministry of Agriculture, and assistance for enhancing general awareness of the Estonian agri-environmental policy and practice. More than 150 interest groups were consulted during the project.

2. PHARE project titled 'Support to the EU accession process in Estonia' (ES No 9620.01.01).

With the help of the PHARE project that took place in September 2000, 'Support to the EU Accession process in Estonia', an action plan was developed for the implementation of national agri-environment support, and various kinds of specific expert assistance were extended.

3. PHARE project 'Development of administrative capacity for monitoring and evaluation of the agri-environment measures' (Twinning light EE02-IB-AG-01).

To contribute the process of Estonia's EU accession, the EU Phare 2002 programme financed the Estonian–Dutch partnership project 'Development of administrative capacity for monitoring and evaluation of the agri-environmental measures' (Twinning light EE02-IB-AG-01). As a result of the project, the monitoring and evaluation system of the ERDP agri-environment support measure was developed by May 2004. A theoretical basis was created for data collection, a monitoring and evaluation manual was prepared, and personnel was prepared and trained for performing the monitoring and evaluation activities. 18 Estonian and 17 foreign (Welsh, English, Finnish, Austrian, Dutch) experts made their contribution to attaining the goals of the project. The Agricultural Research Centre was the leader of the project.

4. Dutch-funded MATRA Programme (International Nature Management Programme) 'Agri-environmental programmes in Central and Eastern Europe'

The project implemented during 1997– 2000 was designed to deliver the following outputs:

1) establishment of working groups to assist policy formation, bringing in governmental, NGO and independent expertise;
2) one or two pilot agri-environment scheme(s) per country;
3) a detailed and considered outline of national recommendations for the implementation of an agri-environment programme;
4) and a final report, of relevance to the broader question of agri-environmental policies in CEE countries.

Research and preparation arising from the project have been used for the development of related government proposals. Another valuable result of the project has been the creation of a network of agri-environment experts in Central and Eastern Europe.

5. Dutch-funded MATRA Programme (International Nature Management Programme) 'Capacity building for EU integration in the field of agri-environment, focusing in particular on organic farming' (MAT01/ES/9/2)
This project implemented during 2002–2003 aimed to build the capacity of the Estonian Ministry of Agriculture, its associated agencies and supporting structures to fully and effectively administer a national agri-environmental programme (AEP), and support the building up of the organic farming certification system.

The project included technical assistance and training for general programme administrators from the paying agency, inspection and control staff, organic certification officers, farm advisers, trainers and the specialists responsible for monitoring and evaluation of all measures.

6. Interreg IIIA project 'Agri-Environment and Organic Farming' (D nr: 02/10/41, fimos 104964)
The successful project 'Knowledge centre for economical co-operation within the sector of agriculture and rural development' was an Interreg IIA project about organic farming and education of advisors, crayfish farming and rural tourism as additional income possibilities for farmers. As there was need to continue and to go deeper into the themes, also taking into consideration the new EU rural regulations concerning organic farming and environmental issues, the application was made also for Interreg IIIA funding for a project on following activities:

1) know-how transfer in relation to EU accession (meetings between the Finnish and Baltic ministries and other relevant institutions in preparing the agri-environment measure of ERDP, virtual knowledge centre, common seminars between institutions and private organisations dealing with agri-environmental issues);
2) seminars, field days, study-tours and workshops for trainers, advisers and farmers concerning AEP measure are organised;
3) demonstration projects;
4) improval of organic products marketing;
5) information materials.

5.11.7 Agri-environment supports

The development of the agri-environment support scheme started in Estonia at the end of 1997 with the project 'Agri-Environmental Programmes in Central and Eastern Europe' (MATRA) financed by the Netherlands. The preparations continued under the PHARE projects 'Development of an Agri-Environmental Scheme in Estonia. O.S.S. No 9507.03.01.001', and 'Action Plan for Implementation of an Agri-environmental Programme for Estonia. N°ES 9620.01.01.

More than 150 people from different interest groups were consulted during these projects: agricultural producers, representatives of nature conservation and environmental protection organisations, the civil servants concerned, and many others. The structure of the Estonian agri-environment support scheme, the measures and the requirements for eligibility, and the administration and training system were developed during the projects, and a plan was drafted for the implementation of the scheme.

Estonia has applied the agri-environment support within three stages by:

1) Implementing certain measures nationally starting from 2000;
2) implementing the full set of measures in pilot areas which are selected in clearly defined and contrasting regions from 2001;

3) full implementation of programme at the stage of accession.

Estonia started to implement agri-environmental support in 2000, when organic farming support and support for the Estonian cattle breed was paid nationwide.

In 2001, nationwide support was granted for the production of endangered varieties besides organic farming and the Estonian cattle breed. Also, EUR 1,2 million of land management support was paid in Estonia for the management of semi-natural habitats in protected areas and other areas where valuable semi-natural habitats can be found; the Ministry of the Environment administered the payments.

Estonia started to apply other agri-environmental measures in three pilot areas in 2001. These pilot areas were the Palamuse rural municipality in the Jõgeva country and the Lümanda and Kihelkonna rural municipalities in Saaremaa.

In pilot areas, in addition to the activities that were eligible to nationwide, support was granted for environmentally friendly management: breeding of the Estonian horse; restoration and maintenance of stonewalls; management of overgrown agricultural land, and in the Palamuse rural municipality, also the establishment of ponds and mixed species hedgerows.

Payments were made to 64 agricultural producers in the pilot areas in 2001; 32 of them were organic farmers or in conversion to organic farming. The payments made in the pilot areas totalled EUR 160 000. Fifty-three per cent of the entire amount was paid for the basic measure, the Environmentally Friendly Management Scheme. The most common additional activities for which support was granted were conversion to organic farming, restoration of stonewalls and establishment of ponds. The average payment was EUR 2580 per enterprise.

The state budget of 2002 allocated EUR 3,1 million for agri-environmental support plus EUR 1,2 million for nature conservation support and nature conservation works in protected areas and other areas where valuable semi-natural habitats can be found, administered by the Ministry of the Environment.

In 2002, nationwide support was granted for organic farming, and breeding of the Estonian horse and the Estonian cattle breed. The same activities as in the previous year were supported in pilot areas, whereas new farmers were involved in the scheme.

A new pilot project was launched in the year 2002 in 55 rural municipalities, mainly located on islands and in peripheral areas, at least one municipality per county. Agri-environmental support was paid in these areas to 1293 farmers in a total of EUR 1,8 million. Support was being granted in 2003 the same way as in 2002.

The main problem in applying for agri-environmental support was the insufficiency of the advisory system — there were too few attested advisers. The conclusion of state-owned land management contracts between the rural municipalities and producers was also problematic. Introduction of the required crop rotation and the preparation of documents were the most difficult steps for the producers.

The positive aspects of implementation of the agri-environmental programme include the enhanced environmental awareness of producers, a better overview and better planning of production, and the gradual adoption of the Environmentally Friendly Management Scheme in Estonia. Moreover, the pilot schemes were designed to test the practical implementation of proposals for a national agri-environment programme under RDP, including a realistic assessment of the time and resources required, assess the quality of farmers' and advisors' training, and identify potential problems with control and monitoring procedures. The pilot scheme helped to evaluate the effectiveness of proposed measures, including levels of uptake, acceptability of payment levels, and the resulting environmental and socio-economic impacts. The pilot actions were also considered useful for demonstrating and promoting the concept of an agri-environment programme amongst Estonian farmers and the general public.

5.11.8 Lessons learned

PricewaterhouseCoopers was assigned by the Ministry of Agriculture to conduct a mid-term evaluation for the SAPARD Programme 2000-2006. The following conclusions are from Mid-term evaluation of the Agriculture and Rural Development Plan 2000-2006 for Estonia, 22 September 2003, Draft Report.

Relevance – to what extent are the programme objectives justified in relation to needs? Can their rationale still be proved? Do they correspond to local, national and European priorities?

- Although some objectives of the measure 5 have been met by national funds, the need in certain areas as research (investment need analysis etc), training, has not been satisfied.
- The beneficiaries of current RDP and measure are not stated clearly
- The evaluator notes that RDP does not clearly justify why in the first step only these eight measures have been selected (from which four is in use).
- It should be pointed out that there have been efforts undertaken in increasing the rate of support, though there is no justification why in 2003 the support rate for sub-measure 1.4 (e.g. tractors) was lifted from 30% up to 50%, when the output objectives had been almost met. At the same time similar actions were not made for sub-measure 1.5 (diversification), which was lagging behind from the target set forth.

Efficiency – have the objectives been achieved at the lowest possible cost consistent with quality standards and the horizontal measures? Could better effects be obtained at the same cost?

- The cost of a job created under Measure 3 has been EUR 7412, compared to the expected EUR 15979. In that light the creation of new jobs has been very cost-efficient.

Effectiveness – to what extent have the expected objectives been achieved? Have the instruments used produced the expected effects? Could more effects be obtained using different instruments?

- The overall compliance with the EU rules shows an increasing trend in the milk production sector (e.g. the baseline for high quality milk was 80% and the result achieved at the moment is 97.5% in the assisted holdings)
- Investments to manure storage and removal facilities (7 projects) and on-farm water management (1 project) activity have been at a relatively low level.

- Taking into account the high level of investments to the crop protection and the high level of conformity with EU rules in the field, it could be stated that SAPARD contribution has been significant in bringing crop protection and seed propagation into conformity with EU rules.
- Assisted holdings had better than average results (i.e. yield) in the previous year.
- The revenue side of measure 1 agricultural holdings has not improved significantly due to the influential exogenous factors (procurement prices; weather conditions) during the last two years.
- The rise of knowledge and experience in accounting and financial management of farmers could be considered as one of the indirect benefits of SAPARD programme.
- The measures 1.5, 3 and 4 have not achieved the output objectives targeted.
- SAPARD has contributed significantly to bringing the food processing sectors, especially the meat sector, into conformity with EU rules.
- As the exogenous factors have been far more influential (e.g. the impact of other SAPARD measures, other government aid programmes), SAPARD measure 3 has not contributed significantly to the creation of new jobs in rural areas.
- SAPARD support has sharply increased the income of beneficiary enterprises (2000 I quarter EUR 152 to EUR 279 in II quarter 2003), but not those of the employees of assisted holdings (average salary in 2002 EUR 216 compared to EUR 249 of the sector average).

Utility and Sustainability – are the expected or unexpected effects globally satisfactory from the point of view of direct or indirect beneficiaries?

- SPD passed ex-ante evaluation and subsequent approval in EC. As the "old SAPARD measures 1-6" have been transferred from RDP to SPD and the whole range of new measures under the Guarantee section are under preparation, which should be linked and verified with the updated strategy, i.e. the new RDP.

5.12 SUMMARISING ANALYSIS OF CURRENT SITUATION

Agriculture and its sub-sectors have been an important activity and source of income for the Estonian rural population for a long time. The changes in the economic environment in the 1990s resulted in a reduced employment rate in the agricultural sector and a high structural unemployment rate (qualified work force is not available for vacant jobs), and rendered rural areas unattractive for people in terms of work and self-actualisation.

The large migration of younger and more educated people from rural to urban areas in the 1990s has impaired the development potential of rural areas and reduced the availability of skilled work force and the quality of work force. Compared to urban areas, the Estonian rural areas are characterised by sparse population and high average age, low purchasing power, closed local communities, and asocialisation in some places.

The changed market situation and reforms have reduced the relative share of agriculture in the national economy, employment and land use, which has resulted in great changes in the landscape; abandoned lands are overgrowing.

However, the level of rural development plays an important role in improving the life quality of the entire population. The greater opportunities of people (welfare) and their mobility boost the need for the natural and traditional cultural environment, which is why a part of the population returns from cities to the countryside. Rural areas are of strategic importance to the state as they supply the (urban) population with food and provide shelter in emergency situations.

The following is an ERDP SWOT list.

Strengths

1.1 Rich flora and fauna, large share of natural landscapes and semi-natural grasslands.
1.2 Shedding of environmentally friendly production, especially in connection with effective protected areas system and organic agriculture.
1.3 Stable macroeconomic framework and generally quite good economic growth, increase of exports.
1.4 Large share of forests and progressive forestry sector.
1.5 Long traditions and good natural conditions for animal husbandry.
1.6 Abundance of agricultural land suitable for extensive agriculture and widely spread extensive agriculture.
1.7 Well-developed third sector and local activities of societies.

Weaknesses

2.1 Slight interest of agricultural producer to sustain environment, insufficient attention to soil- and water protection; inefficiency of agri-environmental support to the intensive production areas.
2.2 Partial non-compliance of agricultural production with new environmental protection standards; concentration of agriculture in environmentally sensitive areas (nitrate sensitive areas, risk areas near small lakes and watercourses).
2.3 Inability of large part of agricultural producers to make necessary investments to meet the standards, first of all to improve manure handling, but also in connection with silage storages and waste management.
2.4 Inadequate sustainability of agriculture because of comparably low image of agriculture as an economic activity, unpopularity of agricultural profession, insufficient alternative employment possibilities for rural people and declining of social and living environment of villages, especially in less-favoured areas and areas with environmental restrictions.
2.5 Bad adaptability of small farms and missing plans for promotion of the business, large share of abandoned agricultural lands.
2.6 Low production efficiency and income rate in rural area, especially in less-favoured areas.
2.7 Poor farm management and insufficient marketing; low environmental awareness of agricultural producers; inactive use of agricultural advisory services.

Opportunities

3.1 Maintaining the share of semi-natural grasslands and starting the network of NATURA 2000 sites.
3.2 Widely shedding of environmentally friendly agriculture, including organic production.
3.3 Increasing the share of agricultural sector in GDP and in export.
3.4 Development of poly-functional private forestry.
3.5 Using of abandoned agricultural lands in extensive agriculture.
3.6 Favouring animal husbandry, connected with grassland management.

3.7 Increasing the share of knowledge-based economic activities in agriculture.

Threats

4.1 Insufficient implementation of agri-environmental support in the intensive production areas, extinction of endangered animal breeds and decrease of interest in sustainable use of environment as result of the increasing share of tenants.

4.2 Insufficient compliance with environmental standards and concentration of agriculture (incl. environmentally sensitive areas).

4.3 Suspension of environmental investments by agricultural producers and as a result of non-compliance with environmental restrictions the suspension of activity.

4.4 Continued leaving of qualified entrepreneurs, employees and young people from rural area and disappearance of employment possibilities, loosening ties of rural people with their home-cites; decreasing the share of income from agricultural production, outflow of services.

4.5 Massive scale suspension of small farm activities.

4.6 Increasing of the share of unused land and decreasing the diversity of landscapes, deterioration of infrastructure in rural peripheral areas.

4.7 Decrease of the connections between the owners of the agricultural holdings and rural area and rural life, as a consequence their small interest in local economic development and environmental protection.

6 STRATEGY

The strategy was drafted mainly relying on the former strategic documents:

- Estonian Agricultural Development Strategy (1999);
- Estonian Rural Development Plan 2000–2006 (SAPARD programme).

Additionally, the strategy takes account of the general goal of 3. priority of the SPD "Agriculture, Fisheries and Rural Development": a balanced and sustainable economic and social development of rural areas. The equality principle has been taken also into account in the preparation of the Agricultural and Rural Development Plan.

6.1 STRATEGIC OBJECTIVES

The strategy's prime objective is to regenerate peoples' ability to cope with rural life and to ensure sustainable and regionally balanced development.

ERDP strategic goals

Objectives

1. To increase agricultural producers' interest in sustainable use of environment, including introduction of more environmentally friendly technologies and techniques, maintaining biological diversity and natural landscapes.
2. To bring agricultural production into accordance with the environmental standards of the Community.
3. To alleviate farmers' financial burden of reorganisation connected with joining EU, increase their economic viability and ability to invest.
4. To Slow down decreasing agricultural employment rate.
5. To advance competitiveness of micro enterprises and balance the effect of area-based subsidies favouring large-scale producers.

6. To maintain land use in less favoured areas and areas with environmental restrictions at least on the level prior to accession and decrease the area of abandoned agricultural land.
7. To raise farmers awareness in the field of economy and environmental protection.

6.2 CHOSEN STRATEGY

The positive developments in Estonian agriculture are related to the EU accession process. Estonia's accession negotiations with the EU began on 31 March 1998. Upon candidacy for membership, Estonia committed itself, without reservations, to harmonisation of its national policies and policy instruments with those applicable in the EU, and therefore the Government of the Republic drafted its action plan for 1998–2003 with the goal of being ready for accession by 1 January 2003.

According to the action plan, Estonia established the Agricultural Registers and Information Centre on the basis of the former Animal Recording Centre with 10 additional workplaces, and started to train the personnel in 1998 as the first stage of the Agricultural and Rural Development Centre. From the SAPARD agency developed ARIB, which will administrate ERDP measures and also the 3. Priority of the SPD "Agriculture, Fisheries and Rural Development" measures.

The accession negotiations were finished on 13–14 December 2002 at the EU summit in Copenhagen, where Estonia along with nine other countries was invited to accede to the EU.

The strategy selected for achieving the goals is based on a purposeful use of the planned EU and national funds. The level of the EU financing for all measures during the period 2004-2006 is EUR 150,5 million.

The agricultural strategy adopted by the Government of the Republic in 2000 assessed the employment level in the Estonian agriculture sector as optimal. The assessment was based on comparison data with the EU Member States relatively similar to Estonia (such as the employment per 100 ha of arable land in the Danish and Swedish agricultural sectors).

According to the agricultural strategy of 2000, the relative share of agriculture in total employment was to remain at a level of 6–7% over the following ten years. In reality, employment in agriculture fell below 5% by 2003.

Considering the short application period of the ERDP, the early retirement and producers' organisations' support measures are not applied.

6.2.1 Support for less-favoured areas

General objective of the measure is to secure continuous land use in less-favoured areas.
According to estimation, there are about 465,000 ha of agricultural land in Estonia that fall under less-favoured areas within the meaning of the ERDP. It is estimated that in the year 2004 400,000 ha of agricultural land will be applied for.

6.2.2 Agri-environmental support

The overall aim of the agri-environmental support measure is to facilitate the implementation and continuous use of environmentally friendly agricultural methods.

Application of the measure will preserve and promote biological and landscape diversity and increase the income of farmers who operate in an environmentally sustainable manner.

Objectives:

1) to promote the introduction and continued use of environmentally friendly agricultural methods;
2) to preserve and promote biological and landscape diversity;
3) to contribute to providing an appropriate income for those agricultural producers who manage their land in a manner that is beneficial for the environment;
4) to enhance the environmental awareness of farmers.

Target value: At least one third of the Estonian farmers will join the agri-environment measure.

6.2.3 Support for afforestation of agricultural land

The overall aim of the measure is to reduce the share of land abandoned and land potentially excluded from agricultural production – land that is not suited for agriculture purposes.

Objectives:

1) to reduce the share of abandoned land
2) to diversify landscape

Target value: At the end of the programming period 2004-2006 afforest 10 000 ha of agricultural land

6.2.4 Support for semi-subsistence farms undergoing restructuring

The overall aim of measure is to help ease rural transition problems as the agricultural sector and rural economy of the new Member States are exposed to the competitive pressure of the single market and to facilitate and encourage the restructuring of farms not yet economically viable.

Objectives:

2) to promote business planning;
3) to improve economic viability of small farmers.

Target value: Semi-subsistence farmers increase revenue more than 12% by the end of support period.

6.2.5 Support for meeting standards

The overall aim is to take livestock into compliance with the environmental requirements arising from the Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy, and the Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources.

Objectives:

1) to promote awareness of environmental requirements arising from the Water Policy Framework Directive;
2) to decrease of water pollution from manure handling;

Target value: by the end of 2006 at least 50 % of applicants manure storages meet requirements.

6.2.6 Technical assistance

The aim of measure is to support the implementation of ERDP measures.

6.3 RELATIONS TO SPD MEASURES

The general goal of the ERDP — support for the regionally balanced functioning of rural areas — is contributed by the SPD agricultural measures under 3. Priority of the SPD "Agriculture, Fisheries and Rural Development" measures:

- **Measure 3.1:** Investment into Agricultural Holdings (EAGGF)
- **Measure 3.2:** Investment Support for Improving Processing and Marketing of Agricultural Products (EAGGF)
- **Measure 3.3:** Diversification of Economic Activities in Rural Areas (EAGGF)
- **Measure 3.4:** Integrated Land Improvement (EAGGF)
- **Measure 3.5:** Renovation and Development of Villages (EAGGF)
- **Measure 3.6:** Local Initiative based Development Projects – LEADER (EAGGF)
- **Measure 3.7**: Forestry (EAGGF)
- **Measure 3.8:** Support for Setting-up and Provision of Farm Advisory and Extension Services (EAGGF)

6.3.1 Investment into Agricultural Holdings (EAGGF)

The overall aim of the measure is to increase the competitiveness of agricultural production by promoting technological progress, by developing agriculture matching different requirements, preserving employment in agriculture and traditional cultural landscapes.

Support is granted for investments in milk production, construction and reconstruction of animal barns and structures, construction and reconstruction of a manure storage facilities, manure equipment, manure spreaders, purchasing of animals, crop protection and seed propagation machinery, crop cultivation, diversification of agricultural production, construction, reconstruction and rehabilitation of land improvement systems, construction, reconstruction and rehabilitation of infrastructure and on farm processing of agricultural products. The measure is aimed at agricultural producers. A 10% higher support rate can be established for farmers located in less-favoured areas.

6.3.2 Investment Support for Improving Processing and Marketing of Agricultural Products (EAGGF)

The general aim of the measure is to improve the competitiveness of processing agricultural produce. Support is granted for the production and processing of milk and meat products, processing of cereal products, fruits, vegetables, and berries. The measure is aimed at processors of agricultural produce.

6.3.3 Diversification of Economic Activities in Rural Areas (EAGGF)

The aim of the measure is to increase employment and income level in rural areas through developing rural enterprises including support to activities into non-agricultural micro enterprises and developing of small enterprises that are using local resources/materials or offer services in rural areas. Support activities are tourism and handicrafts, provision of services in rural areas, and promotion of activities bearing close relation to agriculture.

The measure is intended for farmers and entrepreneurs who diversify or extend non-agricultural enterprising in rural areas.

6.3.4 Integrated Land Improvement (EAGGF)

The overall aim of the measure is to create conditions for integrated land improvement. Support is granted for investments in land improvement and access roads. The measure is intended for undertakings and non-profit associations.

The activities supported under the measure complement the activities supported under the ERDP agri-environmental measure and support for afforestation of agricultural land measure.

6.3.5 Renovation and Development of Villages (EAGGF)

The general aim of the measure is improved attractiveness of living environments by increasing local activity and developing a non-profit sector.

Support is granted for investments in the construction, reconstruction and furnishing of buildings intended for public use and related to joint activities of the village population, development of village culture and maintenance of natural and historical values; Construction, reconstruction and furnishing of public information centres with Internet connections; promotion and implementation of village development plans. The measure is intended for non-profit organisations and undertakings. The final beneficiary of the measure is rural population.

Besides the activities supported under this measure, support is also available for the restoration and renovation of various heritage objects under the ERDP agri-environmental measure.

6.3.6 Local Initiative based Development Projects – LEADER (EAGGF)

The general aim of the measure is to support local initiative based activities that enable creation of new jobs, additional incomes and general economic activities in rural areas.

Support is granted for establishing and developing local initiative groups, developing of local territorial integrated development strategies (technical support for studies, territory diagnosis, drawing of the integrated development strategies, preparation of the applications for support, etc.), internal and international co-operation between different operators in rural areas (transfer of knowledge), implementation of local territorial integrated development strategies; internal and international co-operation between different rural areas and participation in trans-European rural development networks.

The measure is intended for local activity groups and the institutions in charge. The final beneficiary of the measure is rural population.

6.3.7 Forestry (EAGGF)

The overall aim of the measure is retaining and development of economic, ecological and social values and functions of forests and to safeguard the jobs in rural areas.. Support is granted to 5 activities: restocking of woodlands damaged by natural disasters and fire, including the preparation of soil with the purpose of contributing to natural regeneration and purchase of plants; restocking of woodlands and tending of young stands to encourage ecological diversity of species and to add value to the remaining trees; purchase of forest management and timber processing equipment and forest plant protection products; establishing associations of forest owners; development projects that create new opportunities for using wood and forest products and investments into improving and rationalising the processing and marketing. The measure is foreseen for private forest owners and non-profit and profit-making associations of private forest owners.

6.3.8 Support for Setting-up and Provision of Farm Advisory and Extension Services (EAGGF)

The overall aim of the measure is the provision of farm advisory and extension services. Support is granted for the provision of individual farm advisory services (which is divided into: 1) professional advisory services; 2) advisory services related to the compliance with statutory management requirements and good agricultural and environmental condition arising from the CAP-reform), national and local extension services and for the creation of agricultural advisory centres.

The beneficiaries are farmers. The applicants are approved farm advisory centres (individual advisory services and setting-up aid for advisory centres), legal persons and sole proprietors in the field of agricultural advisory, extension and training services (extension events).

The measure contributes to the knowledge and skills of all applicants for the SPD and ERDP measures and thus facilitates a better use of the support funds and achievement of the aims of the measures.

6.4 AREAS COVERED BY SPECIAL MEASURES

6.4.1 Rationale

Environment

A large part of the areas unsuitable for intensive agricultural production, particularly due to the low soil fertility (the islands and coastal areas, hilly landscapes) abandoned by agricultural producers, they are covered with weeds and are overgrowing. This causes weed control problems for crop producers who resume using the land and has a negative impact on the appearance of the landscape. The rapid natural afforestation of hilly landscapes reduces their recreational value: skiing opportunities are lessened and the observability of the relief in beauty spots is impaired.

Continued use of agricultural land in a more extensive form enables the protection of open landscape and its recreational value. Valuable semi-natural habitats require regular management also to preserve their biodiversity.

Coast protection

The preservation of open landscape is necessary on the islands and in coastal areas for bird protection purposes. Grass is too high in unmanaged areas and makes it impossible for birds to nest. It is also important to preserve the feeding spots of birds: grasslands and special feed fields. Besides birds, several endangered and rare plant species are associated with coastal grasslands, and the geo-botanical value of coastal grasslands thus also deserves protection. Beef cattle and sheep farming have proved to be the most suitable methods of maintaining such areas.

Land use

Land use has decreased by one-third over the last decade. The process is slower in the fertile lands of central Estonia, but relatively rapid in coastal and hilly areas. The growth of weeds on unused lands, and overgrowing and natural afforestation in the long term, significantly increase the weed growth on grain fields. Land users cannot arrange for weed control on the neighbouring plots due to land ownership relations. Unused areas are covered with the dried weeds (grass plants) that have accumulated over years and pose a fire. There is also the risk that fire may spread to the neighbouring hardwood forests. Fires caused by burning of dead grass have become more frequent in Estonia.

Land improvement

Nearly 60% of the Estonian cultivated areas are drainaged. The share of excessively moist lands is particularly high in coastal areas, near the mouths of major rivers and also in some parts of the islands. Land improvement has made it possible to use these lands in agriculture, but maintenance of the land improvement systems requires additional expenditure. The cost price of production is higher when compared to moderately moist areas.

Distances

Islands form about 10% of Estonia’s territory. None of them have permanent connection to mainland Estonia. A dam connects Saaremaa and Muhu islands to each other. The Muhu and Hiiumaa islands have regular ferry connection, but connection to small islands (Vormsi, Ruhnu, Kihnu, Prangli, Piirissaar) is poorer. The connection is especially difficult in winter, as ice roads can be opened only in very cold winters.

Saaremaa has an agricultural processing industry (slaughterhouse, meat plant, dairy plant), which reduces the dependence of agricultural producers on unreliable transport. Transport costs are higher compared to mainland Estonia despite the state-subsidised ferry connection. For example, economic analysis has shown that the income of a producer in Hiiumaa is about EEK 2000/ha lower than that of a mainland producer because of lower soil fertility and particularly the high transport costs.

Population

Agricultural land use has ensured employment also in less fertile areas. The decreased land use increases unemployment. The usual reasons for abandoning agricultural land are economic: without additional subsidies, the farmers in less fertile areas cannot compete with those located in more fertile areas.

Tourism potential

The tourism potential is high in areas bordering on water (the islands, coastal areas) and in the south Estonian hilly landscapes. In coastal areas, the tourism season falls into the summer period. In the hilly landscapes, it is more evenly spread over the year. The main tourism season is the skiing season; in summer, tourists are attracted to the scenic landscapes and lakes. The decreasing land use is dangerous in both areas as it damages the appearance of the landscape.

6.4.2 Proposal for defining less-favoured areas

Bases for designation of Less Favoured Areas and Areas with Environmental Restrictions are regulated with Council Regulation 1257/99 and qualified provisions are specified in Council Regulation 1783/2003.

Zoning for the planning period of 2004-1006 will be carried out on the basis of the borders of administrative units entered to the state land cadastre map by rural municipalities as of 31 December 2003.

There are 15 counties and 197 municipalities in the Estonian rural areas. The best available statistical data are only available on municipality level.

The land types eligible for support and land use will be defined in the act on implementation of the European Union Common Agriculture Policy (CAP).

Areas with environmental restrictions (Article 16)

Estonia has to define the Natura 2000 network areas for the time of the EU accession. Preliminary work to join the network is going on according to the national Natura 2000 programme approved by the Government of Estonia. The restrictions provided in the Protected Natural Objects Act cover approximately 11% of the total area of Estonia (490,000 ha), including the areas that will be incorporated into the Estonian Natura 2000 programme (the biggest part of this area is located in the protected areas). According to Regulation 1783/ 2003, only the areas of which the restrictions are related to the implementation of Directives 74/409/EEC and 92/43/EEC are acceptable. Therefore, compensation of water related restrictions under this article are excluded.

Estonia intends to implement Article 16 from the year 2005, that allows to complete identification of areas in the year 2004 and more specifically evaluate the amount of the support for the next programming period, Majority of proposed Natura 2000 areas are either on forest or semi natural habitat areas. At the same time it is important to guarantee that no overcompensation of certain land maintenance activities occur from parallel implementation of less-favoured areas (including Article 16 areas) and agri-environmental measures.

Immediate implementation of art 16 is problematic also due to some technical reasons:

1) There is a draft of planned Natura 2000 areas, landowners notification on planned restrictions are ongoing;
2) Restrictions do not follow any Estonian administrative boundaries and are not registrated on the digital map, there are a lacking of adequate estimations how much agricultural land will be in the restriction area.

3) Cadastre (in National Land Board) hasn't created restrictions layer, required by the Acts, that is the only feasible bases to enact geographically specified restrictions
4) Field Register (Agriculture Information and Registry Board - ARIB) as part of IACS system is in the maturing stage; if the register of Natura 200 areas and fields is devised, it is possible to estimate the value of restrictions and implement adequate compensatory mechanisms;

Article 18 defines the support on mountain areas, while the highest top of Estonia is only 318 meters over the sea level, and implementation of article 18 is not justified (the regulation lays down height of 1000 m as the limit of mountain area). Additional clause of the same article equalises mountain areas to the northern area that is to the north of the 62nd parallel (latitude).

Article 19 defines basic principles of less-favoured areas definition. Three pillars describe natural, economical and population factors.

Less-favoured areas which are in danger of abandonment of land-use and where the conservation of the countryside is necessary, shall comprise farming areas which are homogeneous from the point of view of natural production conditions and exhibit all of the following characteristics:

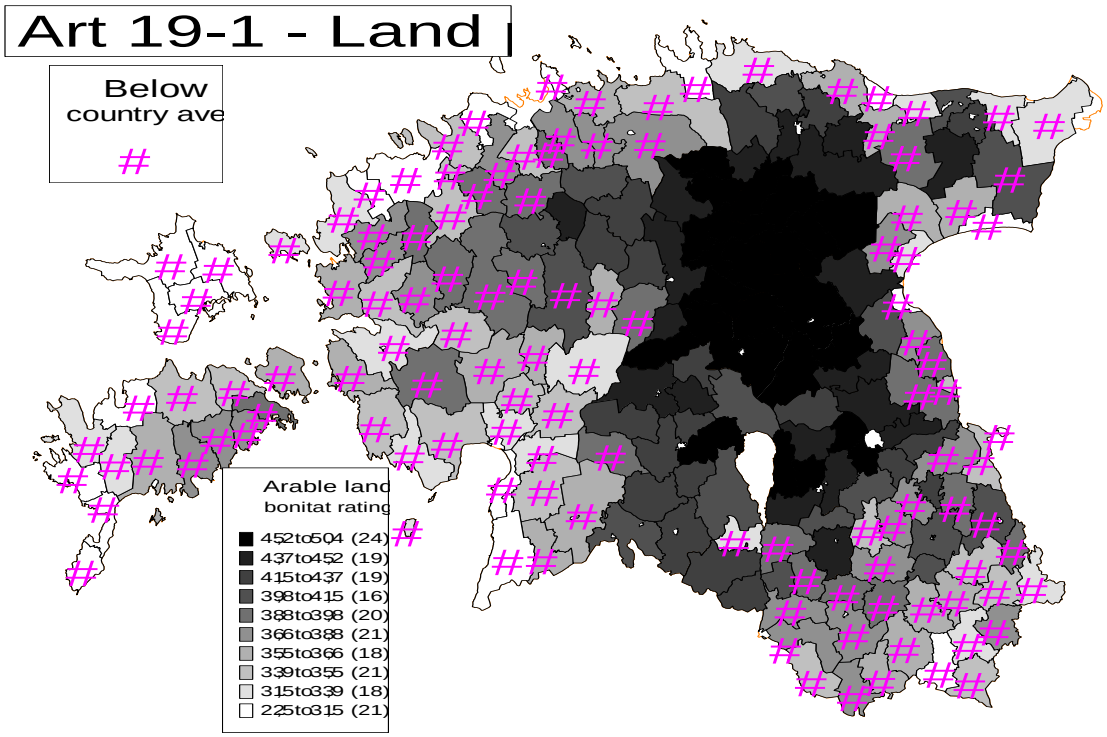
- the presence of land of poor productivity, difficult cultivation and with a limited potential which cannot be increased except at excessive cost, and which is mainly suitable for extensive livestock farming
- production which results from low productivity of the natural environment which is appreciably lower than the average, with regard to the main indices of economic performance in agriculture
- a low or dwindling population predominantly dependent on agricultural activity, the accelerated decline of which would jeopardise the viability of the area concerned and its continued habitation

Land productivity is measured through soil fertility, which has been assessed in Estonia by the soil survey service. The studies have been provided since 1960's, from 1986 the digital soil database has been compiled on all arable lands of Estonia (1,12 million ha) in parallel with manual preparation of soil maps (scale 1:10,000). The database has been completed in 1998 and used for mass appraisal of agricultural lands for land valuation (used for taxation purposes) in 1991-1993 during establishment of land tax in Estonia. Database has been updated until 1996, by now it is achieved at the National Land Board of Estonia. Database contains over 300,000 records, 19 fields per record, stored in FoxPro format, transformed to MS Excel – covering 1,12 million hectares of arable lands. The structure of database allows calculation of different averages on administrative levels of counties and municipalities, but also use of various filters. Despite the digital soil map, covering whole territory, has been completed, it is difficult to use that for current purpose as there are missing links between land use types and soils, as well as the possible drainage existence and impact is not included in the dataset.

Details of database and its possible usage have been analysed during EU Phare DERTEALUP project (1998-2000). According to expert's opinion, the database gives good basis for assessment of productivity potential but also of actual conditions of

arable lands of municipalities. If municipality average is below weighed country average (39,94 bonitate points), the factor is considered active. (121 [18]municipalities).

Map 13. Art 19, land potential



Concerning **economic results,** different criteria's have been studies. Main problem is that from direct data, neither FADN (Farm Accountancy Data Network) nor state statistics is not suitable for less favoured areas and areas with environmental restrictions, these are not dealing with municipality level. Recommendation to use county average is not fruitful as the regions are very variable from conditions and production profile and selections thus not comparable.

The FADN contains detail economic and physical information of 500 test farms. These farms are distributed all over the country; however, the distribution of farms and specialization is not proportional between counties to allow balanced comparison of different counties.

The statistics are recording only natural figures (counting livestock, hectares or yields) and even that only at mid- or larger sized enterprises, missing entirely smaller private farms.

Best covering dataset, reflecting economic results, is amount of paid social tax for people, employed in agriculture (tax is paid by the employer or entrepreneur). To make figures comparable, the tax is spread by agricultural land area (1993). As agricultural land use has been significantly decreased, this index includes also the

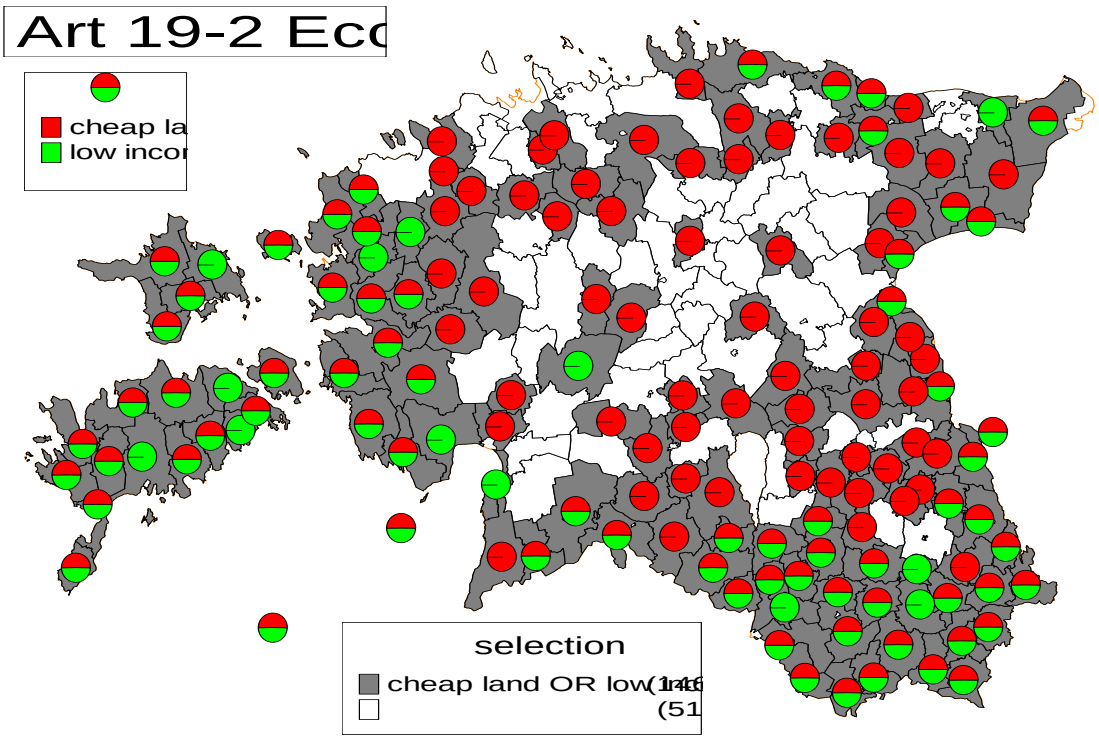
[18] Here and further in text the actual number of municipalities is used, on maps the figure differs by one – Märjamaa and Loodna have been joined, but map base deals them separated. Ain Kendra has prepared maps, using Microsoft Map software with Regio Estonian maps.

decrease of land use. Average is 10 EUR/ha, 80% level is 8 EUR/ha and thus selection covers 132 municipalities.

On areas, which are in impact zone of larger cities or strong non-agricultural centers, the salaries are affected by the possible income levels from other sectors (pendulum migration), in turn the resources, necessary for investments have been used to keep salaries higher and employees from leaving sector. The land market price reflects the possible profit from land use on best legally allowed land use; it is useful to include also agricultural land market value in the basis of economic pillar. The land taxation values are assessed during regular land valuation process, in current case, the official taxation values, based on registered market prices from 1996-2001 have been used, in form of average value of four figures (minimal and maximal zone price values for arable land, arable land value outside of price zones and natural grassland value, which usually is same all over the municipality). Average land value is 153 EUR/ha, the 80% level forms 122,5 EUR/ha, thus selection covers 84 municipalities.

Counting the before mentioned indicators as complementary (low number of social tax per hectare or low paying ability, and low land market price or productivity in fiscal terms) selection covers 145 municipalities.

Map 14. Art 19, economy

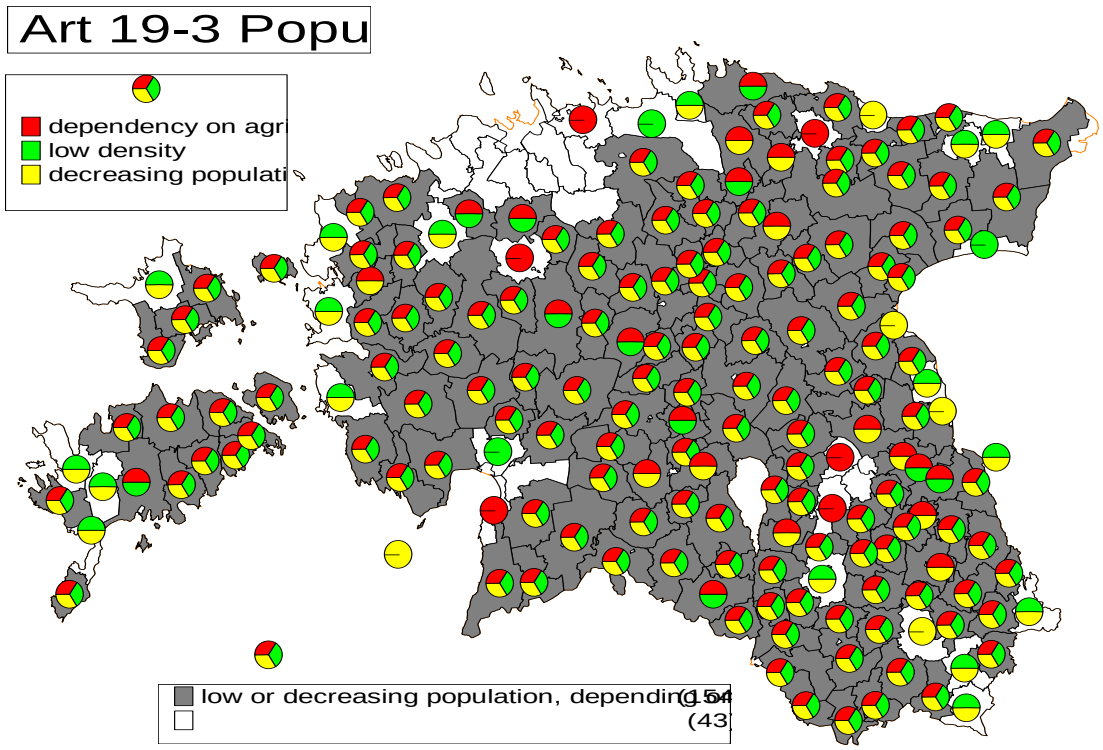


On **population,** the low level is considered below 50% of country average (as of 01.01.2003, 15,61 persons/km^2), counting 162 municipalities. Population is considered dwindling if decline is over 0,5% per year, thus for 1999-2003 the decrease over 2% is found in 164 municipalities. Low or dwindling population is encountered altogether in 179 municipalities.

Population is considered depending on agriculture if more than 10% of working population is in agriculture sector, such municipalities have been found 159.

Low or dwindling population, depending on agriculture, thus is found in 153 municipalities.

Map 15. Art 19, population

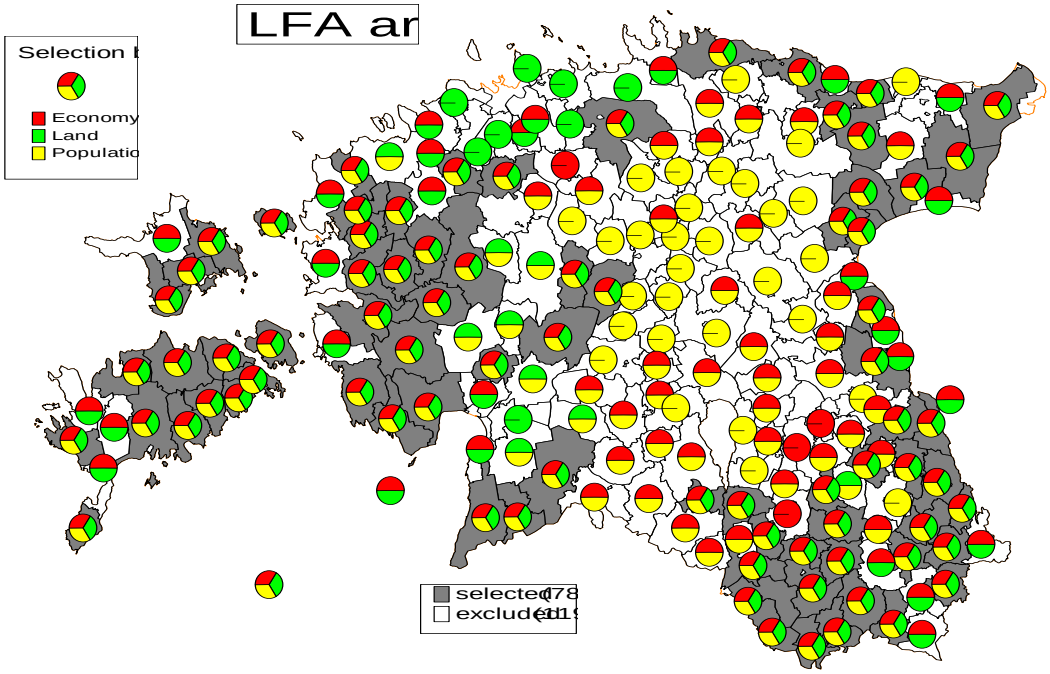


All three pillars of Article 19 are in the same time active in 77 municipalities.

The total area of selection is 1,823 million ha (40,3% of total area of Estonia).

On 1993 the area had 529 thousand ha of agricultural land, Census on 2001 recorded land use on 299 thousand ha. Cadastre has registered (by September 2003) 371 thousand ha and average of said three figures – 400 thousand ha – is forecasted amount of expected applications for support under less favoured areas and areas with environmental restrictions selected according to Article 19.

Map 16 . Art 19, total



According to article 20 it is allowed to take up to 10% from member state area. The basis of selection is containing from three categories:

1. Municipalities in islands (Saaremaa, Hiiumaa) and independently identified municipalities in sea (Vormsi, Kihnu, Ruhnu) as in Peipsi lake (Piirisaar). In this category belongs as well small islands what belong administratively to mainland municipalities, but there are agricultural lands what need to be maintain, although is there some stationary population density or not (Prangli, Naissaar, Aegna, Pakri islands etc).
2. Municipalities what border by the sea. Except areas close to Tallinn (Harku and Viimsi, as well Keila and Jõelähtme municipalities), where most of people who live there work in Tallinn and the population does not depend on agriculture. These municipalities rate of income is quite good and allows municipalities to use it in local activities where it is necessary.
3. Municipalities in the east border of Estonia are situated mostly in the coast of Lake Peipsi. This border is going to be European Union's external border and besides maintaining the landscape there will be the aspect of security what needs to keep stationary population there.

To avoid coasts overgrowing and to keep diminishing of biological diversity, traditional agricultural activities in these areas are necessary as declared in the final message from Malahide 27 May 2004 on halting the decline of biodiversity- priority objectives and targets for 2010.

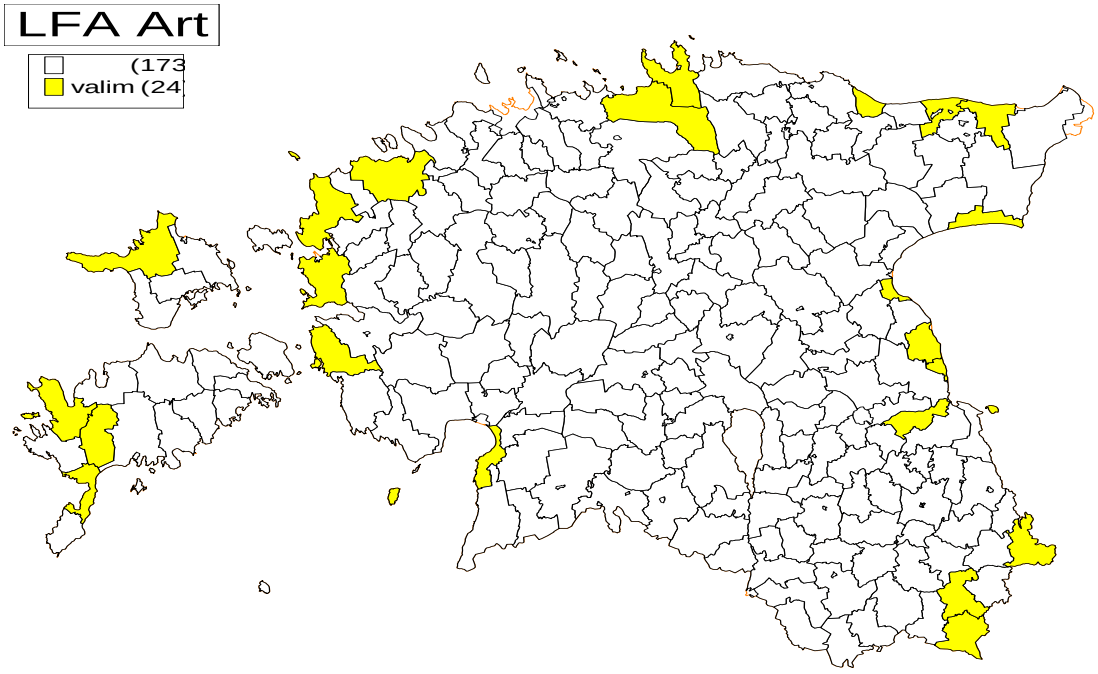
Grasslands maintaining their nature protection value due to the activities of people (grazing, mowing) make up one part of our agricultural landscape. In Estonia cessation of the traditional use of grasslands is the main reason of their disappearance.

There are many protected bird species in natural grasslands that also serve as rest and nutrition areas for migrant birds.

Due to the invasion of open seacoast by aquatic plants, the flora typical of semi-natural biotic community disappears and is no longer so rich in species.

If natural grasslands are not used, they will overgrow, the open landscape will disappear and the value of those landscapes will diminish.

Map 17. Art 20



According to article 20 have been selected 24 municipalities. It is 431 000 hectares what means 9,54% of state's area. In this areas there were 96 000 hectares agricultural lands. According to agricultural census 2001, there were in use 49 000 and in cadastre 68 000 hectares of agricultural lands. 71 000 hectares of land could be the land under support.

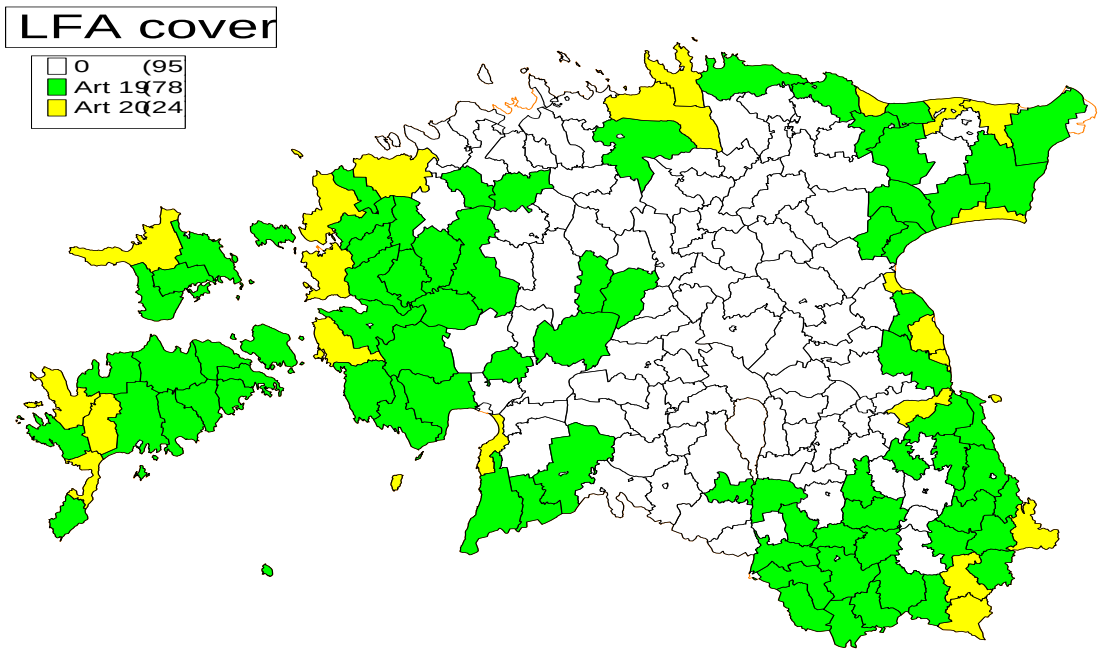
Small islands. Municipalities border by sea are taken by article 19 and 20, except 4 municipalities what are close to Tallinn. And also these small islands need to take as well:

- Pakri islands, in administrative area of Paldiski town, 24,5 km^2, stationary population is missing;
- Aegna island, in administrative area of Tallinn city, 2,53 km^2;
- Naissaar, Viimsi municipalities, 18,6 km^2, 5 inhabitans;
- Prangli island, Viimsi municipalities, 6 km^2, 151 inhabitans;
- Aksi island – almost 2 km long and 400 m wide, so 0,8 km^2;
- Keri island.

It is about 53 km2 from Estonian area, what means about 0,12%.

According to article 20 the sample forms 9,66% from state territory. From small island there could be come thousand hectares as well, what are going to be under support.

Map 18. Proposal of **less favoured areas and areas with environmental restrictions**



In whole sample less-favoured areas are together 2,259 thousand hectares (49,95% from state area). 627 thousand hectares of that is agricultural land and according to agricultural census 2001, 349 thousand hectares are in use and in cadastre 439 thousand hectares. Which makes the forecasted supported area at 465 thousand ha.

Table 28 Proposal for less-favoured area selection

County	**Art 19**	**Art 19 (complies also Art 20)**	**Art 20**
Harjumaa	Anija, Kernu		Kuusalu, Loksa, Padise
Hiiumaa		Emmaste, Kõrgessaare, Käina, Pühalepa	
Ida-Virumaa	Avinurme, Maidla, Sonda	Iisaku, Illuka, Lohusuu, Lüganuse, Tudulinna, Vaivara	Alajõe, Aseri, Kohtla, Toila
Jõgevamaa		Pala	Kasepää
Järvamaa	Türi		

County	Art 19	Art 19 (complies also Art 20)	Art 20
Läänemaa	Kullamaa, Oru, Risti, Taebla	Lihula, Martna, Nõva, Vormsi	Hanila, Noarootsi, Ridala
Lääne-Virumaa		Vihula, Viru-Nigula	
Põlvamaa	Kanepi, Mooste, Orava, Valgjärve, Vastse-Kuuste, Veriora	Mikitamäe, Räpina	Värska
Pärnumaa	Are, Koonga, Vändra	Audru, Häädemeeste, Saarde, Tali, Tõstamaa, Varbla	Kihnu, Tahkuranna
Raplamaa	Kohila, Käru, Märjamaa, Vigala		
Saaremaa		Kaarma, Laimjala, Leisi, Lümanda, Muhu, Mustjala, Orissaare, Pihtla, Pöide, Ruhnu, Torgu, Valjala	Kihelkonna, Kärla, Salme
Tartumaa		Meeksi, Vara, Võnnu	Alatskivi, Mäksa, Peipsiääre, Piirissaare
Valgamaa	Karula, Puka, Põdrala, Sangaste, Taheva, Tõlliste		
Viljandimaa			
Võrumaa	Antsla, Haanja, Lasva, Mõniste, Rõuge, Sõmerpalu, Urvaste, Varstu	Meremäe	Misso, Vastseliina
TOTAL 101	**37**	**41**	**23**

6.4.3 Differences in applying measures to less-favoured areas

There are no differences in applying the ERDP measures to less-favoured areas and areas with environmental restrictions. A higher rate of support is applied to less favoured areas in the case of some of the investment support measures of the National Development Programme.

6.4.4. Implementation of agri-environmental activities regionally

Some activities under agri-environmental measure (Environmentally-Friendly Production Scheme, organic farming, management of semi-natural habitats, establishment, restoration and maintenance of stonewalls, local endangered breeds) can be applied nationally. Some activities will be implemented only in some counties.

Environmentally Friendly Management Scheme- will be implemented in Saare and Võru counties, where are more valuable landscape elements in agricultural landscape to preserve compared to the rest of Estonia.

Winter plant cover- will be implemented in Jõgeva, Järva, Lääne-Viru, Viljandi, Võru and Tartu counties, where the risk of erosion is higher than in the other areas of Estonia due to relief and huge fields.

7 EX-ANTE EVALUATION / EXPECTED IMPACT

7.1 RESULT OF EX-ANTE EVALUATION

The RDP ex-ante evaluation report dated 22.09.2003 has been submitted as an annex to the document. The ex-ante evaluation was based on the RDP versions of 25.04.2003 and 15.07.2003. AS Maves performed the ex-ante evaluation. The Ministry of Agriculture according to Regulation 1257/1999 and Commission Regulation 445/2002 replaced by the Commission Regulation 817/2004. Researchers of the Faculty of Economics and Social Sciences Estonian Agricultural University were involved in the process. The leading expert who conducted the evaluation was Madis Metsur; Tiiu Ohvril from the Agricultural University (socio-economics) and Tiiu Valdmaa from AS Maves (environmental protection) participated in the evaluation. The following persons wre consulted in the course of evaluation: Ain Kendra (Jäneda Training and Advisory Centre), Toomas Ideon (AS Maves); Tõnu Mugra (Engineering Bureau *Maa ja Vesi*), Jaak Tambets (Nature Conservation Centre). The ex-ante evaluation was carried out during 25.04–22.09.2003.

According to the requirements AS Maves prepared a strategic environmental assessment in parallel with the ex-ante evaluation.

The main remarks concerning the ex-ante evaluation and the strategic environmental assessment are listed in the following, together with a remark on whether they were taken into account or not.

A. ERDP **ex-ante evaluation report,** prepared by AS MAVES, 14.08.2003: "The amount of support for less-favoured areas and areas with environmental restrictions is inadequate to level regional inequalities, and it is advisable to consider increasing this support."
   The proposal was not taken into account, as it would reduce the opportunities for improving the environmental condition.

B. ERDP **ex-ante evaluation report,** prepared by AS MAVES, 14.08.2003: "It has not been stated whether the ERDP monitoring committee has been set up already: the first task of such a committee would be to review the draft ERDP (the work should commence already during the ERDP preparation period)."

   The proposal is taken into account. An advisory committee is being set up, including representatives of ministries and social partners of the Ministry of Agriculture.

C. ERDP **ex-ante evaluation report,** prepared by AS MAVES, 14.08.2003: "Guidelines need to prepared for checking the compliance of manure storage facilities and for manure handling activity plans. Among other things, the manure handling activity plan must contain a manure spreading plan."
   The proposal was taken into account guidelines are being prepared. The guidelines for checking the compliance of manure storage facilities are

intended for the environmental authority; their preparation is organised by the Ministry of the Environment in cooperation with the Ministry of Agriculture. Guidelines for the manure handling activity plan are intended for farmers and prepared by the Ministry of Agriculture in cooperation with the Ministry of the Environment.

D. **Interim report on strategic environmental impact assessment,** prepared by AS MAVES, 14.08.2003: "For an optimal use of the funds allocated for the ERDP environmental measures, measures that measurably improve the environmental condition, such as the measure for compliance with Community standards, should be supported to a greater extent."
   The proposal was taken into account; the scope of the measure was increased from the planned budget of agri-environmental support.
E. **Interim report on strategic environmental impact assessment,** prepared by AS MAVES, 14.08.2003: "Areas of intensive and extensive production require different measures. Copying of the EU Member States' environmental measures (mid-field strips, hedgerows, wetlands) to the Estonian areas of less intensive land use is unreasonable."
   The proposal was partly taken into account; the activities covered by the measures and the areas were defined considering different intensiveness. For example, the hedgerows and wetlands activities will be applied in two counties, where agriculture is more intensive than in the rest of Estonia (the Järva and Jõgeva counties). Further regional preferences will be considered in the course of the annual decision-making process.
F. **Interim report on strategic environmental impact assessment,** prepared by AS MAVES, 14.08.2003: "Support for Afforestation of agricultural land should be directed to areas needed for environmental protection purposes."
   The proposal was taken into account in part, because areas needed for environmental protection purposes need elaboration. The minister will (every year, if necessary) define the exact areas to be afforested. Preference is given to areas where the percentage of lands unsuitable for agriculture and/or lands that have not found an alternative use is great and where natural afforestation is slow, including western Estonia and the north coast.
G. **Interim report on strategic environmental impact assessment,** prepared by AS MAVES, 14.08.2003: "The establishment of mid-field strips may be excluded during this programme period as it is not adequately reasoned."
   The proposal was taken into account in part.
H. **Interim report on strategic environmental impact assessment,** prepared by AS MAVES, 14.08.2003: "The establishment of wetlands during this programme period should be excluded."
   The proposal was taken into account.
I. **Interim report on strategic environmental impact assessment,** prepared by AS MAVES, 14.08.2003: "Opportunities should be found for the maintenance of larger ponds (reservoirs). The inclusion of karst funnels and lakes should be considered."
   The proposal was not taken into account; As the measure concerns the biodiversity of agricultural landscapes, the inclusion of lakes is not justified, as this would go out of the limits of agri-environmental support (support is intended for agricultural land).

J. **Interim report on strategic environmental impact assessment,** prepared by AS MAVES, 14.08.2003: "Zoning needs to be performed for the application area of **hedgerows** in 2004, indicating the area where the measure is needed, and guidelines should be prepared for the reduction of winter erosion. Extension of the measure to the establishment and maintenance of groups of trees, coppices, and water protection strips should be considered. These activities could also be linked to support for the maintenance of water bodies and the surroundings of karst and springs."
   The proposal was taken into account in part. The hedgerows activity will be implemented in 2005–2006 in only two counties (the Järva and Jõgeva counties), where agriculture is more intensive than in the rest of Estonia. Maintenance of groups of trees and coppices is a sub-activity of the valuable landscapes activity. The duty to establish water protection strips arises from the legislation, so that it cannot be supported under the agri-environmental measure.
K. **Interim report on strategic environmental impact assessment,** prepared by AS MAVES, 14.08.2003: "**Water protection measures need to be applied to areas where the need for them has been confirmed by studies.** The area of winter plant cover and permanent grasslands needs to be increased, from the viewpoint of water protection, particularly in groundwater feeding areas and in catchments areas of bodies of surface water used as drinking water. In certain cases, these are also important for the maintenance and improvement of the condition of small lakes. These areas can be determined in the course of preparation of water management plans."
   The proposal was not taken into account. The winter plant cover activity is applied nationwide during this programme period, as in the event suggested by the evaluator; ARIB would need a detailed database for the administration of support. Thus, the proposal can be applied during the next programme period.
L. ERDP **ex-ante evaluation report,** prepared by AS MAVES, 9.09.2003: "It is advisable to present a summarised performance analysis of earlier programmes as a separate chapter ("Lessons learned")."
   The proposal is being taken into account; a relevant section (5.12.7) is being drafted.
M. ERDP **ex-ante evaluation report,** prepared by AS MAVES, 9.09.2003: "The absence of a general rural development plan and an official long-term policy, which the ERDP cannot compensate for, complicate the preparation of the document. It is advisable to prepare such documents for the next programme period."
   The proposal was taken into account.
N. ERDP **ex-ante evaluation report,** prepared by AS MAVES, 9.09.2003: "The evaluator finds that **to ensure the regionally balanced and sustainable economic and social development of rural areas,** the differentiation of agricultural support according to the size of the holding is justified."
   The proposal was not taken into account, as most organisations of agricultural producers wished that support be not differentiated.
O. ERDP **ex-ante evaluation report,** prepared by AS MAVES, 9.09.2003: "Termination of support for industrial pig meat production should be considered, or as a compromise, such support could be terminated during the next programme period, by granting the existing large-scale pig farms support

for taking them into compliance with Community standards. This is justified by the environmental and social objectives."
The proposal was not taken into account; it is in the interests of society to take the manure handling relating to pig farming, as a major source of environmental pollution, into compliance with Community standards as quickly as possible.

P. ERDP **ex-ante evaluation report,** prepared by AS MAVES, 9.09.2003: "The harmony between the ERDP programme and the general rural development goals should be better explained. In section 6.10, support for the regionally balanced development of rural areas is specified as a general goal of the ERDP. In section 6.3, such a goal is not mentioned."
The proposal was taken into account.

Q. ERDP **ex-ante evaluation report,** prepared by AS MAVES, 9.09.2003: "The problems, goals, and measures pointed out in the strategy are not in the best mutual accordance."
The proposal was taken into account.

R. ERDP **ex-ante evaluation report,** prepared by AS MAVES, 9.09.2003: "What is the relation between the planned EU direct aid and domestic support measures? Relations to other local programmes should be explained."
The proposal was taken into account.

S. ERDP **ex-ante evaluation report,** prepared by AS MAVES, 9.09.2003: "The authors of the ERDP have not assessed the balance of the measures."
The proposal was taken into account.

T. ERDP **ex-ante evaluation report,** prepared by AS MAVES, 9.09.2003: "It is advisable to add an overview of accession to the European Union (such as at least an extract from the agriculture part of the explanatory note to the accession treaty.)"
The proposal was taken into account.

U. ERDP **ex-ante evaluation report,** prepared by AS MAVES, 9.09.2003: Additions are needed to the conclusions and strategy parts. They should answer the question of "… based on which criteria the priorities and measures were selected, which methodology was used to derive the preferences for the allocation of funds …."
The proposal was taken into account.

V. ERDP **ex-ante evaluation report,** prepared by AS MAVES, 22.09.2003: "The analysis of the current situation, vision, strategic goals and the measures presented in the ERDP strategy chapter are not in harmony as regards regional policy."
The proposal was taken into account.

W. ERDP **ex-ante evaluation report,** prepared by AS MAVES, 22.09.2003: "As an important degree of the ERDP funds are allocated to the LFAs measure, it should be treated as a separate strategic goal. For example, the goal could contain the following emphasis: "alleviation of problems relating to the territorial differentiation of rural areas".
The proposal was taken into account.

X. ERDP **ex-ante evaluation report,** prepared by AS MAVES, 22.09.2003: "The evaluator suggests that the strategic goal specified in the ERDP version of 25.04.2003: "support for the regionally balanced functioning of rural areas" be included in the final version of the ERDP in an elaborated form."
The proposal was taken into account.

Y. ERDP **ex-ante evaluation report,** prepared by AS MAVES, 22.09.2003: "The evaluator suggests that valuing rural areas as the provider of a clean living environment (air, water, and natural resources) should remain an essential goal of the ERDP."
The proposal was taken into account.

Z. ERDP **ex-ante evaluation report,** prepared by AS MAVES, 22.09.2003: "The evaluator finds that the need for studies, guidance material and training is much greater than reflected in Table 11 of the ERDP (27.08.2003). Evaluator's proposal: to consider increasing the scope of technical assistance."
The proposal was taken into account.

7.2 ASSESSMENT OF IMPACT OF ERDP MEASURES BY MINISTRY OF AGRICULTURE

The assessment overview contains the position of the chief specialist of the Ministry of Agriculture responsible for the preparation of each particular measure (section 7.2) and the positions of the ex-ante evaluator (section 7.3). Analysis of the impact of the planned measures took account of the economic, environmental protection, and social aspect of the target group's situation.

7.2.1 General impact

The measures applied under the ERDP have a positive impact on Estonia's competitive edges in the global economic area. If a more ambitious approach is adopted, Estonia has all the prerequisites for becoming the example of actual sustainable rural development in the EU.

The general expected impact of the measures is achievement of strategic goals presented chapter 6.

The ERDP measures contribute to solving the following problems in particular:

- low income level of the rural population compared to the EU and Tallinn;
- low level of investments and alternatives in agriculture;
- insufficient ability of farmers to reorganise their production as required by EU accession;
- non-compliance of agriculture with the EU environmental requirements;
- abandoned agricultural lands;
- little use of environmentally friendly production methods and low environmental awareness of agricultural producers;
- deterioration of landscape diversity and biodiversity.

7.2.2 Support for less-favoured areas

The overall aim of the measure is to secure continuous land use in less-favoured areas.

According to estimation, there are about 465,000 ha of agricultural land in Estonia that falls under less-favoured areas within the meaning of the ERDP. It is estimated that in the year 2004 will be applied for 400,000 ha of agricultural land.

The measure has a positive impact on the economic situation of the target group. The regional income differences decrease as the average income of an agricultural producer in less-favoured areas increase.

The impact of the measure on the environmental condition improves. Environmentally friendly production ensures the preservation of the diversity of the natural environment.
The impact on the social situation is also positive. A greater population is maintained in the peripheral areas of the country compared to non-application of the measure; the backwardness of the application area decreases or at least does not significantly increase.

7.2.3 Agri-environmental support

The agri-environmental support measure improves the environmental awareness of agricultural producers, helps preserve semi-natural habitats, valuable landscapes, and single landscape elements, and promotes the spread of organic farming.

The economic and social impacts are positive. Income of agricultural producers increase and the employment rate in rural areas increases.

7.2.4 Support for afforestation of agricultural land

The measure has a positive impact on the rural economic situation, which is revealed in the long term.

The measure does not have right away a significant environmental impact, although in the long-term it improves landscapes and its diversities and quality of forest resources.

The labour force used for the establishment of forests and maintenance maintains employment possibilities in rural areas.

As the result of support it is possible to afforest 10 000 ha of agricultural land.

7.2.5 Support for semi-subsistence farms undergoing restructuring

Prospect the measure should have positive impact on rural development. The objective is to encourage the restructuring of farms not yet economically viable and with that maintain entrepreneurship in rural area. The estimated participation for support by 2006 is 5000 farms.

7.2.6 Support for meeting standards

The economic impact is positive because crucial environmental expenses are financed. Environmental impact is positive. The living conditions of rural inhabitants who live near livestock farms will improve.

The measure creates conditions precedent to the achievement of a satisfactory environmental condition in the vicinity of livestock farms.

7.2.7 Complements to direct payments

Additional direct aid payments will be made to level the income of farmers of the current EU Member States and Estonia. Economic impact is positive for agricultural enterprises and landowners.

7.3 ASSESSMENT OF IMPACT OF ERDP MEASURES BY EX-ANTE EVALUATOR

7.3.1 Aggregate evaluation of measures, based on common evaluation questions

This section evaluates the impact of the ERDP measures collectively, based on the common evaluation questions listed in Annex 1 to the evaluation instructions.

The support for less-favoured areas and semi-subsistence farms undergoing restructuring measure should increase rural population. This may hold true for villages, but not for small towns and townships. The composition and structure of the rural population cannot be expected to change significantly as the result of the ERDP measures. The overall trend depends on many other factors.

Employment by agricultural enterprises cannot be expected to increase in the long term as a result of the ERDP measures. The establishment of manure storage facilities to take them into compliance with Community requirements temporarily increases employment, similarly to the afforestation of agricultural land measure. However, employment will increase in other rural activities. The ERDP measures generally do not have a long-term impact on employment, but the landscape management activities (stonewalls, valuable landscapes) of the agri-environmental measure have a small positive impact, as these are regular activities. However, the activities are not production activities and taxpayers finance them, which is why their sustainable effect is revealed through other sectors (tourism, etc.).

All the ERDP measures are expected to increase the incomes of rural inhabitants to a greater or lesser degree.

The investment measures (of SAPARD and SPD) have a direct positive impact on the market situation through an improved product quality. The ERDP measures have a positive impact on the competitiveness of meat and milk production and organic produce.

Environmental problems are addressed by the ERDP via the planned measures. The ERDP measures extend the activities to different environmental aspects when compared to SAPARD. The ERDP measures create preconditions for the application of environmentally more sustainable agricultural production methods and contribute to preserving the good environmental condition of rural areas.

Programming and implementation ERDP help to move toward the desired goals. Considering the short programming period and the economic, social, and environmental processes that affect rural development, it is difficult to exactly predict the scope of the changes.

Table 29 Expected impacts of ERDP measures

No	Measure	Economic	Social	Environ-mental	Conditional total
	Less-favoured areas	**+**	**++**	**+**	**4**
	Agri-environmental support	**+**	**+**	**+**	3
	Semi-subsistence farms undergoing restructuring	**+**	**+**	0	**2**
	Support for meeting standards	**++**	**+**	++	**5**
	Support for afforestation of agricultural land	**+**	**+**	0	**2**
	Additional direct aid payments	**+**	0	0	**1**

Marks: + positive impact, ++ significant positive impact, 0 no impact, 5 – conditional summed impact

7.3.2 Support for less-favoured areas

The measure has a positive impact on the economic situation of the target group. The regional income differences decrease as the average income of an agricultural producer in less favoured areas increases.

The impact of the measure on the environmental condition improves. Compliance with good farming practise ensures the preservation of the diversity of the natural environment.

The impact on the social situation is also positive. A greater population is maintained in the peripheral areas of the country compared to non-application of the measure; the backwardness of the application area decreases or at least does not significantly increase.

The indicator is the number of inhabitants in less favoured areas, the number of agricultural producers, the number of applicants, the number of hectares for which support is granted, the number of hectares of land used in agriculture, and the incomes of agricultural enterprises and agricultural employees.

7.3.3 Agri-environmental support

The agri-environmental support measure improves the environmental awareness of agricultural producers, helps preserve semi-natural habitats, valuable landscapes, and single landscape elements, and promotes the spread of organic farming.

The economic impact is positive. The incomes of agricultural producers increase on account of compensated environmental expenditure. About two-thirds of environmental funds are channelled to less-favoured areas, thus providing further compensation for the backwardness of less-favoured areas.

Considering the scope of the planned activities, a broader significant environmental impact associates with the expected impact of management of semi-natural habitats and preservation of endangered breeds. The valuable landscapes activity, feeding areas for migrant birds, and the restoration and maintenance of stonewalls have a

certain environmental impact. The remaining activities are also expected to have a positive environmental impact in the area of their application.

The social impact is positive. The employment rate in rural areas remains on the same level or increases.

7.3.4 Support for afforestation of agricultural land

The support makes possible to afforest 10 000 ha of agricultural land.

The measure has a positive impact on the economic situation, which is revealed in the long term.

The measure does not have a significant environmental impact. The quality of forest resources improves in the long term, but its effect is of little scope.

The social impact is positive. The labour force used for the establishment of forests increases rural employment.

7.3.5 Support for semi-subsistence farms undergoing restructuring

Prospect the measure should have positive impact on rural development. The objective is to encourage the restructuring of farms not yet economically viable and with that maintain entrepreneurship in rural area.

According to the ERDP ex-ante evaluation report the economic impact of measure is positive. The additional income of small farms is clearly measurable and predictable. In 2002 approximately 3800 farms had a turnover of EUR 2000–18000. The estimated participation applying for support is 5000 farms. They all can apply this support. Measure has no clear impact on environment. Only the facilitation of land use may have a positive impact. Social impact is positive. Five years of payments alleviate the social tensions in rural areas.

7.3.6 Support for meeting standards

The economic impact is positive because crucial environmental expenses are financed. Environmental impact is positive. Improves manure handling and the living conditions of rural inhabitants who live near livestock farms will improve. There is a clear positive impact, revealed in a decrease of liquid manure pollution of water bodies and groundwater per LU. The measure creates conditions precedent to the achievement of a satisfactory environmental condition in the vicinity of livestock farms. As the goal, the beneficiaries should be required to reorganise the entire manure technology (including spreading technology), otherwise the impact of the measure may be significantly reduced.

Social impact is positive. Application of the measure gives work to builders.

7.3.7 Complements to direct payments

Additional direct aid payments will be made to level the income of farmers of the current EU Member States and Estonia.

The measure has positive economical impact but has no significant social and environmental impact.

8 FINANCIAL TABLE

The financial table covering the application of the ERDP measures was prepared on the basis of the total EU financing in the prices of 2004. Estonia's co-financing, which has to form at least 20% of the budgets of the measures, was calculated on its basis. Funds for financing the ERDP measures over three years amount to EUR 150,5 million from the EU budget and EUR 37,66 million from the Estonian state budget. The total ERDP budget of the programme period (2004–2006) is EUR 188,16 million.

Table 30 Financing of ERDP measures in 2004–2006, in prices of 2004, EUR'000,000

	EC contribution	EE public expenditure	Total
Support for less-favoured areas	27,6	6,9	34,5
Agri-environmental support	45,81	11,46	57,27
Support for afforestation of agricultural land	8,56	2,14	10,70
Support for semi-subsistence farms undergoing restructuring	10,59	2,65	13,24
Support for meeting standards	32,36	8,10	40,46
Complements to direct payments	20,66	5,17	25,83
Technical assistance	3,00	0,76	3,76
SAPARD	1,92	0,48	2,40
Total	**150,5**	**37,66**	**188,16**

Following table presents the changes planned in financing of the measures over three years. Financing of agri-environmental support will increase the most, partly due to the application of several activities from 2005. It also reflects Estonia's strategic choice in favour of environmental protection.

Table 31 Financing of ERDP measures over years, in prices of 2004, EUR'000,000

	2004			2005			2006		
	EC contri-bution	EE public expen-diture	Private sector	EC contri-bution	EE public expen-diture	Private sector	EC contri-bution	EE public expen-diture	Private sector
Support for less-favored areas	8,48	2,12	0	9,2	2,3	0	9,92	2,48	0
Agri-environmental support	11,19	2,8	0	15,34	3,84	0	19,28	4,82	0
Support for afforestation of agricultural land	0	0	…	3,52	0,88	…	5,04	1,26	…
Support for semi-subsistence farms undergoing restructuring	3,07	0,77	…	3,52	0,88	…	4	1	…
Support for meeting standards	9,5	2,38	13,77	11,43	2,86	16,57	11,43	2,86	16,57
Complements to direct payments	10,24	2,56	0	6,39	1,6	0	4,03	1,01	0
Technical assistance	0,9	0,23	…	1	0,25	…	1,1	0,28	…
SAPARD	1,92	0,48	…						
Total	**45,3**	**11,34**	**13,77**	**50,4**	**12,61**	**16,57**	**54,80**	**13,71**	**16,57**

Funds were divided between the measures in several stages. At first, funds were allocated for additional direct aid payments and semi-subsistence farms undergoing restructuring with fixed support amounts on the basis of the estimated number of farms.

The division between the measures and the limits of the remaining sums were decided in discussion between the Ministry of Agriculture and agricultural producers. For example, it was considered important that not more than one-half of the total ERDP budget be spent on any single measure, and that funds should be sufficient to finance support for meeting standards in full from the year 2004, etc.

8.1 SUPPORT FOR LESS-FAVOURED AREAS

According to estimation, there are about 465,000 ha of agricultural land in Estonia that falls under less-favoured areas within the meaning of the ERDP. It is estimated that in the year 2004 will be applied for 400,000 ha of agricultural land.

The financial scope of the measure was based on EUR 25 per hectare. This is used to compensate in particular for loss of income due to poor soil quality and to avoid overcompensation.

Based on the calculated rate and the aim of the measure, the total budget of the measure for the programming period is EUR 34,5 million.

8.2 AGRI-ENVIRONMENTAL SUPPORT

In addition to the specialists of the Ministry of Agriculture mainly the experts of the Jäneda Training and Advisory Centre and the Centre for Ecological Engineering participated in refund rate calculations. Calculations of management of wooded meadows are based on a study of Viidumäe Nature Reserve.

The calculation of the amount of premium is made according to the lost income and additional costs due to the farming practices that go beyond Good Farming Practice and in some cases up to 20% incentive.

Based on the calculated rate and the aim of the measure, the total budget of the measure for the programming period is EUR 57,27 million.

Considering the large number of activities of the agri-environmental support measure, one calculation has been made in this document for each activity per year.

The rates of support are detailed in section 9.2.

Table 32 Bases of financing agri-environmental support in 2004

Activity	**Estimated number of ha/units**	**Estimated sum per unit EUR**	**Estimated amount of support, EUR '000 000**
Environmentally Friendly Production Scheme	284000	31,96	9,1
Organic production	50000	95,87	4,79
Estonian horse	700	162,97	0,1
		Total	**13,99**

Table 33 Bases of financing agri-environmental support in 2005

Activity	Estimated number of ha/units	Estimated sum per unit EUR	Estimated amount of support, EUR '000
Environmentally Friendly Production Scheme	284000	31,96	9,08
Environmentally Friendly Management Scheme	14500	30,25	0,44
Organic production	60000	102,28	5,87
Establishment of stonewall	20000	4,41	0,09
Restoration of stonewall	40000	3,71	0,15
Maintenance of stonewall	15000	2,43	0,04
Establishment of mixed species hedgerow	45000	5,50	0,25
Maintenance of mixed species hedgerow	3000	2,81	0,01
Estonian horse	720	162,97	0,12
Estonian cattle breed	400	173,18	0,07
Management of semi-natural habitat	30000	92,67	2,78
Winter plant cover	25000	11,31	0,28
		Total	**19,18**

Table 34 Bases of financing agri-environmental support in 2006

Activity	Estimated number of ha/units	Estimated sum per unit EUR	Estimated amount of support, EUR '000 000
Environmentally Friendly Production Scheme	344000	31,96	10,99
Environmentally Friendly Management Scheme	40000	30,25	1,2
Organic production	70000	101,16	6,92
Establishment of stonewall	20000	4,41	0,1
Restoration of stonewall	40000	3,71	0,1
Maintenance of stonewall	15000	2,43	0,01
Establishment of mixed species hedgerow	45000	5,50	0,25
Maintenance of mixed species hedgerow	3000	2,81	0,01
Estonian horse	750	162,97	0,12
Estonian cattle breed	450	173,18	0,1
Management of semi-natural habitat	40000	92,67	3,7
Winter plant cover	50000	11,31	0,6
		Total	**24,1**

Costs and income losses

Environmentally Friendly Production Scheme

The objectives of activity are raising awareness of the environmental value and environmental impacts of their farm and to encourage the use of environmental planning by farmers. Net income lost due to yield loss from restrictions imposed by obligatory crop sequence is EUR/ha 33,27. Extra cost due to additional training, planning, analysing the soil samples and grazing EUR/ha is 19,87. Incentive both to the support payment for land in crop sequence and for grasslands is 10% nationally.

Environmentally Friendly Management Scheme

The objectives of activity are to extend the use of whole farm planning and to protect semi-natural habitats and valuable landscape elements and to promote the awareness of farmers of the environmental values of their undertaking also to promote the integration of further environmental management practices into normal farming operations so as to protect and improve biological and landscape diversity and protect soil and water resources.

Net income lost due to yield loss from buffer strips adjacent to field margins, valuable landscape elements, fields larger than 30 ha and yield loss from restricted fertiliser application is 14.45 EUR. Extra cost of compliance due to keeping 30% of arable land covered by crop during wintertime, costs due to additional training, costs due to additional planning, mowing costs of buffer strips adjacent to field margins, mowing and establishing costs of buffer strips in fields larger than 30 ha, and mowing costs of buffer strips adjacent to valuable landscape elements is 15.80 EUR.

Organic production

The objectives of the activity are to support the development of organic production as a nature-friendly method of production and to satisfy the growing demand for organic produce and to support and increase the competitiveness of organic farming. Grasslands: net income lost due to field average 30% (includes also reduced costs of inputs) is 41.64 EUR. Extra cost of compliance due to additional training, additional planning, due to certification, costs of spreading manure (establishment of grassland, machinery work) and extra costs related to reconstruction of farm buildings is 32.28 EUR.

Grains, legumes, industrial crops, potatoes, fodder vegetables and grasslands in crop rotation: net income lost due to field average 30% (includes also reduced costs of inputs) an yield loss from restrictions imposed by obligatory crop rotation is 78.34EUR. Extra cost of compliance due to additional training, additional planning, cost of certification, due to manure handling is 16.3EUR.

Vegetables, herbs, fruits and berries: net income lost due to loss of income (lower gross margin) is 235.55EUR. Extra cost of compliance due to additional training, additional planning and certification is 4.99EUR.

Establishment, restoration and maintenance of stonewall

The objective of the activity is to contribute to the establishment, restoration and maintenance of stonewalls as elements of traditional agricultural landscapes that have a high historical, cultural and scenic value.

Establishment of stonewall up to 70 cm: net income lost is 0,11 EUR, extra cost due to establishment is 13.42 EUR and maintenance during the 5-year contract period is

1.52 EUR per year. Establishment of stonewall higher than 70 cm: net income lost is 0,11 EUR, extra cost due to establishment is 16.88EUR and maintenance is 1.52 EUR per year. Restoration of stonewalls up to 70 cm: extra cost due to restoration is 11.58 EUR and maintenance is 1.52 EUR per year. Restoration of stonewalls higher than 70 cm: extra cost due to restoration is 13.10 EUR, costs for the maintenance is 1,52 EUR per year. Maintenance of stonewalls is 2.43 EUR per year (more labour costly in the first year).

Management of semi-natural habitat

The objective of the activity is to guarantee the preservation of biological and landscape diversity as well as valuable cultural heritage by promoting the management of semi-natural habitats (wooded meadows, wooded pastures, coastal grasslands, floodplain meadows, wet meadows, alvar grasslands and dry grasslands) using traditional methods.

According to local environmental specialists, it was wise to allow in most habitats (except wooded meadows) both mowing and grazing and that's way support amount for all habitats (except wooded meadows) is the same. The same amount of support is also rational because the boundaries of different habitats are hardly detectable in nature. Therefore, the average extra costs and income loss in most habitats is 89.4 EUR. Managing the wooded meadows during first year, extra cost of compliance is 247.08 EUR and during years 2 to 5 199.79 EUR.

Local endangered breeds

The objective of the activity is to ensure the preservation of local endangered breeds, the Estonian cattle breed and the Estonian native horse, which are important in view of cultural heritage and genetic variety. The amount of support payment for raising an Estonian native horse is EUR 162,97. Amount of support payment for raising a cow of the Estonian cattle breed is due to income lost EUR 173,41.

Winter plant cover

The objectives of the activity are to reduce the risk of winter soil loss due to water and wind erosion on agricultural lands; to reduce the risk of water pollution caused by the leaching of nitrogen and/or winter soil loss and to increase biodiversity by creating winter habitats for invertebrates and birds.-

Keeping 30% of arable land covered by crop during wintertime: as support is available only for these farmers, who have less than 0,5 LU/ha, data of plant production farms are taken as a basis. It is wise to grow winter cereals in same field in every fifth year- consequently in 20% of arable land. We assume that every farmer has 20% winter cereals. The rest of the land covered by crop during wintertime (10%) must be covered with grasslands. Hey from the first cut will be sold. Consequently the area of cereals must be reduced 10%. Income lost per hectare of agricultural land is 12.25 EUR and taken into account the income from the hay sold etc 5.44 EUR it makes the total support of 6.81 EUR.

Keeping 50% of arable land covered by crop during wintertime: It is wise to grow winter cereals in same field in every fifth year- consequently in 20% of arable land. We assume that every farmer has 20% winter cereals. The rest of the land covered by crop during wintertime (30%) must be covered with grasslands. Hey from the first cut will be sold. Income lost per hectare of agricultural land is 36.75 EUR and taken into

account the income from the hay sold etc 20.97 EUR it makes the total support of 15.78 EUR.

8.3 SUPPORT FOR AFFORESTATION OF AGRICULTURAL LAND

According to the estimations and researches made, there are 150 000 ha of agricultural land suitable for afforestation. While the measure will be implemented from the year 2005 and according to the available financial resources it is estimated that it is possible to afforest 10 000 ha of agricultural land.

As a result of analysis forest establishing costs in Estonia are shown in the table bellow.

Table 35 The plants and planting cost of different species

Species	**Spruce**	**Pine**	**Birch**	**Alder**	**Oak**
Plant cost	0,16 EUR/plant	0,10 EUR/plant	0,08 EUR/plant	0,07 EUR/plant	0,51 EUR/plant
plant/ha	3000	4500	3000	2500	1500
EUR	479,34	431,40	230,08	175,76	766,94
Planting cost	0,08 EUR/plant	0,06 EUR/plant	0,06 EUR/plant	0,06 EUR/plant	0,06 EUR/plant
EUR	230,08	287,60	191,73	159,78	95,87
Total (costs of plants and planting) EUR	**709,42**	**719,01**	**421,82**	**335,54**	**862,81**
Soil scarification	44,74	44,74	44,74	44,74	44,74
Subtotal	754,16	763,75	466,56	380,27	907,55
Other cost 15% (Includes planning)	113,12	114,56	69,98	57,04	136,13
Total EUR	**867,28**	**878,30**	**536,54**	**437,32**	**1 043,68**

Taking into account these calculations and the statistics from State Management Forest Centre what tree species were most used for reforestation in 2001 the amount of support is 805 EUR per hectare. And it includes the soil scarification, plants and planting costs.

It should also be noted that the afforested lands do not yield agricultural income, and the land tax incentive will be lost. Land tax will be doubled once the land will be entered into the Register as forestland

Based on this rate and the aim of the measure, the total budget of the measure during the programme period is estimated to be 10,7 million EUR. This amount also (in this programme period) includes maintenance costs for two years after establishment and potential second instalment grant.

8.4 SUPPORT FOR SEMI-SUBSISTENCE FARMS UNDERGOING RESTRUCTURING

The Commission proposed, the maximum rate of support for semi-subsistence farms undergoing restructuring is EUR 1000 per applicant per year, paid during a period of up to five years. On the basis of the working group’s proposal, the maximum rate is

applied in Estonia for this measure, i.e. EUR 1000 per applicant per year and up to EUR 5000 during the five-year period.

According to the income declarations for 2001 received by the Tax Board, there were 3800 sole proprietors who declared their income to be 2000-18000 EUR. The estimated participation for measure would be 5000 farms. Based on the rate of the measure and the estimated number of applicants the total budget of the measure for the programming period is 13,24 million EUR.

8.5 MEETING STANDARDS

According to the agricultural census of 15 July 2001, there are 356,200 LU of animals in Estonia whose farming is subject to the mandatory manure-handling requirement according to the applicable legislation.

According to Water Act (11.05.1994) all the buildings in which more than 10 livestock units are kept should have a leak proof manure or liquid manure storage facilities corresponding to the type of manure. Under §26² (2) of Water Act their storage capacity should be the stocks of at least 8 months. It is advisable to follow good agricultural practice based on the Council Directive on nitrates. According to the amendment (2004, No 57) to the Regulation of the Government " Water requirements for fertilizer and manure and silage storage facilities and for manure and silage juice and the fertilizer usage and storage requirements" (2001, No 288), manure storage facilities should meet environmental requirements by 1. of January 2010 and by 31. December 2008 in the area vulnerable to nitrate pollution.

The gross estimate of average manure quantities per one animal during 8 months is the basis of the manure storage minimal capacity calculation[19]. 1 dairy cow drops ca 8 m^3 of solid manure or 15,4 m^3 liquid manure during 8 months, heifer over 1 year accordingly 3,2 m^3 or 9 m^3 and heifer under 1 year 1,3 m^3 or 3,8 m^3. Sows 2,6 m^3 of solid manure or 4,5 m^3 liquid manure during 8 months, fattening pigs 0,5 m^3 or 1 m^3. In keeping sheep and goats only solid manure is produced approximately 1 m^3 during 8 months. In addition to the type or age of animals, animal-keeping technology should be considered while designing a manure storage facility.

In the year 2000 a study of the more effective use of agricultural buildings was carried out in the framework of Phare project and also need for investments was assessed. The general building cost of the needed works alone amounts to EUR 79.8 million on average. The cost of manure pumps or transporters, design and approval costs (geological surveys, geodetic work, compatibility with the remaining technology, etc.) are added to this. The total cost of manure storage facilities is therefore twice as much, i.e. about EUR 160 million.

19 Source: JÕNK, Ministry of Agriculture

Table 36. Investment need of manure storage facilities

Herd size	Number of animals, 2001, '000	LU coeffi-cient	Live-stock Units, '000	Cost of general building work of manure storage facilities per LU, year 2000, EUR	Cost of general building work of manure storage facilities, M €
Total cattle, including	266.0				
herds of 5–9	35.4	1.0	35.4	246	8.71
herds of 10–99	57. 9	1.0	57.9	233	13.49
herds of 100–199	16. 3	1.0	16.3	224	3.65
herds of over 200	156.4	1.0	156.4	184	28.78
Total pigs, including:	329.8				
sows	38.4	0.5	19.2	230	4.42
fattening pigs and piglets, including:	291.4				
herds of 10–99	18.0	0.17	3.1	396	1.23
herds of 100–399	12.0	0.17	2.1	352	0.74
herds of 400–1000	34.3	0.17	5.8	275	1.6
herds of over 1000	22.1	0.17	38.6	243	9.38
Sheep and goats	9.8	0.1	1.0	291	0.3
Horses	2.9	1.0	2.9	174	0.51
Poultry	2,220				6.97
TOTAL:			**356.2**		**79.78**

Source: Statistical Office, Jäneda Training and Advisory Centre, Ministry of Agriculture

In order to bring the entire manure handling system into compliance with the applicable requirements, another EUR 50 million needs to be invested in manure transport and spreading equipment. The total investment need of manure handling is thus EUR 210 million.

The requirements arise from the Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy, and from Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources, and from the Estonian legislation such as Water Act (1994), Manure composition requirements (Regulation No 85 of the Minister of Agriculture of 2003) and Water requirements for fertilizer and manure and silage storage facilities and for manure and silage juice and the fertilizer usage and storage requirements (Regulation No 288 of the Government, amended in 2002 (No 61) and in 2004 (No 57).

At the same time, the above Table shows that there is a strong relationship between the cost of manure storage facilities per Livestock Unit and the herd size. Support for meeting standards will be applied, which will help farmers to cover the expenses of meeting EU requirements for production and livestock farming. In bringing manure storage into conformity with standards, the building, reconstruction and expansion of a manure storage facility belonging to a farm building for livestock as well as the obtainment and adjustment of utility systems and the preparatory work related to previous investments will be supported. The support partly compensates for the temporary additional burden on farmers, caused by brining manure handling into compliance with environmental requirements.

Table 37 Cost of manure storage investments, EUR per Livestock Unit (LU)

	Herds	Livestock Units	Cost of general building, year 2000	Cost of manure pumps or transporters ca 30%	Design and approval costs ca 10%	Total cost, year 2000
	Animals	000	EUR / LU	EUR / LU	EUR / LU	EUR / LU
Cattle	10…99	57,9	233	69,9	23,3	326,2
Cattle	100...199	16,3	224	67,2	22,4	313,6
Cattle	Over 200	156,4	184	55,2	18,4	257,6
Fattening pigs	100...399	1,2	352	105,6	35,2	492,8
Fattening pigs	400...1000	3,4	275	82,5	27,5	385,0
Fattening pigs	Over 1000	2,2	243	72,9	24,3	340,2
Sows		12,7	230	69,0	23,0	322,0
Sheep, goats	Over 100	1,5	291	87,3	29,1	407,4

Source: Ministry of Agriculture, Statistical Office

Table 37 is based on data from Table 36. Total costs were counted on the basis of cost of general building of manure storages in the year 2000, adding expected costs of design and approval plus costs of manure pumps or transporters.

Table 38 Cost of manure storage investments, EUR

	Herds	**Livestock Units**	**Total cost, year 2000**	**Total cost, year 2005**	**Expected share of herds supported**	**Total cost connected with manure storage facilities**
	Animals	'000	EUR / LU	EUR / LU	%	EUR '000
Cattle	10…99	57,9	326,2	384,9	100%	22286,6
Cattle	100...199	16,3	313,6	370,0	100%	6031,8
Cattle	Over 200	156,4	256,7	302,9	50%	23687,2
Fattening pigs	100...399	1,2	492,8	581,5	100%	697,8
Fattening pigs	400...1000	3,4	385,0	454,3	100%	1544,6
Fattening pigs	Over 1000	2,2	340,2	401,4	40%	353,3
Sows		12,7	322,0	380,0	50%	2412,7
Sheep, goats	Over 100	1,5	407,4	480,7	100%	721,1
					Total	**57735,2**

Source: Ministry of Agriculture, Statistical Office

Table 38 shows the expected investment cost connected with manure storage facilities in prices of 2005. Inflation coefficient 18% in total was counted using data from Bank of Estonia about 2001-2004 which was 15% for those years together, adding 3% as expert prognoses for 2005. Expected share of herds supported takes into account both the minimum number of Livestock Units and maximum support per applicant 25 000 EUR per year. As there are number of cattle herds over 200 animals and fattening pigs over 1000 animals it is estimated that only 50% and 40% of the herds respectively will be supported under ERDP.

Investments need of manure storage facilities per Livestock Unit decrease dependently with the herd size. Maximum support per applicant per year will avoid overcompensation for applicants with big herds.

In case of renovation the overcompensation is not also the case because nearly all the storages are more than 20 years old and renovation costs are not remarkably lower than building new facilities. The calculations assure that even the cheapest investments – for cattle in herds over 200 – calculated per LU costs more than support available through ERDP. From SPD measure 3.1 Investment into Agricultural Holdings is possible to apply for those investments, which are not supported from ERDP. In this case the SPD rules are followed and overcompensation therefore avoided.

Based on this data and the aim of the measure, the total budget of the measure during the programme period is estimated to be 40,46 million EUR. This is less than the investments needed to comply with the standards.

9 MEASURES

Chapter describes chosen measures. Detailed implementation rules are laid down in respective legislations.

Good Farming Practice

All farmers receiving agri-environmental or less-favoured area support payments must comply with the Good Farming Practice.

Council Regulation (EC) No 1257/1999 and Commission Regulation (EC) No 817/2004 laying down detailed rules for the application of Council Regulation (EC) No 1257/1999, require that:

1. All Rural Development Plans developed and implemented by EU Member States must contain *"verifiable standards of Good Farming Practice"*;
2. Farmers receiving agri-environmental or less-favoured area support payments must follow these standards of Good Farming Practice all over the area they farm; and
3. Agri-environmental payments should be calculated so that they only compensate or provide an incentive for farmers to undertake activities that go beyond the "baseline" of Good Farming Practice. Producers are not paid compensation for complying with Good Farming Practice.

According to Article 35 of Commission Regulation (EC) No 817/2004:

- Good Farming Practice means the standard of farming, which should be followed by a reasonable farmer in the region concerned.
- Member States shall set out verifiable standards in their rural development plans. These standards shall at least entail compliance with relevant environmental legislation.

All farmers receiving agri-environmental or less-favoured area support must also comply with the verifiable standards of Good Farming Practice listed below. The standards were selected for their relevance to the current environmental problems and have been prepared to ensure that they are clear and practical for farmers to adopt, whilst also straightforward to control.

Based on the provisions of Article 4 of the Council Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources

and in co-operation with scientists, advisors and administration Estonia has also prepared the Code of Good Agricultural Practice (issued in 2001), defining the generally recognised production techniques and methods in agriculture, observance of which is to reduce the risk of environmental damage. A part of the Code is according to the article 5 (4) of the Council Directive 91/676/EEC obligatory in Nitrate Vulnerable Zones. In the rest of the areas the compliance with the Code isoptional for farmers, but it is an additional source of technical information and guidance to support farmers in the implementation of Good Farming Practice.

Table 39. Environmental legislation and verifiable standards of Good Farming Practice

WATER PROTECTION	
Legislation	**Water Act (1994)** - the purpose of the Water Act is to guarantee the purity of inland and trans-boundary water bodies and groundwater, and ecological balance in water bodies. *Among others, the Water Act has been harmonised with the following EU acts:* • Directive 2000/60/EC of the European Parliament and of the Council of establishing a framework for Community action in the field of water policy; • Council Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources; • Council Directive 76/464/EEC on pollution caused by certain dangerous substances discharged into the aquatic environment of the Community.
Verifiable Standards	1) Up to 170 kg of N per year on an average may be applied with manure on a hectare of cultivated area. 2) It is not allowed to spread organic and mineral fertilizers from 1 November to 31 March or at any time when land surface is covered by snow, frozen or periodically flooded or saturated with water. 3) In keeping of farm animals, the holding capacity of manure and liquid manure storage facilities should be the manure and liquid manure of at least eight months. If the manure storage facility belongs to a farm building in use on 1 January 2002 that is located in an area vulnerable to nitrate pollution, the requirement should be met by 31 December 2008. If the manure storage facility lies beyond the area vulnerable to nitrate pollution, the requirement should be met by 1 January 2010. 4) Surface spreading of manure is prohibited on an area under cultivation of more than 10% slope. If the land surface slope is 5–10%, surface spreading of manure is prohibited from 1 November to 15 April.

	5) In the water protection zone it is prohibited to use fertilizers, pesticides or waste water sediments and place a manure storage facility or a dunghill. It is allowed to use plant protection products in case of plant diseases or for the liquidation of pest cluster sites with the individual permisssion of county environmental departments.
SOIL PROTECTION	
Legislation	**The Water Act** has *inter alia* been harmonized with the Council Directive 86/278/EEC on the protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture.
Verifiable Standards	6) Agricultural producer should keep a field book. 7) The user of wastewater sediment is obliged to enter the relevant data into the field book. 8) It is not allowed to use untreated wastewater sediment in agriculture. 9) It is prohibited to use treated wastewater sediment on vegetables, berries or medicinal and aromatic herbs growing area.
PLANT PROTECTION	
Legislation	**Plant Protection Act (2004)** provides phytosanitary requirements and general principles to secure the safety of plant protection products, and regulates the organisation of plant health protection. *Among others, the Plant Protection Act has been harmonised with the following EU act:* Council Directive 91/414/EEC on the placing of plant protection products on the market and the thematic strategy on the sustainable use of pesticides.
Verifiable Standards	10) The plant protection equipment used must be inspected every three years; inspection shall check the compliance of the equipment's technical condition with requirements. 11) The user of the plant protection product in the case provided in the decision to admit the plant protection product to the market, should be adequately trained and have a plant protection certificate
GRASSLAND MANAGEMENT	
Verifiable Standards	12) Grassland should be mowed at least once or grazed before 31 July. By 31 July at the latest, the mown grass should be removed or chopped. Grazing and mowing is not required in establishing year of grassland, in grassland for a seed production and in semi-natural habitats.

BIOLOGICAL AND LANDSCAPE DIVERSITY	
Legislation	**Nature Protection Act (2004)** – the purpose of the act is: 1) to ensure the favourable conservation status and diversity of nature; 2) to maintain natural environment of cultural-historical value and inhabitable for humans, or its elements; 3) to support the sustainable use of natural resources. *Among others, the Nature Protection Act has been harmonized with the following EU acts:* Estonia will apply the provisions of the directives that serve as the basis for the NATURA network of the EU Member States: • Council Directive 92/43/EEC on the conservation of natural habitats and of wild flora and fauna; • Council Directive 79/409/EEC on the conservation of wild birds.
Verifiable Standards	13) It is prohibited to burn dead grass when there is fire hazard. 14) It is prohibited to use fertilizers and plant protection products on natural grasslands.

ANIMAL WELFARE	
Legislation	**Animal Protection Act (2001)** is to protect animals living in natural or artificial conditions from human violence.
Verifiable Standards	15) A keeper of animals should ensure the availability of feed and drinking water to the animals kept in his business entity.

OTHER STATUTORY REQUIREMENTS AND VERIFIABLE STANDARDS	
Legislation	**Waste Act (1998)** provides general requirements for prevention of waste generation and health and environmental hazards arising from waste generation and for organisation of waste management with the objective to reduce the harmfulness and quantity of waste and to prescribe liability for violation of the established requirements. *Among others, the Waste Act has been harmonized with the following EU act:* Council Directive 75/442/EEC on waste. **Integrated Pollution Prevention and Control Act (2001)** determines the environmentally hazardous activities and lays down the bases for the integrated prevention and control of pollution arising from such activities, in order to prevent or reduce the harmful effect of human activity on the environment. *Among others, the Integrated Pollution Prevention and Control Act has been harmonized with the following EU act:* Council Directive 96/61/EC concerning integrated pollution prevention and control (IPPC Integrated Pollution Prevention and Control).

	Environmental Impact Assessment and Environmental Auditing Act (2000) provides the legal basis for and the procedure for the conduct of assessments of likely environmental impact and environmental audits, in order to prevent environmental damage. *Among others, the Environmental Impact Assessment and Environmental Auditing Act has been harmonized with the following EU act:* Council Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment.
Verifiable Standards	16) Each keeper of animals is required to keep records of medicinal products administered to farm animals. 17) Each keeper of animals is required to maintain records concerning their farm animals, including the register of dead animals.

The standards listed in the table 39 will be implemented as follows:

- Standards 1, 6, 13, 14, 16 and 17 from the application date.
- Standards 2 to 5, 7 to 9, 11, 12 and 15 from the 1st of January 2005.
- 10th standard from the 1st of May 2005.

The following supervisory authorities according to their competence carry out the inspection over the abovementioned legal acts: Environmental Inspectorate, county environmental departments, Plant Production Inspectorate, Veterinary and Food Board, Heritage Conservation Board etc

ARIB and Environmental Inspectorate will carry out Control over the standards of Good Farming Practise listed in table 39:

- ARIB controls verifiable standards no 1, 6 and 10 to 17
- Environmental Inspectorate controls verifiable standards no 2 to 5 and 7 to 9.

ARIB informs competent authorities mentioned above in case of detected violation of verifiable standards and vice versa. ARIB reduces the payment in the event of violation of Good Farming Practice according to the rates prescribed by national legislation.

The obligations relating to compliance with Good Farming Practice outlined above will be clearly explained in information/guidance materials provided to farmers. Guidance on compliance with Good Farming Practice will also be included in the obligatory training undertaken by all farmers participating in the agri-environmental support scheme.

9.1 SUPPORT FOR LESS-FAVOURED AREAS

Objective of measure

The objective of the measures is to ensure the continuing use of agricultural land in less-favoured areas, and to thereby contribute to the maintenance of a viable rural population in such areas and promote sustainable agriculture that complies with Good Farming Practice.

General requirements

Regulation 1257 articles 19 and 20.

The measure is applied in specified rural municipalities throughout the Republic of Estonia.

The annual average EU financing support for the years 2004–2006 is EUR 9,2 million.

Requirements for applicants

The support can be applied for by natural person, legal person, civil law partnership and any other association of individuals without the status of legal person who is involved in agriculture and who applies for support for at least one hectare of agricultural land in his use, meets requirements of Good Farming Practice and meets the requirements laid down for the activity applied for.

An applicant undertakes to continue agricultural land use in a less-favoured area five years after the first support payment.

Documents required upon application

- Application;
- Whole Farm Map;
- Other certifying documents as needed.

Amount of support per applicant

Support is granted to the number of hectares used by a farmer. The planned rate of support is 25 EUR per hectare.

9.2 AGRI-ENVIRONMENTAL SUPPORT

Objectives of measure

The general objectives of the agri-environmental support measure are:

- to promote the introduction and continued use of environmentally friendly agricultural methods;
- to preserve and promote biological and landscape diversity;
- to contribute to providing an appropriate income for those agricultural producers who manage their land in a manner that is beneficial for the environment;
- to enhance the environmental awareness of farmers.

Structure of measure

The agri-environmental support measure of the Rural Development Plan consists of:

- the Environmentally Friendly Production Scheme;
- additional activities;
- special activities;
- detailed agronomic calculations.

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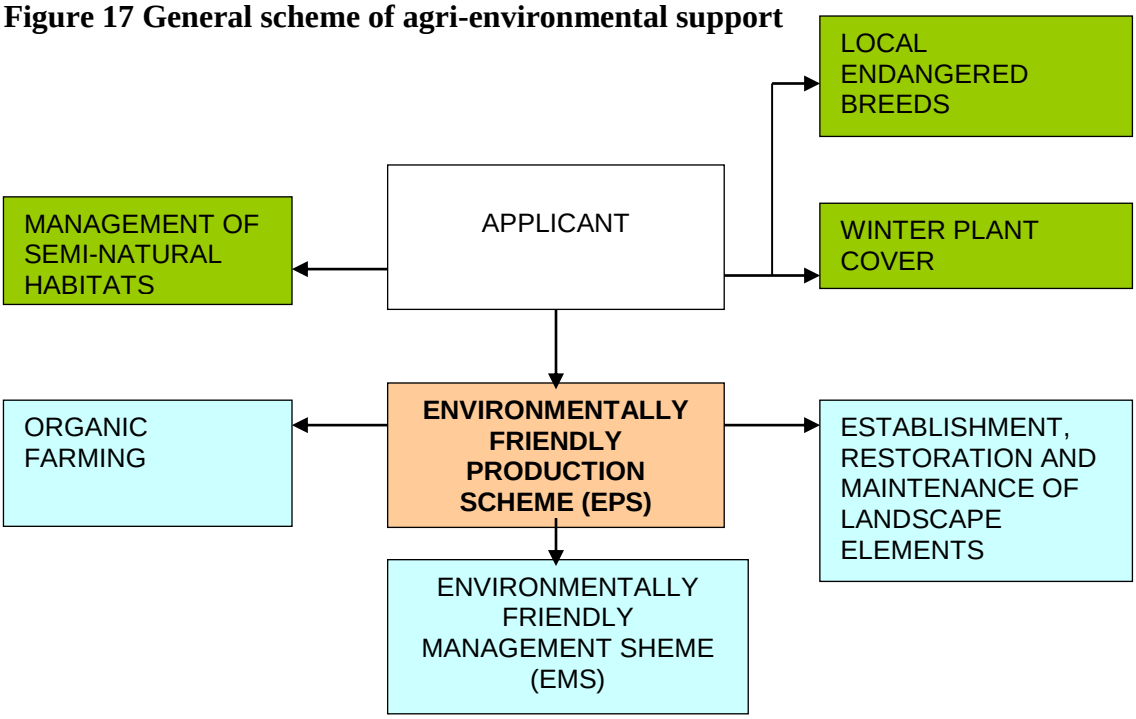
Figure 17 General scheme of agri-environmental support



– Special activities, available to every eligible person;

– Environmentally Friendly Production Scheme, available to every eligible person and a precondition for additional activities;

– Additional activities, available to every eligible person who meets the requirements of Environmentally Friendly Production Scheme.

General requirements

Agri-environmental policy, Council Regulation Regulation 1257 article 22.

The measure is applied in the entire Estonia.

The agri-environmental measure is regulated by Council Regulation 1257/1999, article 22 (2). The activities selected in Estonia are divided as follows (name and place in the Article):

Environmentally Friendly Production Scheme	**1st and 5th indent**
Additional activities	
• organic production	1st indent
• establishment, restoration and maintenance of landscape element	1st and 4th indent
• Environmentally Friendly Management Scheme	1st and 5th indent
Special activities	
• management of semi-natural habitat	1st, 2nd and 3rd indent
• local endangered breeds	1st indent
• winter plant cover	1st indent

The annual average EU financing support for the years 2004–2006 is EUR 15,3 million.

Requirements for applicants

The support can be applied for by natural person, legal person, civil law partnership and any other association of individuals without the status of legal person who is involved in agriculture and who is using at least one hectare of agricultural land, meets the requirements of good farming practise in entire holding and meets the requirements laid down for the activity applied for. Application for agri-environmental support is voluntary for producers; upon application, applicant assumes the obligation to comply with the requirements for agri-environmental support for five years.

Combination of activities

Support for the Environmentally Friendly Production Scheme is not available for land for which support is granted for organic production and management of semi-natural habitat.

Support for the Environmentally Friendly Management Scheme is not available for land for which support is granted to keep 30% of the land under plant cover in winter.

Organic production support is not available for land for which support is granted for Environmentally-Friendly Production Scheme and for land for which support is granted to keep 30% of the land under plant cover in winter.

In the case of combining different activities, support amounts per hectare must not exceed maximum support amounts established in Annex of Council Regulation 1783/2003. Exceeding of mentioned support amounts is avoided during the processing of support applications in ARIB.

Table 40. Possible combining of agri-environmental activities in the same land

	EPS	EMS	Organic	30% coverage	50% coverage	Semi-natural
EPS		+	-	+	+	-
EMS	+		+	-	+	+
Organic	-	+		-	+	+
30% cov	+	-	-		-	-
50% cov	+	+	+	-		-
Semi-nat	-	+	+	-	-	

9.2.1 Environmentally Friendly Production Scheme

Rationale

The intensification and specialisation of agriculture in the Soviet period led to serious environmental problems such as water pollution, soil degradation, loss of natural habitats and traditional agricultural landscapes. Since the beginning of the 1990s, the negative impact of agriculture on the environment (e.g. water pollution) has decreased somewhat as the production volumes have gone down. However, many problems have persisted and new problems have arisen such as abandonment of agricultural lands, which encourages the spread of weeds; open agricultural landscapes are overgrowing and valuable semi-natural landscapes are disappearing.

As economic conditions improve, the negative impact on the environment increases again. For example, the use of plant protection products and mineral fertilisers is again increasing and may bring about water pollution and a decrease in biodiversity unless environmentally friendly modern technologies are applied.

One of the reasons for the aforementioned problems is the poor environmental awareness of farmers and their failure to consider environmental protection aspects when planning production.

Estonia has supported Environmentally Friendly Production Scheme since 2002, when payments were made in 55 rural municipalities. In 2002, support was paid for Environmentally Friendly Production Scheme for 66,650 ha. Support in 2003 was similar to that of 2002, the only exception being the number of rural municipalities in which payments were made — 56. In 2003, support for the Environmentally Friendly Production Scheme was paid for 75,680 ha; the amount of support was EUR 16 per ha for up to 100 ha; EUR 13 per ha for every hectare starting from 100.1 ha up to 300 ha, and EUR 10 per ha for every hectare starting from 300.1 ha to 500 ha. Support was not granted for the area exceeding 500 ha.

Aim of activity

The objectives of the Environmentally Friendly Production Scheme are:

- raising farmers' awareness of the environmental value and environmental impacts of their farms;
- encouraging the use of environmental planning by farmers;
- reducing the risk of water pollution posed by plant nutrients, maintaining soil fertility, and improving the aesthetic value of agricultural landscapes.

Geographical coverage

The measure will be implemented nationwide from the year 2004.

Requirements

All persons participating in the Environmentally Friendly Production Scheme will be required to undertake the actions outlined below.

The applicant must prepare an Environmentally Friendly Production Plan that consists of two documents:

- **Nutrient Management Plan** — containing data on the organic fertilisers produced on the farm, and the use of purchased fertilisers, organic and mineral fertilisers on each field of the farm. The total application of nitrogen as mineral fertilisers and manure/liquid does not exceed an average of 170 kg per hectare of cultivated area and the total application of nitrogen as mineral fertilisers does not exceed 100 kg per hectare of cultivated area. The Nutrient Management Plan is prepared for every year of the commitment period and it must be available at the enterprise of the applicant for inspection throughout the five-year commitment period.
- **Crop Sequence Plan** — the applicant must plan and follow a crop sequence with following requirements:
  1) on the land, where crop sequence is applied, farmer must grow legumes or mixture of legumes and graminaceous grass plants;

2) it is forbidden to grow cereals in the same field more than three years successively and the same crop species in the same field more than two years successively.

Besides the Environmentally Friendly Production Plan, the applicant must meet the following requirements:

- the farmer must graze grasslands or mow them once a year by 31. July. Grazing and mowing is not required in establishing year of a grassland, in grassland for a seed production and in semi-natural habitats;
- the farmer must send to an accredited laboratory soil samples to determine the acidity of soil, organic matter or humus, and the total amounts of potassium and phosphorus assimilated by the plants;
- agricultural animals (sheep, goats, horses, cows, oxen, at least 2-months old female calves and heifers) must be kept outside for grazing during summertime;
- the farmer must participate in at least 6 hours of training in environmentally friendly production during the first year after application and in at least 6 hours of training in environmentally friendly production during the remaining four years of the commitment period in total.

Expected impact

It is anticipated that support for Environmentally Friendly Production Scheme is paid for 30–35% of Estonian agricultural land. As a result of the implementation of the measure, the environmental awareness of the applicants will increase and the adoption of environmental planning and the introduction of environmentally friendly farming practises will contribute to the maintenance and enhancement of the overall environment of the agricultural enterprise.

Amount of support

The amount of support for the Environmentally Friendly Production Scheme for arable land (except permanent grassland) is EUR 45,63 ha/year. The amount of support for the Environmentally Friendly Production Scheme for grasslands (except temporary grassland) is EUR 21,15 ha/year.

9.2.2 Additional activities

9.2.2.1 Environmentally Friendly Management Scheme

Rationale

The intensification and specialisation of agriculture in the Soviet period led to serious environmental problems such as water pollution, soil degradation, loss of natural habitats and traditional agricultural landscapes. Since the beginning of the 1990s, the negative impact of agriculture on the environment (e.g. water pollution) has decreased somewhat as the production volumes have gone down. However, many problems have persisted and new problems have arisen such as abandonment of agricultural lands, which encourages the spread of weeds; open agricultural landscapes are overgrowing and valuable semi-natural landscapes are disappearing.

As economic conditions improve, the negative impact on the environment increases again. For example, the use of plant protection products and mineral fertilisers is

again increasing any may bring about water pollution and a decrease in biodiversity unless environmentally friendly modern technologies are applied.

One of the reasons for the aforementioned problems is the poor environmental awareness of farmers and their failure to consider environmental protection aspects when planning production.

Estonia has supported Environmentally Friendly Management Scheme since 2001 in two pilot areas. In 2002, payments were made for 5000 ha. In 2003, support for the Environmentally Friendly Management Scheme was granted for 4435 ha; the amount for up to 100 ha was EUR 22 per ha, and EUR 18 for each hectare starting from 100.1 ha up to 200 ha. No support was available for the area exceeding 200 ha.

Objectives of activity

The objectives of Environmentally Friendly Management Scheme are:

- to extend the use of whole farm planning and to protect semi-natural habitats and valuable landscape elements;
- to further promote the awareness of farmers of the environmental values of their undertaking;
- to promote the integration of further environmental management practices into normal farming operations so as to protect and improve biological and landscape diversity and protect soil and water resources.

Geographical coverage

Support will be applied in Võru and Saare counties from 2005.

Preconditions for entry

All persons applying to join the Environmentally Friendly Management Scheme must comply with the requirements of the Environmentally Friendly Production Scheme.

Requirements

All persons participating in Environmentally Friendly Management Scheme will be required to undertake the actions outlined below.

Applicant should clearly mark all semi-natural habitats and valuable landscape elements (hedges, hedgerows, stonewalls and other traditional field boundaries, ponds and wetlands, springs, stone heaps and isolated glacial boulders, alleys, coppices and forest patches, trees of notable landscape and biodiversity value, objects of historical or archaeological value) on the Whole Farm Map.

The applicant must not damage, disturb or destroy any of the semi-natural habitats or valuable landscape elements identified on the farm and included on the Whole Farm Map. Fertilisers and plant protection products must not be used closer than one and a half meters of semi-natural habitats and valuable landscape elements.

The applicant must also meet the following requirements.

- At least 1.5 m wide strips with perennial vegetation must established or retained on all boundaries where the cultivated area meets uncultivated areas, such as roads. The strips should be mowed at least once a year during a given time period. No fertilisers or crop protection products should be applied to these strips and they must not be allowed to overgrow.
- In fields that are larger than 30 hectares, the farmer should establish an uncropped and uncultivated mid-field strip (minimum width of 3 metres) with perennial vegetation. No fertilisers or crop protection products should be

applied to these strips and they must be mowed at least once a year during a fixed period.

- From 1 November to 31 March, the plant (crop) must cover 30% of the land to which crop rotation is applied.
- The farmer must follow a planned crop rotation plan.
- The farmer must restrict the stocking rate of grazing animals on the farm to no more than 1,5 Livestock Units (LU) per hectare of cultivated land. Generally and also according to the Water Act 1 LU equalizing to agricultural animal, producing 70 kg of total nitrogen in manure per year. LU will be accounted as fallows:

1)	cattle over 24 months, including suckler cow	1 LU;
2)	cattle from 6 to 24 months	0,6 LU;
3)	cattle up to 6 months	0,2 LU;
4)	sow (incl. piglets) or boar	0,33 LU;
5)	fattening pig over 2 months	0,1 LU;
6)	horse over 6 months or mare with foal	0,7 LU;
7)	goat or sheep over 1 year; goat or ewe with lambs	0,15 LU;
8)	laying hen over 6 months	0,01 LU;
9)	chicken for fattening, duck	0,004 LU;
10)	quail, bantam, laying chick (up to 6 months)	0,0015 LU;
11)	turkey, goose	0,008 LU;
12)	ostrich over 12 months	0,15 LU;
13)	rabbit over 3 kg	0,03 LU;
14)	fox	0,07 LU;
15)	small domestic animals (mink, polecat etc.)	0,025 LU.

- Up to 170 kg of N per ha of cultivated land may be applied as the annual average during one crop rotation period; the total application of nitrogen as mineral fertilisers must not exceed an average of 80 kg per hectare of cultivated area and 80 kg per hectare per cut in the case of permanent grasslands, not over 100 kg N/ha as a total of all cuts.
- The applicant must not apply growth-regulating chemicals to any crops on the farm.
- The applicant must participate in at least 6 hours of training in Environmentally-friendly Management within the first year following application, and in at least 12 hours of training in Environmentally-friendly Management during the remaining four years of commitment in total.

Expected impact

It is anticipated that support for Environmentally Friendly Management Scheme is paid for 5% of Estonian agricultural land.

As a result of the activity, it is expected that:

- biological diversity will be maintained and improve and the quality and diversity of agricultural landscapes will improve;
- soil fertility will be preserved and increased;
- the risk of water pollution will be decreased;
- the number of agricultural holdings where environmental planning is used will increase.

Amount of support

The amount of support for the Environmentally Friendly Management Scheme is EUR 30,25 per ha.

9.2.2.2 Organic production

Rationale

Although interest in organic production has greatly increased in recent years, there are too few organic farmers and their output is too small to satisfy the growing demand for organic food.

Organic production support payments have been made all over Estonia since 2000. The area of land used for organic farming has rapidly grown since then. In 2002, there were 583 approved organic farmers in Estonia who cultivated a total of 30,550 ha of organically farmed land or land in conversion to organic farming. In 2003, there were 764 approved organic farmers in Estonia; organic production support was applied for an area of 38,588 ha; payments will be made according to the crop grown. The amount of support was EUR 19 per ha of grasslands; EUR 22 per ha of grasslands where organically reared farm animals account for at least 50% of the total LU reared in the enterprise at the time of application; EUR 45 per ha under grains, legumes, industrial crops, potatoes, feed vegetables, and short-term grasslands; and EUR 128 per ha under open field vegetables, medicinal and aromatic herbs, and fruit and berry gardens in 2003.

Objectives of activity

The objectives of the activity are:

- to support the development of organic production as a nature-friendly method of production and to satisfy the growing demand for organic produce;
- to support and increase the competitiveness of organic farming.

Geographical coverage

The activity will be applied nationwide from 2004.

Preconditions for entry

Applicants for organic production support must meet the Environmentally Friendly Production Scheme requirements.

Requirements

Persons applying for organic production support must comply with the following requirements:

- Approval of enterprise — the applicant must comply with the rules of organic farming in accordance with the Organic Farming Act; the enterprise must be approved or considered approved on the basis provided by the above Act.
- Training — an applicant who gets organic production support for the first time must undergo at least 12-hour organic production training in the year of application, and all beneficiaries must undergo at least 18 hours of training in the following four years in total.

Expected impact

Since organic production support payments were first made in Estonia, the area under organic crops has increased by about 10,000 ha every year. This growth rate is expected to continue in 2004–2006, meaning that 70,000 of land should be used for organic production in 2006. The output of organic products and their relative share should also increase noticeably.

Implementation of the activity will reduce the environmental and health risks of using mineral fertilisers and plant protection products and help maintain the fertility of soil and biodiversity.

Amount of support

Support payments for organic production will be made in three groups depending on the type of crop:

- for permanent and natural grasslands, per ha of which there are at least 0.1 LU in the enterprise and at least 50% of these LU are reared organically, the amount of support is EUR 73,91 per ha;
- support for grains, legumes, industrial crops, potatoes, black fallow and short-term grasslands is EUR 96,89 per ha;
- support for open field vegetables, fodder vegetables, medicinal and aromatic herbs and fruits and berries is EUR 240,54 per ha.

9.2.2.3 Establishment, restoration and maintenance of landscape elements

9.2.2.3.1 Establishment, restoration and maintenance of stonewalls

Rationale

The intensive farming and extensive land improvement of the Soviet period resulted in a simplification of the traditional mosaic-like landscape structure: large masses of fields were established from which stonewalls, which used to be valuable habitats, were removed; coppices and other valuable landscape elements were also removed from fields. As a result, habitats suitable for many species of agricultural lands were destroyed and the aesthetic value of landscapes suffered. Stonewalls are not only valuable habitats, but represent cultural values. The number of stonewalls has significantly decreased by now and the existing ones are in a poor condition.

The restoration and maintenance of stonewalls has been supported in two pilot areas in Estonia since 2001. In 2002, support payments were made for the restoration of 5546 metres of stonewalls and the maintenance of 1583 metres of stonewalls. In 2003, support was granted for the restoration of 6282 m and the maintenance of 1541 m of stonewalls; the amounts of support were EUR 6 and EUR 1.3 per m, respectively.

Objectives of activity

The objective of the activity is to contribute to the establishment, restoration and maintenance of stonewalls as elements of traditional agricultural landscapes that have a high historical, cultural and scenic value so as to:

- maintain and improve the aesthetic value of agricultural landscapes;
- create habitats and to increase biological and landscape diversity;

- preserve the historic and cultural value of the landscape.

Geographical coverage

The activity will be applied all over Estonia, but new stonewalls may be established only in places where they have been a historical part of the landscape. The activity will be implemented from 2005.

Preconditions for entry

Beneficiaries of support for the establishment, restoration and maintenance of stonewalls must meet the Environmentally Friendly Production Scheme requirements.

Requirements

a) Establishment of stonewalls

The new stonewall must be located in or on the border of agricultural land. A new stonewall may only be established to mark the borders of land ownership in areas where stonewalls are a historical part of the landscape. The location, materials (type of stone) and traditional design of the stonewall are subject to approval by the Heritage Conservation Board. The stonewall must be either 50–70 cm or at least 70 cm high depending on the region. Fertilisers and plant protection products must not be used and the land must not be cultivated closer than 1.5 m of the stonewall.

During the four years of commitment following establishment, the stonewall has to be maintained according the requirements listed below.

b) Restoration of stonewalls

The restored stonewall must be located in or on the border of agricultural land. Restoration is applicable only if the base of an old stonewall exists and in place where its location has been identified on the basis of maps. The decision of the Heritage Conservation Board, based on the map, is required. The location, materials (type of stone) and traditional design of stonewall are subject to approval by the Heritage Conservation Board. The restored stonewall must be 50–70 cm or at least 70 cm high depending on the region. Fertilisers and plant protection products must not be used and the land must not be cultivated closer than 1.5 m of stonewall.

During the four years of commitment following restoration, stonewall has to be maintained according the requirements listed below.

c) Maintenance of stonewalls

The maintained stonewall must be located in or on the border of agricultural land. Maintenance is understood as repair of the cracks in the wall and putting any stones that have fallen out back in their place. Stonewalls must be maintained using traditional methods and materials and a design characteristic of the area. Fertilisers and plant protection products must not be used and the land must not be cultivated closer than 1.5 m of stonewalls.

Expected impact

The expected results for 2005–2006 are the establishment of 20,000 m, the restoration of 40,000 m and the maintenance of 15,000 m of stonewalls.

The establishment, restoration and maintenance of stonewalls will create and maintain suitable habitats for many species of agricultural landscapes and maintain and

improve the aesthetic value of the landscapes and the preservation of the cultural heritage of stonewalls.

Amount of support

The amount of support payments for the establishment of a new stonewall in first year and for the maintenance during the five-year contract period is EUR 4,7 per m per year for the stonewall higher than 70 cm and EUR 4,01 per m per year for the stonewall lower than 70 cm. The amount of support payments for the restoration of a stonewall in first year and for the maintenance during the five-year contract period is EUR 3,83 per m per year for the stonewall higher than 70 cm and EUR 3,53 per m per year for the stonewall lower than 70 cm. The amount of support payments for the maintenance of stonewall is EUR 2,43 per m per year.

9.2.2.3.2 Establishment and maintenance of mixed species hedgerows

Rationale

The intensive farming and extensive land improvement of the Soviet period resulted in a simplification of the traditional mosaic-like landscape structure: large masses of fields were created, from where the field barriers important as habitats, as well as other valuable landscape elements were removed. As a result, habitats suitable for many species of agricultural lands were destroyed and the aesthetic value of landscapes suffered. Wind and water erosion intensified in the large fields.

Mixed species hedgerows as an essential part of the ecological network are among the most valuable habitats in agricultural landscapes; they also act as barriers to wind and water erosion.

The establishment of mixed species hedgerows has been supported in one pilot area in Estonia since 2001. In 2002, support payments were made for the establishment of 2710 m of hedgerows. In 2003, support was granted for the establishment of 2400 m of hedgerows in an amount of EUR 4 per m.

Objectives of activity

The objective of the activity is to favour the establishment of mixed species hedgerows to:

- create habitats and improve biodiversity;
- diversify agricultural landscapes;
- reduce wind and water erosion.

Geographical coverage

Establishment of hedgerows will be applied in the Jõgeva, Lääne-Viru, Viljandi, Tartu and Järva counties, where agriculture is more intensive than in the other areas of Estonia and erosion poses a severe problem in the huge fields.

The activity will be applied from 2005.

Preconditions for entry

Applicants for support for the establishment and maintenance of mixed species hedgerows must meet the Environmentally Friendly Production Scheme requirements.

Requirements

a) Establishment of mixed species hedgerows

To establish a hedgerow, the applicant must have a plan prepared by an attested specialist and approved by the local land improvement bureau and environmental authority. The hedgerow must consist of at least two rows and four different species of bushes or trees that naturally grow in Estonia; at least 75% of the sets must be broad-leaved trees or bushes. Fertilisers and plant protection products must not be used nearer than 1.5 m of the hedgerow. Dead plants must be replaced by new ones during the years following the year of establishment of the hedgerow.

During the four years of commitment following establishment, the hedgerow has to be maintained according the requirements listed below.

b) Maintenance of mixed species hedgerow

The surroundings of the plants must be mowed or cleared of weeds as necessary to facilitate their growth. If necessary, the hedgerow must be trimmed and dried branches must be removed. Fertilisers and plant protection products must not be used and new drainage systems must not be established nearer than 1,5 m of the hedgerow.

Expected impact

According to expectations, 45,000 m and 3,000 m of mixed species hedgerows will be established and maintained, respectively, in 2005-2006.

As a result of establishment of hedgerows, suitable habitats will be created for species of agricultural landscapes and biological and landscape diversity will improve. The risk of soil and water erosion will also decrease.

Amount of support

The amount of support payments for the establishment of hedgerow in first year and for the maintenance during the five-year contract period is EUR 5,49 per m per year. The amount of support payments for the maintenance of mixed species hedgerows is EUR 2,83 per m per year.

9.2.3 Special activities

9.2.3.1 Management of semi-natural habitats

Rationale

Semi-natural habitats have been widely common in Estonian landscapes. Besides their high aesthetical value, semi-natural habitats play an important role in maintaining biodiversity.

The transfer to large-scale production, loss of traditional management methods and discarding of less yielding grasslands have substantially reduced the area of semi-natural habitats over the last half of a century.

The area of wooded meadows has decreased 1000-fold over the last 70 years; there are 1500 ha of mowed wooded meadows in Estonia at present. Not more than 9000 ha of alvar grasslands are in a relatively good condition in Estonia. There are about 15,000 ha of managed bottomland meadows and 3000 ha of wooded pastures.

Nature conservation payments administered by the Ministry of the Environment have been made in Estonia for the restoration and management of semi-natural habitats since 2001. The restoration and management of 16,360 ha of semi-natural habitats

was supported in 2001 and 17,830 ha was supported in 2002. The maintenance of 18 000 ha of semi-natural habitats was supported in 2003. The amount of maintenance support was EUR 128 per ha of wooded meadows; EUR 64 per ha of coastal grasslands, EUR 42 per ha of alvars, floodplain meadows, wet meadows, and EUR 32 per ha of wooded pastures and dry grasslands.

Objectives of activity

The objective of the activity is to guarantee the preservation of biological and landscape diversity as well as valuable cultural heritage by promoting the management of semi-natural habitats (wooded meadows, wooded pastures, coastal grasslands, floodplain meadows, wet meadows, alvar grasslands and dry grasslands) using traditional methods.

Geographical coverage

The activity will be applied nationwide from 2005.

Preconditions for entry

Beneficiaries of support for the management of semi-natural habitats must comply with Good Farming Practice.

Requirements

Support is granted for the management of wooded meadows, floodplain meadows, dry grasslands, coastal grasslands, wet meadows, alvar grasslands and wooded pastures.

Wooded meadows must but mowed from 1 July at least once a year; the hay must be collected and removed.

Dry grasslands, floodplain meadows and wet meadows must be mowed, preferably using the method of mowing into two directions from the centre or from one edge to another, from 1 July at least once a year; the hay must be collected and removed. Where mowing is impossible, dry grasslands, floodplain meadows and wet meadows may grazed at a stocking rate of 0.2–1.2 LU/ha.

Alvar grasslands must be used for grazing 0.1–1.0 LU/ha, the share of land covered by the crowns of bushes must be kept low and the grass must be kept short. If there are not enough animals in the holding, the alvar may be mowed preferably using the method of mowing into two directions from the centre or from one edge to another, from 1 July at least once a year; the hay must be collected and removed.

Coastal grasslands must be used for grazing 0.4–1.2 LU/ha, while at least a half of the grazing area must have short grass. If there are not enough animals in the holding, the coastal grassland may be mowed, preferably using the method of mowing into two directions from the centre or from one edge to another, from 1 July at least once a year; the hay must be collected and removed.

In wooded pastures, the share of land covered by tree crowns must be at least 0.2, the stocking rate should be 0.3–1.0 Livestock Units per hectare and the trees and bushes should be thinned where necessary.

An applicant must participate in 6-hour training in the management of semi-natural habitats once in the year of application and once during the five-year contract period.

Expected impact

According to expectations, the management of 30,000 ha of semi-natural habitats will be supported in 2005 and 40,000 ha in 2006. Implementation of the activity ensures the preservation of valuable semi-natural habitats.

Amount of support

EUR 209,25 per ha is paid for management of wooded meadows; the amount for management all the other habitats is EUR 89,40 per ha.

9.2.3.2 Local endangered breeds

Rationale

According to the FAO classification, the Estonian cattle breed and the Estonian native horse belong to the endangered category and require preservation. According to Veterinary and Food Board there were about 450 Estonian mares and about 500 Estonian cattle breed cows in Estonia in 2003 (e.g. in 1945 — 12,799).

The nationwide payment of support for raising the Estonian native horse began in 2002, when support was granted for raising of 559 horses. In 2003, support was granted for rearing 684 Estonian native horses and the amount of payment was EUR 96 per horse. Dairy cow support payments have been made for the Estonian cattle breed at a preferential rate since 2000. In 2003, support was granted for rearing 351 Estonian cattle breed cows.

Objectives of activity

The objective of the activity is to ensure the preservation of local endangered breeds, the Estonian cattle breed and the Estonian native horse, which are important in view of cultural heritage and genetic variety.

Geographical coverage

Support for raising Estonian native horse will be paid nationwide from 2004; support for raising Estonian native cattle will be paid from 2005.

Preconditions for entry

Beneficiaries of support for breeding local endangered breeds must comply with Good Farming Practice.

Requirements

Support will be granted:

- for cattle of the Estonian cattle breed that are entered in the register of farm animals and in the herd book kept by the preserver of endangered breed approved by the Estonian Veterinary and Food Board, and pure-bred female progeny which is at least six months old carried in the register of farm animals and who's parents are carried into herd book mentioned before;
- for Estonian native horses that are that are at least six months old, duly identified and purebred, carried in the studbook kept by the preserver of endangered breed approved by the Estonian Veterinary and Food Board .

Expected impact

Support payments expected to be made for all eligible Estonian native horses and all Estonian cattle breed. Implementation of the activity will increase the numbers of

Estonian native horses and the Estonian cattle breed and thus reduce the risk of their extinction. The activity contributes to the preservation of genetic diversity.

Amount of support

The amount of support payment for raising an Estonian native horse is EUR 162,97 and amount of support payment for raising a cow of the Estonian cattle breed is EUR 173,41.

9.2.3.3 Winter plant cover

Rationale

Although the pressure of intensive agriculture on soils has significantly decreased over the past ten years, there are about 25,000 ha of eroded cultivated land in Estonia.

Objectives of activity

The objectives of the activity are:

- to reduce the risk of winter soil loss due to water and wind erosion on agricultural lands;
- to reduce the risk of water pollution caused by the leaching of nitrogen and/or winter soil loss;
- to increase biodiversity by creating winter habitats for invertebrates and birds.

Geographical coverage

The activity will be applied from 2005 in the Jõgeva, Järva, Lääne-Viru, Viljandi, Võru, and Tartu counties.

Conditions of aid

The beneficiaries of support for the winter plant cover activity must comply with Good Farming Practice.

Requirements

Support can be applied for on two levels:

- from 1 November to 31 March, 30% of the land to which crop rotation is applied must be under plant cover (crop). Producers who apply for organic farming support and the Environmentally Friendly Management Scheme, as well as producers who have more than 0.5 Livestock Units per hectare of the total cultivated area of the enterprise, are not eligible for support;
- From 1 November to 31 March 50% of the land to which crop rotation is applied must be under plant cover. Producers, who have more than 0.5 Livestock Units per hectare of the total cultivated area of the enterprise, are not eligible for support.

Expected impact

The winter plant cover activity is expected to cover 50,000 ha of agricultural land. As a result, the area under plant cover in winter increases and the area of land exposed to the risk of wind and water erosion decreases. This reduces the leaching of nutrients into water bodies and increases biodiversity.

Amount of support

The rate of support is EUR 6,81 per ha if 30% of the land on which crop rotation is applied has a plant cover in the winter period. Where 50% of such land has a winter plant cover, the rate is EUR 15,78 per ha.

9.3 SUPPORT FOR AFFORESTATION OF AGRICULTURAL LAND

Rationale

To reduce the relative share of abandoned agricultural lands, lands less suitable for agriculture.

In 2004–2006 it is possible under this measure to afforest 10 000 ha of agricultural land in an environmentally friendly manner, taking into account local conditions and planning.

General requirements

Council Regulation 1257/1999, article 31.

Measure will be implemented on common principles in the rural area of Republic of Estonia.

The Minister of Agriculture has right to name the areas, where the measure is not implemented because of the natural afforestation. The need for the measure arises from the ERDP strategy.

According to the Treaty the EU gives Estonia support, as an exception in 2005–2006 to afforest these lands that have been abandoned by agriculture up to five years previously.

The annual average EU financing support for the years 2005–2006 is EUR 4,3 million.

Requirements for applicants

The support can be applied for by natural or legal person who applies for support for at least 0,3 hectare of agricultural land what belongs in applicant's property.

The planting has to be adapted to local conditions and has to be compatible with the environment.

Minimum number of plants per hectare must be guaranteed and the parentage of plants must be also proved documentary.

Where fields of over 5.0 ha are afforested, the soil quality rating has to be below 35 points.

Support for the afforestation of agricultural and abandoned agricultural land will be granted on condition that such land has been in use within the previous five years.

The maximum area supported under afforestation of agricultural land measure is 30 hectares per applicant.

The Natura 2000 habitat types listed in Annex 1 to the wildlife directive (92/43/EEC), located in Natura 2000 areas and protected areas, are not eligible for support under this measure. Support also is not granted for regions and areas where afforestation may endanger the natural environment (like protected areas, restricted zones, habitats with a heritage value).

Establishment of coniferous trees (monoculture), at least 25% should be broad leaved trees, foreign tree species what are not allowed under Forest Act (1998), Christmas trees or fast growing tree species with the rotation period up to 25-year forest plantations are not supported.

Documents required upon application

- Application;
- Action plan;
- Other certifying documents if necessary.

Description of activity plan

The activity plan contains applicant's current situation on agricultural land and planned activities. Local land improvement bureau and environmental authority will approve the activity plan.

Supported activities

The following activities are supported under this measure:

- establishment of a forest plantation;
- an annual premium per hectare afforested to cover maintenance costs;
- a second instalment grant to replace perished forest plantation.

Amount of support

The amount of establishment support is 805 EUR per hectare.

The payment of maintenance support is paid in the first year together with establishment support and next four years the applicant has to apply for maintenance support separately. The support will be given only to the area where planting was done with establishment support. The amount of maintenance support is 77 EUR per hectare per year.

The second instalment grant will be paid, if established plantation has been perished more than 25%. The grant is foreseen in case of *force majeure* and is payable once during the support payment period. The amount of second instalment grant is EUR 128 per hectare.

9.4 SUPPORT FOR SEMI-SUBSISTENCE FARMS UNDERGOING RESTRUCTURING

Objective of measure

To give smaller agricultural holdings temporary income support in the post-accession transitional period, and to thus contribute to the maintenance of smaller agricultural holdings and make them more viable.

General requirements

Article 33b of Regulation 1257.

This measure will be implemented on common principles in the Republic of Estonia.

The need for the measure arises from the ERDP strategy and it will be implemented during the transitional period of 2004–2006.

The annual average EU financing support for the years 2004–2006 is EUR 3,5 million.

Requirements for applicants

Support is available for sole proprietor engaged in the production of agricultural products if applicant's gross revenue from agricultural production in the previous year

exceeded 2000 EUR and total farm revenue included also revenue from on-farm diversification activities in the previous year do not exceed 18000 EUR.

The applicant must prove economic viability in the form total revenue growth (excluded support for semi-subsistence farms undergoing restructuring), which will have to increase at least 12% by the end of the third year compared to year before applying support.

An applicant must continue with agricultural production during support period.

An applicant must complete necessary investments described in the business plan to become economically viable. Compliance with the business plan reviewed after three years.

Documents required upon application

- Application
- Business plan;
- Activity report
- Other certifying documents as necessary.

Description of business plan

The business plan will demonstrate the future economic viability of the holding. The business plan consists of a brief description of previous economic activities and planned economic activities during next five year. The business plan includes planned necessary investments with milestones and targets; and also growth rate of revenue are represented. The minister for agriculture sets detailed requirements.

Amount of support

Initial applications for support can be submitted in 2004- 2006. Support will be paid for up to five years.

The annual amount of support per applicant is 1000 EUR, totalling up to 5000 EUR over five years.

9.5 SUPPORT FOR MEETING STANDARDS

Objective of the measure

The objective of the measure is the compliance of agricultural sector with the standards arising from the water policy of the Community, in particular the aim is to decrease point source pollution from agriculture with substances listed in annex VIII p. 11 of Directive 2000/60/EC of the European Parliament and of the Council.

The measure assists in speeding up the fulfilment of standards based on Community's water policy (the Directive 2000/60/EC of the European Parliament and of the Council and the Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources) and in compensating partly the temporary financial burden arising from bringing manure handling into accordance with environmental requirements. Main emphasis is on environmental standard for manure and liquid storages set by Regulation No 57 of the Estonian Government of 27.02.2004.

According to the amendment (2004, No 57) of the Regulation of the Government "Water requirements for fertilizer and manure and silage storage facilities and for

manure and silage juice and the fertilizer usage and storage requirements" (2001, No 288), manure storage facilities should meet environmental requirements by 1. January 2010 and by 31. December 2008 in the area vulnerable to nitrate pollution.

General requirements

Article 33l (2a, 2b) and chapter Va of Regulation 1257.

This measure will be implemented under general principles in the whole territory of Estonia.

The need for the measure arises from the ERDP strategy and the measure will be implemented during the transitional period of 2004–2006. The measure contributes to the sustainable development of rural economy.

According to the Water Act (2004) the minimum manure storage capacity of eight months has to be fulfilled.

Requirements for applicants

Support is available for a natural or legal person who is keeping more than 10 livestock units (LU) of cattle, pig, sheep or goats in a building used for keeping farm animals. The cattle, sheep, pigs and goats should be registered according to requirements.

Buildings used for keeping farm animals should be registered as required.

An applicant undertakes to make the investments planned in the plan of investment for manure storage organization during the support period. The applicants who before the implementation of the measure concerning meeting standards got a positive reply or were given support for the construction or reconstruction of manure storage facilities under measure 3.1 of the SPD the acceptance of applications for the investments into the construction and reconstruction of manure storage facilities will be closed by 30 August 2004 at the latest, i.e. before the implementation of the measure concerning meeting standards.

An applicant undertakes to go on with keeping farm animals during the support period.

Documents required upon application

Application.

The plan of investment for manure storage organisation approved by the county environmental authority.

Other documents as required.

The plan of investment for manure storage organisation

The plan of investment for manure storage organisation (hereinafter plan of investment) includes the investments for the year of commitment planned to bring manure or liquid storages into compliance with requirements.

Eligible investments are the following: building, reconstruction and expansion of manure or liquid storages, obtainment and adjustment of utility systems and preparatory works connected with planned investments.

The plan of investment should be presented separately for every manure or liquid storage that is connected with the building used for keeping farm animals for which support is being applied.

Amount of support

Applications for support can be submitted in 2004-2006. Support will be paid in three years.

The amount of support granted to an applicant raising cattle, sheep and goats depends on the number of animals ascertained in the building used for keeping farm animals that is connected with the eligible object. Support to pig farmers is calculated according to the number of sows and hogs and in case of fattening pigs according to the reference average of animal movements in the building used for keeping farm animals, which is connected with the eligible object.

The amount of support is 80 EUR per LU a year, whereas the total amount per applicant cannot exceed 25,000 EUR a year and 75,000 EUR per period. There are not planned any further payments and commitments within meeting standards measure for manure storage facilities after the end of support period. One-time investment is sufficient to assure that manure storage facilities conform to the environmental requirements.

9.6 COMPLEMENTS TO DIRECT PAYMENTS

The measure reduces the inequality that arises from a different direct aid level compared to the EU Member States as from 1st May 2004.

Support is paid by ARIB.

9.7 TECHNICAL ASSISTANCE

Objective of measure

The general objective of the technical assistance measure is to support the effective implementation, control, monitoring and the evaluation of the program.

Activities supported

Taking into account the Regulations 1257/1999/EU (art 33e), 1685/2000/EU (rule No 11 of the Annex), 817/2004/EU (art 45), 141/2004/EU (art 3).

- Appraisal of the projects.
- Information actions, seminars.
- Studies.
- Meetings of monitoring committee and sub-committees.
- Audits and on the spot checks of operations.
- Evaluation, including coordination, meetings of expert groups.
- Monitoring.
- Other allowed activities.

Categories of expenditure are foreseen:

- Costs of experts and other personnel not belonging to public authority.
- Costs of public administration experts and other personnel (excluding those connected to activities information actions, studies, evaluation and seminars).
- Costs of preparation of information materials and publishing.
- Costs of transportation.
- Costs of meetings.

- Procurement of techniques related to information actions, seminars.
- Expenditure relating to audits and on-the-spot checks of operations.
- Expenditure relating to monitoring and evaluation activities, including cost of programming of software, techniques, transportation,
- Expenditure connected to civil servants and other public officials seconded by duly documented decision of the competent authority to carry out tasks (excluding those connected to activities information actions, studies, evaluation and seminars).
- Costs of professional services rendered by a public service in the implementation of an operation provided if it does not arise from the statutory responsibilities of the public authority or the authority's day-to day management, monitoring and control tasks.
- Other allowed expenditures.

10 PILOT PROGRAMMES

An overview of SAPARD programme is described in chapter 5.11.4.

11 COMPETENT AUTHORITIES

In accordance with paragraph 1 of Article 43 of Regulation 1257, the following authorities are responsible for ERDP implementation on the national level.

- The Ministry of Agriculture is responsible for coordinating the implementation of the Common Agricultural Policy in Estonia. The Ministry of Agriculture is responsible for accreditation, monitoring, and cancellation of the accreditation of the paying agency in accordance with Regulation 1257 and Commission Regulation (EC) No 1663/95, and has the functions of the managing authority: ERDP adaptation, collection and forwarding to the European Commission of the information required for ERDP monitoring and evaluation, ensuring compatibility with EU policies, and publicity.
- ARIB implements all the CAP measures and the accompanying measures and acts as the paying agency under Commission Regulation (EC) 1663/95, having been previously accredited by the Ministry of Agriculture;
- A body independent of the paying agency, which is appointed by the Ministry of Agriculture, performs the duties of the certifying body.

The Ministry of the Environment, the Agricultural Research Centre, the Plant Production Inspectorate, the Veterinary and Food Board, the Heritage Conservation Board, regional land improvement bureaux and county environmental authorities participate in the implementation of the relevant measures within the scope of their competence.

12 IMPLEMENTATION, EVALUATION, CONTROL, SANCTIONS, INFORMATION

Implementation of the ERDP shall be conducted pursuant to the requirements of the EU, and especially with Art.1 and 12 of the Council Regulation (EC) n° 1260/99 laying down general provisions on structural funds, which states that operations financed by the Funds and activities receiving support from the EIB or from another financial instrument shall be in compliance with the provisions of the Treaty, with instruments adopted under it and Community policies and action approved therein, and, within this, with the rules on environmental protection.

The investments made under the measure "Support of the meeting standards" has to follow Council Regulation (EC) No 567/2004 Article 1. Possibility to support costs linked to investments needed to comply with a standard set by the Community is limited to the first three years of the period of support, up to an annual ceiling of EUR 25000 per farm. Loss of income and additional costs resulting from compliance with the standard may not be taken into consideration until the end of the investment period. Precluded is possibility to support same investments under the different measures. Within this programming period, under measure 3.1 of the SPD the acceptance of applications for the investments into the construction and reconstruction of manure storage facilities will be closed by 30 August 2004 at the latest, i.e. before the implementation of the measure concerning meeting standards.

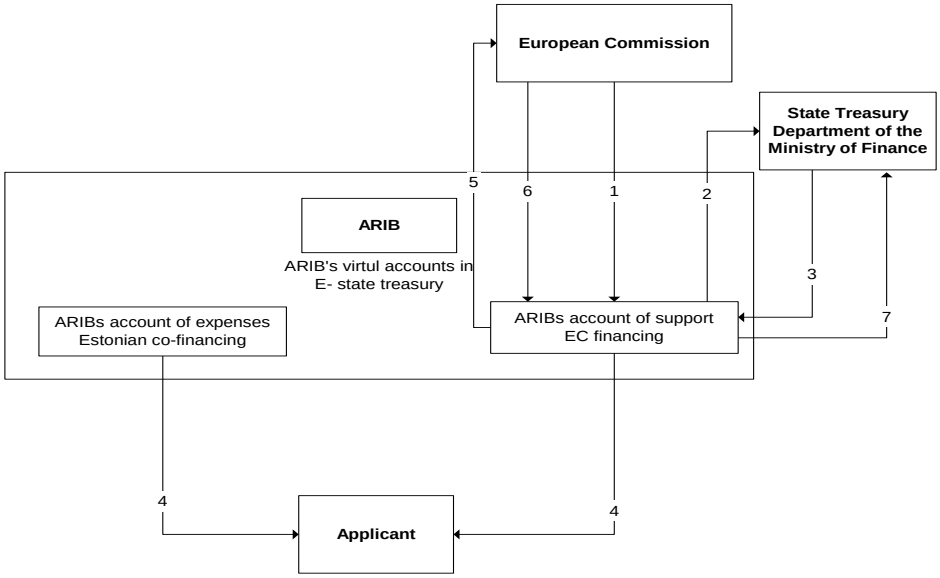
In particular all operations undertaken shall comply with the Habitats and Wild Birds Directives (92/43/EC and 79/409/EC) and where applicable with the Directive on Environmental Impact Assessment (85/337/EEC as amended by 97/11/EC). Additionally, all actions realised must be carried out according to the Estonian legislation on environment. In cases where applicable environmental Community legislation is not yet transposed into national legislation, the relevant EU directives shall directly apply until their effective transposition.

12.1 MOVEMENT OF FUNDS

Final payments to applicants are made by ARIB as the accredited paying agency. Ministry of Agriculture as Competent Authority accredited Paying Authority (ARIB) according to the Common Agricultural Policy Implementing Act, paragraph 7. The Decree of Minister for Agriculture No 35 (13.01.2004) lays down rules for accreditation. ARIB passed the accreditation foreseen by the Decree for the date of the EU accession. The accreditation was based on independent pre-accession audit about prepareness of ARIB to implement measures and functions of EAGGF Guarantee section (Ernst & Young Baltic AS, signed by Mr Hanno Lindpere 26.04.2004).

Funds are transferred trough the State Treasury where ARIB has a separate account from which final payments are made to the applicants.

Figure 18. Movement of funds



1. The European Commission transfers advances to ARIB.
2. For lacking amounts ARIB submits a payment request for bridge-financing to the State Treasury Department of the Ministry of Finance.
3. The State Treasury transfers bridge-financing funds to ARIB account.
4. ARIB makes a payment to the applicant – part of co-financing from the account of expenses and part of foreign-financing from the account of support.
5. ARIB submits a payment request report to the European Commission.
6. The European Commission compensates ARIB for the expenses incurred.
7. ARIB transfers surplus funds from the foreign financing to the State Treasury.

12.2 MONITORING AND EVALUATION OF ERDP

According to Article 43(1) of Regulation (EC) No. 1257/1999 the rural development plans submitted by Member States for the period from 2000 – 2006 must include *"provisions to ensure the effective and correct implementation of the plans, including monitoring and evaluation"*.

Under the PHARE 2002 project among other activities a proposal has been made for the institutional structure for monitoring and evaluation of the ERDP measures. The main emphasis under the project was to work out the monitoring and evaluation system for the agri-environment measure (including indicators and methodology).

12.2.1 Monitoring

According to Article 48(2) of Regulation (EC) No. 1257/1999 "monitoring shall be carried out by reference to specific physical and financial indicators" and that "Member States shall submit annual progress reports by 30 June of the following year to the Commission. For fulfilment of this obligation guidelines and working papers prepared by the Commission for the Member States (Commission Document VI/43512/02 final 26/2/2002) will be taken into account. Annual progress reports are prepared by Ministry of Agriculture together with ARIB.

The electronic monitoring system of the ERDP is under construction and should be completed by 1 November 2004. Most of the data necessary for monitoring are available in the ERDP procedural system. Data can also be obtained from the client register (e.g. location of applicant's activities) and a part of the data related to LFA can be taken from the ARIB geoinformation system. To find the monitoring table indicators, there are certain procedures in reporting system, providing different data classifications. Finally the data are collected in the software package Excel.

12.2.2 Evaluation

An independent expert conducted ex-ante evaluation of the ERDP according to Articles 54–57 of Commission Regulation 445/2002 replaced by Commission Regulation 817/2004, which regulates its implementation. In the course of ex-ante evaluation, the identified discrepancies, backwardness and potential were analyzed and the conformity of the strategy to the current situation and goals was assessed. The expected impact of the selected priority activities was also evaluated and their goals were quantified where possible.

According to Articles 8 Commission Regulation 141/2004, no interim evaluation is planned for this program period.

The Republic of Estonia in cooperation with the European Commission will conduct ex-post evaluation after the end of the program. Ex-post evaluation will assess the impact of the program, the use of funds, the efficiency and effectiveness of support, and make conclusions about rural development policies, including their contribution to the Common Agricultural Policy. The ex-post evaluation will be carried out following the guidelines of the European Commission.

12.2.3 Institutional Structure for Monitoring and Evaluation

1. Co-ordination and administration of the monitoring and evaluation of all RDP measures will be the concern of a Ministry of Agriculture with cooperation to ARIB. The responsibility should include:

- the preparation of all annual progress reports;
- the co-ordination, management and final compilation of all evaluation reports submitted to the European Commission;
- the co-ordination and management of all relevant committees/working groups established by the MoA including the ERDP Monitoring Committee, Agri-environment Monitoring Group and ERDP Evaluation Committee;
- to submit proposals about implementation of the ERDP programme to the European Commission.

2. The Agricultural and Rural Development Council (ARDC) is going to fulfil the task of the **RDP Monitoring Committee.**

In Monitoring Committee are representatives of government agencies, farmers, and other organisations pertaining to rural affairs. The following agencies and organisations are represented: Estonian Farmers' Federation; Estonian Private Forest Union; Estonian Cooperative Association; Ministry of Environment; Estonian Chamber of Agriculture and Commerce; Estonian Horticultural Association; Estonian Chamber of Environmental Associations; Estonian Agricultural Producers Central Union; Ministry of Finance; Estonian Organic Farming Union; Rural Development Foundation and representative of the European Commission in advisory capacity.
The activities of the RDP Monitoring Committee should include:

- to review and discuss the implementation of the RDP programme;
- to submit to the managing authority proposals about assistance of EAGGF Guarantee Section;
- to review, discuss and approve annual progress and evaluation reports prepared for submission to the European Commission.

3. Considering the specific nature of agri-environmental support a special Agri-environment Monitoring Group is created under the Monitoring Committee.

Agri-environment Monitoring Group discuss and make decisions on the full-range of specific issues relating to the monitoring, evaluation and further development of the agri-environment measure. The membership of the group will include scientists, environmental NGOs, government agencies etc. The responsibilities of the Agri-environment Monitoring Group should include:

- The final review of the agri-environment content of all external reports (annual progress and evaluation reports) prepared for submission to the Monitoring Committee before submitting to the European Commission;
- Recommending appropriate action to the managing authority and Monitoring Committee for any adjustments.

4. **RDP Evaluation Committee** should include:

- establishing the selection/tender process for the selection of the **Independent Evaluator** responsible for evaluation of all RDP measures except the agri-environment measure – the **Agricultural Research Centre (ARC)** will have a potential role as independent evaluator of the agri-environment measure;
- establishing and monitoring progress with the time-table for preparation and submission of the necessary evaluation reports;
- defining the division of responsibility between the designated Independent Evaluator and the ARC – including responsibility for answering the Commission Common Questions (chapter-specific and cross-cutting);
- considering and approving draft evaluation reports prepared by the Independent Evaluator and ARC after they have gone to the Ministry of Agriculture for compilation as a single evaluation report for submission to the European Commission.

12.3 MEASURE-SPECIFIC MONITORING AND EVALUATION

The annual ERDP progress report to be sent to the European Commission shall include following common indicators for the measures:

- number of applicants;
- number of applications received;
- number of applications approved;
- number of beneficiaries;
- sum applied for;
- sum approved;
- sum paid;
- number of terminations;
- sum reclaimed.

Monitoring is curried out by ARIB.

Common monitoring indicators tables will be annexed to the reports.

12.3.1 Support for less-favoured areas

Physical indicator
Applications
2004 – at least 7 000
2005 – at least 9 000
2006 – at least 9 000

Financial indicator
Amount of public expenditure committed (EUR ‘000)
2004 – 10 57
2005 – 11 5
2006 – 12 4
TOTAL 34 470

Achievement indicator
Agricultural land maintained:
2004 – 400 000 ha
2005 – 465 000 ha
2006 – 465 000 ha

Impact indicator
Maintained land increased from 2004 to 2006 by 2%.

12.3.2 Agri-environmental support

Proposed physical, financial impact and achievement indicators
1. Environmentally-friendly Production Scheme (EPS)

Physical indicator - total area under agreement (estimated in hectares)
2004 – 284 000
2005 – 284 000
2006 – 344 000

Financial indicator – amount of support (EUR ‘000)
2004 – 9 075
2005 - 9 075
2006 – 10 992

Achievement indicator – average number of crops in rotation on EPS agreement

Impact indicator – change in landscape structure in terms of point, linear and area elements

2. Organic production

1) Physical indicator - total area under agreement (estimated in hectares)
2004 – 50 000
2005 – 60 000
2006 – 70 000

2) Financial indicator - amount of support (EUR ‘000)
2004 – 4 793
2005 – 5 752
2006 – 6 711

3) Achievement indicator – *total number of farms with Organic farming agreement*

4) Impact indicator – *birds, indicative species (number of species and density)*

3. Local Endangered Breeds

1) Physical, achievement and impact indicator - *number of Estonian horses/native cattle under Local Endangered Breeds agreement, estimated*
Estonian horse:
2004 – 700
2005 – 720
2006 – 750

Estonian cattle breed:
2005 – 400
2006 – 450

2) Financial indicator - amount of support (EUR ‘000)
Estonian horse:
2004 – 114
2005 – 117
2006 – 122
Estonian cattle breed:
2005 – 69
2006 – 78
Proposed Indicators for AE measures to be implemented from 2005

4. Environmentally-Friendly Management Scheme (EMS)

1) Physical indicator - *number of hectares, estimated*
2005 – 14 500
2006 – 40 000

2) Financial indicator - amount of support (EUR ‘000)
2005 – 439
2006 – 1 210

3) Achievement indicator – *number of farms under EMS*

4) Impact indicator – *number of pesticide treatments*

5. Establishment, Restoration and Maintenance of Landscape Elements
Stonewalls

1) Physical indicator - *number of walls established, restored and maintained, estimated in metres*

- Establishment of stonewall
  2005 – 20 000
  2006 – 20 000

- Restoration of stonewall
2005 – 40 000
2006 – 40 000
- Maintenance of stonewall
2005 – 15 000
2006 – 15 000

2) Financial indicator - amount of support (EUR ‘000)
- Establishment of stonewall
2005 – 88
2006 – 88
- Restoration of stonewall
2005 – 148
2006 – 148
- Maintenance of stonewall
2005 – 36
2006 – 36

3) Achievement indicator – *length of walls per agricultural area (ha) established, restored and maintained*

4) Impact indicator – *landscape attractiveness*

Mixed Species Hedgerows

1) Physical indicator - *number of hedges established and maintained, estimated in metres*
- Establishment of mixed species hedgerows
2005 – 45 000
2006 – 45 000
- Maintenance of mixed species hedgerows
2005 – 3 000
2006 – 3 000

2) Financial indicator - amount of support (EUR ‘000)
- Establishment of mixed species hedgerows
2005 – 247
2006 – 247
- Maintenance of mixed species hedgerows
2005 – 8
2006 – 8

3) Achievement indicator – *change in average field size of fields due to establishment of hedges*

4) Impact indicator – *birds – indicative species (number of species density)*

6. Management of Semi-natural Habitats

1) Physical indicator – *total area under agreement (estimated in hectares)*
2005 – 30 000
2006 – 40 000

2) Financial indicator - amount of support (EUR ‘000)
2005 – 2 780
2006 – 3 707

3) Achievement indicator – *proportion of valuable semi-natural habitats (by type) which are managed under AE agreement*

4) Impact indicator – *vascular plants – structure, coverage and species richness*

7. Winter Plant Cover

1) Physical indicator – *total area under agreement (estimated in hectares)*
2005 – 25 000
2006 – 50 000
2) Financial indicator - amount of support (EUR ‘000)
2005 – 283
2006 – 566
3) Achievement indicator – *total number of farms with Winter Plant Cover*
4) Impact indicator – *birds – indicative species (number of species and density)*

12.3.3 Support for afforestation of agricultural land

Physical indicator
Applications
2005 –at least 150
2006 – at least 150

Financial indicator
Amount of public expenditure committed (EUR ‘000)
2005 – 4400
2006 – 6300
TOTAL 10 700

Achievement indicator
During program it is possible to afforestate 10 000 ha.

Impact indicator
By the end of the programming period, 6% of the land suitable for afforestation will be forested.

12.3.4 Support for semi-subsistence farms undergoing restructuring

Physical indicator
During 2004 - 2006 approximately 5000 applicants
Total applications every year
2004 – 3840
2005 – 4400
2006 – 5000

Financial indicator
Amount of public expenditure committed (EUR ‘000)
2004 – 3840
2005 – 4400
2006 – 5000
TOTAL 13 240

Achievement indicator
Approved business plans
During program approximately 5000 entrepreneurs are supported.
2004 - 3840
2005 – 4400
2006 – 5000

Impact indicator
Applicants will increase revenue more than 12% by the end of the third year of support period.

12.3.5 Support for meeting standards

Physical indicator
During program at least 2300 applicants
2004 – 700
2005 – 900
2006 – 700

Financial indicator
Amount of public expenditure committed (EUR '000)
2004 – 11 875
2005 – 14 285
2006 – 14 285
TOTAL 40 445

Achievement indicator
At least 2500 of manure storage facilities are supported.

Impact indicator
At least 50% of manure storages under support meet requirements at the end of 2006.

12.4 CODIFICATION

Codification corresponds to point 3 of Annex IV of Commission Regulation 438/2001.

12.5 IMPLEMENTATION OF MEASURES

General principles of administration

Applications are submitted to ARIB, whose duty is to implement the ERDP measures. The applications are reviewed and decisions are made according to the eligibility criteria.

The implementing functions of ARIB are to:

- accept applications;
- review and register applications;
- assess the eligibility of applications on the basis of administrative and on-the-spot checks;
- establish contractual commitments between ARIB and beneficiaries;
- decide on granting support;
- monitor and report;
- ensure compliance with Community legislation.

The payment functions of ARIB are to:

- verify payment requests;
- grant authorisations for payments;
- make payments;
- account for financial obligations and payments;

- perform on-the-spot checks to inspect the compliance of payments with the requirements.

Acceptance of applications

ARIB will give notice of the acceptance deadlines.

According to the article 14 of Commission Regulation (EU) no 2419/2001 the applicant may withdraw an aid application according to the deadlines ARIB sets.

Processing of applications

In the course of processing of applications, the ARIB officials will check whether the potential beneficiary has submitted all the required data and supporting documents and whether the data confirm the eligibility of the applicant.

Support decisions

ARIB adopts a decision to make or refuse to make support payments based on the administrative and on-the-spot checking of applications.

A decision to refuse to make support payments must indicate the reasons for refusal.

In area aid applications replacement of agricultural parcels is allowed.

Payments

Support payments are made to the bank account specified by the applicant in the application in Estonian kroons. ARIB records information on each transfer, including the amount in Estonian kroons and in Euros according to the applicable exchange rate.

12.6 SPECIFIC ADMINISTRATION OF MEASURES

12.6.1 Support for less-favoured areas

Applications are submitted simultaneously with the submission of area aid applications. In the first year of application, the applicant submits the area aid application to the ARIB on the general bases and pursuant to the general procedure, indicating the area of agricultural land used, and assurance in which the applicant undertakes the commitments for a period of five years. In the following years, the applicant submits an area aid application.

The submitted applications are reviewed and the decision is made according to the eligibility criteria and the funds allocated to the measure in the respective year. If necessary, the Minister of Agriculture determines the limit area for which support is available per farmer, according to which the area of land eligible for support may be reduced by up to 30% if the application covers 300 ha or a larger area of agricultural land, or by up to 15% if the application covers 200 ha or a larger area of agricultural land.

12.6.2 Agri-environmental support

The submitted applications are reviewed and the decisions are made according to the eligibility criteria and the funds allocated to the measure in the respective year.

In case there are no budget funds to satisfy the applications meeting the requirements, the minister of agriculture may establish an additional procedure to cut the agri-environment support, according to which the amount of support for all the applicants meeting the requirements for agri-environment support will be proportionally cut or

the amount of support will be decreased on the basis of the area of agricultural land for which the support was applied, or the amount of support will be reduced by the activities to be supported or on some other basis.

Organic farming

The activity is administered by ARIB in cooperation with the Plant Production Inspectorate.

The applicant submits to the Plant Production Inspectorate an application for approval of the enterprise or, if the enterprise has already been approved, information on the changes to be made in the enterprise. The applicant submits an application for support to ARIB. ARIB submits list of applicants with data to the Plant Production Inspectorate. The Plant Production Inspectorate inspects compliance with the requirements of the Organic Farming Act. In case of doubt, the Plant Production Inspectorate submits data to ARIB for checking the fields.

Establishment, restoration and maintenance of stonewalls

The activity is administered by ARIB in cooperation with the Heritage Conservation Board.

The appropriate location and materials, and the appropriate design of stonewall in the particular region are subject to the approval of the Heritage Conservation Board, which sends this information to the producer. The applicant submits the information to the ARIB together with the application for support.

Establishment and maintenance of mixed species hedgerows

ARIB in cooperation with land improvement bureau and the Ministry of the Environment administer the activity.

A plan approved by the local land improvement bureau and environmental authority is required for the establishment of a hedgerow. The applicant submits the plan to ARIB together with the application for support.

Management of semi-natural habitats

The activity is administered by ARIB in cooperation with the Ministry of the Environment.

The applicant visits the local environmental authority and receives confirmation on the management need of the semi-natural habitat. The type of habitat and method of maintenance are also specified. The habitat is entered in the Whole Farm Map issued by ARIB. The applicant then submits the Whole Farm Map to ARIB together with the application for support.

Local endangered breeds

The activity is administered by ARIB in cooperation with the Veterinary and Food Board.
The applicant submits an application for support to ARIB. ARIB submits a list of applicants for support for raising endangered breeds together with the submitted data on the animal of the endangered breed to the Veterinary and Food Board. Cattle of the Estonian cattle breed should be entered in the register of farm animals and in the herd book kept by the preserver of endangered breed approved by the Estonian Veterinary and Food Board. Pure-bred female progeny should be carried in the register of farm

animals and parents should be carried into herd book mentioned before. Estonian native horses should be duly identified and purebred, carried in the studbook kept by the preserver of endangered breed approved by the Estonian Veterinary and Food Board. The Veterinary and Food Board checks these data and submits the results of the check to ARIB.

12.6.3 Support for afforestation of agricultural land

Support is granted over a five-year period. In the first year of application, the applicant submits the application to the ARIB together with approved activity plan. The submitted applications are reviewed and decisions are made according to the eligibility criteria. Before the end of the support payment period the applicant proof that the afforested land has been entered in the Register as forestland.

Where the applicant has made significant changes in the activity plan in the application period or where the changes have occurred for reasons beyond the control of the applicant, the applicant is required to inform the ARIB in written form.

Maintenance support after establishment

The payment of maintenance support is paid in the first year together with establishment support and next four years the applicant has to apply for maintenance support separately. The support will be given only to the area where planting was done with establishment support.

Second instalment grant

To get s second instalment grant the applicant has to submit justified and by the local environmental authority approved application, that the plantation has been perished. The submitted applications are reviewed and decisions are made by ARIB.

12.6.4 Support for semi-subsistence farms undergoing restructuring

Support is granted over a five-year period. In the first year of application, the applicant submits the application to the ARIB together with a business plan. The submitted applications are reviewed and decisions are made according to the eligibility criteria and the funds allocated to the measure in the respective year.

In the fourth year, the applicant submits to the ARIB an activity report, indicating the performance of the specified goals and investments. If necessary investments for increasing revenue are completed and the revenue is increased by 12% and applicant continues agricultural production, payment is made also in the fourth and fifth years of application.

12.6.5 Support for meeting standards

The designated amount of support is paid over a period of three years.

In the first year of application, the applicant submits an initial application for payment together with the plan of investment to meet the standards of manure handling approved by the environmental authority. In the second and third year the applicant submits an initial application for payment together with investment report.

The plan of investment should cover the whole period of support.

The submitted applications are reviewed and decisions are made according to the eligibility criteria and the funds allocated to the measure in the respective year.

If the applicant makes changes in the plan of investment in the application period, the applicant is required to inform ARIB.

When investments will be done before the terms, the applicant can get the third year support with the second year support, in case the total sum stays within the 25 000 EUR limit.

12.7 CONTROL AND SANCTIONS

Principles of control and sanctions

Principles of control are set in the chapters 2 and 12 of the Common Agricultural Policy Implementing Act. Rules for cooperation between Paying Agency and control institutions are detailed in the Decree of Government no 160 from 29.04.2004. In addition, general internal audit rules connected to the ERDP are based on the Decree of Government nr 329 from 18.10.2000.

ARIB is responsible for control and carries out state monitoring of the beneficiaries. ARIB performs administrative control of all applications submitted and performs on-the-spot checks of at least 5% of the applicants every year. The inspection results are recorded in a checklist. ARIB performs the checks according to Articles 67-69 of Commission Regulation (EC) No 817/2004. On-the-spot checks shall be documented on detailed and standardised control reports as provided for by Article 20 of Regulation (EC) No 2419/2001.

Farmers subjected to on-the-spot checks are selected by the competent authority (ARIB) on the basis of a risk analysis and an element of representativeness of the aid applications submitted. Risk analysis shall take into account all risk criteria provided for by Article 19(1) of Regulation (EC) No 2419/2001. To provide the element of representativity, are selected randomly between 20 % and 25 % of the minimum number of farmers to be subject to on-the-spot checks.

Pursuant to the article 37 (2) of the Commission regulation (EC) no. 817/2004 the recipient to the less favoured areas support and agri-environmental support may increase the area that does not have valid commitment, subject to the support in the amount of up to 30 percent or up to 2 hectares.

If the investments made under the measure “Support for meeting standards” exceed 10 000 euros, check on the applications and on-the-spot control will be carried out according to article 9a of the Commission Regulation No 141/2004, last amended with the Commission Regulation No 740/2004.

Cross-checks with IACS and other relevant databases are to be performed in cases where plots and/or animals, included in the IACS system, are elements of the application (Article 68 of Commission Regulation (EC) No 817/2004).

An applicant who has intentionally submitted false data will be punished according to Article 72 of Commission Regulation (EC) No 817/2004.

Interest in case of recovery of undue payments shall be calculated according to Article 49 of Regulation (EC) 2419/2001, which Article 70(3) of Regulation (EC) No 817/2004 refers to.

Where the applicant is not able to perform his obligations because of *force majeure* or other exceptional circumstances listed in Article 39 (1) of Commission Regulation (EC) No 817/2004, he remains entitled to support according to Article 39 of Commission Regulation (EC) No 817/2004.

Control of the Good Farming Practise standards

ARIB and Environmental Inspectorate will carry out control over the standards of Good Farming Practise listed in table 39:

- ARIB controls verifiable standards no 1, 6 and 10 to 17
- Environmental Inspectorate controls verifiable standards no 2 to 5 and 7 to 9.

ARIB informs competent authorities mentioned above in case of detected violation of verifiable standards and vice versa. ARIB reduces the payment in the event of violation of Good Farming Practice according to the rates prescribed by national legislation.

12.7.1 Support for less favoured areas

Sanctions for over declaration of land upon applying for support for less favoured areas are prescribed in accordance with Articles 30–32 of Commission Regulation (EC) No 2419/2001.

ARIB reduces the payment in the event of violation of Good Farming Practice standards according to the rates prescribed by national legislation.-
An applicant does not receive support if he/she is in violating of Article 14(3) of Regulation 1257/1999.

12.7.2 Agri-environmental support

Sanctions for over declaration in area support applications are prescribed in accordance with Articles 30–32 of Commission Regulation (EC) No 2419/2001.

ARIB reduces the payment in the event of violation of Good Farming Practice according to the rates prescribed by national legislation

If the applicant fails to comply with Good Farming Practice, the total amount of payment is reduced by 10% for each violation of Good Farming Practice. No payment is made when there are three or more violations.

If the amount had decreased by more than 50% due to all the violations, the applicant is refused support and must not apply in the following year.

12.7.3 Support for afforestation of agricultural land

Sanctions for over declaration in area support applications are prescribed in accordance with EU regulation 241/2001 articles 30-32.

Where there are significant shortcomings in fulfilment of the plan of activity or the applicant has not started to fill the activities prescribed by the plan of activity, ARIB has rights to consider reclaim back payments.

Also has ARIB the right to consider reclaim back payments if the afforested land has not been entered in the Register as forest land before the end of the support payment period.

12.7.4 Support for semi-subsistence farms undergoing restructuring

Support is paid over a five-year period with interim assessment at the beginning of the fourth year. If the objectives set out in the business plan (revenue has not been increased at least 12%) has not been achieved by the time of three-year review, ARIB will not grant further support.

In the case of shortcomings in meeting requirements, ARIB may consider whether to continue or terminate payments.

12.7.5 Support for meeting standards

Reductions and exclusions for the over declaration of livestock are prescribed in national legislation.

Reductions and exclusions are also foreseen, if in the third year the number of animals has decreased beyond a certain number, compared to the year of application.

In case of significant shortcomings in the fulfilment of the plan of investment or if no investments prescribed in the plan of investment has been made, ARIB has the right to claim for refund or to reduce future payments.

12.8 INFORMATION AND PUBLICITY

The rural development measures to be implemented in Estonia are made public. Publication covers:

- making potential beneficiaries and trade organisations aware of the opportunities afforded by support;
- making the general public aware of the role of the EU in the programme;
- assessment of the potential environmental impact.

Information and publicity is based on Article 32 of Council Regulation (EC) No 2082/93. Potential beneficiaries are informed of the rate of support and the procedure for applications. Information on the measures and the eligibility criteria is available via farmers' organisation, enterprise centres, and county governments.

Every year, the Ministry of Agriculture prepares guidelines for each support measure, which will be available to applicants in the regional ARIB offices. The application forms are also available at the regional ARIB offices.

Organisations of advisers and farmers organise training and seminars for farmers and advisors, including on the preparation of applications.

Information is made available to the public in the following forms:

- announcements in the press;
- information on the web sites of the Ministry of Agriculture and ARIB;
- press announcements and press events of the Ministry of Agriculture and ARIB;
- the public is informed by way of seminars, conferences, and exhibitions;
- topical publications are printed.

The general public is made aware of the role of the EU in the implementation of the programme.

13 CONSULTATION PROCESS

To identify the interests of society, the Ministry of Agriculture consulted with the Agricultural and Rural Development Council (ARDC)[20], which has been set up by the Minister of Agriculture and consists of representatives of government agencies, farmers, and other organisations pertaining to rural affairs. The following agencies and organisations are represented in ARDC on the level of their leaders and representatives:

- Estonian Farmers' Federation;
- Estonian Private Forest Union;
- Estonian Cooperative Association;
- Ministry of Environment (since February 2004)[21];
- Ministry of Internal Affairs;
- Ministry of Economic Affairs and Communications;
- Estonian Chamber of Agriculture and Commerce;
- Estonian Horticultural Association;
- Estonian Chamber of Environmental Associations;
- Estonian Agricultural Producers Central Union;
- Ministry of Finance;
- Estonian Organic Farming Union;
- Movement of Estonian Villages and Small Towns;
- Rural Development Foundation.

The ARDC sessions analysed the current situation of agriculture and made proposals for shaping the agricultural and rural strategy. The ARDC approved the rural development vision for the year 2006 and approved the ERDP measures arising from the rural development strategy. The ARDC discussed also European Commission's comments to the ERDP.

The Ministry of Agriculture set up working groups to involve experts in the relevant fields, specialists from Ministry Environment and social partners to the process of drafting the ERDP measures.

Besides the farmer's organisations participating in the consultation, special interest was shown by the following environmental organisations–involved into the process working out the agri-environment measure:

- Centre for Ecological Engineering;
- Estonian Fund for Nature;
- Estonian Ornithological Society;
- Estonian Organic Farming Foundation
- Wildlife Estonia;
- Estonian Seminatural Community Conservation Association;
- The Estonian Native Horse Conservation Society;
- ~~Estonian Native Cattle Breeding Society~~.

The working groups for the measures relied on the strategic goals of the ERDP as coordinated with ARDC and prepared the draft measures that were sent to ARDC members for comments and proposals.

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20 ARDC fulfils the tasks of Monitoring Committee. Functions are described in chapter 12.2.3

21 Ministry of Environment was involved during consultation process.

The main proposals made concerning the ERDP, followed by a remark on whether they were taken into account, are listed below.

A. **Confederation of Estonian Agricultural Producers**, letter No 1/7 of 25.02.2003 about support for LFA-s and areas with environmental restrictions: "… to extend the number of rural municipalities to 70–80… Besides coastal areas, there are clay soils and drought sensitive areas also in mainland Estonia."
   The proposal was taken into account.
B. **Estonian Chamber of Environmental Associations** in the letter of 8.04.2003 about support for less-favoured areas: "… to differential the amount of support according to the area of land subject to support, but by larger units, e.g. 100 ha."
   The proposal was not taken into account; support is minimal during the programme period, and its differentiation complicates administration.
C. **Estonian Chamber of Environmental Associations** on p. 3 of its letter of 8.04.2003 about support for less-favoured areas: "We are drawing attention to the need to apply all the ERDP measures jointly within the limits of a protected area, so as to avoid landscape changes in protected areas due to administrative borders. Although, e.g. less-favoured areas should be defined by using the rural municipality border as the territorial unit, this should not cause differences in land use and in the management and preservation of valuable landscapes within the limits of a single protected area."
   The proposal was taken into account in part, insofar as the regulation permitted.
D. **Estonian Chamber of Environmental Associations** on p. 4 of the letter of 8.04.2003 about the activity of establishment, restoration and maintenance of landscape elements under the agri-environmental support: "This activity should be more flexible and open, because due to Estonia's natural diversity, its characteristic landscape elements are much broader than currently described in the measure. For example, old farm roads, wooden bridges and footbridges, hay barns on hayfields, and single fisher's huts, which all have been parts of the traditional Estonian landscape. Many of them are characteristic of only a limited area and certain specific regions. Therefore, the list of landscape elements eligible for support should be varied by area."
   The proposal was not taken into account, as most of the listed elements are not characteristic of agricultural lands and cannot be maintained under the agri-environmental support measure.
E. **Kvistgaard Consult, foreign consultant of the Ministry of Agriculture, in April 2003**: "… the ERDP and SPD must have a mutual vertical relation between operational, specific, and general goals. The goal of the ERDP should correspond to a specific goal of the SPD… It is *advisable* to add a section that ensures the conformity of the SPD goals to those defined in the ERDP."
   The proposal was taken partly into account.
F. **Kvistgaard Consult, foreign consultant of the Ministry of Agriculture, in April 2003:** "… SWOT must form a basis for the selection of measures, followed by an explanation of why the measures were selected and how the proposed ERDP measures help to benefit from the strengths, neutralise the weaknesses, make use of the opportunities and avoid the threats. Moreover, specific and measurable indicators should be developed for each strength,

weakness, opportunity, and threat. This would ensure coherence between the previous chapter, the following strategy chapters, and the SWOT analysis... It is highly *advisable* that resources and time be allowed for SWOT analysis and the use of SWOT as an analytical programming tool."
The proposal was taken into account in part. The SWOT indicators were changed according to the proposal but wide range analysis has not been made jet.

G. **Agricultural and Rural Development Council,** session of 29.05.2003, decision on the compliance with Community standards measure: "At the proposal of the minister, it was decided to elaborate on the degree of increase of the support rate coefficients"
The proposal was taken into account. Later support rate coefficients were taken out.

H. **Estonian Cooperative Association** in letter No 1/23 of 20.06.2003 about support for compliance with Community standards: "To determine the farmers' support rate coefficient on the basis of the particular enterprise, based on the LU in that enterprise …"
The proposal was taken into account. Later support rate coefficients were taken out.

I. **Estonian Agricultural Producers Central Union** in letter No 1/22 of 20.06.2003 22 about support for compliance with Community standards: "… not to apply… a support rate differentiated according to the number of animals."
The proposal was taken into account.

J. **Estonian Chamber of Agriculture and Commerce** in letter No 1-3/512 of 27.06.2003 about support for compliance with Community standards: "… not to differentiate support … according to the number of animals in the enterprise."
The proposal was taken into account.

K. **Estonian Farmers' Federation** in letter No 37/2 of 09.07.2003 about support for compliance with Community standards: "We propose to change the differentiation levels of the ERDP... measure. ... If the coefficient of 0.7 is indeed intended to apply, the EFF proposes to apply a corrective coefficient of 1.3 to herds smaller than 100 animals. Only this would assure the owners of smaller herds that funds are available for them, and balance the negative impact on smaller producers, which arises from political arrangements. If our proposal is not approved, we have to return to the starting point …"
The proposal was not taken into account; it conflicts with the proposals of other organisations on the same subject.

L. **Ministry of Environment** in the letter of 13.10.2003 on meeting Community standards: "There is no information about the possibilities to get support for meeting environmental standards of silage storages and by-products of milk processing."
The proposal was not taken into account because milk processing is not question of the ERDP measure and inclusion of questions of silage storages would widen the scope of the measure too much.

M. **Estonian Farmers' Federation** in session of Agricultural and Rural Development Council of 29.10.2003 proposed to reduce the minimum rate of income for implementing semi-subsistence farming support up to 1598 EUR per farm.
The proposal was partly taken into account. The applicant's income from agricultural production in year 2002 must exceed 2000 EUR (previous minimum rate of income was 2556 EUR).

N. **Estonian ornithological Society** in the letter of 8.09.2003 on the interim report on the ERDP strategic environmental impact assessment: "We support the proposal made in the report to link investment support to elements of the agri-environmental measure. A requirement for the preservation of the existing landscape elements should be one of the important elements, which will not cause excessive expenditure, but would prevent the need to pay more for the establishment of landscape elements (hedgerows, stonewalls, wetlands) in the future."
The proposal was not taken into account, as it is beyond the scope of the ERDP.

O. **Ministry of Environment** in the letter of 12.11.2003 on meeting Community standards: "In order to ensure the fulfilment of "Action plan for environmentally sensitive area" we propose to differentiate the meeting Community standards support, so the level for nitrate sensitive area will be 250-300 EUR/LU for example."
The proposal was not taken into account due to the low yearly support limit, only a small number of farmers in the nitrate sensitive area would benefit from the incentive. The other aspect is that there are no extra restrictions concerning manure handling compared to the rest of Estonia.

P. **Ministry of Environment** in the letter of 12.11.2003 on meeting Community standards: "We propose to form a working group of specialists from institutions dealing with checks of farms on the spot as well from experts, in order to homogenise demands of different parties and work out guidelines."
The Minister for Agriculture took the proposal into account and the working group form.

Q. **Estonian Fund for Nature** in the letter of 04.12.2003: "General aim of the ERDP misses people. The main aim should be to regenerate people's ability to live in rural area, balance regional differences. Strategic aim should be also renovation of cultural landscapes (not just keeping), reorientation of agriculture to organic production, nature conservation and public services."
The idea of the proposal was taken into account.

R. **Estonian Chamber of Environmental Associations** in the letter of 04.12.2003 on meeting Community standards: "We suggest to pay incentive in the nitrate sensitive areas, as it was presented as a possibility at the meeting on strategic environmental impact of ERDP."
The proposal was not taken into account due to the low yearly support limit, only a small number of farmers in the nitrate sensitive area would benefit from the incentive. The other aspect is that there are no extra restrictions concerning manure handling compared to the rest of Estonia.

S. **Estonian Fund for Nature** in the letter of 04.12.2003: "… Leave out the topic of WTO. The EU takes care of the negotiations…"
The proposal was taken into account.

14 BALANCE BETWEEN MEASURES

The division of funds between the measures was decided according to their relevance to the ERDP strategic goals and their impact on achievement of these goals, financial calculations of the proportion of support in the farmers' income, and the effect of the production equipment used by and the geographical location of farmers.

The ERDP strategic goals as well as the distribution of the budget in chapter 8 show that Estonia gives priority to the protection of environment: agri-environmental support, less favoured areas and support for meeting standards. More than a half of the RDP budget is considered to allocate for these measures (see Table 41).

Table 41 Division of ERDP budget between measures, %

	2004	2005	2006	2004-2006
Support for less-favoured areas	19	18	18,1	18
Agri-environmental support	25	30	35,2	30
Support for afforestation of agricultural land	0	7	9,2	6
Support for semi-subsistence farming	7	7	7,3	7
Support for meeting standards	21	23	20,9	22
Complements to direct payments	22	13	7,3	14
Technical assistance	2	2	2	2
SAPARD	4	0	0	1

According to the ex-ante evaluation report the ERDP measures have been drafted, following the economic, social, and environmental goals. Ex-ante evaluation report says: "The measures are therefore generally balanced, but finding an optimum balance is a process pertaining to experience (which is why an analysis of earlier experience in a separate chapter would be highly valuable). The economic, social, and environmental needs in rural areas are intertwined and conflicting. The measures should be flexibly adjusted according to implementation experience. The further development of monitoring and the advisory service is very important so as to ensure the maximum effectiveness of the measures. Possibilities for implementing synergy in the next programme period should be sought already today, using the current experience in the implementation of SAPARD and domestic measures."

Two major measures are agri-environmental support and support for meeting standards (table above). Support for meeting standards become momentous during consultation process with social partners.

Agri-environmental support was also the major measure before ex-ante evaluation opening. Calculations were based on previous national experience. The budget of measure in 2004 is smaller because in 2004 only two activities (Environmentally Friendly Production Scheme and Organic Farming) will be implemented. Importance of measure will increase from 2005 (and probably during next program period).

The amount of support for less-favoured areas is inadequate to level regional inequalities. Ex-ante evaluation report proposes to consider increasing this support. Recommendation can be considered in next program period when there will be available resources from support for meeting standards measure.

According to ex-ante evaluator opinion the afforestation of agricultural land is not the first priority in Estonia. The measure is needed to contribute to the formation of

proper forests on abandoned arable lands; forests will cover arable lands that are no longer used naturally in the long term.

15 COMPATIBILITY AND CONSISTENCY

RDP contributes to the delivery of the CAP Strategy by helping farmers to respond better to consumer requirements and become more competitive, diverse, flexible and environmentally responsible. It also provides help to agricultural producers and communities, which need to adapt and develop.

The Ministry of Agriculture, as the competent authority, and ARIB as the paying agency for measures under the Regulation, will work to ensure that the measures operated under the Programme are compatible and consistent with other Community policies and instruments and national instruments.

Measures operated under the ERDP will comply with Community policies laid down in the Treaties, in particular the establishment of a space without internal borders, the Council social exclusion policy, policy in favour of SMEs. Measures will observe the principles and objectives of sustainable development as laid down in the Community programme of policy and action in relation to the environment and sustainable development. They are also consistent with the Strategy for Environmental Integration and Sustainable Development in the Common Agricultural Policy adopted at the Helsinki European Council.

The ERDP does not include support or investments falling within the scope of support measures under Common Market Organisations or research projects, measures to promote agricultural products or to eradicate animal diseases.

16 STATE AID

No additional state aid is provided within the framework of the measures of the Rural