

***BASAN PROJECT***

***Agriculture development in Lithuania***

*(source: Lithuanian agriculture and rural development plan 2000-2006)*

# 1. THE RURAL DEVELOPMENT CONTEXT OF LITHUANIA

## 1.1. GENERAL DESCRIPTION OF THE REGION

### 1.1.1 Lithuania's geographic position

Lithuania is located in the eastern part of Europe, bordering Latvia in the north (610 km long border), Belarus to the east and south (724 km) and Poland to the south (110 km), as well as Kaliningrad region of Russia (303 km) to the south-west. The total surface area of Lithuania is 65.3 thousand sq. km (roughly the size of Ireland).

#### Map 1. Lithuania's geographic position in Europe



The country forms part of the great North European Plain, and landscape alternates between hilly areas and flat plains. There are two elevated regions with a maximum of 290 m above sea level, and three plains and lowlands. Lithuania has 758 rivers longer than 10 km, and there are 2834 lakes larger than 0.5 ha. Forests cover 30 per cent of the territory. Lithuania has a maritime climate in its coastal zones and a continental one in the central part and in east. Under the influence of westerly winds, the summers are moderately warm, there is 80 per cent humidity, and little snow in winter. The average temperature in January is -4.9 C and +17.2 C in July. The growing season varies between 169 and 202 days.

Two transportation corridors of European importance run through Lithuania. North-South road and rail routes connecting Scandinavia with Central Europe, and East-West routes linking the huge Eastern markets with the rest of Europe, cross through

Lithuania. A network of 4-lane highways links major industrial centres of the country. The port of Klaipeda is the only ice-free seaport on the Eastern Baltic. There are regular cargo-ferry lines including rail and Ro-Ro ships between Klaipeda and German, Swedish and Danish seaports. Lithuania has 3 international airports. These serve 2 national and 8 international airline operators.

### ***1.1.2 Rural areas in Lithuania***

At the stage of the design of the programme Lithuania had no national criteria fully compliant to OECD requirements applicable to definition of rural territory.

Instead, the definitions of town, urban-type settlement and other settlements are included in the Law on the Territorial Administrative Units of the Republic of Lithuania and their Boundaries (Adopted on 19<sup>th</sup> July 1994, No. I-558) Article 3: The Concept of the Populated Areas of the Territory of the Republic of Lithuania. The definitions are presented below:

The towns are compactly built up residential areas with a population exceeding 3000. More than 2/3 of the working population is employed in industry, business and production and social infrastructure.

The towns of the Republic of Lithuania with a population of less than 3000, regional towns and urban-type settlements and residential areas shall be considered as towns even after the coming into effect of the Law on the Territorial Administrative Units of the Republic of Lithuania and their Boundaries.

Small towns are compactly built up residential areas with a population from 500 up to 3000. More than half of the working population is employed in industry, business and production and social infrastructures, as well as traditional small towns.

Villages are other residential areas having no characteristic features of a town and a small town.

Exact boundaries of towns are defined by the Decision of the Government of the Republic of Lithuania.

**Table 1. Rural areas in Lithuania - population and area, at the end of 1998**

	<b>Area (sq. km'000)</b>	<b>Per- centage</b>	<b>Population ( '000)</b>	<b>Per- centage</b>	<b>Population Density in sq. km</b>
Total Lithuania	65.3	100.0	3 704	100.0	56.7
Rural Areas	63.6	97.4	1 178	31.8	18.2

Source: Lithuanian Department of Statistics, 1999

The rural areas are of substantial importance in terms of both surface area and population. At the end of 1998, the rural areas covered 63.6 thousand sq. km. This equalled 97.4% of the total Lithuanian surface area. (Table 1)

At the end of 1998, the rural population was estimated at 1.178 million inhabitants, i. e. accounted for 31.8 per cent of the total Lithuanian population. (Table 1)

### ***1.1.3 Administrative structures***

The country is divided into 10 administrative units (NUTS III) – counties (*apskritis*). The counties are divided into smaller administrative units - districts (*rajonas*). Lithuania is divided in 44 districts. (Map 2)

**Map 2. Administrative structures of Lithuania**



Agricultural and rural development policy is set at national level. Administration and implementation of policy is carried out at national, regional (county) and district levels. In policy formation, the Ministry of Agriculture plays a major role. It approves agricultural and rural development directions and measures for public support. These directions are mainly set in the Rural Support Fund (RSF) - a main instrument for agricultural and rural development policy implementation. While the national authorities formulate policy, the local authorities are involved in the RSF grant processing and payment schemes.

As well as administrative institutions, many social and economic partners (e.g., Lithuanian Farmers Association, Lithuanian Agricultural Advisory Service, State Veterinary Service etc.) have their representatives at district level. They also play a role in the agricultural and rural development policy formulation and implementation process. However, the local institutions have not sufficient capacity to elaborate and implement effectively development programs. Thus, technical assistance is required to administrate effectively public support.

#### **1.1.4 Human settlements system**

Lithuania has a well-balanced network of human settlements, which was mainly formed after 1945. Now two major cities – Vilnius and Kaunas – have a population exceeding 400,000; Klaipėda, Šiauliai and Panevėžys have more than 100,000; Marijampolė and Alytus have more than 50,000; 13 towns have from 20,000 to 50,000 inhabitants; and 19 towns have from 10,000 to 20,000 inhabitants. There are also 68 small towns and urban-type settlements in rural areas with a population of less than 20,000. (Map 3 in Annex I).

32 per cent of the total Lithuanian population lives in approximately 22,000 rural settlements of various sizes. Most of them are small villages with a population of less than 50 inhabitants. (Table 2)

**Table 2. Rural settlements, 1997**

Number of inhabitants	Number of rural settlements	Percentage of rural settlements
Up to 26	14 767	68.5
26-50	2 635	12.2
51-100	2 732	12.7
201-1000	1 300	6.1
1001-3000	109	0.5
3001-5000	6	0.0

Source: Lithuanian Department of Statistics, 1998

The proportion of the urban-rural population in counties also demonstrates the even distribution of the population. There are 3 counties with an above average urban population, as well as 3 counties with an above rural population and 4 counties with about average. (Table 26 in Annex I).

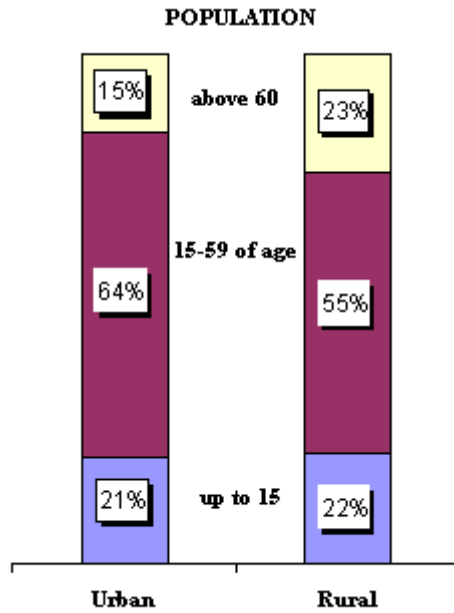
The even distribution of population is considered by the Government to be an important strength of Lithuania. It provides a sound basis for sustainability of regions and rural communities.

### ***1.1.5 Rural population***

At the end of 1998, Lithuania's population was estimated at 3,703,000 inhabitants – 15,000 less than in 1995. The rural population accounted for nearly one third (31.8 per cent) of the total population. From 1994 to 1996, the total population decreased at an annual rate of 1 per 1,000. In 1996, the decline accelerated to 4.3 per 1,000 in rural areas, while in urban areas the population grew at a rate of 0.5 per 1,000. Nearly the same trends remained in 1997-98.

At the end of 1998, the average population density was 56.7 inhabitants per sq. km. Average rural population density were 18.2 inhabitant per sq. km., though it varied considerably between the districts: from 9 to 46 inhabitants per sq. km. The rural population density is usually higher in areas with higher soil productive capacity or situated closer to large industrial centres (Vilnius, Kaunas and Klaipeda). As a result, the rural areas in districts of the eastern and southeastern parts of Lithuania are less populated. (Map 4 in Annex I).

Population ageing trends are common to rural as well as urban populations. However, the process is more obvious and dangerous in the rural area. At the beginning of 1998, the rural population aged 15-59 was considerably smaller, compared to the urban one: accordingly, 55% and 64% of population (Figure 1). Moreover, the rural population above 60 exceeded the population of up to 15 years of age: 105 old people to 100 children. Population ageing has a negative impact on the sustainability of rural communities.

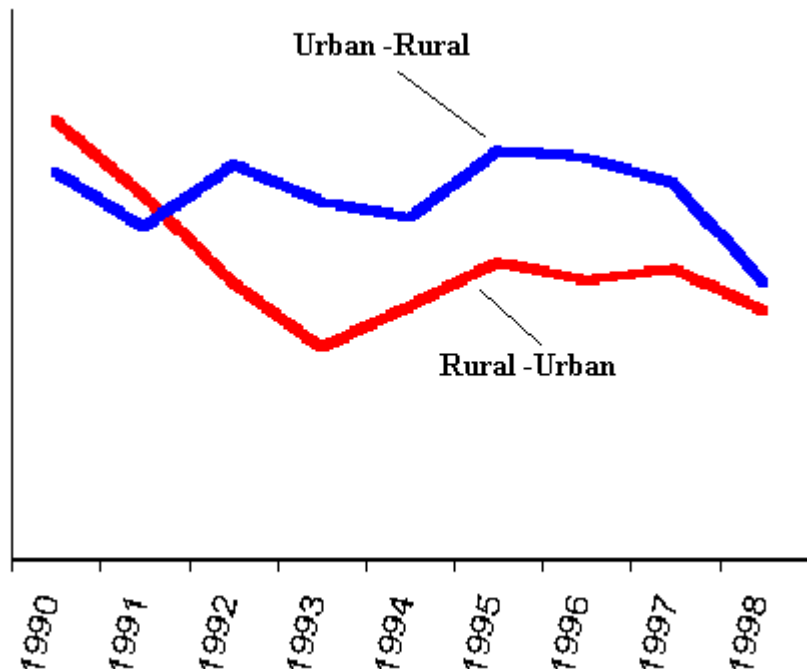


**Figure 1. Age structure of urban and rural population, 1998**

Before 1990, approximately 5% of the total population changed its place of residence annually. For a long time there was a fairly stable migration of people from the countryside to cities, and from smaller towns to larger industrial centres. This resulted in a decrease of rural, and increase in urban, populations.

However, the situation has changed crucially since 1990. First, the proportion of those who changed their place of residence annually fell to approximately 2.5% of the total population. Secondly, the migration flows rural-urban and urban-urban have no longer dominated internal migration since 1992. Moreover, in the last few years, there has been a noticeable increase in the rural population due to migration. In particular, the number of young rural migrants has decreased: in 1994, almost three and a half times fewer young people moved to urban areas than in the early 1990s. (Figure 2)

**Figure 2. Internal migration trends, 1990-1998**



The impact of these trends is twofold. On the one hand, it may increase a proportion of youth in agricultural activities, and thus prevent an ageing of the rural population.

On the other hand, because of the lack of adequate infrastructure in rural areas, the low level of education and the low level of income, the rural population may continue to decline.

### **1.1.6 Soil quality**

Soil quality differs considerably between the regions. According to location, topography and climate differences, the territory of Lithuania is divided into 15 soil-agronomical areas. In terms of soil productivity, these 15 areas could be divided into three main regions: the lowlands in the central part of Lithuania (32,5% of the total agricultural area (areas 5 and 6 on the Map 5 in Annex I)) have the most productive soils, followed by the deep, deeply washed carbonate soils in the western part of Lithuania (25% of the total agricultural area (areas 1-4 on the Map 5 in Annex I)). The wooded moraine hills and interspersed sandy plains in east Lithuania have relatively low agricultural productivity (42,5% of the total agricultural area).

Particular focus is paid to farmers situated in areas classified as less-favoured areas (LFA). According to regulations of the Ministry of Agriculture, areas with an economic evaluation mark below 32 are classified as LFA<sup>1</sup>. Farmers in those areas are encouraged to restructure their activities, in order to develop alternative businesses and improve their income. On average, at the end of 1997, 10.8% of the total utilised agricultural area was classified as LFA. The highest proportion of LFA is in the southeastern part of Lithuania (counties of Alytus, Vilnius and Utena). (Table 27). Considering EU regulations, a draft of new LFA classification system was developed. According to that classification system LFA will increase approximately up to 20% of the total utilised agricultural area.

### **1.1.7 Macroeconomic context** **Recovery of Growth**

Economic recovery started in 1994 and continued with a real GDP growth of 3.3% in 1995, 4.7% in 1996, 7.3% in 1997 and 5.1% in 1998. Indeed, over the period 1995-1998 the Lithuanian economy expanded at an average annual rate of around 5%. However, Lithuanian GDP is forecast to grow by only 1.7% in 1999.

External trade was one of the most important factors in economic recovery. Between 1992 and 1998 Lithuanian exports increased four-fold. The rate of growth of imports has however tended to outpace that of exports contributing to a worsening foreign trade deficit. Increasing domestic demand, partially driven by the expansionary effect of the distribution of privatisation revenues to the population, played a considerable part in economy recovery.

The share of industry (including electricity, gas and water) in the national GDP decreased from 35% in 1993 to 25.2% in 1997. Nevertheless this category continues to make the most significant contribution to GDP as measured by 'gross value added' - 25.2% in 1997 and 24.7% in 1998. The share of manufacturing in GDP decreased

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<sup>1</sup> National classification system is based on following criterias as soil structure and quality, humus, etc. The result is expressed by 'economic evaluation mark'.

from 30.1% to 20.8% over the same period. This trend was primarily caused by the shift of production factors into the service sector.

The service sector was subject to rapid growth over the transitional period. In 1998, it accounted for 58.5% of national GDP. The expansion of the service sector has been the main driving force behind the development of the national economy.

#### Stabilisation of Inflation

The adoption of a Currency Board in 1994 and the implementation of successive IMF programmes created a policy environment conducive to the stabilisation of the economy. During 1997, the average inflation rate was almost halved in comparison to 1996. In 1998, inflation stood at 5.1%. This is illustrative of the fact that Lithuania's inflation has been approaching the EMU convergence criterion. The inflation rate however remains slightly higher than the average of the EURO area.

Increases in state-regulated utility prices are expected to exacerbate inflation until an appropriate price level ensuring full recovery of operating costs and immediate investment needs is achieved.

#### Balance of Payments

The current account deficit increased from 10.2% of GDP in 1997 to 12.1% in 1998. This follows a trend of a sharply increasing current account deficit since 1994 when it was at a low of 2.1% of GDP. The increasing level of the current account deficit is due to decreasing savings rates both in the private and public sectors, excessive public borrowing in 1994-1995 and increasing imports of investment goods.

#### Public Deficit/Debt

In 1998 the budget was close to balance at a preliminary figure of 1.3% of GDP in line with a well-established trend of low budget deficits over the past five years. This trend is set to continue with the Government's Medium-Term Strategy for the Development of the Lithuanian Economy, whose primary objective of national fiscal policy is aimed at maintaining economic equilibrium in order to create favourable conditions for economic growth.

The level of state debt has in recent years been rising since 1996. The increase has in percentage terms been slight (1996: 19.7% of GDP and 1998 22.5% of GDP). In 1998 foreign debt represented 15.8% of GDP.

**Table 3. Main Indicators of the Lithuanian Economy**

	<b>Economic indicators</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998 preliminary figures</b>
1.	Annual change of GDP (at comparative prices)	-16.2	-9.8	3.3	4.7	7.3	5.1
2.	National budgetary deficit, % GDP	0.8	-1.8	-1.8	-2.5	-1.0	-1.3
3.	Annual inflation rate	410.2	72.2	39.6	24.6	8.9	5.1
4.	Inflation during the year (in December)	189.0	45.1	35.7	13.1	8.4	2.4
5.	Foreign trade (goods and services) balance, %	-7.8	-6.0	-11.8	-9.8	-10.6	-12

	GDP						
6.	Current account balance, % GDP	-3.1	-2.1	-	-9.2	-10.2	-12.2
7.	Direct foreign investment, % GDP	1.17	0.74	1.20	1.93	3.70	8.66
8.	Foreign debt, % GDP	10.7	11.7	13.9	15.2	14.6	15.7
9.	Annual growth of real wages	-39	14.2	3.2	4.1	13.9	14.7
10.	Unemployment rate	4.4	3.8	6.1	7.1	5.9	6.4

Source: Lithuanian Department of Statistics, 1999

### Trade Balance

The foreign trade and current account deficits have been worsening since 1996 with a 1.4% increase in the foreign trade deficit for 1997-98 and a 1.9% increase for the same period for the current account. This can be explained by decreasing savings in the private and public sectors, which is a corollary of large output contraction in Lithuania.

The growth rate of imports has tended to outpace that of exports. This can be explained by structural factors. Even though following trade liberalisation consumers adjusted their preferences in favour of better quality products almost overnight; the supply side required more time to restructure in order to meet changing preferences of domestic consumers as well as to withstand competitive pressures from abroad. Exports are still characterised by high price sensitivity because they have a limited product range dominated by goods with low value added.

In 1998, Lithuania's foreign trade deficit (goods and services) with the EU was 14.0%, 0.3% lower than in 1997, but 3.5% higher than in 1996. In 1994-97, the negative balance of foreign goods and services had increased by 5.5 times.

### Employment trends

During the process of transition Lithuania's labour market has undergone significant changes. The labour force experienced a dramatic loss of income and, in turn, purchasing power during the early transition, although a partial recovery of income became apparent in 1994 with economic recovery.

The introduction of economic reforms produced a downward trend in employment. Lithuania's employment data for 1998 compared to 1991 indicate an accumulated job loss of around 14% (233 000). During the same period the number of employed population decreased from 50.1% to 44%.

The incidence of youth unemployment is relatively high by European comparison (26% in 1997). The incidence of long-term unemployed is also high (12.4%). The highest long-term unemployment rates were recorded for people aged over 50, who tend to leave the labour force because of health problems or unavailability of work. The share of women in long-term unemployment accounts for 57.9%.

Labour-force surveys indicate the total unemployment rate of about 14% in 1997. This rate exceeds considerably the EU average estimated to be 10.8%. However,

according to register-based unemployment rates, the total unemployment rate was about 6% in 1998.

### ***1.1.8 Agriculture in the national economy***

In the period 1993-1997, the major sectors' share of GDP changed significantly. The services sector demonstrated a fast growth: its share in GDP jumped from 46.5% in 1993 to 58% in 1998. Despite a fall of share in recent years, Lithuanian agriculture and the countryside still remain an important creator of national wealth: the agricultural sector contributes a stable share to GDP of 10.1%. Moreover, Lithuanian agriculture was a main engine for the real GDP growth in 1995-1996. (Table 4)

**Table 4. Agriculture and the national economy, 1993-1998**

	1993	1994	1995	1996	1997	1998
Real GDP growth (%)	-16.2	-9.8	3.3	4.7	7.3	5.1
Contribution of Agriculture	14.2	10.6	11.7	12.2	11.7	10.1
of Industry	34.2	27.0	26.1	25.8	25.2	23.6
of Construction	5.1	7.2	7.1	7.1	7.7	7.9
Of Services	46.5	55.1	55.0	54.9	55.5	58.5
Employment total Lithuania	1778.2	1675.0	1643.6	1659.0	1669.2	1656.1
Agriculture (%)	22.4	23.3	23.7	24.1	21.7	21.4

Source: Lithuanian Department of Statistics, 1999

Nevertheless, due to geopolitical and historical conditions, Lithuanian rural areas and agriculture play an important economic and social role. In 1998, Lithuanian agriculture created 10.1% of total GDP. Additionally, the number of people in the agriculture sector constituted about 21.4% of total employment in 1998. (Table 4)

However, as the sector's contribution to GDP/share of employment ratio indicates, the efficiency of the Lithuanian agricultural sector is rather low. So far, it has produced a small improvement. To be competitive in market, the Lithuanian agriculture needs substantial improvement in efficiency. And this improvement will reduce the number of people employed in the agricultural sector. On the other hand, constantly declining agricultural employment will raise an important social issue, because loss of income will damage sustainability of rural communities.

### 1.1.9 Agricultural situation in Lithuania's rural areas

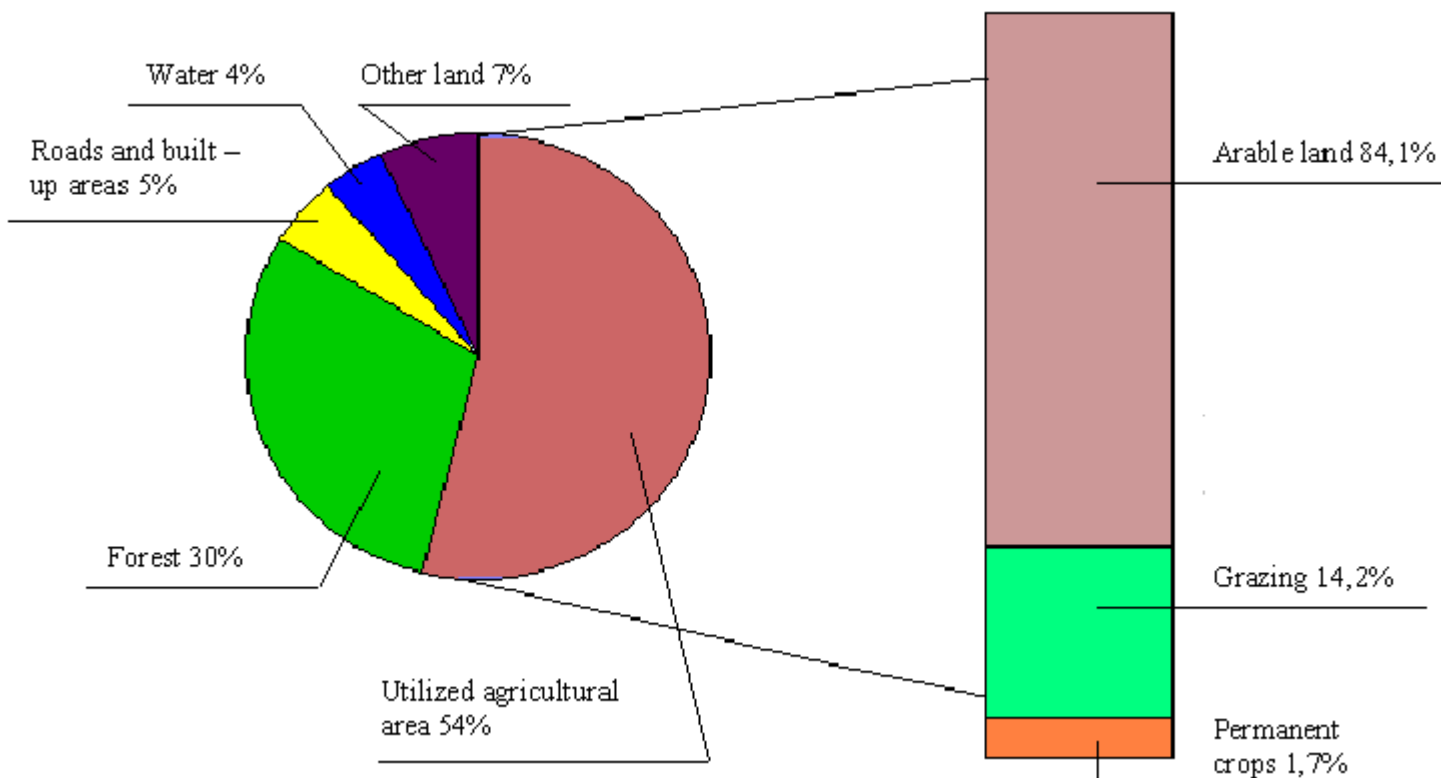
#### Land covers and utilised agricultural area

Of the 6.5 million hectares of total area, utilised agriculture area at the beginning of 1998 equalled 3.502 million hectares, or 54 per cent of total country area. Arable land was the most important. It accounted for 2.946 million hectares (84.1 per cent of UAA), followed by meadows and natural pastures (496 thousand hectares, or 14,2 per cent of UAA) and permanent crops (60 thousand hectares, or 1.7 per cent of UAA). There were no substantial changes in Lithuania's land cover in recent years. (Figure 3)

Recent trends indicate that Lithuania is in a situation where farmers are abandoning marginal agricultural land. This development has especially accelerated since the restoration of Lithuanian independence and the cessation of centralised regulation of farming procedures.

The amount of abandoned agricultural land may be around 200,000 – 450,000 hectares. Some 90% of the abandoned land belong to private owners - or will do so, once the land reform has been completed. According to the estimation of the experts on land use, by the beginning of 1999, the abandoned agricultural land amounted to 360,700 hectares.

**Figure 3. Land use, at the beginning of 1998**



The majority of the abandoned agricultural land is characterised by poor soils, and from an economical point of view they are not suitable for agricultural purposes. The previous economical "sustainability" of these areas was mainly due to the fact that the price of inputs like fuel and fertiliser was below real market price.

### Issues of afforestation of abandoned agricultural land

Afforestation of the abandoned agricultural land is being considered as an opportunity, since it will take place in any case: either by plantation or by natural overgrowing. At present, the legal basis for land use planning for designation of areas suitable for afforestation are:

- the decision of the Government concerning the approval of the “Procedure for Afforestation on Private Land” adopted on April 9, 1998, No. 425, and
- the “The Regulation on Development of Forest Land Management Scheme” approved by the Minister of Agriculture and by the Minister of Environment, 7 April 1999.

The overall legal framework for the planning is the Law of Territorial Planning.

In the present regulations, designation of areas suitable for afforestation is based on several criteria's:

- Unused land – including non-agricultural lands suitable for afforestation (sand and gravel soils, eroded slopes, ravines etc.)
- Agricultural land with soil fertility lower than 27 (if on drained land, only if it is certified, that the drainage system is damaged and is not to be reconstructed)
- Land with soil fertility 28-31 provided they are not convenient for mechanised land cultivation
- Agricultural land between forests and water bodies

However, the present system for land use planning for afforestation requires improvements in order the environmental and sustainable forest management, biodiversity conservation and other aspects are considered. Thus, to accelerate and promote this process and other issues related to afforestation, the project on “Afforestation of Abandoned Agricultural Land based on Sustainable Land Use Planning and Environmentally Sound Forest Management ” was initiated in May 1999 by the Lithuanian Ministry of Environment, with financial and technical support from the Danish Ministry of Environment and Energy. The project has been focusing on the development of proper land use planning procedures, criteria and methods for afforestation, and promoting decentralisation of the land use planning and mapping processes to county and regional levels. Main project activities include awareness raising among landowners and technical staff, training of technical staff, study tours to neighbouring countries and within Lithuania, development of standardised regulations and procedures for land use planning for afforestation, and establishment of demonstration forest in pilot areas.

The project, together with the key institutions and non-governmental organisations related to afforestation, has been preparing guidelines for designation of afforestation areas. These guidelines will include such criteria as agricultural production, erosion protection, protection of groundwater and water bodies, non-agricultural land, cultural heritage, landscape protection, exploited underground mineral resources, recreational areas, etc. It is expected that by the end of the project (the middle of 2001) the final version of the guidelines will be prepared and will be legally adopted.

Provided that a sound planning is carried out, afforestation of such areas will mean:

- ecologically improved of landscapes because of increased variation in size of plots and type of plots of afforested area
- improved the diversity of forest types in the landscape.
- protection in areas subject to erosion.
- derived immediate and considerable long term employment opportunities and economic development.
- increased production of forest products, which are considered to present a higher export-potential than agricultural products in view of further evolution of the number of EU-member states and the general agricultural situation in Europe.
- protection of ground water resources.

Afforestation of the abandoned agricultural land is being considered as an opportunity, since it will take place in any case: either by plantation or by natural overgrowing.

#### Gross Agricultural Output

Traditionally Lithuanian agriculture plays an important role in the national economy. But, as in other transition countries, Lithuanian gross agricultural output (GAO) declined significantly during the country's first transition phase, showing its first signs of recovery in 1995. Stabilisation in livestock and dairy production was accompanied by a considerable increase in crop production. This development continued in the following years. In this context, 1996 can be seen as an extraordinarily favourable year for crop production, with good climatic conditions and the impact of supportive Government policies. The growth of GAO in 1996 amounted to 10.3%, and agriculture was a major factor contributing to Lithuania's overall growth. Livestock production contracted much more significantly than crop production. The share of livestock production in GAO declined from 62% in 1990 to 42% in 1997. After GAO increased three years in a row, growth stopped in 1998, as a result of a decline in crop production. (Table 5)

**Table 5. Gross agricultural output, 1993-1998**

	1993	1994	1995	1996	1997	1998
All farms (in million LTL*)	3 465.7	3 566.5	5 572.1	6 338.8	6 378.6	6 153.0
Change of GAO	-5.5	-20.2	6.1	10.3	6.4	-3
Crops	26.0	-28.0	16.1	21.8	6.8	-4
Livestock	-26.9	-11.2	-2.7	-2.8	5.9	-1
Structure of GAO	100.0	100.0	100.0	100.0	100.0	100.0
Crops	47.1	54.0	53.4	54.8	58.3	58.9
Livestock	52.9	46.0	46.6	45.2	41.7	41.1

Source: Lithuanian Department of Statistics, 1999

### Crop area

The total crop area remains stable (about 2.56 million hectares), except slight fluctuations in 1994-1996. Grain crops (winter and spring cereals, and leguminous grain) and fodder crops (fodder root crops, perennial grasses, maize for silage and green fodder, and other silage crops) are the important ones. Grain and fodder crops take up the largest proportions of the total crop area (45.8% and 44.4% accordingly, in 1998). (Table 28)

Potatoes traditionally take up almost stable share of the total crop area: it varies from 4.7% to 5.3% of the total crop area. In 1998, potatoes covered more than 136,000 hectares.

Flax and sugar beets cultivation concentrates in certain areas known for their old flax or sugar beet growing traditions. After 1995 flax cultivated area dropped steeply from 13,200 hectares to 5,600 hectares in 1996. Over the last years rape growing area increased significantly: from 0.6 % of the total crop area in 1995 to 1.5% in 1998.

### Livestock number

After the decline in the first transition stage, number of cattle recovered in 1995-96. The livestock number directly depends on milk and meat production opportunities and new market prospects. Emerging markets for dairy production caused slight increase in a number of milk cows in 1995-96. Similarly, as market for dairy production declined in 1998 the number of cattle and dairy cows diminished. Despite changes in the number of livestock, livestock density (number of livestock per 100 hectares of the utilised agricultural area) remain nearly stable. At the beginning of 1998, livestock density was: 35 of cattle per 100 hectares of utilised agricultural area, 20 dairy cows, 46 pigs, 2.7 equine and 1.5 sheep and goats. (Table 29)

Slightly different from crop production, livestock production is significant for its opportunities in external markets. Long traditions in cattle breeding and favourable climate in Lithuania has created a base to foster a comparative advantage in livestock production.

#### **1.1.10 Farming structure**

Currently, 3 different types of farms characterise Lithuania's farming structure (Table 30):

- Agricultural companies;
- Family farms; and
- Household plots.

*Agricultural Companies* is large-scale, corporate type enterprises created as a result of the transformation of state and collective farms. In addition to primary agriculture, they are involved in agro-processing and trading activities. By 1998, 1495 agricultural companies remained active, having an average farm size of 337.9 ha. The creation of a so-called *Family Farms* started before Lithuania gained its independence. Currently, family farm is considered as a farm registered on the Farm Register. By 1999, 67.5 thousand family farms owned 608 thousand hectares of land. The third type of farms is *Household Plots* with an average size of 2.2 ha. Household plots are often operated by shareholders of agricultural companies or by rural inhabitants, in order to

supplement their income from other sources. They still account for a significant share of income generated by rural inhabitants.

**Table 6. Farm structure<sup>2</sup>, 1998**

	Number	Average size, ha	% of UAA
Family farms <sup>3</sup> (thousand)	200.0	7.3	43.8
Agricultural companies	1495	337.9	15.1
Household plots (thousand)	327.6	2.2	21.5

Source: Ministry of Agriculture, unpublished material, 1998

During the period of 1991-1998 farming structure has changed: the number of family farms has been increasing since 1991, while there has been a decline in the number of agricultural companies and household farms. (Table 30). Another trend prevalent in recent years is the growing role of Lithuanian private farms (including family farms and household plot owners). Private farms have already become key players in Lithuanian agriculture. In 1997, private farms contributed 75,8% to gross agricultural outputs, while the share of agricultural companies declined to 24.2%.

However, private farms are not inclined to set up specialised farms. Approximately 82% of family farms are engaged in mixed agricultural production. Approximately 12% of farms specialise in crop production, and 4% in livestock.

As a large proportion of agricultural output is produced in private farms that are comparatively small and unspecialised, primary agricultural production has become very fragmented. Consequently, high farm fragmentation has resulted in lower productivity and poorer quality of agricultural produce.

Although farm productivity increased as Lithuanian agricultural output recovered, there is room for improvement. In 1997, average grain yield was 2.5 tonnes per hectare, and annual milk production per cow - 3.2 tonnes. Compared to neighbouring or EU countries of the same latitude, productivity is rather low. (Table 31). Similarly, the quality of agricultural produce is poor. For instance, in 1998, only 14% of total raw milk purchased were of grade A quality<sup>4</sup>. (Table 32)

Like high farm fragmentation, relatively low farm technologies and use of poor quality breeds and seeds do not allow any improvement in the productivity and quality of agricultural produce. At present, farmers often use outdated farm machinery or equipment (most of it came from the former kolchoz system) that requires high energy costs. At the end of 1998, Lithuanian farms owned about 94,000 of tractors, or approximately one tractor per 35 hectares of utilised agricultural area. The average age of a tractor is 8 years. The same is true for harvesters. Lithuanian farms owned about 3,500 of harvesters, or one harvester per 100 hectares of grain crop area. Modern milking and cooling equipment is still not widely used. The fact that only

<sup>2</sup> Other land users are not included in the table

<sup>3</sup> The MoA estimates that in addition to registered farms, there are number of farms run as family farms

<sup>4</sup> Lithuanian requirements for raw milk quality differed from EU requirements: somatic cells and bacteria count criteria were 3-5 times softer than EU requirements. EU requirements for grade A raw milk has been adopted since January 1, 2000.

52% of total raw milk purchased in 1998 were cooled to a required temperature illustrates low use of milking and cooling equipment in the dairy sector.

**Table 7. Number of tractors, 1998**

Number of tractors	Compared to 1997 (%)	of which		
		In agricultural enterprises	In agro-service companies	In family farms
93 675	108	14 916	1 392	77 367

Source: Lithuanian Department of Statistics, 1999

According to veterinary experts, animal waste facilities are not common in Lithuanian farms, except the recently modernised, though there is no accurate data on animal waste storage facilities on farm level. To develop sustainable agricultural activities will require installing animal waste storage facilities on farms.

On the one hand, low productivity and poor quality of agricultural produce reduce competitiveness of Lithuanian farmers, as well limit the opportunities to increase their income. On other hand, low income means that farmers can not purchase modern farm equipment, in order to improve farm competitiveness and working conditions in rural areas.

#### Producer groups

As concentration of demand is increasing in Lithuania, the grouping of fruit and vegetable supply through marketing co-operatives is an economic necessity in order to strengthen the position of our producers. Stimulating the interest in establishing and strengthening national fruit and vegetable producing and marketing co-operatives would therefore be an appropriate measure. Another reason for co-operation is an introduction of new quality standards for fruit and vegetables, which determine the size, quality of the production, marking rules. It requires grading machines, packing equipment and constant quality control. Purchasing such equipment has been included in the Rural Support Fund as support scheme for the co-operatives. Chamber of Agriculture has been administrating the scheme and working on promoting co-operative movement. The aim that is expected from supporting the producer groups is concentration of supplies, quality improvement and stabilisation of producer prices.

The legal definition of producer groups, as it is understand in the EU, is under preparation. At present, all agricultural co-operatives (irrespective of the type of their produce) established by producers are considered to be producer groups and can apply for the same financial aids. Adopting Lithuanian legal basis according to EU requirements, rules for the recognition of fruit and vegetable producer organisations

and rules concerning operational programmes of producer organisations, operational funds and financial assistance will be introduced by the Order of the Minister of Agriculture. It separates fruit and vegetable producer organisations from other co-operatives and adjusts administrative system into that capable to apply the support scheme under provisions of Title II of the Regulation 2200/96 before EU accession.

Recognition of Producer organisation will be granted only to these producer groups which are registered and act according to Law on Stock Corporation, Law on Agricultural Companies or Co-operative Law.

Despite the measures taken to promote the co-operation, establishment of producer groups is still not popular. The reasons are psychological: rural people are not inclined to make common activities and there are no team leaders among them able to head groups of producers. Another reason is legal one: co-operatives were not eligible for tax relieves. However, last year there have been introduced certain tax relieves for co-operatives (i.e. there is no profit tax and some exclusions from payment of VAT).

There are a few fruit and vegetables co-operatives with the number of members from 6 to 30. The most favourable situation for the creation of producer organisations is fruit sector. 6 000 hectares of orchards belong to agricultural companies, stock companies and joint stock companies. Each of them is cultivating 50 to 450 hectares of orchards. The greenhouses are another sector where the co-operation is strongly developed. Greenhouse enterprises that have been modernised are united in the Association of Lithuanian Greenhouses. Members of the association produce up to 90 % of all the vegetables and flowers produced in greenhouses.

#### **1.1.11 Agri-environmental policy and organic production**

The first pilot program of transition to the organic agriculture was prepared in 1987-1993. Implementation of the program was started in the northeastern part of Lithuania (in area of 194 thousand ha), in 1993. It was operated by Tatula's Fund. In 1997 it was reorganised into the public agency "Tatulos programa". 'Tatula' was the first program officially approved and sponsored by the Government with the average annual allocation of 600,000 EUR. 50% of the funds allocated to the program are interest-free credit and subsidies for the elimination of pollutants, as other 50% - for the elimination of pollutants at certain points (e.g., processors). The program involves more than 100 farmers and more than 30 agricultural enterprises and partnerships. The program aims at transforming in the Karst region about 5% of agricultural land in organic agriculture by 2005-2010. Since 1997, the project in the Karst region has been spread throughout Lithuania, and the state support to organic agriculture has been provided.

Support to farmers taking up organic agriculture activities was approved as a priority investment programme by the Rural Support Fund. In 1999, there were 71 farms certified and 100 transitional farms in organic agriculture in the area of 3995 ha. Certification and inspection is carried out by the public institution 'Ekoagros'. In addition to the organic farms, 5 processing enterprises, which process and market organically grown agricultural products were certified. "Ekoagros" is a member of International Federation of Organic Agriculture Movements (IFOAM) and got its accreditation in 1999.

**Table 8. Development of Organic Agriculture.**

	1993	1994	1995	1996	1997	1998	1999
Number of farms	9	14	36	65	105	144	171
Area used for organic agriculture (hectares)	148	267	582	1118	1614	4006	3995

Source: 'Ekoagros', 1999

At present, the local market for organic products has not developed. However, it will have a high potential for export to external markets. For this, common marketing of organic products should be improved. Moreover, farmers should be encouraged to undertake organic agriculture, in order to produce a minimum mass for constant large-scale exports.

A national Agri-environmental program according to the EU Council Regulation 2057/1999 is under the preparation. A measure to protect local species in danger of extinction is foreseen to be one of the measures of the scheme. (Please find the summary of the programme in Annex IX).

To allow a better preparation of this national programme, a measure to be developed at pilot level is included in the present SAPARD Plan. It is planned to begin the implementation of this measure in 2002, after agreement with the European Commission.

The Code of Good Agricultural Practice has been approved by the decision of the International projects' for environment and agriculture monitoring committee on 19 of July 2000. The minimum national standards regarding environment, veterinary, hygiene and animal welfare are the green codes of this code (these are represented in Annex X). The Code consists of obligatory and recommendatory rules. The main rules and recommendations for good farming given in this publication are seeking that a farmer who follows them would not only improve the environment, but also would achieve a profit that grants sufficiently good living conditions. The CGAP include rules relating to:

1. Periods when the land application of certain types of fertiliser is prohibited.
2. Livestock density corresponding to manure application - maximally 170 kg of nitrogen per year per hectare of utilised agricultural area;
3. The capacity of storage vessels for livestock manure for the storage period 6 month;
4. Limitation of the land application of fertilisers, consistent with good agricultural practice and taking into account:
  - soil conditions, soil type and slope;
  - climatic conditions and rainfall;
  - land use and agricultural practices, including crop rotation systems and a balance between:
    - the foreseeable nitrogen requirements of the crops, and
    - the nitrogen supply to the crops from the soil and from fertilisation corresponding to:

- the amount of nitrogen present in the sod at the moment when the crop starts to use it to a significant degree (outstanding amounts at the end of winter),
  - the supply of nitrogen through the net mineralisation of the reserves of organic nitrogen in the sod,
  - additions of nitrogen compounds from livestock manure,
  - additions of nitrogen compounds from mineral fertilisers.
5. Ratio between perennial and annual crops;
  6. Increase of vegetation cover during periods when soil is most vulnerable to nitrate leaching;
  7. Measures that do not allow agricultural effluents to pollute surface and ground water;
  8. Land reclamation, biological diversity and landscape.

The discussion on designation of vulnerable zones is in process. The designation will lead to the preparation and implementation of action program for vulnerable zones and farmers training program.

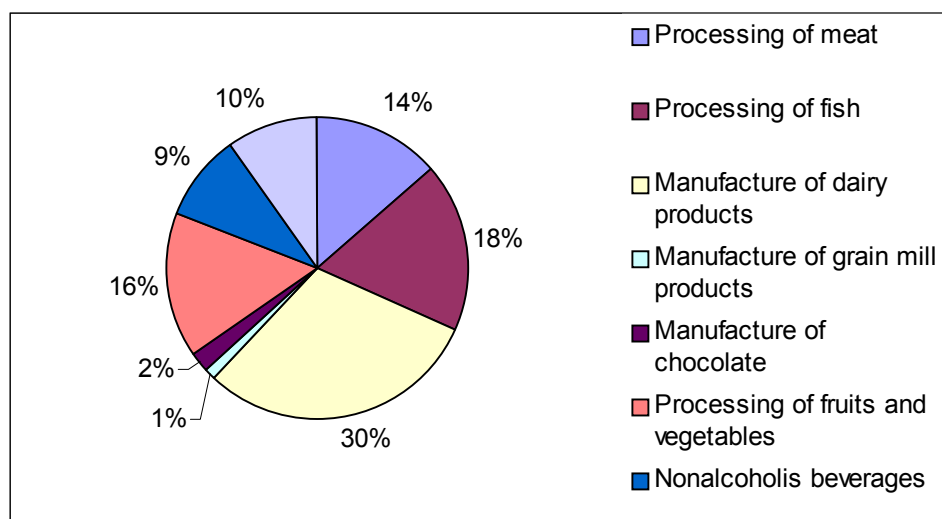
An electronic version of the Code of Good Agricultural Practice is available at the Website address: [http://www.baap.lt/lithuania/code\\_lit.html](http://www.baap.lt/lithuania/code_lit.html)

#### ***1.1.12 Food processing***

Similar to the primary agricultural sector, processing of agricultural products – food industry being the main out of it - plays an important economic and social role in the national economy. The food industry contributes a considerable share to the total Lithuanian industrial output: in 1998, it still accounted for 28.1% of the total industrial output, though its share decreased.

Milk and dairy sector, and meat processing are the most important ones. These sectors account more than a half of the total Lithuanian food industry output. Especially milk and dairy sector is of high importance for its export opportunities. (Figure 4)

**Figure 4. Food sector, 1997**



Source: Lithuanian Department of Statistics, 1999

Regarding the social role, the food industry is an important source for employment. More than 28% of the total industrial output is produced by approximately 20% of the total industrial employment. At the beginning of 1998, 434 Lithuanian food processors and beverage producers employed more than 46,000 employees.<sup>5</sup>

**Table 9. Lithuanian manufactures of food and beverages: number of enterprises and employees, at the beginning of 1998<sup>5</sup>**

	Total	Enterprises by number of employees						
		0-9	10-19	20-49	50-99	100-199	200-499	500 and over
Number of enterprises	2498	718	489	548	294	209	161	79
Number of employees	217808	3520	6896	17253	20460	29212	50655	89812

Source: Lithuanian Department of Statistics, 1999.

Moreover, manufactures of food and beverages are important for the national economy for their contribution to exports. In 1998, 75.6% of foodstuffs and beverages produced were consumed in domestic market, and 24.4% were exported. However, the food industry produces and exports relatively low value-added products. Usually, raw materials are exported, while products of higher value added are imported. Trade balances indicate low level of Lithuanian agri-food industry.

Most of the raw materials used in processing have local agricultural origin. For that reason, the processing industry is vital for local producers of raw milk, meat, grain and other primary agricultural produce. For highly competitive processing industry guarantees its farm-suppliers a constant source of income, further development of agri-food industry is one of the principle issues related to rural development.

Transition to the market economy has changed the structures of the food industry: processing of agricultural products has become fragmented. Currently, the structure of the food industry is characterised by several large processing units, and a number of small-medium enterprises (with employee numbers up to 50). The large processing units were set up to serve local and former Soviet Union markets. The emergence of small-medium enterprises that mainly work for the local market has reduced the market share of the large processing units. The collapse of the former Soviet Union market and loss of the domestic market resulted in huge over capacities in the large processing units: meat processors use approximately 20% of their capacity, as dairies - approximately 45%. As a result, huge over capacities impair competitiveness of the sectors where economies of scales are important. (Table 33)

In order to compete successfully in domestic and external markets, the agri-food industry needs to improve quality of production by conforming to the standards and hygiene-sanitary requirements set by EU. Poor qualities of production limits export opportunities. Furthermore, improvement of the quality is one of prerequisites in finding a niche market in the Common market. Up to now, the most advanced dairy

<sup>5</sup> Sole proprietorships excluded.

sector. 17 certified dairy enterprises have received EU veterinary number, as well as one game meat processing enterprise. However, none of the large “traditional” meat processors has been qualified for EU veterinary number.

The industry is hampered by the fact that much of technologies and equipment installed are rather outdated. For example, in the meat-processing sector it is common that slaughtering is still linked with processing. This results in inadequacy of quality and efficiency. Similarly, in the dairy sector outdated technologies used in raw milk collection network do not allow to guarantee a constant quality of produce.

Absence of slaughterhouses complying with EU requirements heavily limits competitiveness of Lithuanian meat processing sector, and overall fulfilment of pre-accession economic criteria. From the social point of view, weak competitiveness of the sector will mean loss of employment and decrease in farm income level.

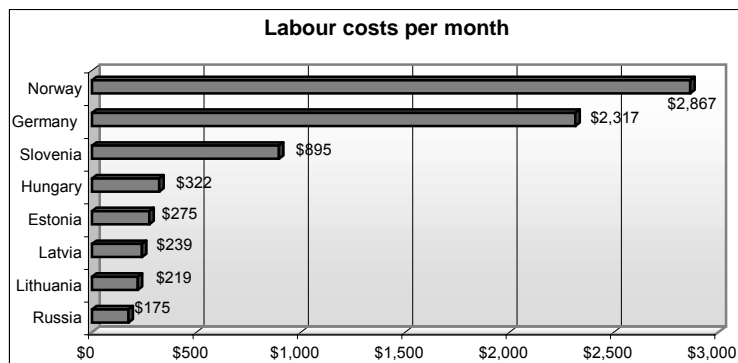
Restructuring of meat processing sector and introducing modern technologies in slaughterhouses and meat processing enterprises will also require reconstruction of overall animal waste collection and rendering system. At the moment, 2 animal waste rendering companies are operating. However, due to their outdated technologies, the situation threatens to become critical.

To outweigh the agri-food industry disadvantages in quality, efficiency and over capacity, there are competitive advantages to be forged. On one hand, the old traditions in agriculture have created a sustainable raw material base. On the other hand, the traditions have formed the product and technological knowledge resources.

Furthermore, Lithuania still remains a country with relatively low labour costs. Considering food industry is labour intensive, this advantage becomes noteworthy.

Labour costs remain much lower than in western countries, in average they constitute 10%-15% out of western salaries in food industry. Eastern European wages exceed Baltic ones in average on 20% while productivity levels are quite similar. Finally, according to Lithuanian Development Agency agriculture and food industry are the sectors with lowest salary levels among Lithuanian industries.

**Figure 5. Labour Costs.**



Source: International Yearbook of Industrial Statistics, 1997

In conclusion, to increase its competitiveness Lithuanian food industry can benefit from public investment support programs. Thus, it can substantially contribute to rural development by providing sources of income to the farm-suppliers.

### **1.1.13 Investment volume in agriculture and food industry**

During the period of 1995-1998, capital investment volume in both agricultural and food sectors have been steadily increasing. The investment volume in agriculture jumped in 1998: it exceeded 166 million Litas (approximately 40 million EUR). The stimulus for investment activities was due to the started Rural Support Fund operations, increased market potential for agricultural products, and speeding up of land reform. Manufacturers of foodstuffs, beverages and tobacco steadily invest in restructuring of enterprises in order to meet new market requirements. The huge investment volume (in both agriculture and food processing industries) is still required to continue the industry restructuring. Public support to capital investment will speed up the restructuring and fostering of industry competitiveness.

**Table 10. Capital investment volume, 1995 - 1998**

	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>
Agriculture, hunting and forestry	140.0	143.1	149.5	166.3
Manufacturing of food, beverages and tobacco	204.8	306.2	351.5	435.4

Source: Lithuanian Department of Statistics, 1999

### **1.1.14 Dairy sector**

Milk production is one of the main branches of agricultural production. In 1999, 1.9 million tonnes of milk have been produced, of which 1,2 million tonnes were processed. Around half of processed milk is consumed in Lithuania (670-700 thousand tonnes).

Currently there are 45 milk-processing companies, 35 of them are small or medium dairy enterprises, established during the last few years and producing milk products for local markets. All dairies are joint stock companies. All dairies have been privatised except one, which is partially owned by state. 10 largest dairies dominate the market and process about 80 % of total delivered milk.

The main dairy products being produced are: cheeses (soft and hard), yoghurts and kefir, butter, skimmed milk powder, whole milk powder, casein, pasteurised milk, chocolate-coated soft cheese, desserts and canned condensed milk.

Many enterprises have modernised their premises, equipment, and production technologies in accordance with the hygiene requirements of the EU. Enterprises are implementing the control system of HACCP. A new hygiene norm "Food hygiene" has been introduced meeting the requirements of the EU-directive 93/43. Main milk processing enterprises have currently certificates to export dairy products to the EU market, in accordance with directive 92/46.

The Ministry of Agriculture of the Republic of Lithuania prepared the strategy of dairy sector development, where the present situation of the sector is assessed and the perspectives to improve the competitiveness of the dairy sector are outlined.

Great support has been provided by two PHARE projects: Agriculture re-structuring part No. 2 and Quality Management in the Dairy Industry in Lithuania.

In the first project, dealing agro-industrial restructuring, improving the international competitiveness of meat, dairy and grain processing enterprises, two large milk processing enterprises J.S.C. Rokiškio sūris and J.S.C. Panevėžio pienas have been advised on structural reorganisation, marketing and improvement of the quality of products.

In the second project - Quality Management in the Dairy Industry - ten dairies have been selected to assist them to implement the HACCP and ISO standards.

Lithuanian quality standards of dairy products related to the EU market and methods of quality analysis are either already prepared (in 9 dairies) or being prepared (in 5 dairies) in accordance with the White Book.

Due to different factors (change in nutrition pattern, decreased purchasing power) the domestic per capita consumption of milk dropped during last decade. However, this trend is now being reversed as income growth resumes and as new products such as cottage cheese and spreads and various forms of yoghurts and other value added dairy products become more widely available and replace imports. In spite of relatively low domestic market protection, the import of dairy products makes a very insignificant part of total assortment. It concerns in particular products not produced in Lithuania: specific types of cheeses, yoghurts and milk drinks.

In recent years export of dairy products (mainly cheese, butter and skimmed milk powder) made more than one third of total food product export.

Ministry of Agriculture prepared a stimulation programme for agriculture and food products export. Export limits (quotas, licences, duties) are not being currently applied. In future, possibilities of applying export subsidies will depend on Lithuania's agreements with the World Trade Organisation.

Traditional export market for Lithuanian dairy products is CIS. Due to decrease of purchasing power of CIS inhabitants during Russian crisis, overall export quantities of dairy products have significantly dropped. For example, butter export decreased by 48 % in 1999 compared to 1998, export of skimmed milk powder decreased by 30 % during the same period. Though 17 dairies are currently approved for exports to the EU, the growth in exports of dairy products is hampered by the quantities of tariff quotas.

*Strengths* of the Lithuanian dairy sector:

- Many enterprises have modernised their premises, equipment, and production technologies in accordance with the hygiene requirements of the EU;
- Enterprises are implementing the control system of HACCP;
- The leading dairies implement new technologies and expanded their assortment;

- The leading dairies are consolidating their positions in the market, trade contacts in the EU and with other Western countries and thus are compensating traditional markets lost in the East;
- A tendency of concentration and specialisation of enterprises leads to improved quality aspects and as a consequence to a higher degree of competitiveness.

*Weaknesses of the Lithuanian dairy sector:*

- Low quality of raw milk due to large number of small private farmers;
- Low efficiency of control over milk storage and collection points;
- High costs of dairy products due to relatively high collection costs and inefficient use of processing capacities;
- Lack of international marketing experience;
- Low value products are prevailing in exports.

*Opportunities of the Lithuanian dairy sector:*

- Annual growth of GDP, around 5% during the last years, gives a higher purchasing power;
- Association Agreement with the EU eliminated the high tariff barriers, which severely limited Lithuanian export into the EU;
- Abolition of tariff barriers between Baltic States since January 1997, which increased competitiveness of the dairy industry;
- Lithuania is getting closer to joining the WTO. This should improve the investment climate in the country, as potential investors will have added insurance that the investment climate will not become more restrictive in future. In addition, a membership of WTO will bring the country closer to a future accession to the European Union. The opportunity of the WTO-membership will certainly be of the benefit for exporters, at least in the long run.

*Threats of the Lithuanian dairy sector:*

- Some dairy plants might fail to meet international quality standards;
- Despite the fact that Lithuania's dairy plants have been in a market oriented business environment over the last 6-8 years, it has not learnt to become effective marketers, to understand how the market works and how to take corrective actions to ensure the company's competitiveness.

To summarise, the milk processing industry has to strengthen the capacity to cope with increased competitive pressure and market forces in domestic and world markets.

It is important to increase efficiency of the industry by further modernisation of plants and equipment, adopting new production technologies, improving marketing chain and reducing seasonal fluctuations of production. The further concentration process has to be encouraged, allowing effective bankruptcy of inefficient enterprises.

According to Lithuanian HN 15, dairies have to introduce the HACCP system in order to increase product quality and competitiveness. It requires considerable investments and know-how, where external means and expertise would be very requested.

Support should be given to dairies in order to restructure the product basket, switching from balance products to more value-added products. The alternatives of producing whey and baby-food, which require modern technologies, should be weighed. The possible markets for national specialities should be evaluated.

The growing demand for ecological dairy products reveals new possibilities for dairies. Support should be given to acquire new production technologies and equipment for ecological production.

#### ***1.1.15 Meat sector***

Meat industry is a priority branch of agricultural production in Lithuania. It encompasses more than one fifth of the total agricultural production.

On average, 1 million cattle and around 1.2 million pigs are raised in Lithuania. According to the information of the State Veterinary Service (SVS), more than 336 thousand cattle and 700 – 800 thousand pigs are slaughtered in all the slaughterhouses of Lithuania each year. Rural inhabitants in addition slaughter around 200 thousand pigs, for their own consumption.

By the 1<sup>st</sup> of January 2000, the SVS had on its register 203 slaughterhouses, 156 meat processors having also slaughtering facilities, as well as 181 meat processors without slaughtering. Only 6 of them have reached 500 animals a week in 1999. Others are small or medium businesses. All the meat processing enterprises produce 53 % of cattle meat, 33 % of pig meat and 14% of fowl.

As SVS states, production capacities of all the enterprises in Lithuania comprise 34 691 of cattle heads and 34 765 pigs a week. On average, these capacities were inefficiently utilised. Since the domestic market is overloaded with meat products and export volumes to foreign markets have dropped, competition among companies will continue to increase, so it is likely that a number of inefficient meat processing enterprises will go bankrupt in the nearest future.

The largest meat processing enterprise is “Klaipėdos maistas”, which has a processing capacity of 1000 cattle and 2000 pigs (1 056 tonnes) per week. At the same time, its capacity utilisation is 50%. This company, with an objective to enter the Russian market, has established in Kaliningrad oblast of Russia the joint enterprise “Kaliningradas delikatesas”, which meets the EU quality requirements. One of the advantages of this enterprise is that most of the raw materials are produced in Lithuania, and the finished goods are sold without customs duties to Russia.

By the State’s Veterinary Service opinion, currently there are 8 enterprises relatively close to meeting the EU standards. The most advanced are UAB. “Mažeikių mėsinė”, UAB “Vilkė”, AB “Skinija”. Most of them have been established during 1994-1995. These enterprises utilise almost their full capacity. Most of the meat processing enterprises is private. The State has shares only in “Panevėžio maistas” (38 %) and “Tauragės maistas” (16 %).

The HACCP system is to be introduced in meat-processing enterprises until the middle of 2000. Two meat enterprises “Vilkė” and “Krekenavos agrofirma” have ISO 9002 certificate.

According to the recommendation of the PHARE project “Reorganisation of Meat-processing Industry” it is necessary to establish slaughterhouses, which would confirm to the EU requirements.

The Ministry of Agriculture has prepared the program of quality improvement of meat and its product (framework to 2005). The Order of the Minister of Agriculture as of 1999 enforced “The obligatory requirements for carcasses of pigs and bovine animals”. These obligatory requirements were prepared according to the Council Regulations 1208/81 and 1186/90 on carcass classification. At present those requirements are being partly implemented.

Traditional export market for meat products was the CIS. In 1990 the export volumes of meat and its products to Russia exceeded 2 thousand tonnes per week. Due to such an export volume demand, all meat industry was orientated toward large capacity enterprises. Up to now the old enterprises are of big capacity, which are only partly used. Great energy costs, inefficient equipment and old technology in meat enterprises make its products expensive. Investment in the meat industry is insufficient. A low level of profit margin in the meat enterprises caused low investment within 2 last years.

Due to the Russian crisis export volumes of meat and its products to the CIS decreased more than 50 per cent in 1998. In 1997 the export of meat was 18,9 thousand tonnes. In 1998 meat export dropped to 4,06 thousand tonnes. The production volumes of some meat enterprises fell down more than 50 per cent. However, the enterprises still export meat products to the Baltic States and CIS, but there is almost no export to the Western Europe (only 394 tonnes of whole meat export were exported to EU in 1998).

Import of meat was 11,7 thousand tonnes in 1998 and 10,9 thousand tonnes – in 1999. The main part of meat import was poultry. It encompasses 9,8 thousand tonnes in 1998 and 7,5 thousand tonnes in 1999.

*Strengths* of the Lithuanian meat sector:

- The obligatory requirements for carcasses of pigs and bovine animals are implemented;
- Most of the big meat-processing enterprises are modernising their premises, equipment and technologies in accordance with the hygiene-sanitation requirements of the EU;
- Enterprises are implementing HACCP system;
- Meat-processing enterprises are stimulated to improve quality of their products and to make them less expensive due to a strong competition in an internal and external markets.

*Weaknesses* of the Lithuanian meat sector:

- Inefficient use of capacities in meat-processing enterprises;

- Most of meat-processing enterprises have inside slaughterhouses, which contradicts to the EU requirements;
- Great energy costs, inefficient equipment and old technology in meat enterprises;
- Many meat enterprises are indebted to farmers;
- Lack of investment;
- Lack of good quality bovine animals for meat processing;
- Weak marketing and management structure;
- Lack of international marketing experience.

#### **1.1.16 Fishery sector**

Fisheries sector of Lithuania covers fishing, management, protection and restocking of fish resources, fish breeding, aquaculture, transportation of fish, storage, fish processing and supply for consumers. Sector creates 0,06 per cent of Lithuania's GDP and employs about 6 thousand persons (0,3 per cent of total country employees).

Fish processing sector is a very important part of fisheries. It creates and guarantees working places for people living in the regions dependent on fisheries and it also supplies healthy, protein rich products to the consumer (see table 37 in Annex I).

Officially more than 100 companies are engaged in fish processing. Small enterprises dominate in this industry that includes 17 medium size enterprises and 12 large companies. About 3,000 people are involved in the fish-processing sector. Seven Lithuanian fish processing companies are approved and certified according to the EU standards. These companies introduced quality assurance and food safety programmes; they can supply not only local, but also the EU market. Lately the fish processing industry produces and supplies the consumer with bigger amount of fish and fish products. The production of fish fingers, crab sticks, crayfish tails and other delicatessen sea products have been started. Consumption of fish and fish products is increasing in the current years. In 1998 consumption was 12,5 kg per person (1,1 kg more comparing with 1997) (see table 38 in Annex I).

#### **Raw material**

Not the entire Lithuanian quota for Baltic Sea herring and sprat are being processed into consumer products, whereas the entire quota for Baltic Sea cod is utilised, either for processing in Lithuania or landed abroad.

The major reasons for not utilising the quota on herring and sprat for consumer products are:

- for sprat, the present loss of sales to the Russian market and better prices when selling to fish meal producers in Scandinavia;
- for herring, a lack of product development on this fish specie which is more difficult to process than the more fat and bigger Atlantic herring.

The loss of the former high sea fleet of ocean going trawlers forces the industry to import all of the needs for Atlantic herring, mackerel, sardinella, hake a.o. species from local traders or from traders abroad (Norway, Denmark, Holland, etc.). All of this import is in the form of block-frozen fish – whole round, headed and gutted or as fillets

#### **Development of the fish processing sector**

*Frozen fish fillets.* The buildings in this part of the fish processing industry are generally in a good condition and well maintained. All the plants in this category are

established after the independence and even within the last years. The equipment is generally good, mostly new but also second hand equipment is used and often in stainless steel. The level of sanitation and hygiene is very good as well and in accordance with the EU demands.

Only few products develop in this category. The product programme consists of single frozen, vacuum packed or blocks frozen fillets of white fish species. Most of the products are produced from imported frozen fish, which are partly defrosted, glazed and re-frozen.

Some new species like pike perch and flounders are being tested but supply of raw material is still only sporadic and training in filleting of flat fish is needed as investment in filleting machines may be an economic problem.

The Russian crisis has had some negative effect on this part of the industry but as some of the companies have already been approved by the EU and have established sales to new markets in western Europe the effect is not as severe as for other parts of the industry. The biggest problem and the limiting factor to full utilisation of the installed capacity are the lack of raw material.

This part of the industry is performing good marketing and with positive results. Contacts are established with customers in new (western) markets and orders are executed at competitive prices that include a profit for the selling companies.

*Canned fish.* There are four fish canneries in Lithuania. Two of the companies are planning to move out in the year 2000 from the present facilities. Such a move is in each case most needed as the present building facilities are in an extremely bad condition and beyond any economically justifiable upgrading – in one of the cases the facilities are also too modest in size to allow for any future extension of production.

The two other canneries are in buildings that need upgrading. Most of the equipment used is 12 – 15 years old and some is even older. The equipment is of Russian or Ukrainian origin and is lacking even daily maintenance. Some of the equipment is second hand. An exception from this is 3 new smoking kilns of German origin being installed in one of the canneries. Sanitation and hygiene in the fish canneries are very poor and do not in any of the companies meet the demands of the EU-directives.

Practically no product development has taken place yet. However, one of the newly established fish canning companies has, as the company strategy, decided to produce products that are not made by other companies. Such new products are cod in oil or tomato, flounder in oil or tomato, cod roe or liver and pike perch in oil. Another of the companies has contact to wholesalers in the Czech Republic and is in the process of testing recipes on new products for this market.

Two of the companies now utilise the installed capacity close to 100% in a first shift, whereas the two other companies only operate at about 30% of the capacity installed. This is mainly due to differences in product programmes and to an ongoing and dragging privatisation process for the oldest and the biggest of the companies.

This is probably the part of the industry that has been hurt most by the Russian crisis in 1998 and also the part that has most problems in establishing new markets.

The industry was totally unprepared for this and the two old companies had to reduce production for 6 –7 months. One of the companies even has not been able to start again but went into reconstruction and is renting out its facilities to other companies (but within the group).

The other companies, which have survived so far struggles to keep going but orders are at best executed at break-even prices and mostly with a loss.

One bright point in an otherwise dismal situation is that there is a recent tendency that the buying power of the Russian market is being restored. A new (since last year) fish cannery is increasing its sales to Russia and at prices well above production cost.

*Chilled/Semi-preserved/Smoked fish products.* This part of the fish processing industry includes the highest number of companies.

A few of the companies carry out a proper sanitation of the processing premises and the facilities for personal hygiene are very good, but the differences from company to company are huge.

This is probably the sector of the industry that exhibits the most innovation in product diversity. The supermarkets offer on their shelves an assortment of fish products that exceeds what may be seen in any western supermarket or retail outlet. Most of the production within this category is sold on the home market and there are too many companies – about 80 registered companies of which maybe 30-40 are active. This has led to a sales strategy where low price dominates over quality and food safety. The unfortunate consequence is that the companies that invest and carries costs in food safety precautions loose out to the companies, which produce under low cost and high-risk conditions.

Most of the fish processing companies understand the need for improving of quality assurance and of food safety – but they need practical assistance in development and implementation of adequate systems tailored to their situation and requirements.

*Strengths of Lithuanian catches and fish processing industry:*

- Good body of technical skills and tradition
- Access to resources and quota in Baltic, NAFO and Norwegian waters
- Competent authority approved for third country supplies to EU
- Skilled fish processing workforce with low labour costs
- Access to Baltic Sea resources of fish as raw material

*Weaknesses of Lithuanian catches and fish processing industry:*

- Ageing fleet with high costs, unable to compete with more efficient EU suppliers
- Poor landing and market infrastructure; fragmented landings
- Lack of developed local market for fresh fish
- High dependency on quota species for significant part of landings.
- Highly fragmented sector with many small firms
- Poor hygiene conditions in many establishments with only 7 firms approved to EU standards
- Canning sector approaching obsolescence with loss of Russian market
- No marketing experience

*Opportunities of Lithuanian catches and fish processing industry:*

- Under-utilised quota for sprat and herring
- Potential for development of non-quota species (flatfish)
- Improved sales and incomes via better marketing of fresh fish
- Access to EU markets for value added products
- Supermarket outlets in other applicant countries
- Production of inexpensive, high nutritional new fish products

*Threats of Lithuanian catches and fish processing industry:*

- Loss of quota due to non-utilisation
- Loss of fishing skills
- Lower cost good quality imports will dominate local market
- Weak veterinary inspection system undermines investment in upgrading
- Loss quality image if improvements in hygiene and sanitation fail to come off

#### Development of market infrastructure strategy

On the one hand the fishing fleet does not utilise the full quota for all species of fish available from the Baltic Sea and allocated by the IBSFC. On the other hand systems for internal marketing of fresh fish are weak or non-existent. There is no corps of fish traders, no wholesaling of fish and no specialised fish retailers (mobile or otherwise). Only processed and preserved fish are available to the average consumer. The fleet sector lacks landing and infrastructure for concentrating the first sale of fish, which presently takes place at several locations within Klaipeda port area, and at least 15 small coastal landing sites. By providing infrastructure such as landing quays, covered market areas, ice plants and road access, traders and processors will be able to access supplies more readily and the internal market will develop. The proper fish landing infrastructure will encourage the fishermen to land their catches in Lithuania as these initiatives will contribute to ensure a fair and competitive price for the fish. At present too much of the fish caught by Lithuanian fishermen are landed outside of Lithuania, as prices there are higher.

Klaipeda region is considered to be an important fisheries dependent area within Lithuania, with 2% of employment in fishing, 3% in fish processing, and a further 2% in other up and downstream activities.

The port of Klaipeda is the main focus of fishing and landing and its modernisation is a priority. There are other ports whose condition has deteriorated and which have very limited draught. Renovation of these ports is a secondary consideration. Recent policy of the Klaipeda Port is targeted to the cargo services, which has limited the possibilities for the fishermen. It has resulted the situation that there is no specific place for the fishing vessels in Klaipeda port. The landing territory includes several places not suitable to land fresh fish, as the conditions do not comply with technical and sanitary-hygienic requirements.

The feasibility study "Perspectives of the Port for the Baltic Small Fishing Vessels", which was initiated by the fishermen association "Klaipėdos žvejas" has been completed in 1999. Conclusions were made that the most problematic issues of the transportation and storage of fish are directly related to the lack of the fishing port. The feasibility study identified the following functions of the fishing port:

- Services for vessels,
- Production of ice,
- Storage of fish,
- Fish auction,
- Management and self-governing of the port.

In 1999 the designing of the fishing port started. Construction of the port requires 10 million Litass (2.5 million EUR) from the State Budget. According to Klaipeda Port Direction the quays could be constructed in the year 2000.

Employment dependency on fishing in the smaller coastal communities is up to 16%. It is also policy to develop landing infrastructure for the coastal fishery (local ports in the areas like Nida, Juodkrantė and Rusnė). Local authorities and/or fish producers'

organisations or co-operatives at these locations to develop this infrastructure will use SAPARD funding.

#### *Strategy of the fish processing sector*

There is evidence of over capacity in the fish processing sector. This is related to decline in Russian market for canned products and an excessive number of very small enterprises with sporadic production and low standards of quality and hygiene. It is considered inevitable that structural adjustment of the fishery sector will result in the closure of many of these enterprises, and no support should be provided for upgrading of fish processing enterprises unless they can demonstrate that they:

- are viable enterprises
- have sales which are not exclusively dependent on the sale of canned fish to the "eastern" markets

Furthermore, present policy promotes better utilisation of national fish quotas. This should not however be done at any cost. EU states in the Baltic region make better use of quota because small pelagic fish are used for fishmeal production. The additional fishmeal processing capacity is not required in Lithuania, and this type of activity should be excluded from receiving support. Only projects processing fish for human consumption should be supported.

#### *Modernisation of fishing vessels*

Conceivably there is a need for quality related improvements to fishing vessels e.g. Insulated fish holds, ice machines, chilling and freezing equipment on board.

#### *Proposed actions*

The main objectives of the development strategy of the fish processing and marketing is to create port and market infrastructure, to improve a fish processing sector which meets all national and international requirements for health conditions, and which uses all available sources of raw material to provide safe products to meet the demand of national, EU and export markets.

Actions to be supported by SAPARD:

to develop the marketing chain to ensure the delivery of regular supplies of good quality fresh fish to consumers;

to implement/improve hygiene and sanitation programmes in the fish processing enterprises and in the fishing vessels, which handle, process and supply fish processing industry with raw material;

to implement environmental management systems;

to develop on – going market products and marketing.

With regard to fish processing sector and marketing, these measures will aim to create fish landing and market infrastructure, to achieve restructuring, consolidation and modernisation of the fisheries processing industry, and increase its competitiveness.

#### **1.1.17 Other sectors**

##### *Grain and fodder crops*

The total crop area remains stable (about 2.56 million hectares), except slight fluctuations in 1994-1996. Grain crops (winter and spring cereals, and leguminous grain) and fodder crops (fodder root - crops, perennial grasses, maize for silage and green fodder, and other silage crops) are the important ones. Grain and fodder crops

take up the largest proportions of the total crop area (45.8% and 44.4% accordingly, in 1998). 50 % total domestic use of grain products comprises fodder produce, about 19 % are used for human consumption and 12.6 % is used for sowing. Domestic demand for grain and fodder crops is satisfied by about 105%.

The total yield of protein crops amounted to 104,100 tonnes in 1998, whereas total area made up 66,100 hectares, gradually achieving its previous level. Protein crops made up 2.6 % of the total crop area in 1998.

Currently there are 47 grain-processing companies and 10 of them are the big ones. In 1998, the processing capacity of the biggest 10 grain processing enterprises was 409,000 tones, whereas total production was 191.9 thousand tones. Capacity utilisation of these big enterprises was 46.9 %. The processing industry is almost completely privatised and privatisation level is 96.3 %. There is a special purpose enterprise involved in the state grain reserve and storage, which is for 70% owned by the State.

The PHARE project “Agro-industrial restructuring” had been completed in grain processing industry. Two grain - processing enterprises were the beneficiaries. During the project training was given on marketing and quality issues, study tours were organised and that contributed to establishment of contacts with EU counterparts.

One of the import regulation instruments is import duty, which were established by Government Resolution on the Procedure of Export and Import Regulation in the Republic of Lithuania, adopted on March 1997. Ad valorem autonomous, conventional and preferential import duties are applied as well.

Automatic import licences are issued for cereals (CN codes 1001.90 –1004.00.00), buckwheat, products of the milling industry. The Ministry of Agriculture issues automatic import licences. That was introduced by Government Resolution, on October 1998. For importing cereals and derived products, it is necessary to get permission from the State Plant Protection Service. However, import levels in this sector are very insignificant.

During the 1998 was exported 151,0 t. tones of wheat, 13,4 t. tones of rye, 2,75 t. tones of barley and during the same time import made 11,6 t. tones of wheat, 1,13 t. tones of rye and 0,7 t. tones of barley. Export quantities of grain have increased by 87 % in 1999 compared to 1998. Main export markets for the before mentioned products were Belarus, Russia, Latvia, Poland, and Denmark. The majority of imports came from Estonia, Denmark, Czech Republic, Latvia and Ukraine. Export duties and other restrictions are not applicable.

New standard methods for determining the quality of grain are prepared in compliance with the ICC and ISO standards. The quality criteria correspond to those of the EU.

In order to make grain quality estimation more precise and operational, financial resources have been allocated from the Rural Support Fund to buy INFRATEC equipment, 39 units in total, for determination the quality of cereals, flour, compound

feeds and their supplements. All analysers are combined in a network administrated by the MoA.

From the 1 of July 2000 all grain-processing enterprises are required to introduce the HACCP (system of risk factories analysis and basic control points).

The main tasks for restructuring and modernisation in grain sector are:

- To encourage modernisation of storage capacities in the favourable zones for wheat cultivation;
- To promote restructuring and specialisation of farms by the economic measures;
- To diversify activities of processing enterprises;
- To reorganise grain-processing enterprise premises equipment, and production technologies in accordance with the hygiene requirements of the EU.

Support should be given to encourage the consolidation of the grain industry, laboratory equipment and production quality control. Support to flour milling has to be focused on investments in modern laboratory equipment aimed at testing the quality of raw materials. Also, closer co-operation between processors and retailers will be encouraged.

#### Cultivation and processing of oil crops

Rapes are the most suitable oil crops for cultivation in Lithuania. Its oil cake is albumen fodder. Compared to 1998, area covered by rapeseed crop doubled in 1999, and amounted to 84 thousand hectares. Low technological and technical rapeseed cultivation level predominates, that predetermines high input and not high enough crop capacity. There is a need for rapeseed sowing, crop supervision and harvesting machinery.

The weakest chain in this branch is a first stage of treatment. The aim of this treatment is to prepare high quality rapeseeds for further processing and sale. Just a few farmers have equipment for rapeseed sorting and drying.

Rapeseed cultivation and processing is rather new sector of Lithuanian agriculture. This branch has been developed in accordance with programme of “Rapeseed cultivation development and oil supply to the market 1995 – 2000”, in which there has been foreseen to expand rapeseed cultivation and processing in order to supply the consumers with domestic oil and fodder industry – with rich protein fodder.

There are two food oil-processing companies: AB “Obelium Aliejus” and AB “Aliejus”. Their total production capacity is 30 thousand tonnes of food oil per year. Domestic demand for food oil is 45 thousand tonnes per year.

AB “Obelium Aliejus” is the only enterprise in the country that has a complete technological line from drying of the rapeseed to the finished product – oil. Its main products are refined, whitened, deodorised, packed up food oil and rapeseed-cake fodder.

AB “Aliejus” has oil refinery and deodorization equipment. Their projected capacity is 20 thousand tonnes of food oil per year. Its main products are refined, whitened,

deodorised, packed up food oil and mayonnaise. There are three lines of packing mayonnaise into glass packages and four lines – into plastic packages. Production equipment is constantly being renewed with enterprise's own funds.

Oil competitiveness is determined by international level technologies, ensuring high production parameters. However, in order to develop oil industry of the highest level, it is necessary to strengthen a first-stage rapeseed processing and to modernise its pressing.

Aid in this sector will be provided to:

- Support of rapeseed growers in purchase of the necessary machinery in order to cultivate these crops;
- Support purchase of equipment for rapeseed sorting and drying and development of such services;
- Support expansion of the existing pressing factories or building of new, more efficient ones.

#### Fibre flax sector

The situation in the sector is such that Lithuanian farmers can hardly satisfy up to 40 % of local textile industry demand for fibre flax raw material. The main problems are insufficient yields and quality. Obstacles for achieving good yields (and especially – quality) are lack of investments for renewal of fibre flax production technologies, fibre flax and seed treatment as well as lack of investments for purchasing special equipment.

9 fibre flax primary treatment enterprises carry out their activities now in Lithuania. Yearly processing capacity of these enterprises is 50 thousand tonnes. Unfortunately, they are profitless. Financial situation in these enterprises depends strongly on technical state of fibre flax treatment equipment. Modernisation of production is necessary as equipment is worn over 50 %.

Therefore, getting financial aid for investments from SAPARD programme is very actual question for fibre flax growers and primary treatment enterprises.

#### Fruit and vegetable sector

The average fruit production is 134 thousand tonnes per year.

Villagers and town dwellers in their small holdings grow up to 90 % of fruit and berries. Their orchards are old and the yield from such orchards goes mainly for processing into concentrated juice. Apples cover up to 80 % of fruit production.

Main suppliers of dessert fruit and berries are agricultural companies and specialised horticultural farmer farms. Specialised agricultural companies have storage capacity able to contain 22 thousand tonnes of fruit and vegetables. Storage equipment needs to be renovated. Some companies have already started this process of renovation. They have purchased storage equipment with gaseous environment. Technical modernisation of storage equipment, introduction of packaging and sorting stations, laying out of modern orchards and berry plantations meet with lack of investments. Proper use of SAPARD aid could assist in solving these problems.

Farmers and town dwellers in their small holdings produce the main part (95 %) of vegetables. Average vegetable production is 387,2 thousand tonnes per year. Carrots, white cabbage, cucumbers, tomatoes, onions, and red beet are the most important grown vegetables in Lithuania, but the produce is not supplied to consumers smoothly over the year. Lithuania grows too few glasshouse production and greens. Vegetable growers have not enough storage capacity. They lack money for introduction of modern vegetable growing technologies, storage building, vegetable packaging and sorting equipment, glasshouse modernisation. Co-financing of this investment by SAPARD programme would encourage solving problems in vegetable sector.

Each year there is processed about 5 – 7 % of produced fruit and vegetables in Lithuania. Equipment of the canning industry is obsolete and technologies are inefficient. Only concentrated juice production industry has modern equipment and technologies. Capacities allow to process up to 80 thousand tonnes of fruit and berries. In a bumper – crop year, these capacities are fully utilised and the above stated amount of fruit and berries are processed into concentrated juice, which is almost totally exported.

Currently small processing enterprises are establishing. They either process or freeze small quantities of vegetables, fruit, berries or mushrooms.

Below there are presented tables regarding production of processed fruit and vegetable products by category as well as fruit and vegetable processing enterprises by number of employees in 1997.

**Table 11 Production of processed fruit and vegetable products by category**

	1985	1990	1995	1996	1997
Dried vegetables and potatoes, (tonnes)	690	914	241	209	61
Vegetables, mushrooms, fruit prepared or preserved by vinegar or acetic acid, (thousand tonnes)	4.9	5.8	1.4	1.8	2.3
Other vegetables, mushrooms prepared or preserved otherwise than by vinegar or acetic acid, (thousand tonnes)	14.0	12.0	0.4	0.3	0.5
Jams, fruit jellies, marmalades, compote, (thousand tonnes)	15.5	13.2	1.7	2.0	1.3
Fruits and vegetables juice, (mln.Litas)	12.4	23.7	13.4	2.5	6.8
Tomato ketchup and other tomato sauces, (thousand tonnes)	3.8	2.2	2.9	2.2	2.3

Source. The Ministry of Agriculture, 1999.

As it can be observed, during the last fifteen years, production volumes have dropped significantly. Similarly as it is the case in other processing sectors reasons for such dramatic changes are lost Russian markets. Probably best positions retained are in fruits and vegetables juice and tomato ketchup and other sauces categories.

**Table 12 Fruit and vegetable processing enterprises by number of employees in 1997**

	Total	Number of employees				
		0-9	10-19	20-49	50-99	100-199

Number of enterprises <sup>6</sup>	20	5	1	4	8	2
Joint Number of employees as of 31 December 1997	1036	21	14	130	607	264
Sales of production (at current prices), thousand EUR	12 918	123	210	4 919	6 492	1 172
Sales in domestic market, thousand EUR)	11 475	123	206	4 702	5 367	1 076

Source: The Ministry of Agriculture, 1999.

From the table above (Table 12), it can be concluded that the major part of sales (almost 90%) is made by 12 medium to large size enterprises. Also, since almost all of the processed production is consumed domestically, share of exports is about 12%.

Lithuania's main exports as of 1998 were apple juice, tomato paste, homogenised not frozen potato products, tomato ketchup and preserved cucumbers. Exports went mainly to Germany, Poland, Russia, Latvia, and Italy. Export volume was almost 9 million EUR. At the same time, main imports were homogenised not frozen potato products, tomato ketchup, tomato paste and fruit juice mixes. These imports came mainly from Sweden, Poland, Hungary, Germany and Greece.

Main factors, which hinder development of the sector, are lack of modern equipment, low efficiency and high production costs.

#### ***1.1.18 Other rural economic activities***

Rural tourism activities in Lithuania were introduced in 1996-1997. The Rural Tourism Association (a member of the Chamber of Agriculture) was established in 1997. The Association promotes rural tourism services, and provides technical assistance for rural dwellers willing to undertake rural tourism activities. A basic regulation of the sector - the Law on Tourism - was issued in September 1998.

At the beginning of 1999, there were 194 farmsteads involved in rural tourism business in different regions of Lithuania. The majority of the farmsteads are located in Southeastern and Western parts of Lithuania. These are the most favourable geographical regions, and are known for their rich natural and cultural resources.

During the second half of 1998, approximately 15,000 guests visited the farmsteads. Most visitors were residents of Lithuania (accounting for more than 95% of visitors). Another group of visitors came mainly from the former Soviet Union countries. However, rural tourism is not developed enough, and a wider range of services needs to be introduced to attract more visitors.

Like rural tourism, other rural businesses are not well developed. Rural small-medium enterprises are mainly involved in the processing of agricultural products, retail business, wood processing and repair shops. By the end of 1997, there were about 200 meat processing enterprises, 50 grain mills, 150 sawmills and other small-medium enterprises in the rural areas. Compared to urban entrepreneurs, rural ones are less

<sup>6</sup> - in 1999, the number of enterprises decreased to 10.

active to take new businesses. However, further development of non-agricultural rural businesses will provide opportunities for new employment and additional income. It also will secure rural society and minimise dependence on the agricultural sector.

### **1.1.19 Markets for agricultural production**

Traditionally, the Lithuanian food industry is a net exporter with local producers able to satisfy domestic consumption. In 1998, Lithuania's milk production was 208% of domestic consumption, egg production was 108%, and meat and grain production about 100%. (Table 34)

The main export markets for agricultural products are the former Soviet Union, the E.U. and the Baltic countries. Despite the Russian financial crisis, 46.4% of exports of Lithuanian agricultural products went to the former Soviet Union countries in 1998, and 23.5% to the E.U. countries.

**Table 13. Exports of Lithuanian agricultural produce 1995-1998**

	1995		1996		1997		1998	
	million EUR	%	million EUR	%	million EUR	%	million EUR	%
Total	496	100.0	547	100.0	618	100.0	520	100.0
E.U.	136	27.5	98	17.2	123	20.0	122	23.5
Former Soviet Union	290	58.5	360	62.7	364	59.0	241	46.4
Of which Russia	177	35.9	219	38.2	222	36.0	149	28.7
Of which Belarus	55	11.2	65	11.4	89	14.5	41	7.9
Baltic States	39	8.0	59	10.4	64	10.4	77	14.8
Of which Latvia	23	4.8	33	5.8	43	7.0	54	10.5
Of which Estonia	16	3.2	26	4.5	21	3.4	22	4.3
Other countries	63	12.6	98	17.1	114	18.5	139	26.6

Source: Lithuanian Department of Statistics, 1999

Dairy, meat, fish and confectionery products account for the largest proportion of total agricultural export. In 1998, more than 28,000 tonnes of dairy products (22% of total dairy export), about 22,000 tonnes of sugar confectionery (61% of total confectionery export), and more than 2,300 tonnes of meat and fish preparations (33% of total meat and fish preparations export) were exported to the E.U. countries. (Table 35). Taking into account these trends, Lithuanian food industry will be able to find some niche in the Common Market. However, to compete successfully in domestic and external markets, the Lithuanian food industry requires restructuring and large investments in capital and human resources to comply with quality, hygiene and food safety requirements.

### **Implications of Russian financial crisis on Lithuanian food processing industry**

Russian financial crisis has effected Lithuanian enterprises which operations were closely related to Russian market and economy. While Russia and other CIS countries have been major export markets for the produce of the most of Lithuanian food processing enterprises, the agri-food industry was hit by the crisis. The Russian crisis resulted in losses of Lithuanian food processing enterprises due to devaluation of Russian currency, unstable exchange rate of US dollar and Russian ruble, currency convertibility problems in commercial banks. Furthermore, delayed settlements with

Russian trade partners lead to shortage of working capital and financial difficulties of the enterprises.

In 1999, due to the Russian financial crisis, prices of main agricultural products have decreased approximately by 15 – 20 % compared to 1997 price level. Lithuanian food processing enterprises have lost their competitive positions. The decline in total export volume of foodstuffs and agricultural products was remarkable: in 1999, the export volume of agricultural produce decreased by 28% (by 697 million Litas, or 174.3 million EUR) compared to 1997.

Russian financial crisis severely damaged trade relation with Russia and other CIS countries. In 1997, 59% of agricultural produce export went to CIS countries (including Russia), while in 1999 the share declined to 37%. In 1999 export volume to CIS countries has declined by 55% (802 million Litas, or 200.1 million EUR), compared to 1997. Taken Russia alone, the decline was even higher – 58% (521 million Litas, or 130.3 million EUR). It is worth mentioning that the leading food processing enterprises have re-orientated their trade relations from Russia and other CIS countries to the European markets. By preliminary figures, in 1999, the export value to the Western European market exceeded the export value to CIS Countries: the share of export to the Western European and CIS countries was 28% and 27%, respectively.

Nevertheless, Russian financial crisis and its results have revealed weak competitiveness of Lithuanian food processing industry. This implies that in order to strengthen competitiveness and flexibility, food processing industry needs restructuring. Still, the major aim is to improve effectiveness of enterprises and quality of produce.

#### **1.1.20 Land reform**

The process of land reform and restoration of ownership rights to land started in 1991. In principal it gained higher speed in recent years after Seimas and the Government of the Republic of Lithuania passed relevant legal acts necessary for the implementation of those tasks and allotted funds for that purpose. New institutions such as Department of Land Management and Law for implementation of the land reform were established and functions of other institutions performing these tasks were specified.

At present the land management projects for the land reform for cadastral areas are being prepared and approved, forestry and land parcels are restituted in kind. After the land management projects for the land reform are approved, the ownership rights to illegally expropriated land are restored by transferring or granting gratis the land and forestry parcels and giving actual possibilities to acquire or lease state-owned land in accordance with the procedure set by laws. The Department of Land Management and Law and other institutions are ready to finish preparation of land management projects for the land reform in whole country in order to restore ownership rights to land, forest and water bodies for the Lithuanian citizens until 2001.

There are 1286 cadastral area within the territory of Lithuania. The land reform gained higher speed especially in recent years. By 1<sup>st</sup> March 1999, 344,700 decisions were made to restore ownership rights to land, forest and water bodies (to the area of

2,310500 ha). Out of this number by the same date 90,700 decisions were made restore ownership rights to the area of 5,973 thousand hectares of land while the state bought it out or compensated for it in cash or state securities.

The speed of land restitution is the highest in those counties and districts where the land productivity is the best – it means the counties of Marijampole, Kaunas, Panevezys and Siauliai. Ownership rights in those counties are restored to 2/3 of the land area indicated in the applications.

The implementation of the land reform is most complicated in eastern part of Lithuania especially in Vilnius region. At present 35% of citizens in Vilnius County have not yet submitted the documents proving the ownership right or kinship with the previous landowner. Problems arise because the documents proving the ownership right are within the archives of Lithuania, Byelorussia, Russia and Poland. Many important archive documents have not survived, therefore the citizens are forced to address the court to prove the rights.

Though, a progress is made in the recent years, unfinished land reform limits land market functioning. Consequently, this hinders agricultural and rural development.

Development and approval of the land reform projects, legitimisation of private ownership rights to the land, forests, water bodies and elucidation of spare land areas will stimulate development of the land market. It has been foreseen, that after concluding the land restitution process, the spare land area will comprise around 0.5 million hectares of land. The non-agricultural land may be already sold to the interested physical or legal persons as well as the foreign citizens. When the amendments are brought into the article 47 (2) of the Constitution of the Republic of Lithuania, foreign citizens will be allowed to also acquire agricultural land.

Implementation of measures foreseen in the national Rural development plan will also stimulate development of the land market, because the existing private land tenures are too small to run perspective and competitive farm. Lithuanian farmers in the nearest future will see the need to increase their farms in size, also to make them more comfortable for usage and it will enable them to buy or rent more land. This will lead to a new very significant economic land reform stage which will be directed at the environmental protection, land reorganisation and consolidation process. Usage of agricultural land would become more comfortable, more efficient in economic terms with the increasment in area and shortage of distance between the fields.

#### **1.1.21 Veterinary sector**

The great importance of beef and dairy sectors in Lithuania suggests that the veterinary sector is a key agricultural policy area, particularly with regard to the pre-accession strategy and to safeguarding export markets.

The State Veterinary Service (SVS) was established in 1991. It is an autonomous organisation, reporting directly to the Prime Minister but with close links to the Ministry of Agriculture. Generally, it is responsible for the control of animal health, of zoonosis infections and veterinary public health control of products of animal origin, including food. Only food of animal origin in shops and supermarkets is excluded from control by the veterinary services. The Veterinary Council of

Lithuania, which comprises representatives and specialists from the State Veterinary Service, the Lithuanian Veterinary Academy and the Lithuanian Veterinary Institute, has a general advisory function for the whole veterinary sector. In general, therefore, procedures for the control of products are comprehensive and well integrated with the animal health controls.

Operating in headquarters, Veterinary legislation is enforced by the State Veterinary Service, through 4 departments, 10 county veterinary services, 34 district State veterinary services and 5 city veterinary stations. There is one National Veterinary Laboratory and a laboratory at each of 10 counties. 23 border inspection posts (BIPs) have been established on the Lithuanian land borders with Latvia, Poland, Belorussia and Kaliningrad, at 3 airports and 2 seaports. Following the accession of Lithuania and their neighbouring Associated Countries to the EU, the number of BIPs at road and rail border crossings can be greatly reduced, and priority given to the construction and equipment of 9 long-term BIPs with Belorussia and Kaliningrad and the international ports and airports of Lithuania.

The SVS employs about 600 veterinarians. About another 1400 veterinarians are engaged in practices; 170 veterinarians are busy with the operation of private veterinary pharmacies and supply companies.

Lithuanian veterinary sector has made a big progress in integrating EU veterinary acquis into the national veterinary legislation. To a large extent, PHARE programme makes a considerable contribution to strengthening veterinary sector. (see also chapter 1.4). It is expected that PHARE support to the sector strengthening will continue in the future.

#### ***1.1.22 Current situation in rural areas***

At the end of 1997, the total rural working population was estimated at 475,500, constituting about 30% of total Lithuanian employment<sup>7</sup>. One in six rural employees was above retirement age (about 58,000, i.e. 11% of the total rural working population). Agriculture remains a main activity among the rural population: the sector employs 58% of total rural employment. The second largest employer is public services - healthcare, education and social sectors. It constitutes 15.6% of the total rural working population. (Table 36 in Annex I).

Usually, the rural activity rate is considerably lower than the urban one. At the end of 1997, it was 57.4%, compared to 62.7% in Lithuanian urban areas. Similarly, the rural employment rate was lower than the urban. Despite this, the rural population is less unemployed than in urban areas. But the age structure of the rural unemployed is unfavourable: the large number of rural youth unemployment is common. At the end of 1997, the unemployment rate among rural youth up to 20 years of age was nearly 30%.

**Table 14. Activity, employment and unemployment rates in rural areas compared to urban**

	<b>Average Lithuanian</b>	<b>Urban areas</b>	<b>Rural areas</b>
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<sup>7</sup> Source: Lithuanian department of Statistics, Labour Force Survey, 1997

Activity rate	61.2	62.9	57.4
Unemployment rate	14.1	15.4	10.8
Employment rate	52.6	53.2	51.2

Source: Lithuanian Department of Statistics – Labour Force Survey, 1997

Consequently, lower activity and employment of the rural population leads to lower average disposable household income, when compared to the urban population. In 1998, rural household per capita income was 30% lower than the urban one. Additionally, rural household income grew at a slower rate. Therefore, the already existing gap between rural and urban households in terms of income keeps on widening.

**Table 15. Household income per capita in rural and urban areas**

	Disposable monthly income in Litas per capita		1997 compared with 1996 (%)
	1996	1997	
All households			
Total disposable income	326.69	368.92	112.9
Real disposable income index			103.7
Urban households			
Total disposable income	352.73	403.05	114.3
Real disposable income index			104.9
Rural households			
Total disposable income	268.87	298.37	111.0
Real disposable income index			101.9

Source: Lithuanian Department of Statistics, 1998

Thus, data on employment and household income reveal major weaknesses in Lithuanian rural areas: first, high dependence on one source of income - agriculture; second, high unemployment among rural youth; and third, a widening income gap between rural and urban households.

### ***1.1.23 Social and physical infrastructure***

#### ***Education***

The main types of schools operating in Lithuanian rural areas are primary, secondary and vocational. At the end of 1997, there were 752 primary schools (46 % of the total school number). The number of rural secondary and vocational schools grew in 1997/98 to 251 and 107 respectively. In addition, there were one private primary school, one gymnasium, 6 special schools for disabled children and one school for juveniles operating in the Lithuanian rural area. Since 1993, the total number of schoolchildren has increased in all types of rural schools. During the last five years, the number of pupils in rural comprehensive schools increased from 126 thousands to 138 thousands: on the average, in one rural school from 78 to 86 pupils. The number of pupils per teacher is lower in rural schools than in urban ones.

There are 40 agricultural schools, 12 higher education agricultural schools and one college that together train agricultural specialists and skilled workers for employment in agriculture. The schools are mostly situated in the countryside. The training and re-

qualification of the adult students also takes place there. The most popular majors are in agricultural accounting, organisation of land exploitation and geology, agricultural commerce and green plantation and design.

To provide consultancy and vocational training to rural population, Lithuanian Agricultural Advisory Services (LAAS) were set up. LAAS provides consultancy on crop and livestock production technologies, agricultural economics, accounting, prepares farm improvement plans. Besides, Lithuanian Chamber of Agriculture also is involved in providing technical assistance to farmers. It mostly focuses on developing alternative activities in rural areas, organises training and seminars.

In spite of a dense network of Lithuanian rural schools, education quality expressed by farmers' education level is rather poor. At the end of 1997, only 14% of farmers had a university degree. Approximately 38% had a profession related to either agriculture or farming. Only one of ten farmers has participated in farming training and seminars.

#### Infrastructure

Compared to urban areas, Lithuanian rural areas have a lower standard of living in terms of physical infrastructure. Although, at the end of 1997 there were no villages without electricity, wide disparities between rural and urban areas existed in water supply, central heating systems, sewage and telephone networks. Only 43.5% of rural residential units, or one third of rural settlements, have central piped water supply systems. Approximately 700,000 rural inhabitants use drinking water from 300,000 dug wells. The same is true for sewage systems. In total, 733 sewage systems have been installed in rural areas. They serve around one third of rural inhabitants. Poor development of water supply and sewage systems raises major environmental issues.

Recent investments in the telephone network increased the number of telephones per 100 rural inhabitants to 13.4 in 1997. However, the rural areas still lag behind the urban by almost a half.

**Table 16. Rural infrastructure compared to urban areas, at the end of 1997.**

	Percentage of residential units	
	Rural	Urban
Electricity	99.5	99.9
Central heating systems	13.5	81.9
Water supply	43.5	89.6
Hot water supply	10.5	78.0
Sewage systems	49.5	91.0
Telephone network	46.4	76.8

Source: Lithuanian Department of Statistics, 1998

Though Lithuania has a well-developed road network, which is well maintained, the condition of local roads is not so good. At the end of 1997 the total length of local roads was 42,157 km. And approximately 80% of them were surfaced.

To conclude, poor water supply and sewage systems represent a major threat to rural environment. Besides, existing disparities in infrastructure between rural and urban areas and poorer quality of life may lead to migration from rural to urban areas. These trends would have a negative impact on rural development and threaten the sustainability of rural communities.

#### *Soil drainage and irrigation*

Drainage and irrigation systems affect the natural environment. A countrywide mean 85% of Lithuania's agricultural area is drained by pipe drain systems. The total drainage area is estimated at 3 million hectares, of which 2.6 million have a functioning drainage system. The drainage system is very important for Lithuanian agricultural production, because climate and geographic conditions lead to a surplus of moisture.

Pipe drainage system has been installed during the Soviet period on a huge scale, without much consideration for the real need and economics of the investments. As a result, areas in which pipe drainage contributes to a high agricultural potential are mixed with locations where its additional benefits are marginal. In other areas agricultural potential is low, and other forms of land use are preferred. Most the land reclamation systems installed needs replacement. Large investments are required to rehabilitate the land reclamation infrastructure to make it contribute to sustainable farming.

The land reclamation infrastructure is the property of Land Reclamation Service, which is responsible for maintenance, except in case of restoration of property rights to claimants. It is proposed to establish Land reclamation boards, independent single-purpose public institutions. To take up this initiative, investment support is required.

Irrigation systems cover almost 8,000 ha of farmland. Restructuring of agriculture made some irrigation systems redundant, and they are abandoned. About 60 per cent of irrigation systems continue to function.

#### **1.1.24 Rural Culture**

The rural areas have a number of villages and manors with historical or cultural heritage. At the end of 1998, the Cultural Heritage Centre identified 46 villages, which have either historical or cultural heritage. Additionally, more than 59 manors, buildings, parks and gardens subject to protection were located in the rural area. Together they cover more than 1,300 hectares. These sites of cultural value (villages, manors, etc.) play a vital role in development of rural tourism and recreation services, and preserving rural heritage.

Rural libraries and cultural centres represent an important part of rural life, traditions and culture. In 1990-1997, the number of rural libraries and cultural centres steeply diminished. In 1990, there were 1439 rural libraries compared to 1230 in 1997. Also, the number of rural cultural centres dropped from 1045 in 1990 to 849 in 1997. At the same time, the number of rural libraries and cultural centres has been decreasing, their technical conditions worsened. Despite this fact, in 1995-1997 the participation in traditional rural art activities increased by approximately 10%.

### 1.1.25 Forestry

#### General overview of the sector

Lithuanian forests are important for their natural resources. The forests cover approximately 2 million hectares, or 30% of the total Lithuanian surface area. The dominant tree species are pine and spruce. The coniferous species account for some 60% of trees, and deciduous tree species, such as birch, black alder, grey alder and aspen, for some 40%. 27% of forestland is subject to conservation restrictions, e. g. aiming at conserving bio-diversity. Commercial forests make up some 73% of Lithuania's forests. Forest types predominant in Lithuania do not directly relate to the forest types listed in Annex I of the Habitats Directive; however, there are other types of habitats (e.g. wooded dunes) that are included in appropriate categories of protected areas, and are protected by Lithuanian laws.

Most of Lithuania's forests are in State hands. At the end of the first half of 2000, private forests made up to 20,1 % (which corresponds to 399,000 hectares). It is estimated that by the end of land reform private forests will cover from one third to one almost one half of total forest area. The Lithuanian private forestry is characterised by large number of small private forest holdings. At the end of the first half of 2000, there were about 118,000 of legitimated private forest holdings with the average 3.4 hectares per holding. At the same time, about 399,000 hectares of private forest were owned by approximately 162,000 of legitimated owners. Consequently, private forest owner had on average only 3,4 hectare of forest. Weak co-operative relations among forest owners and between them and other economic partners engaged in timber harvesting, wood processing and wood trading considerably limit rapid development of the private forestry.

Currently, forest sector contribution to GDP is 2.8%. Wood produce is very important for export. In 1997 and 1998, wood products accounted for 5.1% and 4.8% of total Lithuanian export. In recent years, Lithuania annually produced more than 5 million m<sup>3</sup> of wood. However, almost 80% of wood are produced in State-owned forests.

**Table 17. Dynamic of forest cutting in state and private forests (1996-1999), ha**

Cutting	1996			1997			1998			1999		
	State	Private	Total	State	Private	Total	State	Private	Total	State	Private	Total
Annual cutting	199280	43978	243258	213605	68136	281741	198244	41730	239974	171464	40493	211957
Final cutting	14176	1132	15308	11925	2385	14310	11117	3958	15075	11880	7098	18978
Clear cutting	11434	982	12416	10522	1629	12151	9693	1823	11516	9785	2564	12349

**Table 18. Dynamic of reforestation in state and private forests (1996-1999), ha**

Refor estati on	1996			1997			1998			1999		
	State	Private	Tota l	State	Private	Tota l	State	Private	Tota l	State	Privat e	Tota l
Annua l	8562	86	8648	10689	602	11291	9591	782	10374	7393	992	8385

Source: Lithuanian Department of Statistics, 1999.

According to Forestry law all clear cutted areas have to be reforested in two years period. Almost 30 percent of these areas are left for natural regeneration. This contributes to biodiversity and ecological improvement of forest ecosystems.

Annual average increment is 6.2 m<sup>3</sup> per hectare. The average growing stock volume per hectare amounts to 184 m<sup>3</sup>. During last 50 years timber resources have increased more than twice. At present, the total growing stock volume amounts to 347.6 million m<sup>3</sup>. The average forest land area per capita makes up 0.53 hectare, which corresponds to 93 m<sup>3</sup> of timber.

Since 1990, the Lithuanian forest industry has been undergoing a period of rapid change to adapt to the principles of market-led economy. Many old public enterprises have either shut down or been privatised. Young entrepreneurs have established new privately owned companies, and new export market links have been forged.

Lithuanian forest industry has a positive social impact: this impact reflected in the almost steady employment level observed over the past few years, notwithstanding the closure or significant reduction in production of important segments of the industry, such as pulp and fibreboard industry. Currently, forestry and forest industry has about 12,000 and 34,000 of employees respectively.

In addition to wood products, Lithuanian forest are important for non-wood products, such as mushrooms, berries, medicinal herbs, game meat, furs, antlers, hunting trophies, Christmas trees, etc. In 1996, it was estimated that income from non-wood forest products made up 13% of the total amount earned from forest activities. Especially significant was the harvest of mushrooms due to export opportunities.

Currently, 70-80% of mushrooms and berries harvested is used to satisfy personal needs and 20-30% is intended for sale. About 100 species grow in Lithuanian forests. However, only 15-25 of them are collected. The annual exploitable mushroom yield varies from 15 to 30 kg per hectare. It is estimated that only 30-40% of the exploitable harvest is collected. Potential mushroom production in Lithuanian forests amount to 24,000 tonnes per year.

Bilberry, raspberry and cowberry cover large areas of Lithuanian forests. The greatest demand on both domestic and external markets is for cowberries, cranberries, bilberries and ashberries, while wild strawberries and raspberries are sold on domestic market. Main exploitable harvest in Lithuanian forests comprises about 5,000 tonnes of berries.

Up to 30 species of medicinal herbs are harvested in Lithuanian forests. Juniper berries, bearberry leaves and black alder bark are the most popular and of the greatest

demand. Though Lithuanian forests are rich of medicinal herbs, the existing resources are insufficient to meet the current demand.

Ungulate animals (moose, red deer, roe deer, wild boar) and fine fauna (hare, wild duck, gallinaceous birds) are hunted for meat. From 1993 to 1996 an average of 545,000 kg of wild animal meat was produced per year, including 505,000 kg of ungulate animal and 40,000 kg of fine fauna meat. About 12% of the ungulate animal meat were exported. The recreational significance of game has been increasing with the growing interest in sport hunting which used to be limited. Moreover, foreign hunters have expressed interest in Lithuania. Income from game hunting in the period of 1993-1996 was on average 1.8 million LTL (0.45 million EUR) per year. The trends indicate a high potential for developing game tourism. At the same time, these activities are consistent with hunting policy aiming at regulating wildlife population, increasing the productivity of hunting and preventing damage to forests.

Since the most of the forests occupy areas where soil productivity is low, forestry (in terms of both wood and non-wood products) provides opportunities as an important source of additional income for farmers and rural dwellers. For that reason, forestry is considered as one of diversifying activities in the rural areas able to contribute to provision of additional employment. At the moment, especially non-wood forest product utilisation provides a sound basis for rural development initiatives, which aim to increase income-earning opportunities while maintaining environmental quality.

#### Current forest policy

Lithuanian forestry policy is based on the principles of sustainable forest management, and, first of all, is aimed at:

- Implementation of resolutions of Strasbourg (1990), Helsinki (1993) and Lisbon (1998) Ministerial Conferences on Protection of Forests in Europe;
- Development of sustainable and multiple-use forest management;
- Protection of biodiversity;
- Increasing of forest area via afforestation of abandoned agricultural land;
- Development of forestry research, education, extension and etc

The principles underlying Lithuania's forest policy are set up in the Forest Law. The Forest Law was issued in November 1994, and updated in 1996. The Forest Law establishes rights and duties of all forest managers, owners and users of the Republic of Lithuania to utilise, reproduce, grow and protect forests, strikes a balance between the interests of forest owners and society, establishes the main principles of forest management. The Forest law covers all main issues of forest policy: trends of forestry policy, forest ownership, forest management and supervision, economic regulation of forestry, forest use, regeneration, growing and felling, forest protection and etc.

In addition to the law a "Forestry and Forest Industry Development Programme" was approved by the Government in 1994 and updated in 1996. It contains many issues related to forestry policy. The Action Plan, which is annexed to the programme, foresees the actions to be undertaken in forestry sector up to the year 2023.

#### Implementation of recent resolutions on the protection and management of European forests (Strasbourg, Helsinki, and Lisbon)

Lithuania has signed Strasbourg (1990), Helsinki (1993) and Lisbon (1998) Ministerial Conferences on Protection of Forests in Europe Resolutions. Therefore, Lithuanian forest policy is first of all aimed at the implementation of resolutions of Strasbourg (1990), Helsinki (1993) and Lisbon (1998) Ministerial Conferences on Protection of Forests in Europe.

To develop sustainable forest management important changes in the forestry sector have been made successfully during last decade in Lithuania. Such changes include legal and regulatory frameworks, the institutional framework, economic policy, financial instruments and information.

**Implementation of H1.** Lithuania has prepared general national guidelines for sustainable forest management, which were included into up-dated National Program for Development of Forestry and Forest Industry, approved by the Government of Lithuania in 1996. Forest Law is under the process of revision after which basic principles of sustainable forest management will be introduced even in a broader sense. The implementation phase of general guidelines on regional level was started via improving forest management planning methods and corresponding forest management activities.

**Implementation of H2.** The enhancement of biodiversity in Lithuania is being considered as an essential element of sustainable forest management. All activities aimed at implementation of H2 have very close relations to other Helsinki and Strasbourg resolutions - particularly H1, S2, S6.

The network of nature protection areas was strengthened within the last few years. Structural and protection quality improvements were followed by the increase of protected area. Guidelines for Conservation of Biodiversity in Commercial Forests were prepared in 1996, Recommendations for Conservation of Rare Forest Habitats and Proposals for the Improvement of the Protection of Rare Forest Birds' Nesting Sites, in 1996. Besides the above guidelines and recommendations, numerous fundamental and applied research projects dealing with various aspects of forest biodiversity and environmentally sound silvicultural practices have been recently conducted.

Lithuania is a member of EUFORGEN since 1995 and participates in the program activities. As a result of such co-operation Guidelines for the Conservation of Genetic Resources were developed in 1996. Comprehensive national program on Conservation of Genetic Resources is under preparation.

Consequent actions towards education and raising of public awareness in relation to the conservation of biodiversity are being implemented recently. Educational curricula, programs of various courses for university and college degree forestry students, state forestry employees, forest owners and forest workers as an important part also includes biodiversity conservation issues. These activities are aimed not only at forestry professionals and forest owners but also cover broader auditorium, e.g.: schoolchildren, students with environmental background, forestry-related institutions and NGO's.

***Work-programme on the conservation and enhancement of biological and landscape diversity in forests.*** The commitment of the European governments in the conservation of biological diversity has been expressed in Resolution H2. Therefore a "Pan-European Biological and Landscape Diversity Strategy" has been developed which addresses the conservation of biological diversity at all levels. Lithuanian Biodiversity Conservation Strategy and corresponding Action Plan was prepared by the Ministry of Environmental Protection and approved by the Parliament in 1998. This strategy and Action Plan follow-up a "Pan-European Biological and Landscape Diversity Strategy" and are based on the Helsinki resolution H2.

***Criteria and indicators for sustainable forest management.*** Lithuania has not developed any of its own special criteria and indicators for sustainable forest management. Most criteria and indicators have come directly from the Pan-European system. These criteria were officially approved for use by the former Ministry of Forestry in 1995. Only one additional criterion, the percentage of private forests, is being used. The reason for this is a regularly increasing share of private forests and significant influence of the private forest sector on sustainable management of the country's forests.

#### *Forestry development measures*

The Department of Forests and Protected Areas in the Ministry of Environment is core forest policy making and implementing institution. Its main financial instrument is Forest Fund. Of the revenues from products sold and services rendered, state forest enterprises raise financial resources for the Fund. In total, 43 enterprises accrue approximately 300 million Litas annually (75 million EUR). The financial resources are divided in 2 sections: (1) resources to cover general costs of state forest enterprises, and (2) centralised resources of the Fund.

The resources of the first section are used to cover general costs of state forest enterprises and state forestry development programmes. These include

The resources of the second section of the Fund are allocated to cover costs of management of state parks, land reform, afforestation of state-owned land and other nation-wide needs. Among the measures, there is support to private forestry development. The measures include:

- Development of private forest owners;
- Support to Forest Extension Service for private forest owners; and
- Subsidies for forest management services provided for private forest owners.

To conclude, Lithuanian forestry sector is important to the country development, though not as much as the agriculture sector. Compared to the agriculture sector, the forestry is less important in terms of contribution to the national economy and employment. On one hand, state forests play a major role in the sector. And private forestry is underdeveloped. The development of the private forestry is slow, to a large extent, due to continuing land reform, ownership right restitution process and legal basis.

On the other hand, the forestry sector is important its 'alternative to agriculture' role: development of small-medium enterprises (mostly, sawmills), non-wood forest

products, opportunities for recreation and tourism, alternative use of abandoned agricultural land.

For the reasons identified above, it is proposed to consider the forest sector to be supported under the present plan under measure 5 – Afforestation of agricultural land and improvement of forest infrastructure.

### ***1.1.26 Environment***

#### ***Protected areas***

The network of protected areas (natural parks, reserves, etc.) in Lithuania was developed in the last five years. The system of legally protected areas of Lithuania is aimed at the conservation and where possible restoration of:

- Nature and cultural heritage features,
- Landscape ecological balance,
- Biodiversity,
- Gene pool for restoration of biota resources.

Also, it creates conditions for the development of interpretive, research and the promotion of nature and cultural heritage protection.

There are 4 categories of protected areas:

- Conservation areas- strict nature reserves or culture reserves, protected landscape features (nature or culture monuments), nature or culture reserves,
- Protection areas- protection zones for various purposes (buffer zones for strict reserves, national or regional parks, nature or culture monuments, water bodies, roads and railways, recreational areas, etc.),
- Restoration (recuperation) areas- sites where natural resources are protected or restored,
- Integration areas- national parks and biosphere monitoring areas.

In 1997, specially protected areas covered 734 thousand hectares, equalling 11.2 per cent of total country area. There were 1,113 protected sites listed in total, including 5 national parks and 30 regional parks. Most of the protected areas are concentrated in the Southeast Lithuanian regions.

**Table 19. Protected areas, at the end of 1997.**

	<b>Number</b>	<b>Area (1000 ha)</b>	<b>Share of total area %</b>
Integrated areas:			
National parks (IUCN II)	5	138.1	2.1
Regional parks (IUCN V)	30	380.9	5.8
Conservation areas:			
Strict nature reserves	4	23.5	0.3
Strict culture reserves	2	0.2	0.1

Reserves ( IUCN IV )	290	176.4	2.7
Landscape objects	688	.	.
Total of above listed data	1113	734.0	11.2

Source: Lithuanian Department of Statistics, 1998

With the factual development of the system of particularly protected areas before land reform, good preconditions for the conservation of landscape and biodiversity in Lithuania have been created; however, part of the areas especially valuable from the biodiversity point of view are still unprotected.

In 1983, in the national Integrated Nature Protection Scheme, the idea of Lithuania's Nature Frame (ECONET) was raised and approved. Lithuania proposed the concept of Nature Frame, which became the concept and approach for the conservation and protection of Lithuania's natural landscape.

The Nature Frame, which offers a universal approach, was put forward and legally established under the relevant laws of the Republic of Lithuania on environmental protection and protected areas. The Nature Frame links all natural protected areas with other ecologically valuable or relatively natural areas which underpin the general stability of landscape, to form a landscape system of geoecological compensation zones. It is aimed not only at development of a complete system for natural buffering and connecting natural protected areas, but also at conservation of natural landscapes, biodiversity and natural recreational resources. It does so by providing guidelines and conditions for recovery of forests, optimising the structure of agrarian landscape from the geoecological point of view, regulating development of agrarian activities and defining sustainable urbanisation. It is a concept based on catchment and biologically important areas.

The Nature Frame, however, is not a continuous network of green belts. Instead, it is an integrated process for all land use, management and protection. Currently, the Nature Frame covers about 60% of Lithuania varying from 35 to 80% depending upon natural conditions and land use.

Among Lithuanian environmental assets which might be affected negatively or positively by agriculture are ecosystems that include natural/ semi-natural (forests, wetlands, meadows, aquatic, lakes, rivers systems) and anthropogenic (agrarian) ecosystems.

During the last 30 years, natural meadows have decreased: in 1956, meadows covered 19.6 % of the country, whereas by 1980 they accounted for only 6.5 %. Natural continental meadows, which were intensely cultivated or planted with forests, have suffered most. The surviving natural flooded and continental meadows have deteriorated. Conservation of semi-natural meadows is related to their extensive use, yet no legal economic compensatory mechanism has been created. Economically strong farms use fertile meadows intensively as pastures, which degrades them. In other cases, in low-intensity use, non-fertile meadows and pastures are over-grown with shrub or forest. In some regions unused arable land is turning into meadow. There are natural/ semi-natural and cultivated meadows and grasslands in Lithuanian farms. Some of the grassland quality is poor. The sow into these grasslands the proper

grass varieties or the proper application of organic fertilisers could improve the quality and biodiversity of the grasslands.

During the last 30 years, 70 % of the wetland have been lost. Vast areas of wetlands suffer from eutrophication, which has adverse effects on vegetation.

Agrarian ecosystems occupy the largest land area in Lithuania (53.7 %), have the most impoverished biodiversity. Recent changes in land use, which includes land privatisation, less intensive agriculture and agri-chemical use, and an increase in fallow land has provided an opportunity for meadows and scrub systems to develop.

There is a range of institutions, which deal with agri-environmental protection in Lithuania such as Ministry of Environment, Ministry of Agriculture, Lithuanian Fund for Nature, Lithuanian Water Management Institute, Lithuanian University of Agriculture and others.

Government Resolution No 343 on Special Conditions of Land and Forest Use, adopted on 12 of May 1992 defines special conditions for specific land/forest (Karst region, natural meadows and grasslands, wetlands, national and regional parks, reserves, strict reserves, forest) plots and their protective zones.

The Rural Development Plan includes the measures such as investments in agri-environmental objects (manure storage, slurry reservoirs, proper techniques) that would prevent pollution from agricultural holdings and protect environment. As well as Plan includes the pilot project on Environmentally friendly agricultural methods.

Project to select territories for Natura 2000 is being carried out by the Ministry of Environment. Objective of the project is to evaluate compliance of currently existing protected territories and the other territories with criteria of Natura 2000. Review to what extent the existing national protected territories cover the requirements for protected animal species under the EU Bird and Habitats Directive will be finalized in the beginning of 2001. The list of candidate areas to be included in Natura 2000 network will be prepared in the mid of 2001 and approved by the end of 2001. Once completed, results of the project will be taken into account for all the projects under this Programme.

#### *Other environmental issues related to agriculture*

The major environmental issues related to agriculture are soil erosion, pollution of surface water and groundwater, as well as use of fertilisers and pesticides.

Pollution of surface water and groundwater is of primary concern. Groundwater is the main source of drinking water in Lithuania. Drinking water supply faces serious problems, particularly in rural areas and on the outskirts of cities, where piped water supply is less common. Today, approximately 300,000 dug wells produce drinking water from shallow wells for nearly 1 million people. National groundwater monitoring, as well as for wells water quality, estimated for 1996 that 60% of dug wells did not meet hygiene standards, and nitrates polluted 37.5%.

Severe pollution of surface and groundwater by nutrients from large-scale pig and poultry breeding units and livestock production is most common and problematic in rural areas. Major environmental problem results from 24 large pig-breeding complexes each producing between 12,000 and 54,000 pigs per year (in 1997, 520,000 pigs were raised), and 5 large poultry farms. The problems result primarily from inadequate waste storage facilities and poor application of technology.

Another major environmental concern related to agriculture is soil erosion. According to experts, 14-15% of Lithuania's arable land is subject to erosion, resulting in a loss of valuable topsoil and productivity. The average detachment of soil particles from agricultural land is approximately 1.8-2.5 tonnes per ha. More pronounced erosion is occurring in west Lithuania, is amounting to 12-15 tonnes per ha.

Use of fertilisers and pesticides is one of the most important sources of soil contamination with heavy metals. On average, fertiliser application fell to 99 kg per ha in 1997. In 1991, 196 kg of fertiliser was applied per ha. Before the agricultural reform, average pesticide use stood at some 2.0 kg per ha. Recently, average use remained below 0.5 kg per ha (0.363 kg in 1995 and 0.477 kg in 1996 per ha). Generally, the economic recession and financial difficulties of farmers explain this reduction. Though fertiliser application fell, accumulative property may represent potential environmental danger.

## **1.2. ANALYSIS OF DISPARITIES**

### **1.2.1. Rural-urban disparities**

Lithuanian rural areas are characterised by unfavourable demographic situation. Natural rural population increase in 1998 was negative (- 3.8), while urban was 0.2. Birth rate in rural areas is by 30% higher than in urban, but the percentage is annually decreasing. High death rate in rural areas, which is by 75% higher than in urban areas, makes a negative impact on natural population increase.

Ageing of rural population and its poor viability are indicated by ratio between children and retired people, which is 0.93; in urban areas this indicator is 1.28. Ratio between active and retired population shows that in rural areas for one active person there are by 36.5% more of retired people than in urban areas.

Number of divorces is rapidly increasing too. During 1991 – 1995 there were 55.5% and 32% divorces in urban and rural areas respectively and in 1998 these figures became 62.7% and 65.4%.

Regarding the quality of life, improved health, which can be measured by longer life, is one of the most important indicators of social development. In 1998 life of men, living in rural areas was by 5 years shorter than of men, living in urban areas; among women this figure was 2.4 respectively.

Investments in health and education should be the factors, which would affect higher income in the future. However, majority of rural inhabitants receives only minimal income to satisfy the basic needs, therefore, the part allocated to health care, education and culture is very small. In 1998 rural population spent by 31.5% less for

health care, by 78.9% less for education and by 64.6% less for leisure and cultural activities than urban population. Percentage of income allocated for food by rural inhabitants is decreasing, but it is still high (59%) and by 14.7% higher than allocation by urban inhabitants.

In 1998, rural household per capita income was 30% lower than the urban one. Additionally, rural household income grew at a slower rate. Therefore, the already existing gap between rural and urban households in terms of income keeps on widening.

**Table 20 Household income per capita in rural and urban areas**

	Disposable monthly income in EUR per capita		1997 compared with 1996 (%)
	1996	1997	
All households			
Total disposable income	81.67	92.23	112.9
Real disposable income index			103.7
Urban households			
Total disposable income	88.18	100.76	114.3
Real disposable income index			104.9
Rural households			
Total disposable income	67.21	74.59	111.0
Real disposable income index			101.9

Source: Lithuanian Department of Statistics, 1998

At the end of 1997, the total rural working population was estimated at 475,500, constituting about 30% of total Lithuanian employment<sup>8</sup>. One in six rural employees was above retirement age (about 58,000, i.e. 11% of the total rural working population). Agriculture remains a main activity among the rural population: the sector employs 58% of total rural employment. The second largest employer is public services - healthcare, education and social sectors. It constitutes 15.6% of the total rural working population.

Usually, the rural activity rate is considerably lower than the urban one. At the end of 1997, it was 57.4%, compared to 62.7% in Lithuanian urban areas. Similarly, the rural employment rate was lower than the urban. Despite this, the rural population is less unemployed than in urban areas. But the age structure of the rural unemployed is unfavourable: the large number of rural youth unemployment is common. At the end of 1997, the unemployment rate among rural youth up to 20 years of age was nearly 30%.

**Table 21 Activity, employment and unemployment rates in rural areas compared to urban**

	Average Lithuanian	Urban areas	Rural areas
Activity rate	61.2	62.9	57.4
Unemployment rate	14.1	15.4	10.8

<sup>8</sup> Source: Lithuanian department of Statistics, Labour Force Survey, 1997

Employment rate	52.6	53.2	51.2
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Source: Lithuanian Department of Statistics – Labour Force Survey, 1997

Because of dominating agricultural activity, only part – time involvement in it and poor rural infrastructure there may be considered 20% of the employed inhabitants as part – time workers, at the same time in urban areas this figure does not reach 7%. In rural areas, as compared to the urban ones, additional occupation is sought by twice as much employed population and there are by 73% more people willing to work additionally. Unemployment among women in rural areas is by 4% less than in urban areas.

Majority of the unemployed in rural as well as in urban areas does not have professional education and only have completed secondary schools. However, high percentage of the unemployed with professional education (21.8 %) indicates that skills gained are not in demand in the labour market.

Thus, data on employment and household income reveal major weaknesses in Lithuanian rural areas: first, high dependence on one source of income - agriculture; second, high unemployment among rural youth; and third, a widening income gap between rural and urban households.

It is rather difficult to evaluate the available statistics concerning employment of rural inhabitants situation, because information sources reveal situation in 10 biggest Lithuanian cities and the rest of the country is classified as other territories.

In 1999 there have been employed 67.2 thousand of the urban unemployed and 21.1 thousand of the unemployed from other territories, among them – 5.1 thousand were employed in agricultural activities. Among the most popular professions there were joiner – carpenter, construction worker, dressmaker, cook, driver, accountant, and teacher. Rural inhabitants who seek jobs are mostly employed by private service enterprises – 40%, State service enterprises – 25%, industrial enterprises – 18%, in agriculture – 11% and construction enterprises – 6%.

Number of employed in social and service sectors shows the level of rural development. In rural areas for 1000 of rural inhabitants percentage of people working in the social and health care is 48, education – 30, services – 66, hotel and restaurant business – 72, industry – 64 lower than in urban areas.

Less developed rural social and technical infrastructure hinders development of better living and working conditions. However, level of social infrastructure development is influenced by limited social needs of rural population, which are, in turn, influenced by the level of income and the cost of services. Rural inhabitants are more involved in housekeeping activities than urban ones, which determines their leisure, self – education and public activities.

Currently the main labour market policy objective is to reduce the increasing levels of unemployment in rural areas, using labour market regulation measures:

- to involve into public works people from those areas, where new jobs are not being created and there are no perspectives for them to be created in the nearest future;

- to encourage mobility of labour force, especially of youth, from territories of high unemployment to territories where industrial and business developments are more rapid;
- to focus vocational training in accordance with labour market situation, national economy perspectives, and demand for certain professions;
- to support financially creation of new jobs and organise public works;

### **1.2.2. Analysis of disparities with the European Union**

Key indicator for economic and social cohesion with the EU is Gross Domestic Product per capita. In relation to the EU average, the GDP per capita in Lithuania increased from 28% in 1995 to 31% in 1998.

Regarding rural development, major disparities are:

- Lithuanian employment is strongly dependent on agricultural activities
- The agricultural sector itself still has to foster its competitiveness in terms of quality, productivity and efficiency.

The summarising Table 22 contains main indicators illustrating disparities of Lithuania with the European Union.

**Table 22. Lithuania - disparities with the European Union**

Indicators	Units	1997	
		EU (15)	Lithuania
<b>Basic data</b>			
Area	thousand sq. km	3 230.8	65.3
Population	thousand	374 565	3 707
Population density	per sq. km	114	57
Total employment	thousand	149 147	1 669
Gross domestic product	million EUR	7 132 300	8 946
Gross domestic product per capita at PPP <sup>9</sup>	EUR	19 819	6 200
Population of less than 15 years	thousand	63 676.1	771.1
Population of 65 years and more	thousand	59 930.4	470.7
Population of less than 15 years/Total population	per cent	17.3	21.2
Population of 65 years and more/Total population	per cent	15.7	12.4
Activity rate	per cent	67.5	61.5
Unemployment rate	per cent	10.8	14.1 <sup>10</sup>
Employment in agriculture and fisheries	per cent	5.0	21.7
Employment in industry and construction	per cent	29.4	28.5
Employment in services	per cent	65.6	50.8
<b>Rural development</b>			
Gross value added of agriculture/Gross domestic product	per cent	2.3	10.7
Gross value added of agriculture	million EUR		
Agricultural employment	thousand	7 514	362
Agricultural employment/Total employment	per cent	5.0	21.7
<b>Agricultural structures data</b>			

<sup>9</sup> 1998

<sup>10</sup> Labour Force Survey data

Utilised agricultural area	thousand hectares	115 788.3	3 502.1
Utilised agricultural area/Total area	per cent	43	54
Wooded area	per cent	34	30
Final agricultural output	million EUR	216 635	1 494
Crop products	million EUR	104 792	871
Livestock products	million EUR	111 843	623
Crop products/final agricultural output	per cent	48.4	58.3
Animal products/final agricultural output	per cent	51.6	41.7
Structure of utilised agricultural area			
Arable land	per cent	59.6	85.7
Meadows and natural pastures	per cent	35.6	13.0
Permanent crops	per cent	4.8	1.3
Average farm size	hectare	17.7	11.9
<b>Agricultural production</b>			
Crop yields			
Wheat	tonnes hectare	per 5.2	2.7
Potatoes	tonnes hectare	per 32.5	15.1
Sugar beets	tonnes hectare	per 54.4	28.6
Rape	tonnes hectare	per 2.6	1.9
Milk yields	kg per cow	5 401	3 386
Fertiliser use	kg per hectare	130	99

Source: Lithuanian Department of Statistics, 1998

### 1.3. STRENGTHS AND WEAKNESSES OF THE REGION

#### 1.3.1. Strengths and weaknesses

##### Economic development

<b>Strengths</b>	<b>Relevant indicators</b>
Overall national economy is improving and macro-economic indicators are stable	GDP per capita at PPP - 6,200 EUR (1998) Real GDP growth - 5.1% (1998)
The agricultural sector is important for national economy in terms of both production and employment	Share of GDP - 10.1% (1998) Utilised agricultural area/total area – 54% Agricultural employment/total employment 21.4%
Competitive advantage for livestock production due to natural and climate conditions	N.a.
The quality of agricultural products has improved	N.a.
Farm structure has changed leading to an increase in the contribution to GAO from private initiative	GAO from private farms – 75.8% (1997)
Land reform is in progress	Will be completed before the end of 2000.
Harmonisation with EU legislation (the agricultural <i>acquis</i> ) is under way	N.a.
Forestry is important for its natural resources and farm diversification opportunities	Wooded area – 30% Employment in forestry – more than 15,000
Fishery sector is significant source of income in coastal areas, and is another farm diversification option	N.a.
Lithuania has an attractive countryside, landscape, wildlife and cultural heritage. The attractiveness of the rural areas is a strength in order to diversify of agricultural activities	N.a.
<b>Weaknesses</b>	
The agricultural sector is characterised by a low level of productivity (could indeed be a threat to competitiveness of agriculture and rural areas on a whole)	Yield: grain - 2.5 tonnes per ha milk – 3.2 tonnes per cow
Lack of capital (investments)	N.a.
Fragmented agricultural holdings	N.a.
Poor quality breeds and inadequate hygiene standards	N.a.
Poor educational skills with farmers	Farmers with a professional/technical education – 38% of farmers
Lack of specialisation in farming	Mixed farms – 82% of farms
Land market is not functioning optimally	N.a.
Inefficient food processing industry due to lack of machinery, over capacity	Food processing industry production/total industrial production – 28%
EU harmonisation not yet complete	N.a.
Poor infrastructure (transport and communication)	N.a.

Lack of administrative structures and capabilities at de-central level	N.a.
Ageing population is a weakness for economic vitality in rural areas	Rural population above 65 – 23% of total rural population

### Social development

<b>Strengths</b>	<b>Relevant indicators</b>
Good balance between rural and urban population and settlements	Number of rural settlements – approximately 22,000
Due to rural-urban migration slowed down, more young people are available in rural areas	
Strong rural civil society with strong commitment, social structures and community feeling	N.a.
<b>Weaknesses</b>	
Low educational level	N.a.
Over dependence on agriculture in rural areas	Employed in agriculture – 58% of total rural employment
Rural disposable income is low compared to urban disposable income thereby decreasing rural living standards	N.a.
Basic living conditions (e.g. water supply, sewage, telephone) are much poorer in rural areas with consequences for quality of life.	Sewage systems available for inhabitants – 733 systems (1997) Number of telephones per 100 rural inhabitant – 13.4 (1997)
Social and cultural services are weak	N.a.
Ageing population is a problem for rural civil society and overall rural vitality	Rural population above 65 – 23% of total rural population

### Environmental development

<b>Strengths</b>	<b>Relevant indicators</b>
Lithuanian rural areas contain landscape and wildlife of great ecological and scientific value (bio-diversity)	Natural parks in ha – 734,000 ha Forests in ha – 1,888,000 ha Number of landscape objects – 688
Lithuanian soils, climate and water resources are great ecological and economic assets	-
A network of protected areas has been developed over the last five years	Natural parks in ha – 734,000 ha Under protection rule – 11.2% of total area
Lithuanian rural areas have many buildings of historic heritage, architectural value and interest.	Number of buildings of registered in Cultural Heritage Register – 59 manors
<b>Weaknesses</b>	
Intensive farming using fertilisers, pesticides and chemicals will cause substantial environmental damage, e.g. soil and water pollution through erosion, and contamination	-

with heavy metals	
Contamination of ground water sources because of poor handling of animal waste	-

### **1.3.2. Ranking of drawbacks identified**

To summarise, the following major drawbacks of Lithuanian agriculture and rural development that need to be addressed were identified:

1. Low level of efficiency in agricultural sector, high energy costs and low level of farm technologies are ranked as high<sup>11</sup>. The issues will be addressed by supporting capital investments in agricultural holdings (proposed Measure 1). It will exploit available human resources in rural areas, as well as natural conditions and traditions in agriculture.
2. Small average farm size and fragmented agricultural production are also ranked as high. These will be addressed by supporting on-farm investments and promotion of structural changes in agriculture: providing higher level of support to young farmers and co-operated projects.
3. Low quality of agricultural produce and use of poor quality breeds and seeds is of high importance. Support to investments in agricultural holdings (new technologies and equipment) and promotion of quality breeds and seeds, together with the development of supporting sectors (e.g., animal breeding) will address the drawback.
4. High importance is ranked for processing of agricultural products that is very fragmented, characterised by over capacities and needs to improve in order to meet quality, food safety, environmental requirements. The issue will be addressed by supporting capital investment in the processing of agricultural and fisheries products (proposed Measure 2).
5. Lower average rural household disposable income is marked to be very important issue. It will be indirectly addressed promoting investments in agriculture and diversified activities (proposed Measure 3).
6. Over dependence on agriculture as source of income is classified as highly important. Promoting multiple activities in rural areas will contribute to alternative income. This will exploit existing favourable natural conditions, rural landscape and heritage, as well as experience in other sectors (e.g., SME, forestry, fisheries).
7. The future technology investments in agriculture will decrease employment opportunities and income in rural areas dependent on the sector. This highly important issue will be addressed through supporting diversified activities.
8. Low standard of living in rural in terms of physical and social infrastructure is highly ranked. Renovation of villages and development of rural infrastructure will aim at minimising gaps between rural and urban areas (proposed Measure 4).
9. Low level of education among the farmers is classified as medium drawback. Directly it will be addressed providing technical assistance, developing strategic and technologic knowledge (partly proposed Measure 5)
10. Ageing of farming and rural population (medium rank) will be addressed through supporting young farmers and entrepreneurs, improvement of social infrastructures in rural areas. Improvement of social infrastructures will lower threat of continuing decrease in rural libraries and culture centres.

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<sup>11</sup> Ranking was decided after taking into the consideration of the overall importance of the aspects to rural development in Lithuania

11. Intensification of agriculture will impact negatively environmental conditions. To address the emerging threat, first, special focus will be paid to organic farming by providing support at a higher rate. Second, project selection criteria will include environmental appraisal.

the NDP and the fundamental principles outlined above constitute the frame within which the Rural Development Plan will be implemented.

### 2.3 GENERAL RURAL DEVELOPMENT OBJECTIVES

The next level in the objective hierarchy is the RDP level. In close collaboration between Lithuanian competent authorities and bodies and economic and social partners, the overall vision of agriculture and rural development has been formulated as follows:

“To make a balanced contribution to the economic, environmental, social and cultural well-being of rural areas and the country as a whole, through partnership with the private sector and local communities.”

The Rural Development Plan prepared by the Ministry of Agriculture has translated this overall vision into a number of general objectives for rural development. These are:

- Provision of additional income for farmers and rural dwellers as well as increased income levels leading to improved living standards and working conditions in rural areas;
- Improved competitiveness and efficiency of primary agricultural production;
- Improved processing and marketing of agricultural produce through increased efficiency and competitiveness;
- Improved quality and hygiene standards;
- Achieving a sustainable rural development through promotion of farming and other economic activities in harmony with the environment;
- Creation of employment opportunities in rural areas;

These RDP general objectives follow naturally from the NDP overall national objectives as illustrated in the figure. Further more, the general objectives for rural development are made operational through the general objectives of the SAPARD programme as outlined in the Council Regulation (EC) No 1268/1999. They contribute to the *acquis communautaire* concerning the CAP and related policies and solving priority and specific problems for rural sustainable development, as illustrated at the next level of the figure.

As it is apparent from the figure, the SAPARD general objectives are supplemented by national objectives for complementary national programmes as well as bilateral programmes on the left side of the figure, and multinational and EU co-operation and programmes on the right side of the figure. The objectives of these actions and programmes are described briefly in section 2.6 below.

Returning to the SAPARD general objectives, the main strategic focus of the SAPARD programme is to establish a favourable environment for economic, social, environmental and ethno-cultural rural development, gradually leading to

improvement of the quality of life and facilitating the conditions for integration into the European Union.

## **2.4 GEOGRAPHIC SCOPE OF THE PLAN**

The Rural Development Plan will be applied throughout all rural areas, defined as all areas except district (rajonas) centres and settlements with city status (e.g. Palanga, Visaginas, etc.). Exception is provided for agro-processing industry, since a considerable number of agro-processing enterprises (directly or indirectly related to the development of rural areas) are located outside rural areas. Agro-processing industry enterprises located outside rural areas are eligible.

## **2.5 SAPARD PRIORITIES**

In accordance with article 1 of the SAPARD-Regulation, Community economic support is provided for sustainable agriculture and sustainable rural development measures for the pre-accession period within priority areas. This support will comply with the conditions laid down in the framework of the Accession Partnership.

The analysis of the strengths and weaknesses of Lithuanian rural areas as well as of the opportunities and threats to the agricultural and rural development suggest that pursuit of the overall vision for rural development require action in the following priority areas, see figure:

1. Agricultural production;
2. Processing and marketing of agricultural products;
3. Diversification of economic activities in rural areas;
4. Rural Infrastructure;
5. Forestry
6. Environment;
7. Human Resources Development, Training, Information and Bottom-up Involvement;

These priorities are made operational by 8 specific measures presented below focusing on the specific objectives of the individual measure. These measures will be implemented in the program period as the main instruments in the RDP, and are generally presented in chapter 4 and in detail in annex II: Technical sheets. See also figure for a concentrated presentation of the specific objectives of each measure.

### ***2.5.1. Agricultural production***

The priority area is selected taking into account that Lithuanian agricultural sector has been playing an important role in the rural and in the whole national economy as well as in social life. Presently, the sector produces more than 10% of GDP, and employs more than 21% of total employment. However, Lithuanian agriculture has to improve competitiveness and increase productivity, efficiency and quality of products, in order to make a contribution to economic growth and employment over the next decade, as well as guarantee adequate and stable incomes for rural population. The sector has to tackle its major drawbacks – low level of efficiency, fragmented production and poor quality of produce.

In order to improve competitiveness of agriculture, the specific strategic actions required in this priority area are to:

- modernise farming with the aim of creating a competitive business;
- establish specialised farms complying with EU requirements;
- provide support to setting-up new farms;
- provide support to young farmers;
- improve breeds and seeds;
- implement quality and hygiene standards;
- improve storage and hygienic handling of produce;
- re-orientate agricultural production towards products with growing demand;
- restructure farming and constantly improve economic viability of farm business;
- provide support to farmers in less-favoured areas;
- improve animal welfare;
- promote farming in harmony with the environment;
- improve in the handling and storage of farm wastes; and
- support investments, which are targeted towards meeting environmental requirements.

The actions will also make use of the agriculture and rural areas strong points, such as traditions in agriculture, advantageous natural conditions for livestock production, availability of young people in rural areas.

With the aim of assisting agricultural holdings to make improvements in the farm business and increase competitiveness, the SAPARD programme will contribute by providing grant aid for capital investment in farm machinery, farm equipment, buildings and other production facilities. The programme would be targeted on economically viable family farms, producer groups and other agricultural holdings.

Particular focus will be laid on *young farmers* and *farm businesses in less-favoured areas*. For these applicants, grant aid will be provided at a higher rate. Similarly, special attention will be paid to *producer groups* at all levels of the production chain. In addition to aid for capital investment, cost of formation and operating expenses (e.g., legal fees, administrative costs, and insurance) will be partly covered.

Additional support to *organic farming* is considered to be mitigation actions on the possible negative environmental impact caused by intensive agricultural activities. Agricultural holdings involved in organic farming (certification is required) will be provided of higher level of grant aid, and additionally, premium payments will be available (financed by the national measure).

The specific objectives will be to create a network of approximately 100,000 family farms of average 15 hectares size (in 2006). The major targets are development of competitive agricultural holdings producing dairy and meat, fruits and vegetables, cereals, flax.

A substantial amount of capital investment is required to achieve these objectives, and make farming competitive. For that reason, it is planned to allocate nearly a half of the total public funds to grant aids for investments in agricultural holdings. Expected number of projects granted aid is 7,300, of which 2,000 – to young farmers.

### ***2.5.2. Processing of Agricultural Production***

Processing is also of great importance to both Lithuanian industry and rural areas. On the one hand, it produces about one third of total industrial output. On the other hand, agricultural sector is strongly dependent on the processing industry due to the fact that processing enterprises usually process local agricultural produce.

Similar to the agricultural sector, Lithuanian processing industry is fragmented, characterised by over-capacities, and is not efficient enough to compete successfully. To build a competitive food industry, the strategic actions pursued will be targeted on:

- sector restructuring;
- development of higher value-added products;
- fulfilment of hygiene, food safety and quality standards;
- introduction of environmentally friendly technologies;
- improvement of efficiency; and
- improvement of the structure for quality, veterinary and plant-health controls.

In the processing of agricultural products, the SAPARD contribution will be to assist processors of agricultural products to increase the efficiency, quality and value of their products, invest in minimum waste technologies, meet EU and national environmental, hygiene and health standards, and provide a better service to their farm-suppliers. Since the further development of meat processing industry closely depends on establishment of slaughterhouses complying with the EU requirements, special attention will be paid to the investment.

The specific objectives in the priority area are to build the food processing industry to be able to meet EU requirements on hygiene, food safety, health, quality and environment, and to be able to compete successfully in domestic and external markets. The targets (at the end of programming period in 2006) are:

- 170 meat processing enterprises (including slaughtering, cutting, poultry meat and meat preparations) meeting EU requirements and producing approximately 21 thousand tonnes of meat;
- establishment of rendering system, including rendering plant meeting EU requirements;
- 35 dairies meeting EU requirements and processing 2.1 million raw milk;
- 35 fish processing enterprises meeting EU requirements.

In order to meet EU requirements on hygiene, food safety, health, quality and environment, a substantial amount of capital investment and development of human resources will be required. For the reason, nearly 20% of public funds will be allocated in the improvement of processing and marketing of agricultural and fisheries production. It is expected to grant aid for up to 70 beneficiaries.

### ***2.5.3. Farm Diversification, Alternative Income and Employment Opportunities in Rural Areas***

Bearing in mind that structural change in agricultural and food processing sectors will effect rural employment, it is important to create favourable conditions for farm diversification, employment opportunities and additional income in rural areas.

In order to create opportunities for employment and additional income, the SAPARD contribution will assist rural businesses to undertake and develop new activities as well as promote alternative farm enterprises involving non-surplus products.

With the objectives of creating new employment and providing additional farm income, support should be available for alternative farm and rural enterprises involving non-surplus products, e.g. inland water fisheries.

Rural tourism that exploits rich natural and cultural resources also represents a high potential for provision of additional income and creation of new job opportunities in rural areas.

Apart from on-farm diversification, there is a need to develop the non-farm rural sector, and encourage rural dwellers to undertake new activities. Support will be provided for the development of small firms, craft enterprises and local services and exploitation, as well as to marketing of local agricultural, forestry and fisheries products.

All the proposed actions aim at minimising rural population dependence on agricultural sector and creation of new employment. The target is:

- 47% of total rural employment by 2006 (compared to 58% in 1998);
- 27,000 employment places (including part-time) created during the whole programming period 2000-2006.

Capital investments and development of human resources are required in order to promote on- and off-farm diversification, create opportunities for employment and provide additional income for the farmers. It is expected to allocate to the priority area approximately 14% of public aid and provide grant aid for 2,600 projects.

### ***2.5.4. Rural Infrastructures***

Lithuanian rural areas considerably lag behind the urban ones in terms of physical infrastructure. This drawback is considered to be of the highest ranking. On one hand, rural people can not experience the adequate quality of living. On other hand, poor physical infrastructure in rural areas causes environmental contamination and additional problems.

With the aim of improving working and living conditions in rural areas, the SAPARD programme will target improving rural technical infrastructure. Aiming at maximising the impact on the Rural Development Plan objectives, preference would be given to actions integrating with rural tourism and involving rural communities.

This priority area was chosen to prevent environmental contamination caused by poor rural infrastructure, and to minimise gaps between rural and urban infrastructure and quality of living.

The specific strategic actions in this area are as follows:

- improvement of communications and engineering equipment (e.g. establishment of electricity lines and roads).
- improvement of water management systems (e.g. renovation of polders, water supply and sewerage systems, setting up of artesian bores).

It is planned to allocate approximately 16% of public funds to the actions proposed. During the programming period, the public funds will be granted to 180 beneficiaries.

#### **2.5.5. Forestry**

Forestry development and afforestation are other alternatives for the use of agricultural land. Furthermore, forestry is in itself an important economic activity in rural areas. Afforestation is able to provide new long-term employment opportunities in rural areas. To a large extent, forestry sector plays an ‘alternative to agriculture’ role. However, the private forestry is underdeveloped, mainly due to unfinished land reform. For the reason, it was decided to include actions related to forestry in a specific measure on forestry.

The measure is focused on the development of the economic, environmental and social functions of forests in rural areas with a particular emphasis on afforestation of abandoned agricultural land and improvement of forest infrastructure.

The targets at the end of the programme period is as follows:

- |                    |            |
|--------------------|------------|
| - Area afforested: | 9,000 ha   |
| - New jobs:        | 4,500 jobs |

It is expected to allocate approximately 6 percentage of total public support in the RDP to this measure leading to the implementation of more than 1,500 projects.

#### **2.5.6. Environment**

The main objective of agri-environmental measure is to decrease negative impact of agriculture on the environment, restore traditional landscape and increase biodiversity and to prepare measures that ensure normal economic and social conditions for rural population. The measure will be applicable in two pilot areas.

The general agri-environmental sub-measures, which could be applicable in both pilot areas, are:

- Fertilising and proper manure handling;
- Protective belts and other technical measures;
- Landscape protection and increase of biodiversity;
- Preservation of historic and archaeological objects;
- Keeping of domestic animal breeds in danger of extinction;
- Organic agriculture

Strategic actions under this measure will be:

- Premium for ha where agri-environmental measures are applicable;
- Premium for local animal species in danger of extinction.

#### **2.5.7. Human resources Development, Training, and Bottom-up Involvement**

The development of human resources is the key factor effecting positive changes in rural development. Farmers and rural communities require assistance in establishing

rural business or diversifying farm production to generate additional income or employment.

Focus will be laid on young people taking up rural businesses, and rural adults engaged in farming or establishment of rural business.

The specific objective is to provide strategic knowledge and technical information necessary in the transition period from price support to market-led industry, and whilst adjusting to hygienic, environmental and animal welfare requirements.

#### ***2.5.8. Technical assistance***

Technical assistance will include studies to assist with the preparation and monitoring of the Plan, information and publicity campaigns. Assistance under this measure shall be aimed at ensuring close co-operation between the European Commission and competent national authorities, social and economic partners.

Funds allocated to this measure will be focused on the following sectors:

- Preparation and publication of information publications (INTERNET pages, TV and radio broadcasts);
- Technical assistance for institutions implementing the goals of the programme;
- Monitoring the efficiency of the use of SAPARD funds.

### 3.INNOVATION SUPPORT INFRASTRUCTURE IN LITHUANIA

#### INTRODUCTION

Innovation support infrastructure is considered as an integral part of Business support infrastructure in Lithuania. Because of the common structural nature of Innovation and Business services this survey provides information on:

- institutions which could be treated as key elements of the innovation support infrastructure
- institutions which are elements of the business support infrastructure and in certain conditions could act as elements of the innovation support infrastructure;

In order to develop innovations within the regions of Lithuania it is very important to have the innovation support services regionally available. In this respect the survey provides brief information about the administrative structure of Lithuania and key indicators of economy development within the regions.

#### ADMINISTRATIVE STRUCTURE OF LITHUANIA

There are in Lithuania 10 counties, each containing a number of regions. The total number of regions is 44, and the national population is 3.7 million. Average population per county is about 370,000. Vilnius is the capital of Lithuania, the city has a population of 580,000, and the region about 900,000.

#### INNOVATION SUPPORT INFRASTRUCTURE

Key elements of Innovation support infrastructure are:

- Innovation centres;
- Science and technology parks;
- Higher education centres;

##### 1.1.26.1.1 Innovation Centres

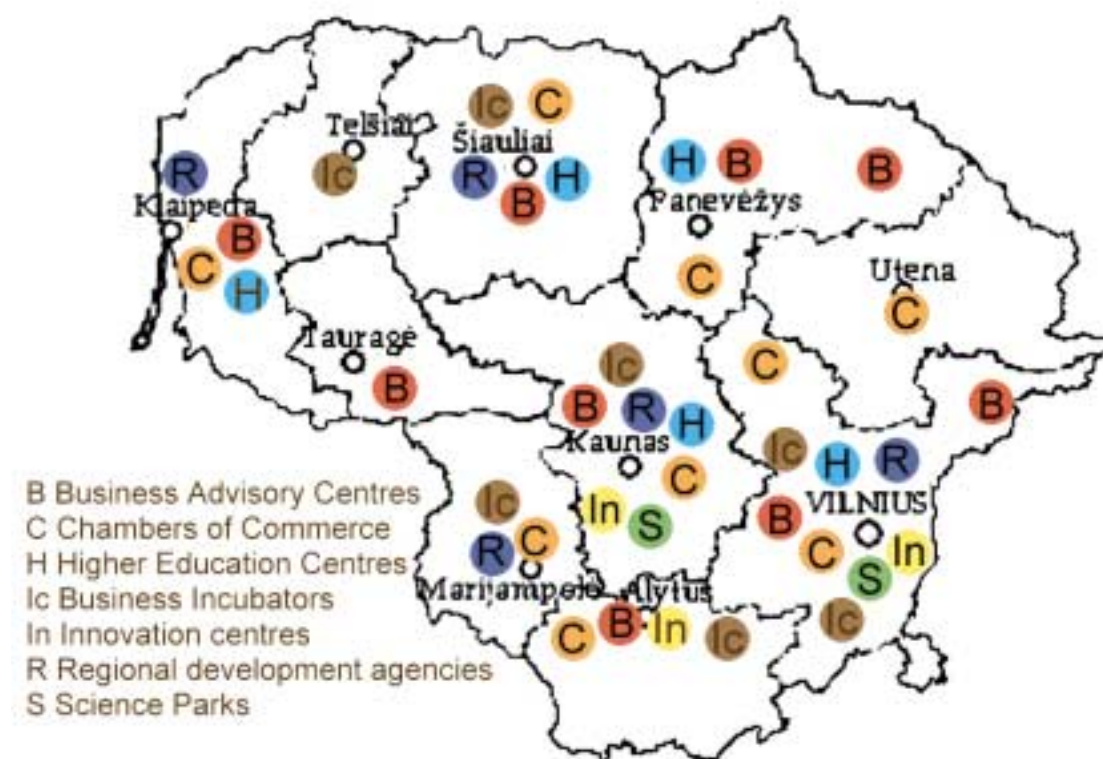
The map beneath shows that there are 4 Innovation centres in Lithuania presently concentrated in the counties of Vilnius (*Lithuanian Innovation Centre*) Kaunas (*Innovation Centre of Kaunas University of Technology* and *Innovation Centre of Lithuanian University of Agriculture*).and Alytus (*Alytus Business Innovation Centre*). These centres are not linked into a network of innovation support service providers.

Lithuanian Innovation Centre was established in the 1996. It is of the most active Innovation centre in Lithuania with 8 full time staff. It offers a whole range of innovation support services, in particular transnational technology transfer services to Lithuanian SMEs and R&D laboratories. These services are backed up by the European network of IRCs. Lithuanian Innovation Centre plays very active role in Innovation policy development.

*Innovation Centre of Kaunas University of Technology (established in 1994)* and *Innovation Centre of Lithuanian University of Agriculture (established in 1992)* are University based innovation centres. These Innovation centres focus their activities on commercialization of technologies developed by researchers at Universities. KUT Innovation Centre initiated establishment of KUT Technology Centre that acts as a science and technology park (see below).

Alytus Business Innovation Centre is a newly established institution (in 1998). The mission of the centre is to promote innovation in its implementation in science and industry. The activity of this centre is focused on Alytus county.

#### 1.1.26.2 Business support infrastructure in Lithuania



##### 1.1.26.2.1.1 Science and Technology Parks

Two technology parks operate in Lithuania. They promote technology transfer and co-operation between research institutions and enterprises, serve as incubators for knowledge-based firms, and organise participation in international co-operation projects. The STP in Vilnius is focused on material science and IT and aim, amongst other things, to support the formation of spin-offs. The park currently hosts 24 companies. The Kaunas Technology Centre is set around the Kaunas Technological University. The Centre has expertise in the areas of energy development and transport, laser technologies, new materials, biotechnology, environment and IT. Technology Centre acts as a business incubator for spin-off companies and currently hosts 18 companies.

##### **Higher education centres;**

Universities as sites of study and research, are a vital part of the innovation support network. This research often represents the first step for development of innovations in companies. There are 10 Universities, 5 academies and 29 research institutes conducting research in the fields of humanities, natural science as well as in applied science fields such as geology, biotechnology, construction, materials and engineering. Higher Education Centres are currently concentrated in Vilnius (4 Universities, 3 academies and 19 research institutes) and Kaunas (4 Universities, 2 academies and 9 research institutes). One University operates in Klaipėda and one in Šiauliai. Branch office of KTU operates in Panevėžys

#### OTHER BUSINESS SUPPORT INSTITUTIONS

Several networks of business support services exist in Lithuania which provides business support services but currently do not focus their activities on innovation support services. In certain conditions these institutions could act as elements of innovation support infrastructure.

The main players are:

- the Lithuanian Development Agency for Small and Medium Sized Enterprises – SMEDA – and its Tauragė branch;
- the Lithuanian Development Agency – LDA (has its main focus on export and foreign investments promotion);
- the National Regional Development Agency (together with the network of Regional development agencies prepares for the implementation of EU pre-structural funds instruments);
- the Business Information and Advisory Centres (established in their start-up phase with the assistance of the Phare programme, 9 are functioning and 2 more will be operational soon.
- the Chambers of Commerce, Industry and Crafts (1 national and 5 regional chambers. These are present in Vilnius, Kaunas, Klaipėda, Šiauliai, Panevėžys with the branch offices in Alytus, Marijampolė, Utena, Ukmergė);
- the Euro Info Centres (act as ‘first stop shop’ for enterprises seeking Community information, 1 run by the LDA and 1 hosted by Kaunas Chamber of Commerce).
- *Business incubators* (. The first business incubators were established in 1999. There are now seven incubators operating across Lithuania (in Kaunas, Vilnius, Šiauliai, Alytus, Telšiai, Naujoji Vilnia and Kazlų Rūda). These incubators work especially with start up companies. By the end of 2000, they hosted 81 enterprises with 420 employees; 197 new jobs were created. Enterprises renting business space are mainly start-ups (up to 3 years of age) and are micro-enterprises.

These services to SMEs are mainly provided through non-profit organisations, some of which are financed by the Government, and some of which are funded by membership fees and income from services.

#### ECONOMY DEVELOPMENT WITHIN THE REGIONS

##### 1.1.27

##### 1.1.28 *Table comparing aspects of each county in Lithuania (1999)*

	<i>Population (in thousands)</i>	<i>Population (% from total population)</i>	<i>Proportion of national GDP (%)</i>	<i>Capital Investment (% from total investments)</i>	<i>Distribution of SMEs (%)</i>
Vilnius county	894	24,2	33,1	40,7	30,1
Kaunas county	754	20,4	19,6	17,1	21,6
Klaipėda county	416	11,2	12,2	11,2	12,3
Šiauliai county	401	10,8	8,4	4,8	8,7
Panevėžys county	322	8,7	7,4	6,4	8,1
Alytus county	202	5,5	4,4	4,2	3,9
Utena county	201	5,4	4,8	4,4	3,9
Marijampolė county	198	5,4	3,6	2,4	3,9
Telšiai county	183	4,9	4,3	8,2	4,4
Tauragė county	130	3,5	2,1	0,6	3,0
Total Lithuania 1999	3701	100	100	100	100

(Source: Lithuanian Department of Statistics)

From the map, it is evident that Vilnius holds the majority of support organizations and the institutions for technical innovation.

The dominance of Vilnius is also reflected in its possession of the highest proportion of SMEs, and its proportion of the national GDP. The table below indicates that capital investment in Vilnius county is much higher than average in Lithuania. 40,7 % of total capital investment goes to Vilnius county with 24.2 % of total population. It indicates there are large disparities in economic development within the counties of Lithuania. It is clear that Vilnius is most suitable for central co-ordination of innovation projects.

#### 1.1.28.1.1.1

#### 1.1.28.1.1.2 *Conclusions*

Factors favoring TTT: increasing potential of innovation support oriented structures; developed skills and professionalism of provided services; institutional and financial support given to such institutions; gradual integration of Lithuania's innovation system into European context, emerging opportunities for business support organisations to expand their activities into innovation support area.

Factors limiting TTT: relatively low number of innovation support institutions; limited overall impact of innovation in SMEs; almost no domestic networking, brain drain of high skilled personnel to private companies.