PROJECT "IPATECH"

Miniaturization technology: synergies of research and innovation to enhance the economic development of the Adriatic

TABLE OF CONTENTS

ITALIAN TERRITORY

Project IPATECH - Miniaturization technology: synergies of research and innovation to enhance the economic development of the Adriatic

1. Overview of the Italian agricultural sector

The 6th General Agricultural Census shows that the Italian agricultural sector is an evolving sector. The number of farms diminished, but their size is bigger.

There are differences in the different part of the country confirming the gap, in terms of productivity and modernization of agriculture in the North and the rest of the country as evidenced by the structural data indicated in the table below.

Geographical Area	Farms (number)			Total Farm Area			Utilized Farm Area		
	2010	2000	Var %	2010	2000	Var %	2010	2000	Var %
Italy	**1 620 884**	**2 396 274**	**-32.4**	**17 081 099**	**18 766 895**	**-9.0**	**12 856 048**	**13 181 859**	**-2.5**
North-west	145 243	220 145	-34.0	2 745 985	3 127 737	-12.2	2 096 985	2 243 193	-6.5
North-east	251 859	367 052	-31 .4	3 538 563	4 003 085	-11 .6	2 471 852	2 632 288	-6 .1
Center	252 012	423 085	-40 .4	3 349 801	3 898 892	-14 .1	2 191 651	2 435 200	-10 .0
South	691 281	929 514	-25 .6	4 426 634	4 683 196	-5 .5	3 554 349	3 571 517	-0 .5
Islands	280 489	456 478	-38 .6	3 020 116	3 053 985	-1 .1	2 541 211	2 299 662	10 .5

The average size of the farms grows in all regions and autonomous provinces. The largest increases are recorded on the islands (79.8%) and Central Italy (+51.1%), where the average size reaches 9.1 and 8.7 hectares, respectively of UAA per farm. Nevertheless, companies in the North continue to have the largest average size (14.4 hectares of UAA per farm in the north-west and 9.8 in the Northeast). The South (5.1 hectares per farm) is characterized by a minor increase in absolute and percentage in the decade (+1.3 hectares to company and +33.8%).

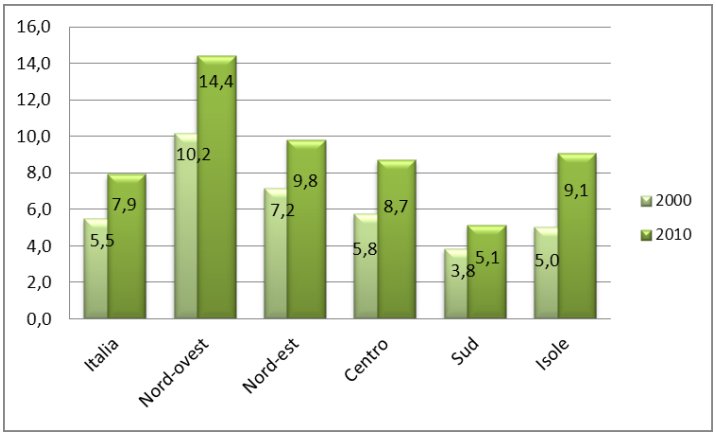


Fig. 1 UAA of the farms located in the different part of Italy

More than half of the UAA continues to be cropped arable land (54.5%) followed by permanent grass land covers and pastures (26.7%), the woody agricultural (18.5%) and kitchen gardens (0.2%). In terms of hectares only permanent grasslands cover and pastures were slightly increased compared to 2000 (+0.6%).

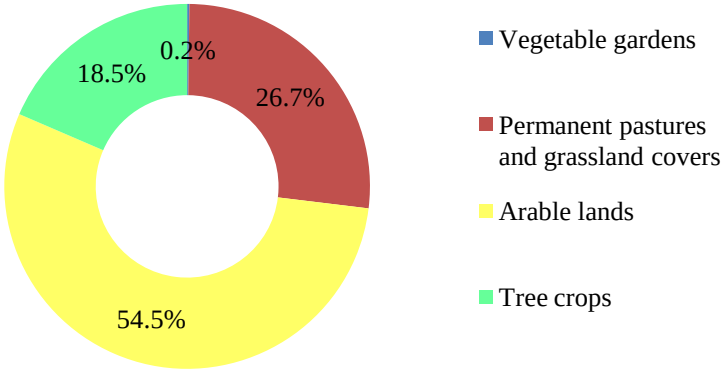


Fig. 2 Composition (%) of the UAA. Source ISTAT

Livestocks

The livestock farms are about 217449 and are equally distributed among the geographical areas, although significant regional specializations are present.

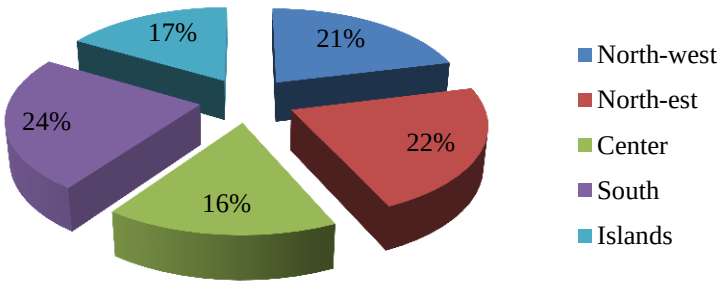


Fig. 3 Livestock farms distribution in the different Italian region. Source ISTAT

In particular, the northern regions are characterized by cattle and pig farming, while those of the Centre-South and the Islands continue to be traditionally related to goat and cattle.
The regions and autonomous provinces where this sector is strongly present are Bolzano (49.2%), Valle d'Aosta (41.6%), Lombardy (40.6%) and Sardinia (33.8%).

2. Overview of the Italian Agri-food sector

As referred to Article 36, paragraph 1, of the Law of 5 October 1991, n. 317, rural districts are local production systems characterized by homogeneous territorial and historical identity resulting from the integration between agriculture and other local activities, as well as the production of particular necessities or services, consistent with natural and local traditions.

Agro-food quality districts are local production systems, including interregional, characterized by significant economic presence, interrelation and interdependence of agricultural and food production, as well as one or more certified and safeguarded productions in accordance with applicable Community or national legislation or by traditional or typical productions.

Table 1. Number of agro food districts in the different Italian regions

Regions	***Regional Districts***	***Province in the District***	***Inter-regional Districts***
Piemonte	4	4	2
Valle D'Aosta	-	-	-
Lombardia	4	5	1
Trentino Alto Adige	2	2	-
Veneto	5	6	-
Friuli-Venezia Giulia	1	1	-
Liguria	3	2	1
Emilia Romagna	3	6	1
Toscana	1	2	-
Umbria	1	1	1
Marche	2	3	1
Lazio	5	5	1
Abruzzo	5	4	1
Molise	1	1	-
Campania	6	5	1
Puglia	1	1	1
Basilicata	1	1	-
Calabria	5	3	-
Sicilia	3	8	-
Sardegna	2	3	-
TOTAL	**55**	**63**	**5**
Five Inter-Regional Districts			
Piemontese - Ligure (Piemonte, Liguria)			
Lombardo - Emiliano (Lombardia, Emilia R.)			
Umbro - Marchigiano (Umbria, Marche)			
Aprutino - Laziale (Abruzzo, Lazio)			
Sannio - Daunia (Campania, Puglia)			

Source: Istituto G.Tagliacarne

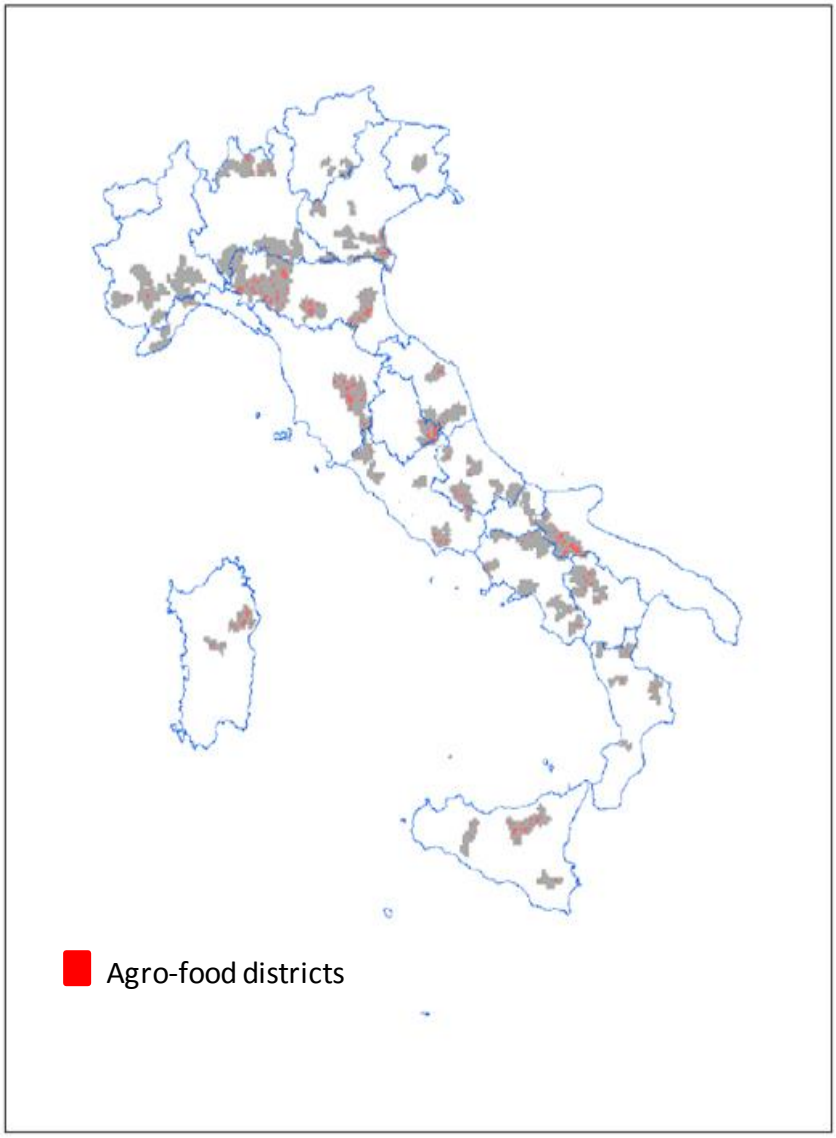


Fig. 4 Agro food districts distribution in Italy - Source: Istituto G.Tagliacarne

MARCHE REGION

1. Description of Marche Region

***Lead Beneficiary*:** Consiglio per la Ricerca e la Sperimentazione in Agricoltura (CRA-ORA)- Agricultural Research Council, Via Salaria 1, 63077, Monsampolo del Tronto (AP)-ITALY

Marche has a total surface of 9693 km^2 and a population of 1471000 inhabitants. Population density is 152 inhabitants/km^2. The territory is characterized by a mountainous internal area and by hills. Plain areas are rare and mainly localized near the Adriatic coast or along the rivers.

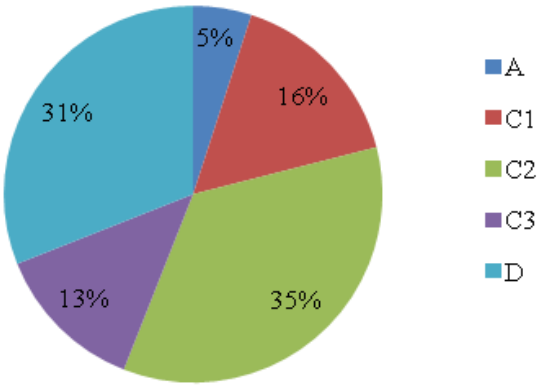


Fig. 5 Identification of the different areas in relation to regional surface (%). Modified from PSR

Urban areas (**A**) coincides with the 4 main towns of the Region. They cover approx. 5% of regional surface and 19% of population (284.000 inhabitants); population density is 567 inhabitants/km^2.

Rural areas have been identified according to the methodology set up in the national strategy of the **Rural Development Programme (PSR).**

Rural area B (areas with intensive and specialized agriculture) can't be individuated. Only rural areas C (intermediate rural areas) and D (areas with development gaps) are therefore present. Overall, they cover 95% of the regional surface and have 81% of the population. On average, the population density is 129 inhabitants/km^2. In order to better describe the regional characteristics, and to set up a more elaborate territorial strategy, a sub-classification of rural area C has been introduced.

Rural area C1 is localized along the coast. This area contributes significantly to the regional VA and is characterized by the presence of industries and by intensive agriculture. It has a surface of 1.537 km^2 (16%), a population of 621.000 inhabitants and a density of 404 inhabitants/km^2.

Rural area C2 covers the hills between the coast and the internal 2 mountains and is characterized by the greater importance of agriculture and a lower population density. It has a surface of 3.413 km^2 (35%), a population of 382.000 inhabitants and a density of 112 inhabitants/km^2.

Rural area C3 covers the hills between the coast and the internal mountains. In this area, which comprises the municipalities whose territory is mountainous, the agriculture is more extensive, the weight of the industrial is lower and the population density is small. It has a surface of 1.221 km^2 (13%), a population of 72.000 inhabitants and a density of 59 inhabitants/km^2.

Rural area D occupies the internal and mountainous part of the region and has an surface of 3.022 km^2 (31%), a population of 112.000 inhabitants and a density of 37 inhabitants/km^2. Population is slightly increasing, mainly because of the migration from other countries. The population ageing ratio is elevated, and higher than the national one. In rural area D, young people tend to move to the coast or to the main towns, thus determining ageing and depopulation phenomena.

In the last decade, the economic structure of the region has faced a de-industrialization process, and an increase of services. Still, the industrial sector, characterized by the importance of the SME, is relevant. In 2004, GDP per capita was 23.800 Euro, in line with the Italian average and slightly above the European one (111%). In relative terms, the economic structure is the following: primary sector = 2.4%, industrial sector = 30.6%, tertiary sector = 67%. The regional employment rate (64%) is higher than the Italian and the UE-25 one. In 2005, the unemployment rate was 4.7%. Like in the rest of the country, there are some disparities concerning age and gender, whose employment levels are significantly lower than the average. The training and education level is not elevated, and lower than the regional average in the internal areas. In 2006, the employment structure was the following: primary sector = 2.5%, industrial sector = 37.7%, tertiary sector = 59.8%.

The situation in terms of human capital shows some problems and weaknesses. The percentage of young farmers is the lowest of Italy (7%), and the ageing process is increasing. The data concerning training and education show that the regional farmers have a low level of education (75% with a basic education) and of training. In particular, 92% of the regional farmer based their knowledge only on practical agricultural experience.

1.1 State of the agricultural and forestry sectors

Land cover is the following: 65.6% agricultural, 21% forestry, 9.5% natural and 3.9% artificial.

According to the last available data, the regional UAA is approx. 512.000 Ha. Arable land is about

80%, while permanent pastures and grasslands covers approx. 7%. Permanent crops represents 13% of the regional UAA. According to the last available data, approx. 200.000 Ha of the regional territory is covered forests and woods. About 63% of the regional forests are owned by public local bodies, and 28% by private. The average size of the private forestry holding is small (2 Ha). Less than 6% of the regional forests are completely available for wood supply. In spite of these problems, the production of wood is stable. The demand of fire wood is increasing, as well as the demand of the forest by-products (i.e. truffles, chestnuts). The main problem of the sector ate the fragmentation, the ageing of the entrepreneurs, the bad working conditions (comprising security) end the small incomes.

Regional farms are about 55.000. Their average surface is 9.2 Ha and their economic dimension is approx. 30 ESU. In spite of the increase of the average dimension of the holding recorded in the 1990-2000 period, regional structures are still very fragmented. Less than 20% of the regional holdings can be defined as "professional", while 25% of them are essentially non-market farms, for self consumption purposes. Land productivity is not elevated, and lower than the national average. Labour productivity is, on the contrary, higher both than the national and the EU-25 (27.400 euro GVA/AWU). In 2000-2002, the agricultural sector represented 2.8% of the regional economy in terms of VA (780 M euro per year, on average). In 2003, the number of employed was 26.900.

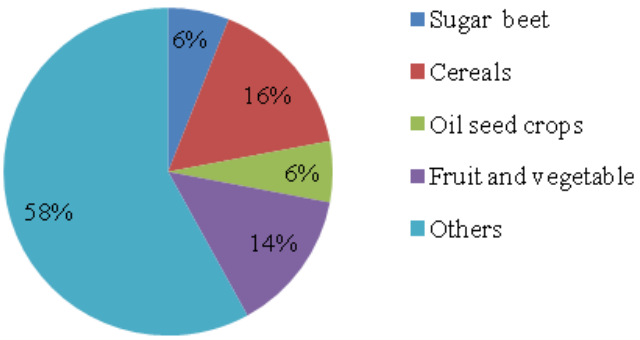


Fig. 6 Agriculture output (%) of the region

One of the most important agricultural production of the region is represented by cereals. In 2006, more than 200.000 Ha were devoted to the production of cereals, and in particular of durum wheat (more than 50%), common wheat, barley and maize. According to the data provided in the text, the sector accounts for approx. 16% of the total agricultural output of region. In the last three years, the surface has diminished constantly (-12% from 2004). This decrease, probably a consequence of the implementation of the CAP reform, has affected mainly durum wheat and to a minor extent, common wheat.

Oil seed crops are significant. The arable surface devoted to these crops was, in 2004, approx. 30.000 Ha and accounted for 6% of the agricultural output.
The incidence of no-food crops (i.e. sunflower for bioenergy) is increasing steadily. Another important sector of the regional agriculture is represented by sugar. 30.000 Ha are devoted to sugar beet, which accounts for 6% of the regional agricultural output. The reform of the CMO will have relevant consequences on the sector. From 2000, two of the regional plant have been closed or converted, the number of farms has halved, and the surface has diminished significantly.
Another important sector of the regional agriculture is fruit and vegetable production. According to the last available data, fruit and vegetable crops occupy approx. 13.000 Ha and accounts for nearly 14% of the regional agricultural output. In this sector, the fragmentation of the holdings is particularly evident (low level of specialization, average F&V surface of 0.8 Ha). Less than 30% of the production is managed by the PO, which means that the retailers and discount chains have a leading role in the determination of market prices and conditions. Large part of the production is represented by vegetable, fresh, frozen or processed. The most common fruits are peaches, apricots and plums.
Nearly 30% of the regional holdings are rear farms. According to the last available data, livestock production accounts for approx. 29% of the regional agricultural output. Cattle breeding are present in more than 5.000 farms and account for 5% of the regional agricultural output. The presence of a traditional, productive and certified breed (razza marchigiana) is a positive feature for this sector. In these years, the demand of beef has increased and the prices have been stable. Milk production is not very significant. The few regional dairies (less than 200) are facing a general crisis, with the exception of some bigger holdings localized in more fertile areas. Other important productions are represented by poultry, sheeps and goats.

2. Food sector

The food sector is characterized by the presence of small productive units (smaller than the national average). The incidence of the sector on the regional GVA is 2,2% and accounts for 726 Meuro in absolute terms. The number of employed is approx. 14.900 units (again, 2,2% of the regional total). Labour productivity is slightly lower than the national average and the investments in the sector are not particularly elevated. As a consequence, the regional enterprises have some problems in comply with all the market requirements (in terms of safety and quality standards, innovation, etc.), especially in the international context. The most important food sectors (present on the national/international markets) are: wine, vegetables (mainly frozen or processed), sugar and seed production (cereals and forage crops). The production of wine is important, in the agri-food regional

context, especially in terms of added value (12% of the regional total, while the incidence on the agricultural output is approx. 3%). Vineyards occupy nearly 20.000 Ha of the regional UAA and are present in more than 50% of the holdings. Only few of them, however, are specialized and competitive (less than 20%). In spite of this fragmentation of the production, more than 70% output is represented by quality wine, which is frequently exported (more than 30 M euro in 2004).
Olive production is less important. The regional surface doesn't reach 8.000 Ha and the bigger, specialized producers are extremely rare. Large part of the production is represented by extra-virgin olive oil, which is consumed locally. The production of table olive is much smaller, and characterized by an extremely small production, and by high quality and price.
The production of bioenergy is still limited, but it's increasing. The result of a recent survey shows that there are some possibilities of development of biomass production (both from forests and fro SRC) and of biodiesel/bioenergy production (from oilseed crops).

3. ***Rural economy and quality of life of the different rural areas***

Approximately 64% of the regional territory (53.8% in terms of UAA) is localized in less favored areas (LFA – both mountain and with other natural handicaps). In these areas, the risk of abandonment is particularly elevated, and it is related to the higher costs of production, to the fragmentation property, to the lack/scarcity of infrastructures and services, to the more severe working conditions and to the scarce presence of young farmers.
The rural areas D and C3 are more isolated and have significant physical and structural disadvantages. Depopulation and ageing are the main problems, and the risk of marginalisation is concrete. In these areas, the rate of economic activity and the availability of services are lower and, between 1990 and 2000, more than 27% of the enterprises have been lost. The rural area C2 presents some natural handicaps, but has fewer problems in terms of depopulation and economic marginalisation. Rural area C1, localised along the coast, is characterised by a high level of industrialisation and by an increase in population. In Marche, the incidence of the micro-business is extremely elevated: more than 53% of the regional enterprises are "micro".

4. Agriculture and agro-food **in the province of Ascoli Piceno**

As revealed by the last census on agriculture performed in 2000, agriculture and livestock contribute for around 4% of GNP of the province; the same percentage is reported for the whole Italian territory. Agro food sector is featured by many farm of reduced acreage. In fact, looking at the whole number of farm in the province with respect to the number of farm in the Marche Region,

it is evident that, on a numeric base, these represents the 30% of the number farm in the whole Marche territory, while the percentage decrease to a 20% if the ratio is in term of acreage.

Farms are often a family-run businness; in the last 10 years both total number and area had been decreasing up to a 10%.

Table 2. Total number, area and employees of Ascoli Piceno (AP) in relation to Marche region and Italy

	N° farms	Total area	Total n° employees
AP/Marche (%)	30.73	21.17	29.95
AP/Italy (%)	0.83	0.77	0.82

Agricultural soil is by 46% employed with arable crops, followed by trees, forests and meadows & pastures. The crops mostly contributing to the GDP of agricultural sector in the province are potatoes and vegetables (21%), viticulture (16%) and cereals (14%).

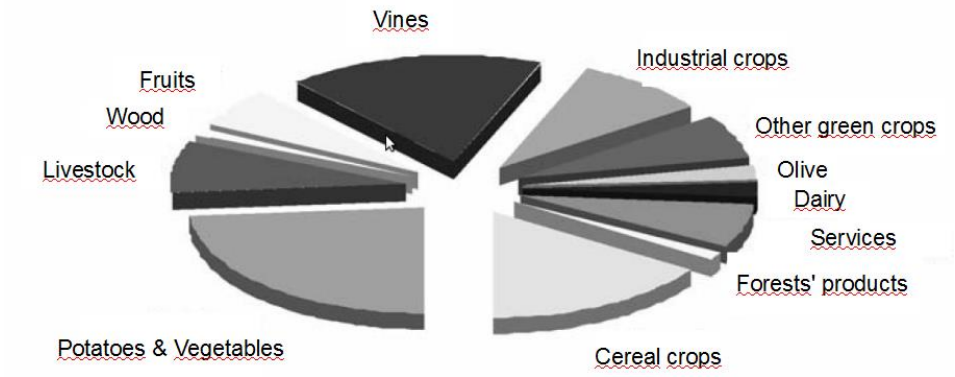


Fig. 7 Agricultural GDP in the province of AP. *Source: Istituto Tagliacarne, 2000*

Grape production stands for more than 50% of the whole Marche production and it is at the origin of some important local wines, such as "Rosso Piceno", and to a lesser extent, "Falerio dei Colli Ascolani" and, lately, "Offida". However, a substantial part of the grapes is used in the production of the so-called "table" wines.

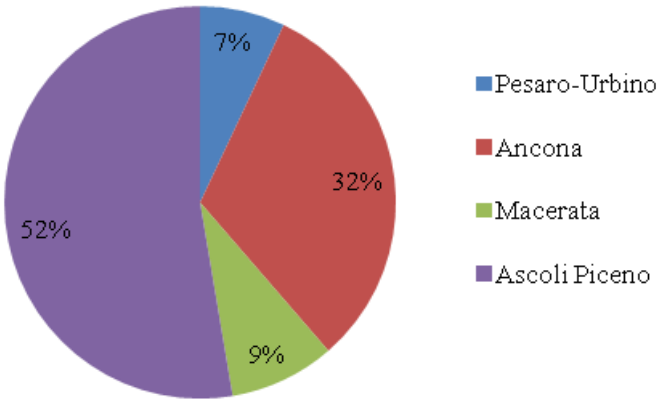


Fig. 8 Production of wine *per* province. Source Sistar Marche

Livestock production is not relevant on the territory. The table below shows the % of items *per* typology.

	Livestock								
	Poultry	Cattle	Buffalo	Goats	Rabbit	Horse	Sheep	Ostriches	Pig
AP/Marche (%)	33.87	20.21	69.98	22.67	35.09	17.50	26.36	55.98	36.19
AP/Italy (%)	1.52	0.26	0.19	0.17	3.17	0.45	0.63	4.73	0.62

Together with agriculture and fisheries, agro-food industry strongly posed its basis in the area of San Benedetto del Tronto, with a high concentration of factories and industries.

Fishing

Among the areas to be highlighted in the productive structure of the Piceno a place is reserved for fishing, one of the main activities of all the towns along the coast, with the harbour of San Benedetto del Tronto (the second largest in Italy for boats of over 10 tons) that acts as a point of landing and first sale of fish. Here it is sold 80% of the fish, while the remaining 20% is sold at the fish market of Porto San Giorgio. In the previous years there has been a significant growth in the sector, with over 80% of tons caught more than in beginning of 2000 and a change in the structure of the market. Faced with a decrease in the amount introduced in the wholesale fish markets (-8.8%), increased by 620% sale to industry, which is now the largest sector of destination representing 60.6% of sales. Overall, tons sold increased by 1%. Nevertheless, the amount in euro all sales declined by 1% between 2003 and 2004 (Chamber of Commerce 2005).

Linked to the development of fishing and also agriculture, the agri-food industry has developed, with a genuine industrial district with a high concentration of companies operating in the sector, in the surroundings of San Benedetto del Tronto.

Organic Farming

The data on organic farming more reliable and comprehensive are those of the Istat census of 2001. The photograph that was given at that time was a particularly developed Marche compared to the rest of the country. However, this strength came mainly from contribution of the province of Pesaro, which recorded more than 720 organic companies (both agricultural and livestock). The Province of Ascoli Piceno had a given above national averages and the center compared to the total number of firms, but a portion of agricultural land devoted uses organic below the other territorial aggregations.

Table 3 Number of farms and their surface in the different provinces, Marche Region and Italy

	N° farms	Surface (Ha)
Pesaro-Urbino	722	35468
Ancona	141	7437
Macerata	251	7695
Ascoli Piceno	443	6991
Marche	1557	57590
Central Italy	7743	318802
Italy	48726	1280721

The Agro food districts of Marche region are: San Paolo di Jesi and Visso and are indicated in the map below.

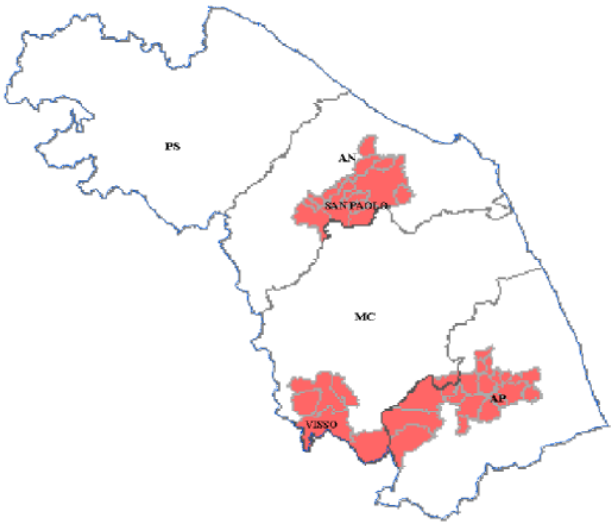


Fig. 9 Agro food districts of Marche region

The district of San Paolo di Jesi includes 15 municipalities, with a total population of 78153 inhabitants. In the district there are 9387 farms, 130 of which are agro-industrial and 3265 agricultural. In the agricultural sector are employed 6016 people. The district is specialized in the beverage industry and in the production of animal feed.

Table 4 San Paolo di Jesi district municipalities and their index. Source: Istituto G.Tagliacarne

ISTAT Code	Village	Index 1	Index 2	Index 3	Index 4
42008	Castelbellino	0.60	0.52	0.40	0.04
42012	Castelplanio	1.04	1.35	1.14	1.73
42016	Cupramontana	1.11	1.26	1.03	0.22
42021	Jesi	0.38	0.19	0.89	0.44
42023	Maiolati Spontini	0.51	0.89	1.02	0.12
42024	Mergo	1.10	1.04	0.77	0.01
42025	Monsano	0.85	0.53	0.32	0.06
42029	Monte Roberto	1.05	1.11	0.87	0.18
42031	Morro d'Alba	1.37	1.69	0.90	0.14
42040	Rosoa	0.97	1.04	1.14	0.09
42041	San Marcello	1.16	1.31	0.21	0.00
42042	San Paolo di Jesi	1.38	1.68	2.03	0.31
42043	Santa Maria Nuova	0.74	0.73	0.77	0.19
42047	Serra San Quirico	1.26	1.01	0.80	0.37
42049	Staffolo	1.34	1.47	1.43	0.44

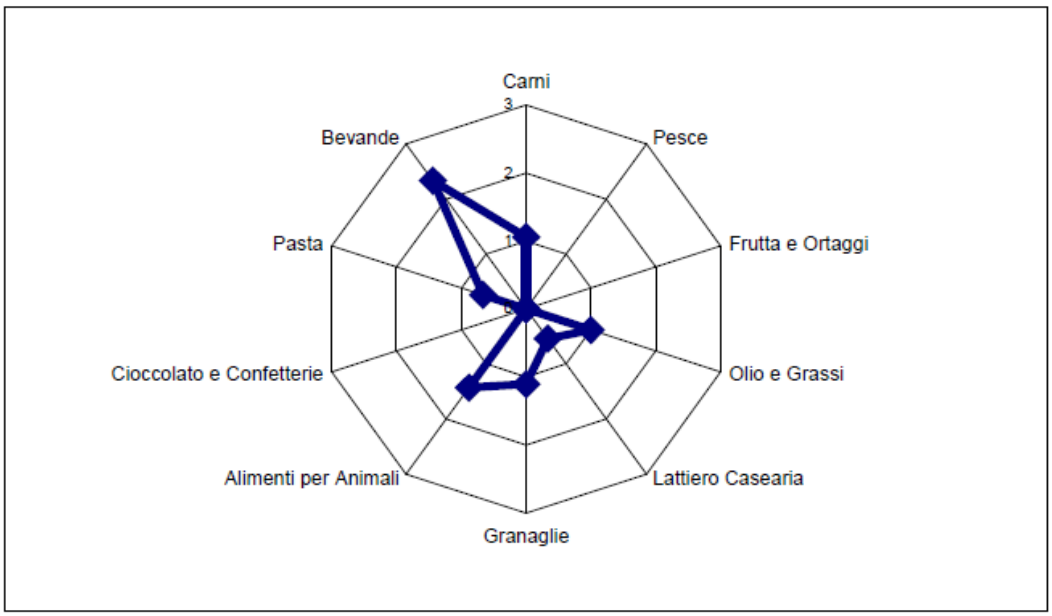


Fig. 10 San Paolo di Jesi municipalities specialization

Visso district includes 25 municipalities with a total population of 24652 inhabitants. In the district there are 5374 farms, 92 of which are agro-industrial and 3377 agricultural. In the agricultural sector were employed 4431 people. The district is specialized in the beverage industry and meat processing.

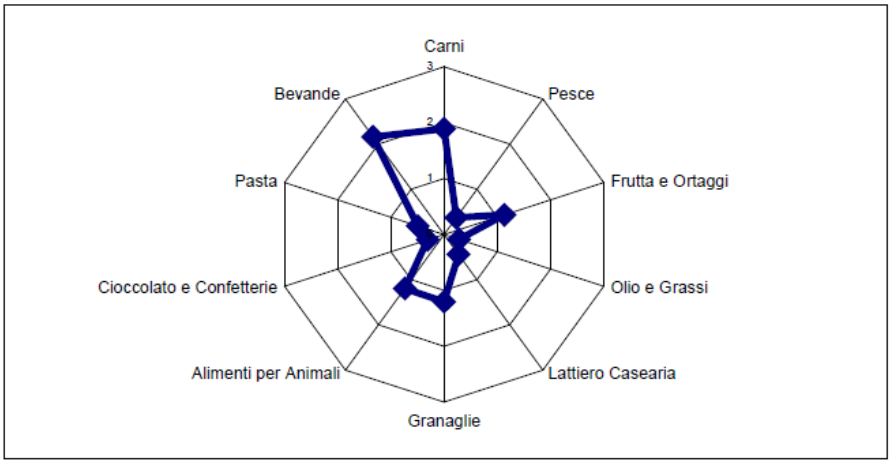


Fig. 11 Visso municipalities specializations

Table 5 Visso district municipalities and their index. Source: Istituto G.Tagliacarne

ISTAT Code	Village	Index 1	Index 2	Index 3	Index 4
43010	Castelsantangelo sul Nera	0.74	0.85	0.00	0.00
43018	Fiordimonte	1.05	1.02	5.42	2.50
43027	Monte Cavallo	1.12	1.21	0.00	0.00
43032	Monte San Martino	1.50	1.66	2.32	1.25
43038	Pieve Torina	0.64	0.63	1.25	4.62
43057	Visso	0.62	0.52	21.68	115.80
44004	Amandola	0.79	0.68	1.11	0.69
44008	Belmonte Piceno	1.50	1.93	1.63	0.06
44010	Carassai	1.33	1.66	2.23	0.52
44016	Cossignano	1.36	1.62	3.25	1.36
44021	Force	1.53	1.79	0.68	0.05
44030	Monsampietro Morico	1.45	1.77	0.68	0.12
44032	Montalto delle Marche	1.32	1.44	2.07	0.50
44034	Montedinove	1.41	1.61	2.71	0.42
44035	Montefalcone Appennino	1.62	1.88	1.36	0.21
44037	Montefortino	1.58	1.67	1.36	2.25
44042	Monteleone di Fermo	1.58	2.15	2.71	38.56
44043	Montelparo	1.54	1.90	0.00	0.00
44044	Montemonaco	1.38	1.81	5.42	1.50
44046	Monte Rinaldo	1.62	1.82	10.84	8.33
44055	Ortezzano	1.25	1.42	4.22	2.95
44056	Palmiano	1.75	2.20	0.00	0.00
44065	Rotella	1.69	2.05	0.77	6.63
44067	Santa Vittoria in Matenano	1.30	1.30	2.11	0.17
44070	Smerillo	1.65	2.04	0.00	0.00

5. Technical and economical support to farmers/rural enterprises

In order to promote and help farmers in their activities from a technical point of view, a wide range of support facilities are available through social unions and/or private associations of agronomists. Agricultural Unions, such as Coldiretti, Confagricoltura, etc, give their support to farmers also assisting them in fund-raising through Regional Projects linked to UE support.

6. Other information

The biodiversity of Marche is elevated. In the regional territory, there are 2 national parks, 4 regional parks and 5 other protected areas, for a total surface of nearly 90.000 Ha (approx. 9.2% of the regional territory). Natura 2000 areas cover 14% (approx. 137.000 Ha) of the territory. SCI are 80 and SPZ 19. In these areas there are more than 500 different plant and animal species and 51 different habitats. In these areas, 28% of the surface is agricultural, 23% is represented by permanent pastures and other natural areas and 45% is represented by woods. In november 2006, the Region has defined the conservation measures for the Natura 2000 sites, defining some obligations for the farmers. At the moment, no managing plans have been implemented. The incidence of land with a high natural value is significant (more than 60% of the total UAA).

On the basis of the monitoring carried out by the regional authorities, it can be said that the quality of the water is good in mountains and more internal hills, is sufficient is the central part of the region, and present some problem in the last part and the mouths of the rivers. 12% of the regional territory is classified as nitrate vulnerable zone (NVZ). An action plan has been adopted and now is in the process of updating, in order to take into account the development of the national legislation. Less than 5% of the regional UAA is irrigated, and the surplus of nutrients is in line with national average for phosphorus, and significantly lowers for nitrogen.

The emissions of greenhouse gasses linked to agricultural activities are limited in case of CO_2 and more significant in case of N_2O and CH_4.The contribution of agriculture to the emissions of the three gasses is, respectively, 1.9%, 93.3% and 19.2%. Breeding activities are the first responsible of the emissions of the latter two gasses. The regional plan for energy and environment has individuated the objectives for the production of bioenergy from the agricultural sector. According to this programme, the savings could arrive at 0.16 Mtep/year. A forestation rotation and other agricultural techniques could contribute to the "carbon sink" effect of the soil. Today, the production of bioenergy (mainly for heating) is 3510 TJ and energy crops cover 2400 Ha.

The main problems concerning soil are represented by erosion, loss of organic matter, contamination, compaction and landslides/floods. Thirty per cent of the regional territory is affected

by erosion, and 25% of it in at significant levels. The phenomenon is strictly linked with agricultural activities (arable land) and concentrated in the hills that occupy the central part of the region. The loss of organic matter is strictly linked with erosion: in the hilly part of the region, the phenomenon is more intense. Another negative effect caused by agriculture in soil contamination: in case of Marche, the problem is present but at smaller levels than in the rest of the country (in 2001 7.6 kg/Ha of chemicals were used vs. 11.2 kg/ha at national level). Compaction is recorder in hills and along the coast, and landslides and floods (not only related to agriculture) are a major problem, which affect more than 17% of the regional territory.

Twenty-five per cent of the regional forests are in Natura 2000 protected areas. They are represented mainly by broadleaves (more than 92%) and are concentrated in the more internal part of the region. As in other Italian regions, forests are increasing, at a rate of more than 2.000 Ha per year. More than 60% of them have a protective role/high natural value, in terms of protection of water/soil. Forest fires are not a major problem.

ABRUZZO REGION

1. Description of Abruzzo Region

***Final Beneficiary**:Università degli Studi di Teramo (UNITE) - University of Teramo - Viale Crucioli 122, Teramo, ITALY*

Abruzzo is located in central Italy, stretching from the heart of the Apennines to the Adriatic Sea, on a mainly mountainous and wild land. The mountainous inland is occupied by a vast plateau whose highest peaks are the Gran Sasso (2912 m) and Mount Majella (2793 m). The Adriatic coastline is characterized by long and sandy beaches to the north and pebbly beaches to the south. It has a total surface 10795 km^2 and about 62% of the land is used for agricultural purposes. In fact, the territory of Abruzzo is characterized by an important agricultural tradition which originates from its cultural and historical events. According to Movimprese agricultural enterprises represent 23.4%, a percentage significantly higher than that found nationally (16.1%). Regarding occupation this sector shows a percentage of employees of about 4.0%.

Table 6 Added value, farms, employees and export in Abruzzi region and Italy. Source CRESA

Index	Abruzzo	Italy
Added value	3.6	2.6
Farms	23.4	16.1
Employees	4.0	3.9
Export*	0.7	1.6

*2009

Agriculture is characterized by a close link with the food processing. The food processing sector is one of the most important in the regional economy because, according to ISTAT data for 2007, the value added reached 535.4 million euro, equivalent to 10.8% of that produced by the entire manufacturing sector (9.7% in Italy).

Farm utilized area is about 432000 Ha and 183000 Ha are arable crops, 166000 grass land covers and pastures and 83000 permanent cultivations (ISTAT, 2000).

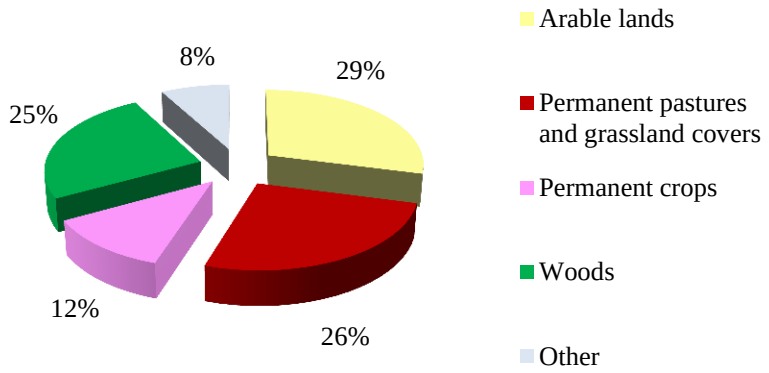


Fig. 12 UAA distribution in Abruzzo region

In particular, the major part of arable crops, in terms of surfaces, are cereals (91 thousand hectares), forage crops (48,000 ha), the vegetables (9,000 ha), the industrial crops (8,000 acres), followed by sugar beet, potatoes and dried vegetables.

Among the permanent crops, vines and olive trees are by far the major sectors.

In particular, almost 80% of the Abruzzo wine production is concentrated in the province of Chieti and the rest is divided between the provinces of Teramo and Pescara. Olive cultivation is concentrated in the provinces of Chieti (57%), Pescara (25%) and Teramo (13%), where there are the three oil PDO recognized by the European Union. The forest covers about 21% of the territory, with extremes in the province of L'Aquila.

2. Agro food sector

For the description of the regional agro-food sector, we will refer to the study proposed by CRESA. Six sectors can be described, such as the production of cheeses, liquors, meats, olive oil, wine and pasta. According to the data of the OIV (Organisation Internationale de la Vigne et du Vin) wine production in Abruzzo in 2009 was 104 million euro (less than two-thirds of that recorded in 1980), 15.6% of the value of regional agricultural crops and 3.2% of total Italian wine. According to ISTAT data the area planted with vines was of 34747 in 2009. In particular, the area devoted to wine grapes represents approximately 97.5%. In Chieti is concentrated 97.9% of the area for table grapes and 78.8% of those in wine grapes. Wine production was 2.65 million q (5.8% of total Italian), and 82,2% is produced in the province of Chieti. The wine companies are generally small in size, half of them has 5 employees, and 9% has more than 20 employees. The limited size is also confirmed by the analysis of the amount of sales during the year. In fact, more than half of the companies (54.5%) produces less than 1.5 million euro. Only 4.5% have a turnover exceeding 13 million euro.

According to the data published by the International Olive Oil Council the annual production of olive oil in 2009-2010 is 3 million tones. With its 1.4 million t of Spain is the world's largest producer, followed by Italy (460mila t) and Greece (320 thousand tonnes). According to Istat in Abruzzo value of olive oil production in 2009 was EUR 81.8 million.

Oil farms are 363 and the surface planted with olive trees is 936.6 Ha. Both farm and olive groves are located in Pescara. Oil millers and bottlers are 51 and they are distributed as follow: Pescara 49%, Chieti 35,3% and Teramo 15,7%. Oilve oil export in 2010 reached 15.6 M euro. Also oil farms are small with 2 employees. Generally, farms with less of 10 employees are 97%. Almost all of the olive oil companies (88.9%) underlined the occurrence of some changes in the market situation over the last three years. The types of change are: the fall in prices (75.0%), the decrease in demand (62.5%), foreign competition (50.0%).

The largest world producer of pasta is Italy, with its 3.2 million tonnes, representing about a quarter of world production. In Abruzzo pasta factories, according to the Unipi are 14. Employees engaged in the production of dried pasta are just under 900 units, an increase of almost 30% compared to 1981. Regional exports of pasta products in 2010 reached 115.7 million euro (8.2% of the national total. There has been an increase of 38.2% compared to 2003.

According to Istat in Abruzzo in 2009 the milk collected from farms in the dairy industry was 329mila q, of which 89, 6% cow's milk, 10.3% sheep's milk. Production units operating in the dairy sector are 36 and represent the 1,7% of the total Italian.

2.1 Agro food districts

The tables and the maps below show the agro food districts (Campotosto, Castel del Monte, Collelongo, Fara San Martino, Casalanguida) together with the Istat, the name of the municipalities, residents and four indices considered explanatory of the phenomenon. The index refers to the relative regional basis set equal to 1. If in a municipalitie an index assumes a value greater than 1, this indicates that it is more specialized than the regional average. The index are:

INDEX 1: Agro-food Companies/Total Companies
INDEX 2: Agro-food Employment/Total Employment
INDEX 3: Agro-food Companies/Total Manufacturing Companies
INDEX 4: Agro-food Employment/Total Manufacturing Employment

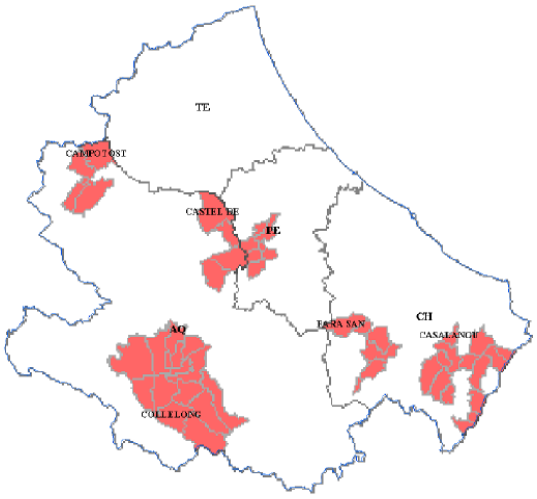


Fig. 13 Agro food districts of Abruzzo region

Campotosto district is made up of 4 municipalities with a total population of 5052 inhabitants. In the district there are 549 farms, 8 of which are agro-industrial and 221 agricultural. In the agricultural sector were employed 237 people. The district is characterized by a strong specialization in the grain processing and in the dairy industry.

Tab. 7 Campotosto district municipalities and their index. Source: Istituto G.Tagliacarne

ISTAT Code	Municipality	Index 1	Index 2	Index 3	Index 4
66008	Barete	0.90	0.79	2.58	0.22
66016	Campotosto	0.72	0.74	1.94	0.36
66021	Capitignano	1.01	0.88	0.97	0.36
66072	Pizzoli	0.60	0.48	0.20	0.00

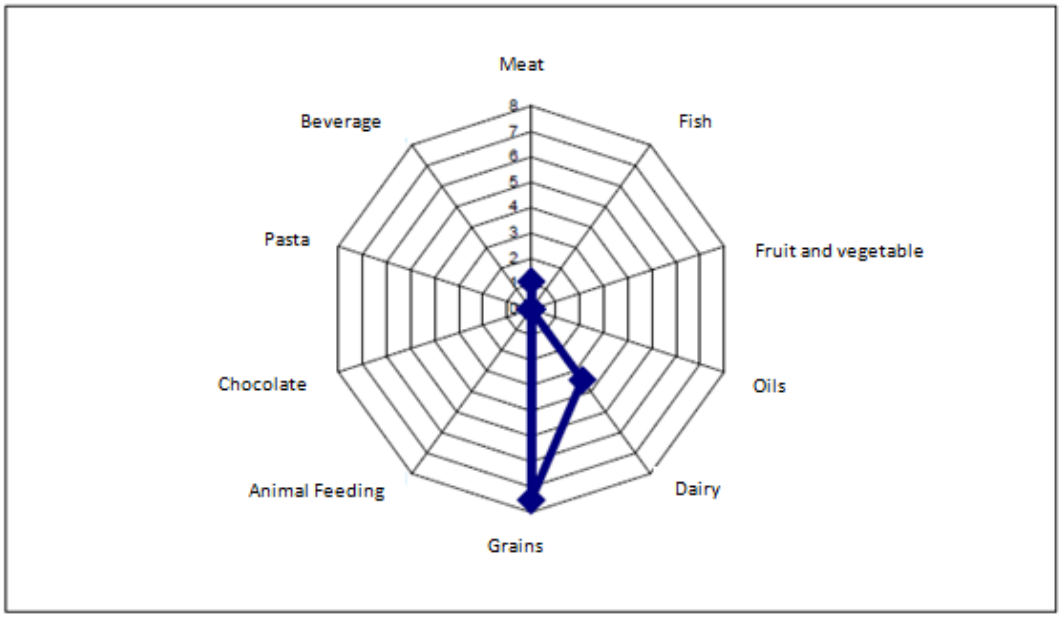


Fig. 14 Campotosto municipalities specializations

The district of Castel del Monte includes 10 municipalities with a total population of 6023 inhabitants. In the district there are 1514 companies, 20 of which are agro-industrial and 1171 agricultural. In the agricultural sector are occupied 1280 people. The district is mainly specialized in the manufacture of oil and fat, but also in the dairy industry.

Table 8 Castel del Monte district municipalities and their index. Source: Istituto G.Tagliacarne

ISTAT Code	Municipality	Index 1	Index 2	Index 3	Index 4
66019	Capestrano	1.12	1.05	1.94	4.66
66026	Castel del Monte	0.44	0.85	5.17	8.97
66058	Navelli	1.37	1.27	1.03	0.54
66104	Villa Santa Lucia degli Abruzzi	1.44	1.81	0.00	0.00
68004	Brittoli	1.42	1.56	2.58	2.69
68013	Civitaquana	1.46	1.51	0.86	0.27
68016	Corvara	1.49	1.85	0.00	0.00
68029	Pescosansonesco	1.51	1.74	1.29	2.69
68032	Pietranico	1.50	1.80	0.86	1.43
68045	Vicoli	1.51	1.74	2.58	0.90

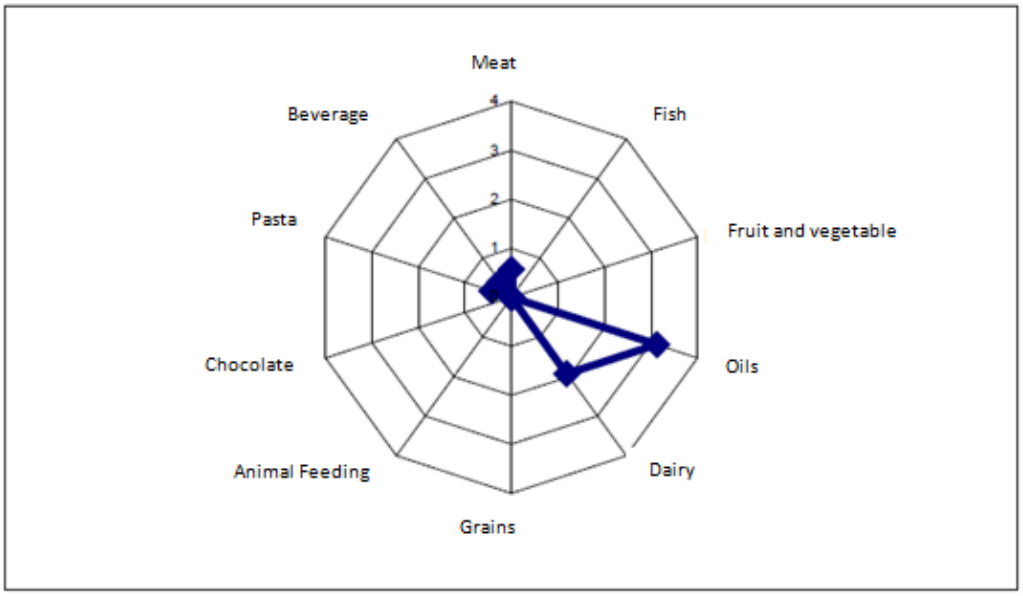


Fig. 15 Castel del Monte municipalities specializations

Collelongo district includes 14 municipalities, with a total population of 82096 inhabitants. In the district there are 9413 companies, 144 of which are agro-industrial and 3613 agricultural. In the agricultural sector are occupied 7225 people. It shows a strong specialization in the processing of fruit and vegetables.

Table 9 Collelongo district municipalities and their index. Source: Istituto G.Tagliacarne

ISTAT Code	Municipality	Index 1	Index 2	Index 3	Index 4
66002	Aielli	0.99	0.64	0.41	0.09
66006	Avezzano	0.22	0.09	0.62	0.09
66032	Celano	0.95	0.81	0.90	2.02
66033	Cerchio	0.71	0.54	0.32	0.09
66038	Collarmele	1.00	0.81	0.43	0.11
66039	Collelongo	0.91	1.12	3.88	6.28
66046	Gioia dei Marsi	0.93	0.86	0.60	0.49
66050	Lecce nei Marsi	0.46	0.33	3.88	5.38
66051	Luco dei Marsi	1.00	1.35	1.51	2.22
66064	Ortucchio	1.46	1.49	0.70	2.97
66069	Pescina	0.74	0.74	1.16	0.32
66085	San Benedetto dei Marsi	1.11	1.46	1.38	1.20
66102	Trasacco	0.92	1.33	0.86	1.00
66106	Villavallelonga	0.91	1.13	0.00	0.00

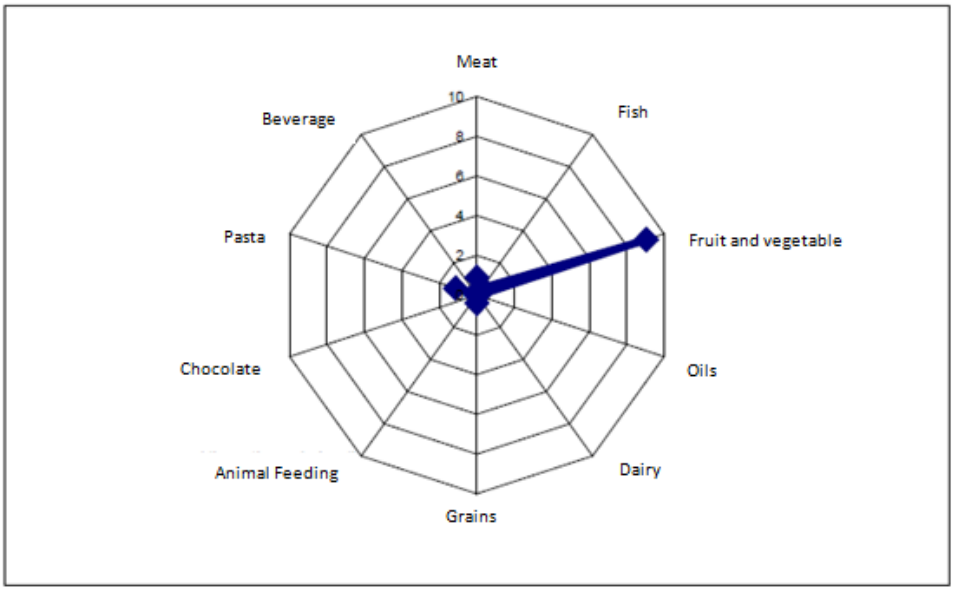


Fig. 16 Collelongo municipalities specializations

The district of Fara San Martino includes 5 municipalities with a total population of 6815 inhabitants. In the district there are 1526 companies, 25 of which are agro-industrial and 1109

agricultural. In the agricultural sector are occupied 1988 people. The district is specialized in the production of animal feed, but also in the dairy industry and in the manufacture of oil and fats.

Table 10 Fara San Martino district municipalities and their index. Source: Istituto G.Tagliacarne

ISTAT Code	Village	Index 1	Index 2	Index 3	Index 4
69024	Civitella Messer Raimondo	1.50	1.69	1.94	0.62
69031	Fara San Martino	1.14	1.14	2.84	3.14
69040	Gessopalena	1.46	1.61	3.88	3.59
69054	Montenerodomo	0.99	0.88	0.86	0.45
69095	Torricella Peligna	1.12	1.06	0.94	0.37

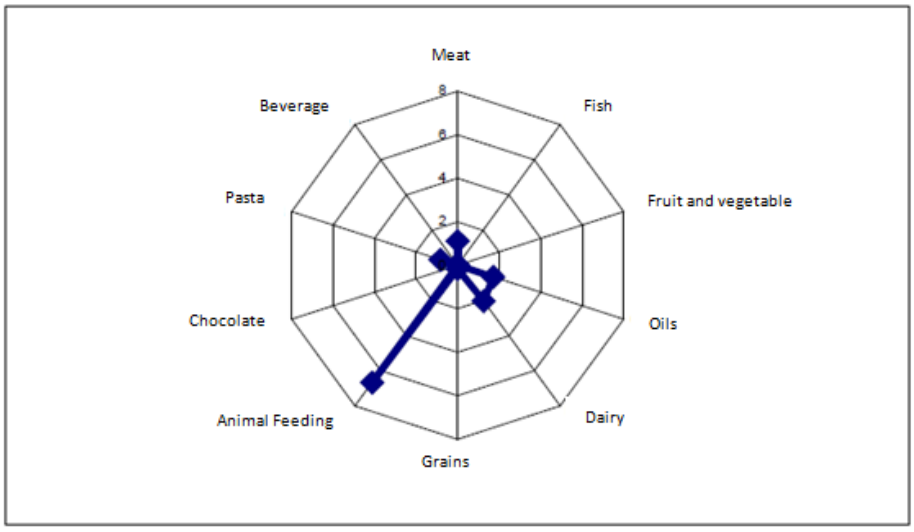


Fig. 17 Fara San Martino municipalities specializations

Casalanguida district includes 14 municipalities, with a total population of 12974 inhabitants. In the district there are 3773 companies, 45 of which are agro-industrial and 3071agricultural. In the agricultural sector were employed 3258 people. The district is specialized in the manufacture of oil and fats, in the grain processing, in the meat processing and in the dairy industry.

Table 11 Casalanguida district municipalities and their index. Source: Istituto G.Tagliacarne

ISTAT Code	Village	Index 1	Index 2	Index 3	Index 4
69011	Carpineto Sinello	1.49	1.66	0.00	0.00
69014	Casalanguida	1.47	1.64	3.88	0.17
69019	Castelguidone	1.34	1.39	2.58	7.17
69021	Celenza sul Trigno	1.37	1.47	0.97	0.30
69034	Fraine	1.24	1.49	2.58	1.79
69036	Fresagrandinaria	1.56	1.73	0.46	0.03
69038	Furci	1.50	1.58	3.10	1.10
69044	Guilmi	1.17	1.26	0.00	0.00
69047	Lentella	1.44	1.45	2.58	0.14
69051	Montazzoli	1.29	1.11	3.45	1.43
69061	Palmoli	1.46	1.59	2.58	0.24
69076	Roccaspinalveti	1.49	1.67	0.37	0.04
69079	San Buono	1.49	1.66	2.07	0.47
69080	San Giovanni Lipioni	1.57	1.93	1.29	0.27

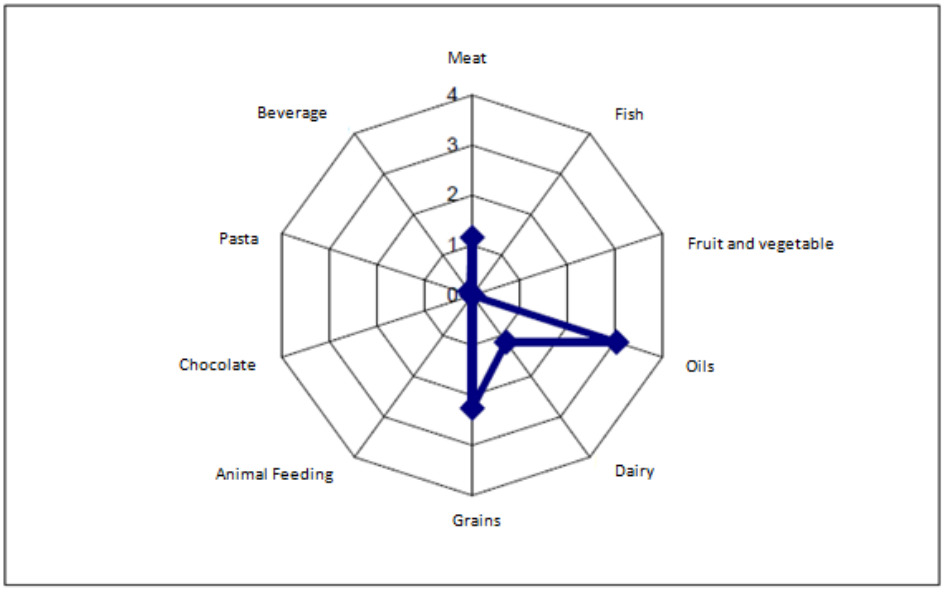


Fig. 18 Casalanguida municipalities specialization

3. Technical and economical support to farmers/rural enterprises

In order to promote and help farmers in their activities from a technical point of view, a wide range of support facilities are available through social unions and/or private associations of agronomists. Agricultural Unions, such as Coldiretti, Confagricoltura, etc, give their support to farmers also assisting them in fund-raising through Regional Projects linked to UE support.

4. Other information

As with many Mediterranean regions, Abruzzo's vegetation is characterized by the presence of different Mediterranean ecosystems; the coast and the surrounding areas are remarkable for the presence of typical Mediterranean plants such as myrtle, heather and mastic, but in hilly areas other typical Mediterranean species will also grow, including olive, pine, willow, oak, poplar, alder, arbutus, broom, acacia, capers, rosemary, hawthorn, licorice and almond trees, interspersed with oak trees. The fauna of Abruzzo is highly varied, and the animal symbol of the region is undoubtedly the Abruzzo Chamois that has had a remarkable recovery after risking extinction. Another animal typical of this region is the Marsicano Brown Bear. The natural parks of the region include the Abruzzo National Park, the National Park of Gran Sasso and Monti della Laga, the National Park Maiella and Sirente Velino .

This region obtained also obtained some recognition by EU for some traditional and typical products. In particular, two PDO (Protected Designation of Origin) for olive oil with the "*Aprutino – Pescara"* and "*Colline Teatine* e *Pretuziano delle Colline Teramane".* In 2005 "*Zafferano dell'Aquila"* gained the PDO. Regarding zootechnics "*Vitellone Bianco dell'Appennino Centrale"* obtained the Protected Geographical Indication (PGI). Regarding wines this region boasts 3 PDO (*Montepulciano d'Abruzzo, Montepulciano d'Abruzzo Cerasuolo* and *Trebbiano d'Abruzzo*) and 9 IGP (*Terre di Chieti, Colline Teatine, Colline Frentane, Colli del Sangro, Colli del Vastese* o *Histonium, Colline Pescaresi, Alto Tirino, Valle Peligna* and *Colli Aprutini*).

APULIA REGION

1. Description of Apulia Region

Final Beneficiary: Associazione Sviluppo Rurale- Rural Developement Association, Via Santa Margherita n. 34, 72100, Brindisi, ITALY

In comparison with the country as a whole, the economy of Apulia is characterized by a greater emphasis on agriculture and services and a smaller part played by industry. The share of gross value added generated by the agricultural and services sectors in the total gross value added of the region is in fact above the national average, whereas the share of industry is below. Agriculture in Apulia is largely modern and intensive, allowing the region to be at the first places in Italy for the production of many products.

In 2006 (ISTAT assessment) the GDP of the region amounted to 57421.8 million euro. This data is made up by a quota coming from the primary sector, equal to 5%, that produces considerable quantities of valuable produce as wheat, olives, grapes, fruit and vegetable, beets, milk, flowers, tobacco and, in some areas of the Salento, medicinal herbs that give rise to an intense activity of food processing and agro industry one.

In particular , the province of Brindisi has a long and important agricultural tradition that it is an essential pillar of its economy, both in terms of employment and production. Even if during the last decades the industrial sector, mostly specialized in agro-food, chemical and energy production, has seen a great progress. Anyway the agricultural vocation of Brindisi and surroundings area still remain an important resource for all the territory. The agricultural enterprises registered at 31 December 2011 are 8.594 and almost all (95,58%) belong to the agricultural cultivation. Less relevant result “Mixed activities”, which employ 315 employees (2,6%) and activities related to livestock with 255 employees (2,1%); marginal are the activities related to forestry and fishing.

Table 12 Registrated and active farms. Source Stock-View Infocamere

Type of activity	Registrated	Active	% active
Farm	8169	8079	95.58
Livestock	110	101	1.2
Farm and livestock	83	81	0.95
Economical and technical suuport	140	103	1.22
Forests and woods	12	11	0.13
Fishing	80	78	0.92
Total	8594	8453	100

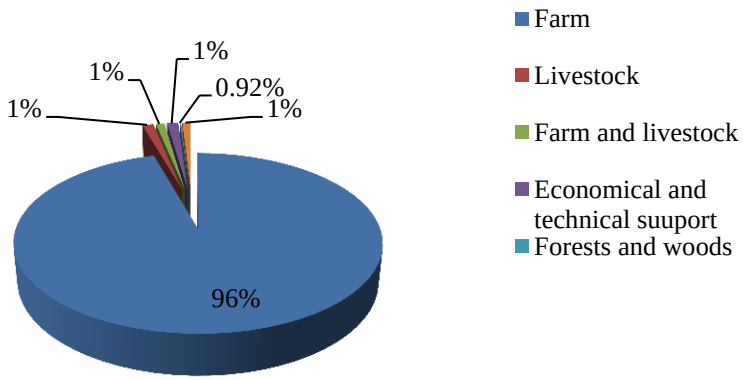


Fig. 19 Active farms of Brindisi province, 2011. Source Stock-View Infocamere

Alongside the primary cultivation activity, satellite industry of food-processing SMEs has developed in the last few decade, specialized in the processing of the main local products. The concentration of different agricultural productions, especially the typically Mediterranean ones such as olive, grapevine, wheat and vegetables foster the rise of an important food processing industry,

that has spread over the province territory with wine-producing companies that have established themselves into the Italian and foreign market. Also the deep-frozen food companies and those of tomato processing are active.

The agricultural products of Apulia are preferentially processed within regional borders, for almost all of the olives, milk and wheat. Of course there are exceptions. In particular, tomato and spinach are agricultural products that cannot find a processing industry large enough within the region.

Fishing, given the lack of municipalities that overlook the sea apart from Brindisi, did not have a large development such as agriculture.

The total number of employed in agriculture, expressed in units of work is on average approximately 132 000 units, with salaries which amounted to just over € 1 billion currents. The structure of the regional agricultural work market shows a high prevalence of employees than independent which reflects the distinctive features of agriculture on south and at the same time shows a tendency contrary to the rest of the nation where prevails the component of the self-employed.

1.2 State of the agricultural and forestry sectors

In Apulia region the prevalent conduction forms of farms are as follows:

- only family run business;
- prevalence of family run business.

Together, these forms of management, represent almost 90% of the farms present in the whole Apulia region.

Almost all of the farms in the Puglia region are made up as individual farms (350,295 of 352,510 companies).

According to ISTAT survey in Apulia region the 245 thousands agricultural enterprises (15% of the national amount) are characterized by very little dimensions.

The main sectors of agriculture are reported below.

Vegetables, fruits, olive oil and viticulture

This sector includes horticulture, viticulture, fruit and olives. The area that marked the territory for centuries is based on the culture of almonds, olives, tobacco, artichokes, and grain.

The most important productions, for volume products processing are: tomatoes (about 1.7 million tonnes produced) and olives (about 1.1 million tons).

Both represent the 35% of national production followed by lettuces, artichokes and fennel, as well as wine grapes. There are also high crops of carrots, eggplants, peppers, cabbage, wheat, corn and almonds.

About the important sector of typical products: the wine's production, together with that of the oil, it constitutes an important component of the Apulia economy and the elevated production of wines assigns to Apulia the title of "Italy Wine cellar". In fact, with almost the 15% of the whole Italian production, Apulia stays on to the vertexes of the production and also to the maximum levels for quality and merit.

Livestock

L '8% of the UAA is used in meadows and pastures. With about 6,000 livestock farms Puglia region shows the lowest incidence of the livestock sector on the agricultural sector as a whole (only 2.2% of the farms is of livestock). Net prevalence of cattle with regard to farmed species: companies with cattle account for 45% of total farms, 25% Sheep, Goats 13%, 1% buffalo, 16% Horses.

Dairy

Brindisi cheeses are mostly from sheep, due to the significant ranching of sheep and goats.

Within this sector the table cheeses represent the most important sector and is represented by 970 enterprises.

The most common cheese produced are: in the summer ricotta, which can be eaten fresh or matured for a few months; typical of the winter season are the Pecorino, ricotta and strong ricotta (or cottage cheese). Fresh popular cheeses are burrata, the junket, the Manteca, mozzarella or Fior di latte.

1.3 Agro food districts

The Agro food district of Apulia region is Volturara Appula. This district includes 23 municipalities with a total population of 54037 inhabitants. In the district there are 15441 farms, 127 of which are agro-industrial and 12535 agricultural. In the agricultural sector are employed 16581 people. The district is specialized in meat processing, grain processing and in the manufacture of oil and fats.

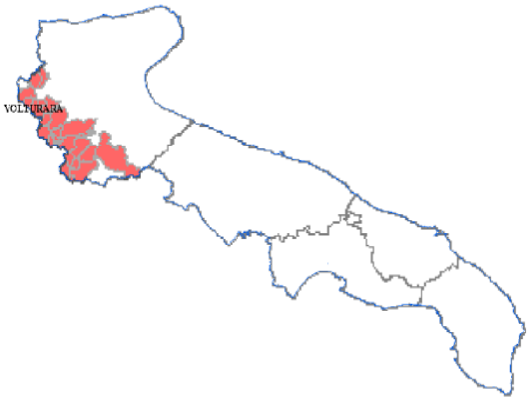


Fig. 20 Agro food district of Apulia region

Table 13 Volturara Appula district municipalities and their index. Source: Istituto G.Tagliacarne

ISTAT Code	Village	Index 1	Index 2	Index 3	Index 4
43010	Accadia	1.27	1.18	0.90	1.89
43018	Alberona	1.22	1.24	5.38	0.00
43027	Anzano di Puglia	1.12	1.05	1.15	1.08
43032	Ascoli Satriano	1.27	1.28	1.58	0.76
43038	Biccari	1.21	1.21	1.61	0.48
43057	Bovino	1.19	1.09	1.13	1.03
44004	Casalnuovo Monterotaro	1.06	0.92	0.90	1.21
44008	Casalvecchio di Puglia	1.29	1.44	0.49	2.10
44010	Castelluccio Valmaggiore	1.21	1.25	3.23	5.60
44030	Celenza Valforte	1.12	1.02	1.34	1.31
44032	Celle di San Vito	1.34	1.45	0.00	0.00
71022	Deliceto	1.20	1.24	1.85	5.03
71023	Faeto	0.92	0.93	2.69	5.03
71032	Monteleone di Puglia	1.19	1.10	0.90	0.38
71034	Motta Montecorvino	1.28	1.30	1.34	0.60
71035	Orsara di Puglia	1.14	1.03	0.96	1.51
71037	Panni	1.22	1.27	2.02	1.34
71044	Roseto Valforte	1.08	1.08	1.34	1.51
71048	San Marco la Catola	1.25	1.22	2.02	1.51
71052	Sant'Agata di Puglia	1.45	1.55	2.15	5.28
71058	Troia	1.16	0.99	1.17	0.99
71061	Volturara Apulla	1.37	1.46	8.07	4.53
71062	Volturino	1.23	1.28	4.84	3.57

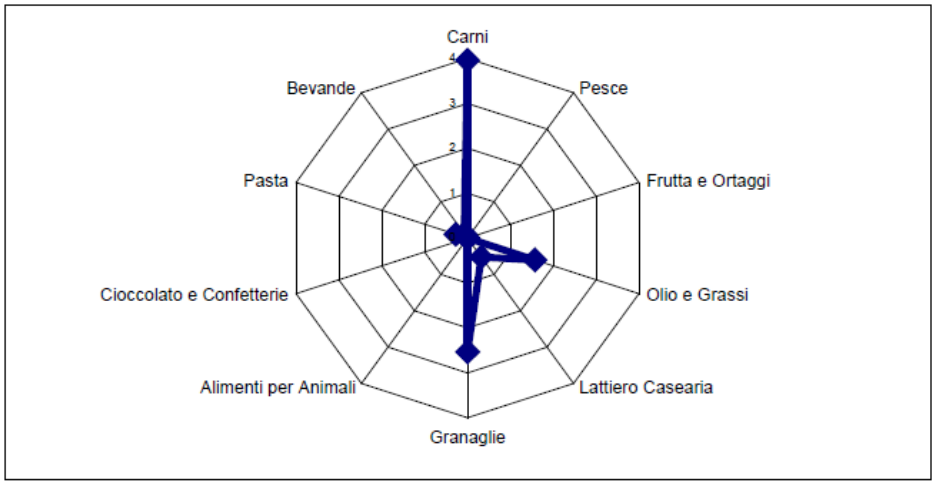


Fig. 21 Volturara Appula municipalities specializations

2. Technical and economical support to farmers/rural enterprises

The agricultural system is heavily depending from EU contribution (PAC).

National and regional policies support and help the agricultural sector. Several institutional bodies constantly monitor the situation in each region through studies highlighting the new needs emerging in both the demand and the offer of the agricultural sector and they are: INEA (National Institute of Agricultural Economics); CRA (Council for Research and Experimentation in agriculture) agricultural Universities and the National Statistics Institute, which periodically provides detailed analysis of the most important factors of this sector.

Then there are agricultural unions, first of all Coldiretti Puglia with 40,736 farms that promotes regional agriculture as an economic, human and environmental resource. Through its activity guarantees to agricultural enterprises development opportunities within a framework of full integration of agriculture with the economic and social interests of the country, providing support services in the planning and application of funds (like PSR), as well as technical support by agronomists. It also support agriculture through two projects: Impresa Verde, addressed to the competitive growth of farms, Campagna Amica, to build a dialogue between producers and consumers.

Furthermore, the Apulia region is divided into agro-industrial district, our pilot area of Brindisi is included in the District Agricultural and Food Quality Jonico-Salentino that includes 187 companies, with 78 public and private associations, 7 research centers and universities. In addition to the province of Brindisi the district includes the provinces of Taranto and Lecce and it is the result of the fusion of three proposals: the Agricultural and Food Quality Jonico-Salentino district, the Agricultural and Food Quality Hills Jonico-Tarantine district, the Production System "Salento" district. The District has received full approval by the Regional Council on 20 December 2010. It is a powerful tool to promote local development and competitiveness.

Finally, many farms are registered as cooperative and such as are organized in Confcooperative. The Confederation of Italian Cooperatives is the main organization, legally recognized, that represent and give assistance and protection to the cooperative movement and social enterprises. Confcooperative make available to its members services that support the enterprise at all stages of its life, from birth to the consolidation and growth. The services offered may be administrative, legal or expert advice.

3. Other information

In several studies, it has determined the need for renewal of companies in the food industry but the significant presence of small and medium-sized enterprises makes the transformation insurmountable, in terms of lack of information, skills and knowledge. While having an understanding of the problems to be solved, they very hard glimpse the ways to meet their particular needs.

Among the positive signals that can be noticed in the regional dynamics of the food industry it is underlined the growing presence of companies, mainly artisan, that strongly aim to a policy of high quality often linked to the connection with the products and their territory.

It is not a coincidence that in Apulia region a different trademarks to protect the uniqueness and authenticity of the products are born. First of all the *Marchio di Qualità Puglia* whose purpose is to:

- enhance the agricultural and food products with a high standard of quality control;
- to inform consumers through information and advertising about the quality of the products and services covered by the mark that participate in food quality scheme recognized by the Region of Puglia
- to promote and support the commercial marketing and sale of these products.

Then there are the DOP and IGP products, trademarks that define the product origin in a certain region, whose characteristics are essentially dependent on geographical origin.

Green trend

The study Green Italy 2011 detects a change towards green economy evenly throughout Italy, but with some points of excellence and high accelerations in the South. A green revolution is in progress that already affects 23.9% of Italian companies, which between 2008 and 2011 have invested in green technologies and products to create employment: 38% of recruitments planned for year 2011 was of professionals related to sustainability. But in the South regions there is an higher push about the new eco-friendly investments.

ALBANIAN TERRITORY

Project IPATECH - Miniaturization technology: synergies of research and innovation to enhance the economic development of the Adriatic

ALBANIA

1. Short description of Albania Vlora Region

Final Beneficiary AULEDA Agjensia e Zhvillimit Ekonomik Lokal, AULEDA- Local Economical Development Agency, Lagjia "Isa Boletini", Rruga Vlore-Skele, Pallati tek Banka IntesaSan Paolo, Kati III, 9401, Vlore, ALBANIA. auledavlore@gmail.com

Administrative division

Albania is divided into 12 administrative counties (Albanian: Region or Prefecture). These counties include 36 districts and 373 municipalities (Albanian: Municipality or Communes). 72 municipalities have city status. There are overall 2980 villages/ Communes in all Albania. Each district has its council which is composed of a number of municipalities. The municipalities are the first level of local governance, responsible for local needs and law enforcement.

Geography

Albania is a small country with a landmass of 28.748 sq km (about 11.000 sq miles), roughly the size of Belgium. It is situated in the western part of the Balkan Peninsula in the southeastern part of Europe. It shares borders with Montenegro and Kosovo to the North and Northeast, Macedonia to the East and Greece to the South. To the West, Albania has a coast that adjoins the Adriatic and Ionian Seas.

The Adriatic separates it from Italy via the Strait of Otranto (72km/45mi). Much of Albania's surface is mountainous – the average height above sea level is 708 m, (2,336 ft) and its highest peak, Mount Korabi on the Macedonian border, is 2.753 m (9,085 ft).

Most of the population lives in the south-central lowlands and on the coastal plain.The country has many rivers which originate in the high mountains and pass through steep gorges before reaching the plain and making their way to the sea.

Most of the main rivers have been extensively managed, usually to generate hydro-electricity.

Albania has nearly 450 km (280 mi) of seacoast, with the Adriatic running from the Montenegrin border south to the Bay of Vlora, where the Ionian Sea begins. The Ionian Cost is very rugged with rocky coves along the narrow coastal strip and steep mountains rising almost straight up almost much of its length. The highest point along this stretch is at the Llogara Pass, over 1.000m (3,300ft) high. Geologic activity and erosion have created many caves at the base of these cliffs, some of which were inhabited in prehistoric times. On the other hand, the Adriatic coast is a low-lying one, with large protected bays (such as those of Vlora and Durrës), which have been used as harbors since ancient times. The rivers that flow into the Adriatic have created fertile alluvial plains on these lowlands and, at their mouths, exceptionally rich wetlands, which are home to many waterfowl and migratory birds.

In Albania there are also 10 lakes. The most significant are:

• Lake Shkodra is the largest lake in the Balkans and straddles the border between Albania and Montenegro. Thousands of cormorants winter on this lake each year. It is relatively shallow and is

fed by many different rivers as well as by springs, making it quite varied in its aquatic life, with various species of carp and trout in its waters.

• Lake Ohrid is shared between Albania and Macedonia in the southeastern part of Albania. Around the lakeshore there are some tourist areas such as Lini, Pojska, Pogradec, Tushemisht, and Drilon. It is exceptionally deep and fed mainly by springs around the edge of the lake and on its floor.

• Above Lake Ohrid lies Prespa Lake, which is distinguished by its solitude and beautiful landscapes. In this lake there are very important breeding populations of Dalmatian and white pelicans.

Lakes Ohrid and Prespa are between two and four million years old and unique species of fish have evolved in them, among them the delicious koran and belushka.

Over a third of the territory of Albania – about a million hectares (2.5 million acres) – is forested and the country is very rich in flora. About 3.000 different species of plants grow in Albania, many of which are used for medicinal purposes. The forests are home to a wide range of animals such as wolves, bears, wild boars, and chamois. Lynx, wildcats, pine martens and polecats are rarer, but survive in some parts of the country.

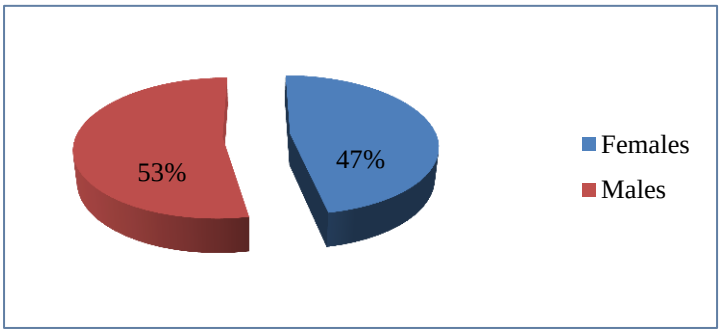
Vlora region

1. Farm structure

The farm structure in Albania is generally based on household farms (family's economy). As is shown in the table, in Albania there are 353341 households' activities and in Vlora Region there are 29830 households. If we are going to evaluate the population of these farms 47% are woman and 53 % are man.

Table 1: Farm structure (householders) in Albania

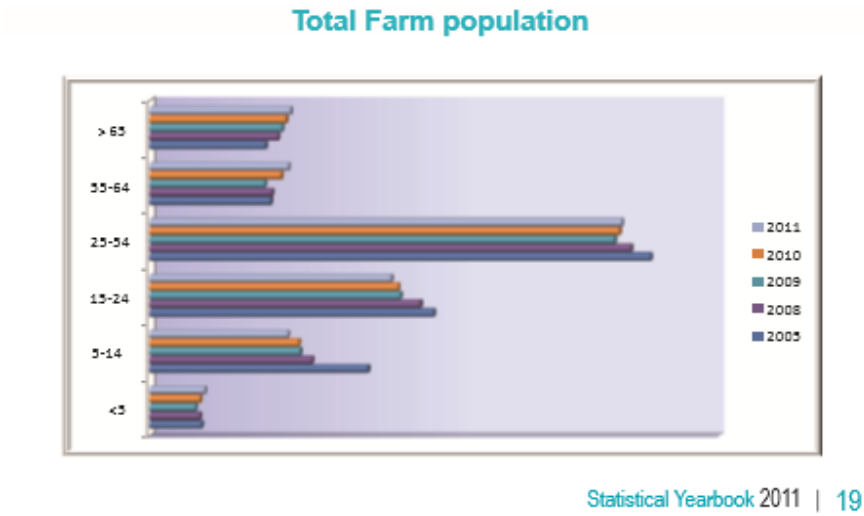
Tot. Households with activity	Total Farm Families	Average Families/ Household	Total farm population	Avg. Size of Household	Number of Females
26463	30834	1.2	127004	4.8	59401
26455	27486	1.0	123616	4.7	57772
32820	34457	1.0	144904	4.4	73682
32540	41632	1.3	156410	4.8	74750
56695	60468	1.1	274323	4.8	123586
11438	12776	1.1	45795	4.0	19669
30284	33663	1.1	128646	4.2	59566
10373	11610	1.1	54706	5.3	24703
23592	27150	1.2	110456	4.7	49012
39695	39965	1.0	183200	4.6	87999
33155	36630	1.1	174237	5.3	80035
29830	32026	1.1	141676	4.7	67626
353340	388697	1.1	1664973	4.7	777801



From the table No. 2 we notice that 32% of farms population belongs to age group 5-24 years, 40% of the population that is also part of active working belongs to the age group of 25-54 years and 24% belong to the age group 55-65 years. So for the region of Vlora the active population that work on the farm is on average 41.7% of the total population, the age group over 55 occupies 25.1% of the population.

Table 2: Total farm population in Albania and Vlora Region

No.	Region	Age						
		Under 5	5_14	15-24	25-54	55-64	>65	Total
1	Berat	4000	13020	23430	56501	14184	15870	127004
2	Diber	3614	19251	29174	45048	13349	13181	123616
3	Durres	6232	19274	27797	56358	17989	17254	144904
4	Elbasan	6705	17993	34380	64766	15853	16713	156410
5	Fier	17207	30998	47976	110590	34332	33220	274323
6	Gjirokaster	1056	4058	9960	19200	5846	5676	45795
7	Korce	4382	15510	23561	49758	19968	15467	128646
8	Kukes	2768	7352	14012	20664	5192	4718	54706
9	Lezhe	4322	11525	25475	42462	13561	13111	110456
10	Shkoder	7172	20291	41489	68510	22813	22925	183200
11	Tirane	11928	21829	35146	69812	15550	19973	174237
12	Vlore	7663	12637	26606	59166	15916	19689	141676
Republic		77049	193738	339006	662835	194553	197797	1664973
%		5	12	20	40	12	12	100



The age of farm owners referred to the data of Table 3 is relatively moderate. Only 1% of farms have new owners of the age of 25 years old, while referring to Vlora region about 1.7% of the farmers belong to this age group. The largest number of farms belongs to the owners of the age group of 25-64 years respectively 69%, while 30% belong to the age group of over 65 years. If we are going to analyze from the social point of view will understand that young people in rural areas

avoid agricultural and livestock activity, this trend will not affect positively the development of this sector in the next 10 years if it maintains the same rhythm.

Table 3: Agriculture household by age of holder in Albania

No.	Region	Years			
		<25	25-64	>65	Total
1	Berat	77	17961	8427	26463
2	Diber	440	18591	7425	26455
3	Durres		23954	8866	32820
4	Elbasan	340	21463	10773	32540
5	Fier	281	40795	15618	56695
6	Gjirokaster		8171	3267	11438
7	Korce	162	21938	8184	30284
8	Kukes	58	7380	2936	10373
9	Lezhe	131	16523	6937	23592
10	Shkoder	277	27748	11670	39695
11	Tirane		22408	10747	33155
12	Vlore	523	17029	12277	29830
Republic		2253	243961	107127	353340
%		1	69	30	100

Referring to gender we conclude that farm owners are men, who own 94% of the ownership. Only 6% of the ownership of the farms is owned by women. At regional level females own 13.6% of the property, 7.6% more than the average in Albania. Of course, this percentage relates to patriarchal mentality in rural areas and discrimination toward women in families and in society.

Table 4: Agriculture household by sex of holder in Albania

No.	Region	Farm Holders		
		Male	Female	Total
1	Berat	25129	1334	26463
2	Diber	24690	1765	26455
3	Durres	31177	1643	32820
4	Elbasan	29861	2679	32540
5	Fier	53074	3621	56695
6	Gjirokaster	10542	896	11438
7	Korce	28287	1997	30284
8	Kukes	10203	170	10373
9	Lezhe	22759	833	23592
10	Shkoder	37843	1852	39695
11	Tirane	31152	2003	33155
12	Vlore	25759	4070	29830
Republic		330476	22863	353340
%		94	6	100

From the statistical point of view but also the sector analyzes is very important the level of education of farmers, as reflected directly in the production and management of farm management. If we refer to the data of table 5 we realize that 63% of the farmers have finished the basic education, secondary education 34.2% and 2.8% higher education. Referring to the scale of farms qualification only 31.4% are qualified farmers for production and 2.4% are qualified for management and technical assistance. At regional level, 55.4% have the basic education, 37.9% that of secondary vocational education and 1.3% high education, University. Based on these figures the level of education of farmers is low, what is negatively influencing in the development of this sector.

Table 5: Level of education of holder in Albania

No.	Region	Level of education				
		Primary & Lower Secondary	Upper Secondary School		University	
			Agricultural	Other	Agricultural	Other
1	Berat	19602	5970	373	68	324
2	Diber	16848	4531	3370	1407	129
3	Durres	17555	11607		1641	
4	Elbasan	22137	9284	186	371	4
5	Fier	33391	20967		1552	245
6	Gjirokaster	6676	3776		632	177
7	Korce	20321	9118		486	
8	Kukes	6074	3634	295	269	
9	Lezhe	14174	6926	445	742	16
10	Shkoder	26305	10374	1762	560	192
11	Tirane	18134	10803	2272	301	695
12	Vlore	16422	11249	1088	401	451
Republic		217639	108239	9791	8430	2233

If we refer to the size of the farm the coefficient of the surface planted in proportion to the number of farms in the region of Vlora is 5.9 (higher than in any other region) and higher than the average coefficient of Albania, which is 5.0

Table 6: Farm size with Plants in Albania

No.	Region	Total Farms	Total Parcels		Avarage Farm Size (Ha)
			Planted	per Farm	
1	Berat	25898	133141	5.0	0.88
2	Diber	26455	106859	4.0	0.61
3	Durres	31114	141405	4.3	1.03
4	Elbasan	32427	171916	5.3	1.08
5	Fier	55480	261630	4.6	1.36
6	Gjirokaster	11438	55789	4.9	1.05
7	Korce	30118	157620	5.2	1.14
8	Kukes	10333	48305	4.7	0.66
9	Lezhe	23592	131475	5.6	0.85
10	Shkoder	39640	210844	5.3	1.14
11	Tirane	33126	172030	5.2	1.12
12	Vlore	29081	174605	5.9	0.98
Republic		348702	1765619	5.0	1.05

In Vlora region, referring to the data of table No. 7 which reflects the division of farms by activity that develops turns out that 78% of farms are mix, that means that develop agriculture and livestock activities, 21.9% of them develop farming activities only, 97.4% of them cultivate field plants, 84.1% of them deal with orchard and only 26.7% of farms do not work the land. If we take into analysis the last figure we have a significant% of farms that do not produce and develop agricultural and livestock activity.

Table 7: Farms with mixed corps

No.	Region	Farms with					
		Crops and Livestock	Crop without Livestock	Field Crops	Orcharding	Fallow land	Total Farms
1	Berat	20050	6413	25898	21794	4613	26463
2	Diber	24391	2064	26455	7266	5471	26455
3	Durres	24659	8161	31114	14074	10410	32820
4	Elbasan	30954	1586	32427	16611	5348	32540
5	Fier	44062	12456	55480	34340	14275	56695
6	Gjirokaster	8044	3394	11438	2688	6494	11438
7	Korce	26098	4187	30118	14770	18634	30284
8	Kukes	10072	300	10333	1258	1676	10373
9	Lezhe	21768	1824	23592	5971	8847	23592
10	Shkoder	37642	2053	39640	12190	2221	39695
11	Tirane	28050	5105	33126	14783	11210	33155
12	Vlore	23287	6543	29081	25102	7937	29830
Republic		299077	54086	348702	170847	97136	353340

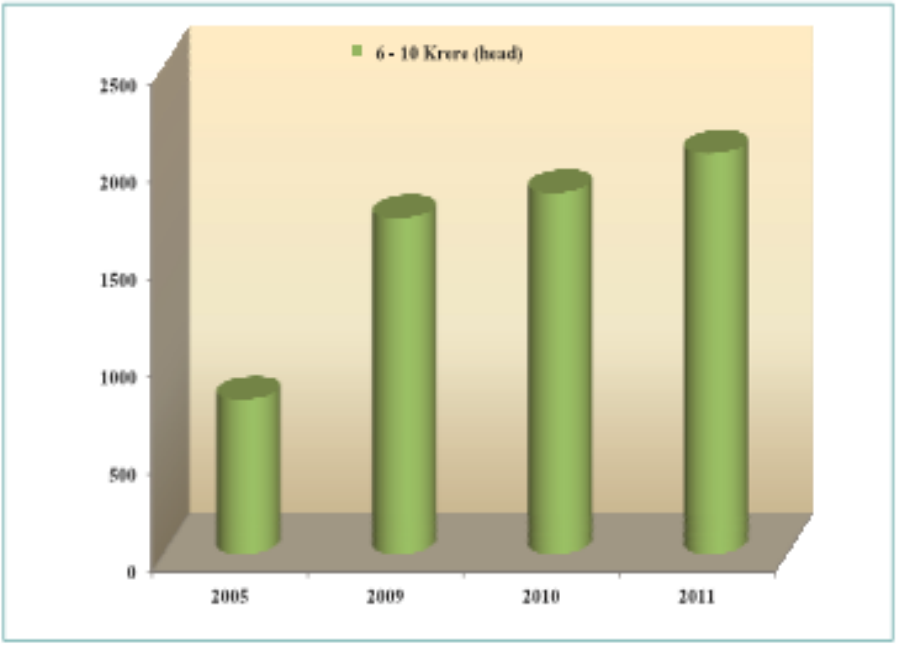
Characteristic of agricultural and livestock farms is that they are plotted with a non considerable disposable area what prevents the use of mechanized working tools. Thus from the total farms in the republic range 41% of them possess an area of 1.1-2.0 ha, 23.9% possess 0.6-1ha and only 17.4% of them possess over 2 ha.

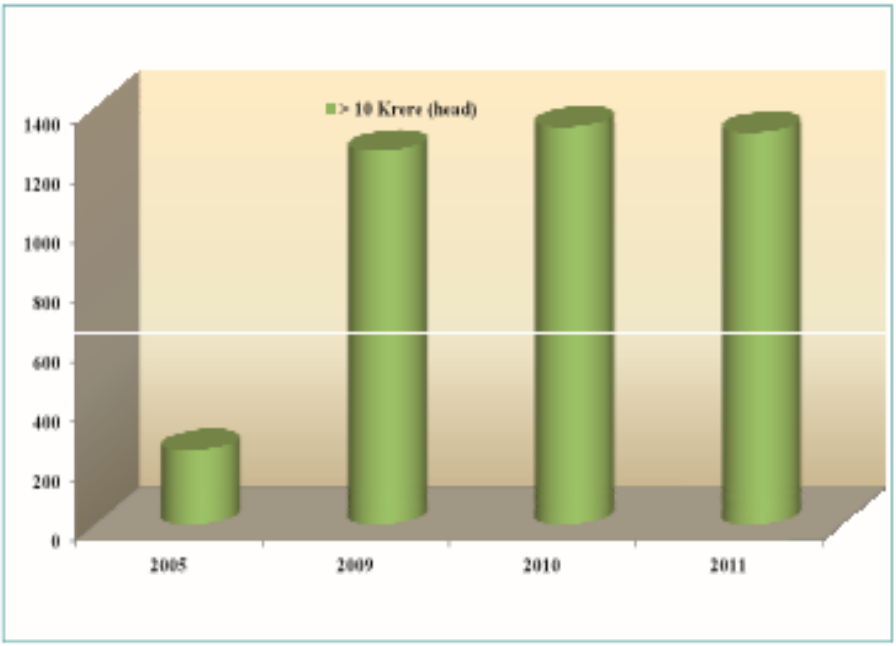
No.	Ha	Farms with					
		Crops and Livestock	Crop without Livestock	Field Crops	Orcharding	Fallow land	Total Farms
1	0.1 - 0.5	52391	8890	59936	10369	5461	61459
2	0.6 - 1.0	70080	14534	83178	42071	19385	84613
3	1.1 - 2.0	122987	22514	144264	80215	45825	145501
4	2.1 +	53619	8148	61326	38191	26466	61767
Republic		299077	54086	348704	170846	97137	353340

Table 8 Outliers

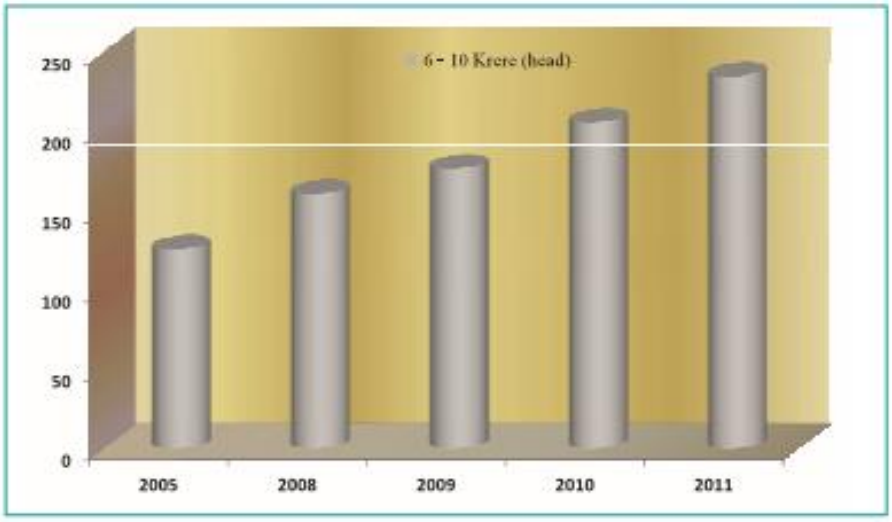
No	Emertimi	2005	2009	2010	2011	Description
1	Fermat me lope	1042	2977	3188	3372	farms with cow
	6-10 Krere	793	1722	1853	2055	6-10 Head
	mbi 10 Krere	249	1255	1335	1317	over 10 Head
2	Ferma me te leshta	5403	8087	7950	8347	farms with sheep
	51-100 Krere	3630	5005	4823	5607	51-100 head
	101-200 Krere	1243	2324	2329	2129	101-200 head
	mbi 200 Krere	530	758	798	611	over 200 head
3	Fermat me te dhirta	3218	3349	3311	3506	farms with goats
	51-100 Krere	2372	2141	2156	2263	51-100 head
	101-200 Krere	672	891	889	963	101-200 head
	mbi 200 Krere	174	317	266	280	over 200 head
4	Ferma me dosa	234	314	337	372	farms with sow
	6-10 Krere	126	177	206	235	6-10 Head
	mbi 10 Krere	108	137	131	137	over 10 Head
5	Pulari per veze	25	26	22	24	egg poltry farm
	1000-5000 Krere	10	6	2	7	1000-5000 Head
	5000-10000 Krere	1	1	3	1	5000-10000 Head
	mbi 10000 Krere	14	19	17	16	over 10000 Head
6	Pulari per mish	23	38	37	41	poultry meat farm
	1000-5000 Krere	11	16	11	20	1000-5000 Head
	5000-10000 Krere	3	5	4	2	5000-10000 Head
	mbi 10000 Krere	9	17	22	19	over 10000 Head
7	Pulari gjela deti	3083	6046	6159	6564	turkey meat farm
	21-50 Krere	2398	4724	4820	4936	21-50 Head
	51-100 Krere	576	1148	1153	1404	51-100 Head
	mbi 100 Krere	109	174	186	224	over 100 Head
8	Zgjoje me blete	1693	3853	4289	4412	beehives
	20-50 Koshere	1108	2666	2862	2850	20-50 beehives
	mbi 50 Koshere	585	1187	1427	1562	over 50 beehives

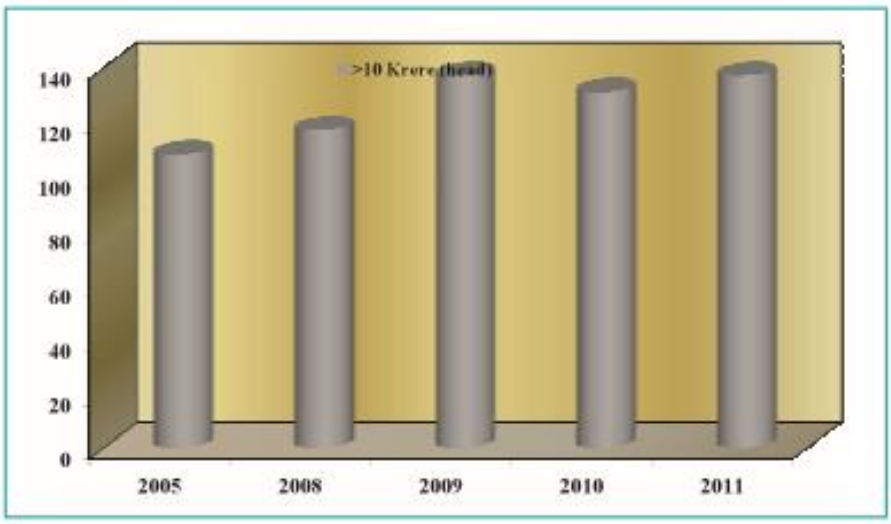
Fermat e medha me lope
Outliers with cow





Fermat e medha me dosa
Outliers with sow

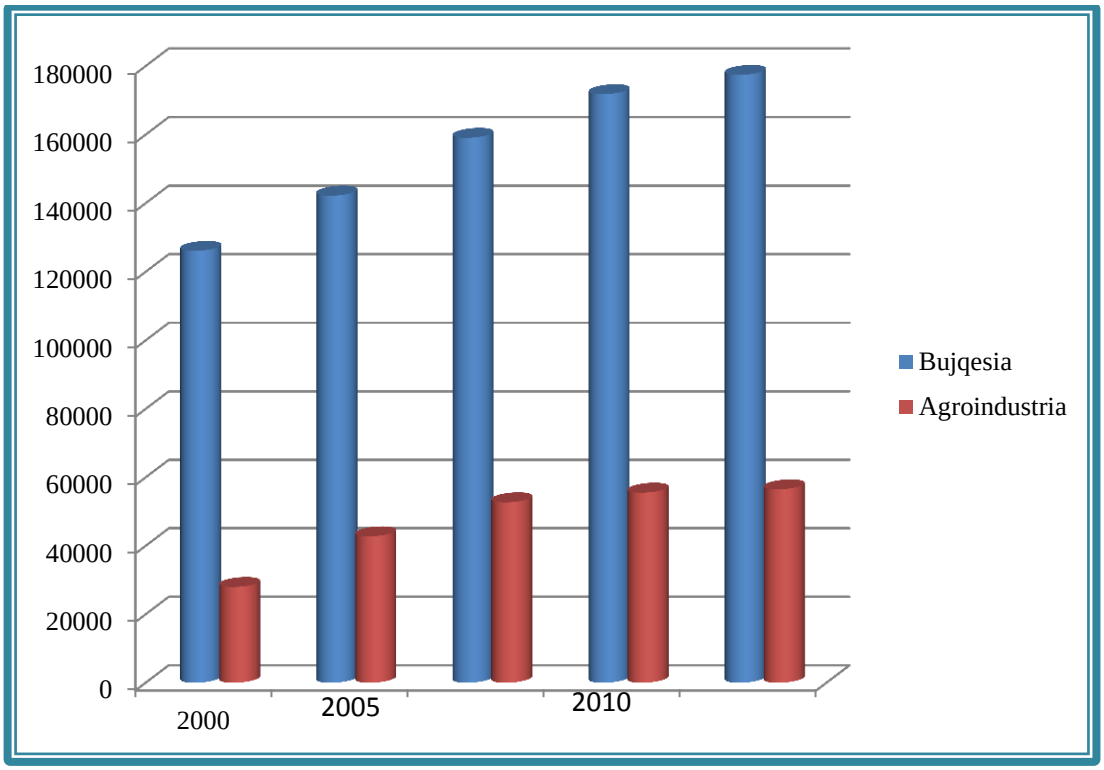




2. Economic data: Value of production by branches (Prices of 2006) in min ALL

Referring to the economic data presented in the following table we notice that the income according to the sectors from the year 2000 until 2011 have increased in 71 % for the agricultural sector and 49.5% for the agro industry sector, so an average of 7% per year for the agriculture and 4.9% per year for the agro industry.

Nr	Emertimi	2000	2005	2009	2010	2011	Description
	Bujqesia	126116	142220	159080	171802	177438	Agriculture
	Agroindustria	27990	42790	52731	55543	56524	Agro industry
	Total	154106	185010	211811	227345	233962	Total



Estimates of gross income from crops and livestock

Referring to the economic data of the following table for the agriculture and livestock income we notice that in 29830 farms, 29564 produce for selling, the other part that constitute about 9% of the total of farms produce only for their own needs. Referring to the farms that produce for selling 49.3% of the farms income come from the products that are cultivated in field (planted surface) and 50.6% come from the livestock product selling. From the graph is concluded that Vlora Region is the region that has the highest income per farm in Albania.

No.	Region	Fermat		% of Farms with sales	Gross income from Sales (000leke)			Income per Farm(Lek)
		Total	with Sales		Crops	Livestock	Total	
1	Berat	26463	26284	99.3	5529234	2980864	8510098	321585
2	Diber	26455	24526	92.7	1852080	3288049	5140129	194297
3	Durres	32820	30855	94.0	4293480	3851684	8145164	248177
4	Elbasan	32540	32460	99.8	3157769	5054779	8212548	252383
5	Fier	56695	55070	97.1	9482096	8477866	17959962	316782
6	Gjirokaster	11438	11037	96.5	537375	2935306	3472681	303609
7	Korce	30284	29122	96.2	5393375	5807229	11200604	369852
8	Kukes	10373	9101	87.7	238077	1955312	2193389	211452
9	Lezhe	23592	22118	93.8	1498603	2038827	3537430	149942
10	Shkoder	39695	38709	97.5	4289581	6086230	10375811	261388
11	Tirane	33155	32280	97.4	4235911	4899812	9135723	275546
12	Vlore	29830	29564	99.1	5850372	5998570	11848942	397216
Republic		353341	341126	96.5	46357954	53374528	99732481	282256

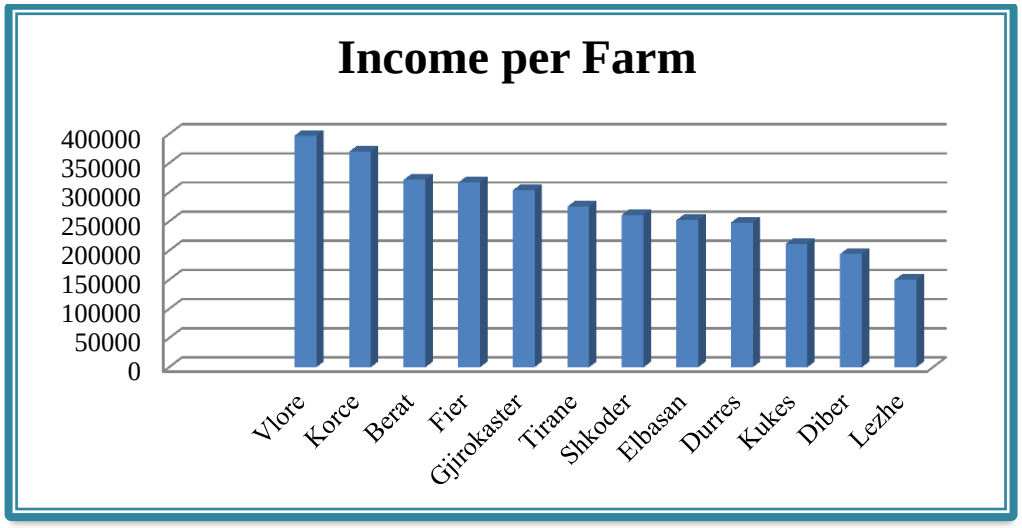
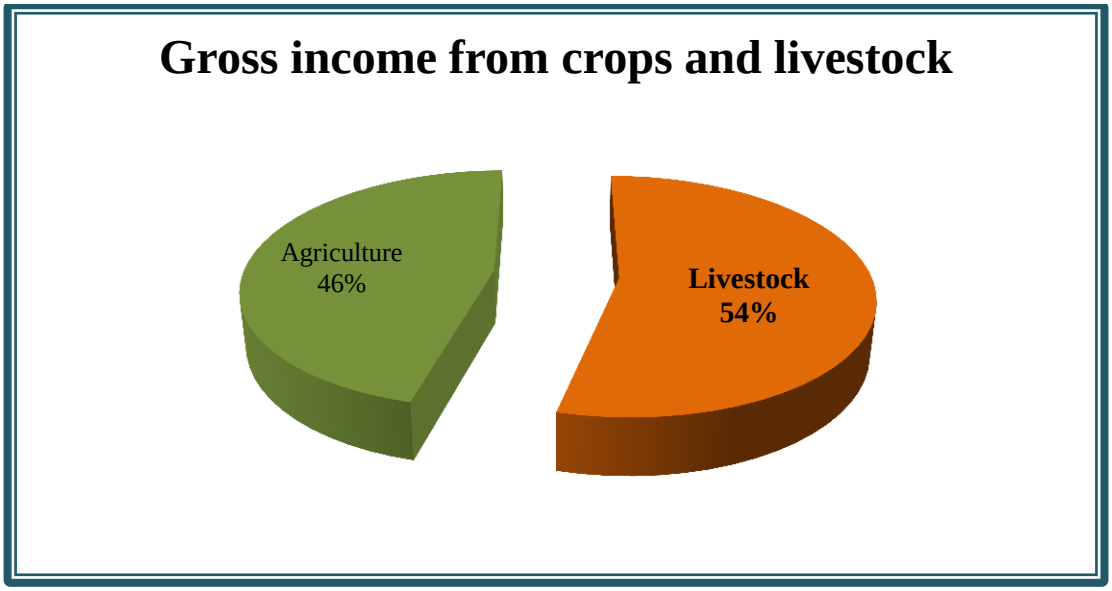


Table 9: Estimates of gross income from crops and livestock

Gross Income (Lek)	Fermat		% of Farms with sales	Income from Sales (000leke)			Income per Farm(Lek)
	Total	with Sales		Crops	Livestock	Total	
0-10000	17840	5625	31.5	21272	13901	35173	1972
10001-100000	78740	78740	100.0	2356645	2185036	4541681	57679
100001-400000	182191	182191	100	19357089	20314835	39671924	217749
>400000	74570	74570	100	24622948	30860755	55483703	744049
Total	353341	341126	96.5	46357954	53374527	99732481	282256



The income from the processed products varies according to the production and processing sectors. So the income from the processing of agricultural products for the farms that operate in Vlora Region constitute 92.8% and that of livestock products only 7.16%, the income from the production and selling of wine constitute 19.9%, the production of brandy 21.2% and 7% from the selling of butter and cheese.

Vlora Region gives 30.9% of the income from the production and selling of wine in all Albania, 16.4 % of the income from the production and selling of brandy in all Albania and 7 % of the income from the production and selling of butter and cheese in all Albania.

Income from processed products

No.	Region	Income from processed products (000leke)		
		Agriculture	Livestock	Total
1	Berat	535005	83573	618578
2	Diber	194361	707146	901507
3	Durres	160108	84948	245056
4	Elbasan	457099	279671	736770
5	Fier	611400	52627	664027
6	Gjirokaster	104787	92675	197462
7	Korce	78552	319339	397891
8	Kukes	29324	299151	328475
9	Lezhe	102759	56881	159640
10	Shkoder	382385	93242	475627
11	Tirane	248859	244519	493378
12	Vlore	1470154	113452	1583606
Republic		46357954	2427224	6802017

Income from processed products

No.	Region	Income from processed products (000leke)			
		Wine	Brandy	Butter	Cheese
1	Berat	8310	356712	19596	41786
2	Diber	37120	116249	135272	367176
3	Durres	14457	126956	12300	44697
4	Elbasan	1063	297324	22976	138925
5	Fier	267487	279010	13214	32847
6	Gjirokaster	8485	81765	24	76666
7	Korce	28230	48582	54272	228651
8	Kukes		29324	62047	197507
9	Lezhe	3908	95415	6259	50591
10	Shkoder	328714	52186	2494	90402
11	Tirane	7865	222826	63434	129802
12	Vlore	316415	336449	6957	106161
Republic		1022054	2042798	398845	1505211

3. Agriculture sector

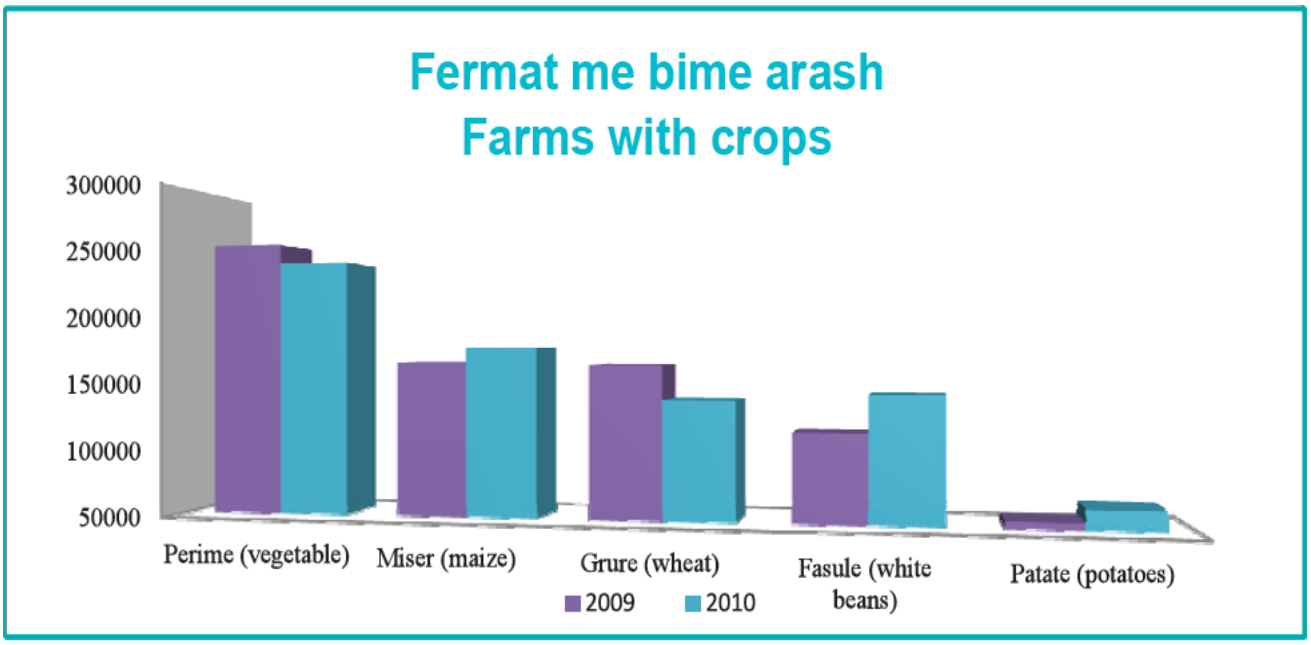
In this part there are given the statistical information on the agriculture, livestock, and fruit trees branches. Inside each branch there are summarized the data which reflect their development.
The data collected from two agricultural surveys consist in this information.

1. Farm structure
2. Field Crops
3. Tree Crops
4. Livestock
5. Farm Practices

By analyzing the data for the agricultural sector and in particular the structure of farms according to the agricultural production we realize that the farms of Vlora Region plant considerably cereals and vegetables and less potatoes and beans.

Tab.1. Farms with crops

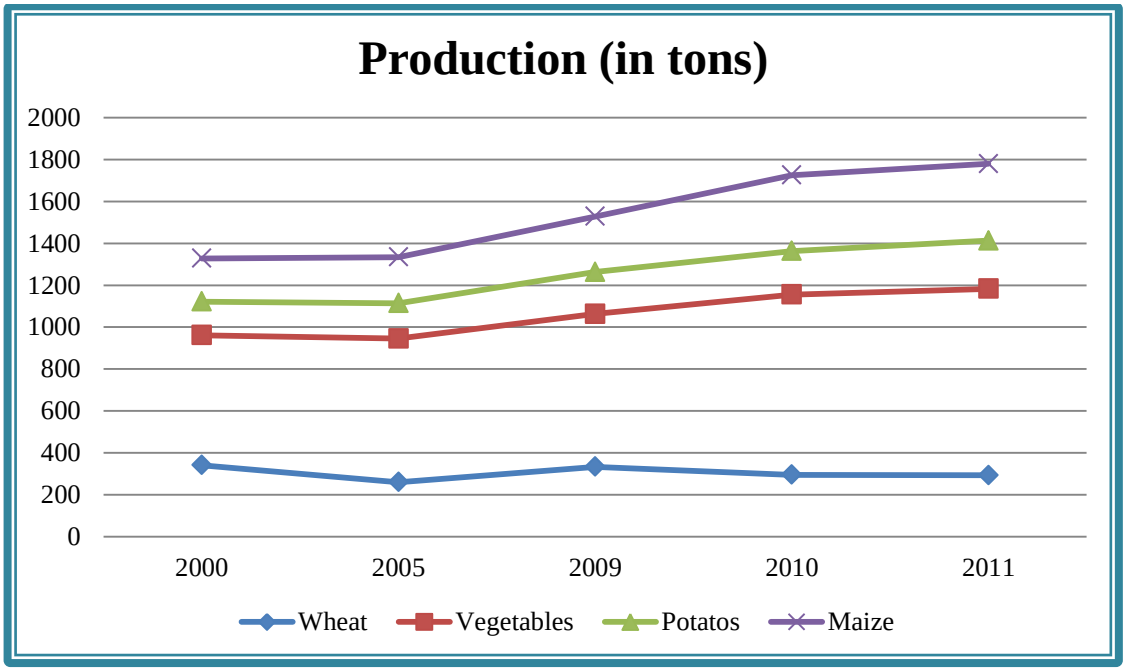
No.	Region	Number of farms					
		Field Crops	With wheat	With maize	White beans	With vegetable	With potateos
1	Berat	25898	12420	16317	10362	19661	5750
2	Diber	26455	5472	22545	20899	21850	7410
3	Durres	31114	9295	17724	12504	25345	4237
4	Elbasan	32427	22271	20011	12245	22825	10235
5	Fier	55204	28918	30588	12395	31933	4213
6	Gjirokaster	11438	2735	1931	2011	8777	2447
7	Korce	30118	22291	15068	16359	18876	10176
8	Kukes	10333	2587	7200	6485	9492	716
9	Lezhe	23592	8791	12494	10878	16356	4052
10	Shkoder	39640	7265	24231	13570	37580	12298
11	Tirane	33126	10344	19759	17209	25931	7339
12	Vlore	29081	7563	8284	8053	19891	8484
Republic		348426	139952	196152	142970	258517	77357



Tab.2 Field crop production in 1.000 tons

	Emertimi	2000	2005	2009	2010	2011	Description
1	Drithera	565.8	511.2	629.9	693.8	701.1	Cereals
	Grure	341.1	260	333.1	294.9	292.8	Wheat
	Miser	205.7	219.9	265.1	362	366.4	Maize
	Theker	1.5	3	2.2	2.3	3.4	Rey
	Elb	1.8	4.1	4.5	7.3	8.7	Barley
	Tagjira	15.7	24.2	25	27.3	29.9	Oats
2	Perime	620	684.9	730	860.4	890.2	Vegetables
3	Patate	161	169.3	200	208	230	Potatoes
4	Fasule	25.2	23.6	23	24	25.3	White beans
5	Duhan	6.2	1.9	1.6	1.7	1.9	Tobacco
6	Lule dielli	2.9	2	2.3	2.6	3	Sunflower
7	Soje	0.6	0.7	0.5	0.5	0.6	Soybean
8	Foragjere	4730	5197	5326	5429	5900	Forage

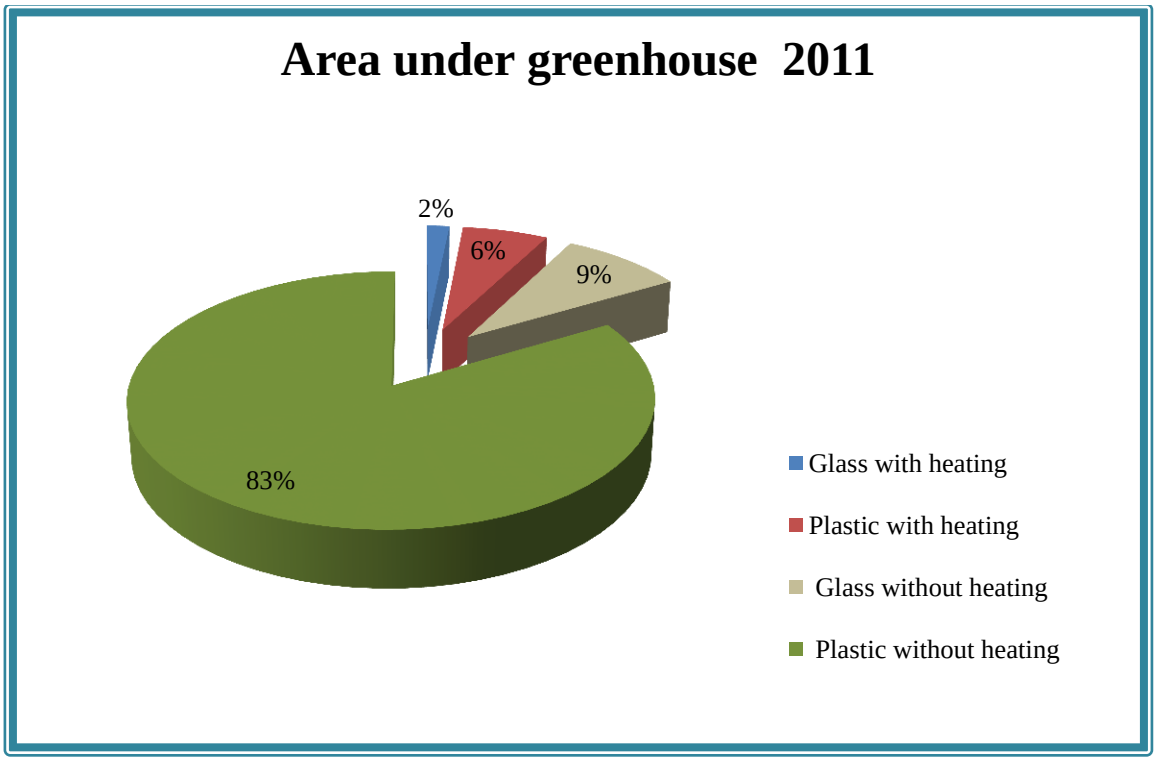
From the above table is asserted from 2000 until 2011 a very significant increase in the production of cereals, vegetables and potatoes, same level of production for beans and sun flower, is reduced the production for tobacco and soy.



From table 3 we realize the increasing of the surface by almost 3 times of the heat greenhouses, mainly those with plastic and nearly two times the increasing of the greenhouse surfaces with solar heating.

Tab.3 Area under greenhouse

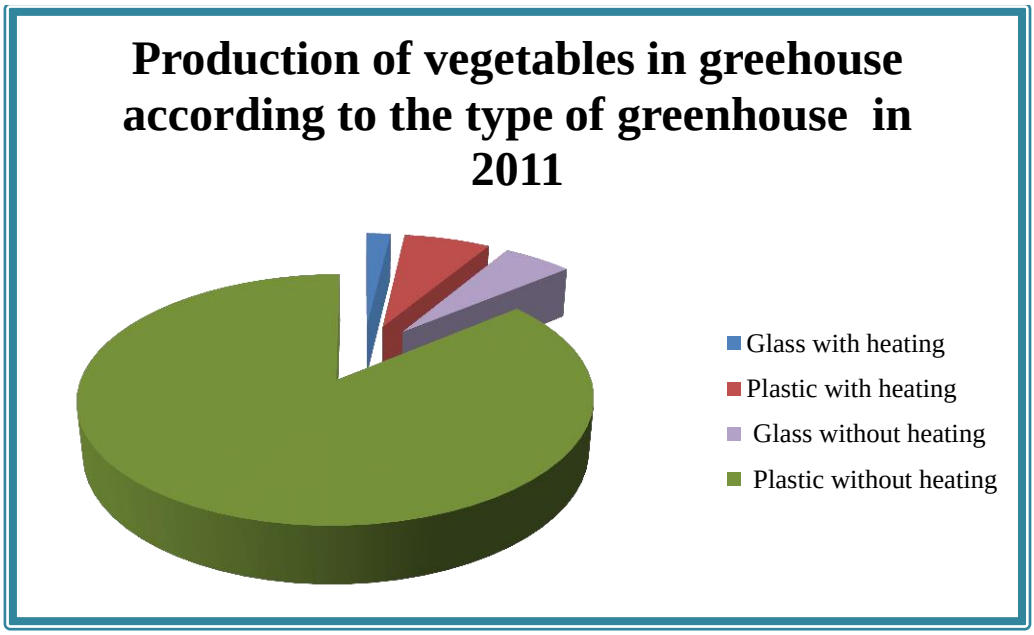
Emertimi	2000	2005	2009	2010	2011	Description
Serra me ngrohje	17	35	55	57	68	White heating
me xham	15	11	14	16	14	With glass
me plasmas	2	24	41	41	54	With plastic
Serra diellore	445	615	673	771	812	Without heating
me xham	114	81	75	80	78	With glass
me plasmas	331	534	598	691	734	With plastic
Gjithesej	462	650	728	828	880	



Tab.4 Production of vegetables in greenhouses

Emertimi	2000	2005	2009	2010	2011	Description
Serra me ngrohje	1688	2580	5007	4592	6104	Heating greenhouses
me xham	1240	527	1173	1330	1336	With glass
me plasmas	448	2053	3834	3262	4768	With plastic
Serra diellore	36892	56082	55271	61725	64856	Solar greenhouses
me xham	8778	5516	3914	3914	3803	With glass
me plasmas	28114	50566	51357	57811	61053	With plastic
Gjithesej	38580	58662	60278	66317	70960	Total

From Table 4 and the following graph we conclude that during the last decade has significantly increased over 60% the production obtained from greenhouses with solar heating and with a much slower rhythm the production obtained from the heat greenhouses with glass or plastic. This is explained by the high costs of equipment for the greenhouses heating and lack of subsidy policies in this regard.



3.1 Orcharding

Orchard is one of the ancient traditions of Albanian agriculture. Production of fruit trees, olive trees, and citrus has been and continues to be a characteristic feature for Vlora region in comparison with other regions. In the last decade is seen a doubling in the number of fruit trees, olive groves, vineyards, tripling of citrus productivity and a slight increase in the vine productivity. This is because during the last decade have functioned the subsidy schemes by the Albanian government in the sector of olive trees, vineyards and citrus.

Tab 1. Number, yield and production of orchard

Nr	Description	2000	2005	2009	2010	2011
I	Fruit trees					
	Total (000 trees)	5573	7120	9882	10190	11225
	In production (000 trees)	4179	5370	7319	7439	8313
	Yield (kg/ trees)	15.5	17.2	20.5	22.6	22.6
	Production (000 ton)	64.9	90	150.4	167.8	188.1
II	Olive trees					
	Total (000 trees)	3611	4264	5590	6255	7443
	In production (000 trees)	3256	3488	4270	4298	4576
	Yield (kg/ trees)	11.1	8.6	11.4	16.3	14.3
	Production (000 ton)	36.2	30.2	48	70	65.4
III	Citrus trees					
	Total (000 trees)	391	550	707	763	916
	In production (000 trees)	305	421	486	530	589
	Yield (kg/ trees)	8.8	12.3	20.6	25.2	25.5
	Production (000 ton)	2.6	5.2	10	13.4	15
IV	Pergola					
	Total (000 trees)	4638	5364	5503	5501	5743
	In production (000 trees)	3856	4536	4916	5100	5208
	Yield (kg/ trees)	11.9	12.3	13.5	16.2	16
V	Vineyard					
	Total (ha)	5824	7994	9806	9712	10073
	In production (ha)	4613	6637	8532	8630	9077
	Yield (kv/ ha)	70.5	90.1	113	118.6	123.4

	Grape total (000 ton)	79.3	115.1	162.8	184.9	195.2

According to table 2 Vlora region with 3 main districts, Vlore, Sarande, Delvine has about 3.5 % fruit trees planted allover Albania, 17.3% olive trees, 33.8% citrus, 9.2% vine and 11.8% vineyard. So the specific weight of Vlora Region compared to 11 other regions in the sector of olive, citrus and vineyard is relatively very high.

Tab.2. Numerical situation in orchand (in 1.000)

Nr	Region	Fruit trees	Olives	Citrus	Pergola	Vineyard (ha)
I	Berat Region	972	1420	85	503	1082
1	Berat	721	1209	67	274	711
2	Kucove	115	193	17	73	120
3	Skrapar	136	18	1	156	251
II	Diber Region	1178	0	0	334	185
1	Bulqize	262	0	0	87	20
2	Diber	714	0	0	110	58
3	Mat	203	0	0	138	107
III	Durres Region	613	331	65	314	732
1	Durres	455	208	59	190	657
2	Kruje	158	123	7	124	75
IV	Elbasan Region	1166	1189	61	668	1206
1	Elbasan	690	914	41	381	860
2	Gramsh	98	53	0	90	120
3	Librazhd	255	1	0	165	94
4	Peqin	123	220	20	32	132
V	Fier Region	1241	1792	268	749	2021
1	Fier	511	926	151	390	982
2	Lushnje	582	476	115	314	761
3	Mallakaster	149	389	2	45	278
VI	Gjirokaster Region	294	216	1	303	714
1	Gjirokaster	114	16	1	117	261
2	Permet	85	14	0	80	303
3	Tepelene	95	186	0	107	150
VII	Korce Region	2597	0	0	262	1001
1	Devoll	775	0	0	50	114
2	Kolonje	194	0	0	47	118
3	Korce	1326	0	0	112	528
4	Pogradec	302	0	0	54	241
VIII	Kukes Region	814	0	0	329	87
1	Has	134	0	0	65	18
2	Kukes	227	0	0	110	52
3	Tropoje	453	0	0	155	17
IX	Lezha Region	379	163	27	500	419
1	Lac	127	71	9	135	131
2	Lezhe	148	92	18	163	198

3	Mirdite	104	1	0	202	90
X	Shkoder Region	786	345	35	790	670
1	M.Madhe	289	125	1	213	347
2	Puke	148	0	0	202	31
3	Shkoder	350	221	34	374	292
XI	Tirana Region	790	648	64	462	764
1	Kavaje	390	223	28	115	317
2	Tirane	400	425	36	347	447
XII	Vlora Region	395	1340	310	528	1194
1	Delvine	48	173	27	60	180
2	Sarande	100	394	237	200	140
3	Vlore	247	773	46	268	874
REPUBLIC		11225	7443	916	5743	10073

If we refer to the data for the use of mechanized tools in land working shows that among 29 830 farms, 72.2% of them work the land by hand or with animals. This is due to higher prices of land working by mechanized tools, higher prices for their renting or purchase.

Tab.3. Farms by plowing methods

Nr.	Region	With Hand	Animals	Tractors	Total
1	Berat	20869	7518	17987	26463
2	Diber	16542	6137	17844	26455
3	Durres	17473	1802	26558	32820
4	Elbasan	12472	580	31044	32540
5	Fier	25692	9753	46864	56695
6	Gjirokaster	5410	1402	9916	11438
7	Korce	24378	16322	21140	30284
8	Kukes	7054	2985	6110	10373
9	Lezhe	16672	2723	15150	23592
10	Shkoder	16023	2517	36725	39695
11	Tirane	20699	3960	29183	33156
12	Vlore	21541	10778	21371	29830
Republic		204825	66477	279892	353341

Farms by plowing methods

Nr.	Ha	With Hand	Animals	Tractors	Total
1	0-1	85110	24441	113150	146073
2	1.1-2.0	84748	29347	116658	145501
3	>2.1	34966	12690	50085	61767
Republic		204825	66477	279892	353341

Agricultural farms and the one that deal with orchards use constantly fertilizers in the amount of 99.1% which means that only 1.9% use organic fertilizer the other part use chemical fertilizer.

Tab. 4. Farms by type of fertilizer used

Nr.	Region	Total Crop Farms	Farms Using Fertilizers	Farms Using Fertilizers %	Kind of Fertilizer Used	
					Manure	Chemical
1	Berat	26463	26106	98.7	2656	26106
2	Diber	26455	26201	99	10191	25995
3	Durres	32820	29974	91.3	7490	29739
4	Elbasan	32540	31338	96.3	221	31338
5	Fier	56517	53816	95.2	4538	53643
6	Gjirokaster	11438	7009	61.3	859	6438
7	Korce	30284	27619	91.2	6310	27604
8	Kukes	10373	7654	73.8	58	7654
9	Lezhe	23592	22873	97	476	22873
10	Shkoder	39695	33549	84.5	780	33549
11	Tirane	33155	32862	99.1	1524	32626
12	Vlore	29830	28940	97	984	28940
Republic		353163	327941	92.9	36087	326506

In the following table are described the fertilizers used including urea, ammonium nitrate, phosphate, superphosphate etc. What we should consider is their use outside the criteria, unfounded on soil tests because are missing the structures to achieve them. Also, about 82.5% of farms use pesticides, averaging 1 kg of pesticides per farm.

Tab.5. Farms that use chemical fertilizers

Nr.	Region	Farms By Type of Fertilizer Used				
		Urea	Amon. Nitrat	D. phosphate	Superphosph.	Others
1	Berat	24504	18742	23468	11259	211
2	Diber	8589	23324	13647	5233	4756
3	Durres	21912	21979	17599	7011	4752
4	Elbasan	20796	29794	24563	17841	69
5	Fier	46974	42211	36553	27268	5812
6	Gjirokaster	3476	5215	3124	1870	1322
7	Korce	11284	25946	25237	100	549
8	Kukes	4325	7123	3249	2389	1786
9	Lezhe	18910	18507	12027	6754	659
10	Shkoder	24852	24596	22579	739	312
11	Tirane	28929	30284	15351	16661	1255
12	Vlore	14243	25844	16916	7444	2345
Republic		228793	273565	214313	104569	23828

Tab.6. Pesticides used in farms

Nr.	Region	Farms Using Fertilizers	Farms Using Fertilizers %	Used Quantity (Kg)	Used Quantity per farm (Kg)
1	Berat	23165	87.5	60597	2
2	Diber	14476	54.7	6331	0
3	Durres	21136	64.4	32913	1
4	Elbasan	21712	66.7	22063	1
5	Fier	39266	69.5	99612	2
6	Gjirokaster	6811	59.5	9648	1
7	Korce	17372	57.4	30869	1
8	Kukes	4318	41.6	3648	0
9	Lezhe	13420	56.9	5078	0
10	Shkoder	23222	58.5	41924	1
11	Tirane	25183	76	46274	1
12	Vlore	24628	82.6	27266	1
Republic		234709	66.5	386224	1

Tab.7. Farms by type of owned equipment

Nr.	Region	Farms by types of owned equipment			
		Cars	Computer	Wash machine	Fridge
1	Berat	6187	1368	25689	26063
2	Diber	2463	1642	20522	25286
3	Durres	10211	5047	32426	32467
4	Elbasan	584	1208	30239	32399
5	Fier	14105	7578	54572	55908
6	Gjirokaster	1986	366	10500	11438
7	Korce	1281	1280	29229	30208
8	Kukes	1608	2363	9824	10373
9	Lezhe	2503	1618	19863	23592
10	Shkoder	3069	7571	31768	38965
11	Tirane	13733	4901	32082	33155
12	Vlore	9939	5291	29830	29830
Republic		67669	40233	326544	349684

Tab.8 Number of agriculture machineries

Nr.	Region	Tractor with Wheels	Minitractor	Sowing machinery	Mower
1	Berat	515	231	113	71
2	Diber	291	106	100	47
3	Durres	438	304	179	143
4	Elbasan	863	530	393	148
5	Fier	2376	935	833	557
6	Gjirokaster	273	95	98	81
7	Korce	1244	1074	570	170
8	Kukes	252	192	157	52
9	Lezhe	456	277	182	194
10	Shkoder	857	311	155	253
11	Tirane	488	400	231	168
12	Vlore	526	310	301	123
Republic		8579	4765	3312	2007

The farmers of Vlora Region have not considerably invested in mechanized tools, what is reflected in a total of 1260 tools for 29830 farms, an average of 1 mechanized tool for 23 farms.

Tab.9 Irrigation capability

Nr.	Region	Arable land	Irrig. Capability		%
			potential	actual	
		1	2	3	4 (3.1)
1	Berat	52908	13150	10180	19.2
2	Diber	41056	22945	15996	39
3	Durres	40568	20593	12650	31.2
4	Elbasan	72872	33748	21190	29.1
5	Fier	121961	76387	46432	38.1
6	Gjirokaster	45111	19065	10018	22.2
7	Korce	90909	35791	22250	24.5
8	Kukes	25292	12241	8006	31.7
9	Lezhe	34736	18814	9776	28.1
10	Shkoder	50625	34615	16948	33.5
11	Tirane	56609	14613	10450	18.5
12	Vlore	62873	34004	20500	32.6
Republic		695520	335966	204396	29.4

Even investments the irrigation sector left much to be desired if we compare it with the actual irrigation capacity, its capacity utilization rate goes 32.6%. Certainly alongside with private investment a very important place occupy also the investments of the Albanian government in particular in irrigation canals.

3.2 Livestock

Due to its geographical position and the early traditions of the mountain area of Vlora Region, farming is a sector that has seen significant development in the recent years. In Vlora region the number of livestock and cattle goes in 23 287 respectively 2762 cattle, 7385 sheep, 2925 goats, 21 449 birds and chickens.

Table.1 Livestock's farm

No	Region	Farms with :			
		livestock	cattle	sheep	goat
1	Berat	20050	13782	3905	2199
2	Diber	24391	23475	8880	3470
3	Durres	24659	17164	1712	281
4	Elbasan	30954	26473	7393	3080
5	Fier	44062	27764	3952	1812
6	Gjirokaster	8044	5382	2802	1697
7	Korce	26098	18831	7453	599
8	Kukes	10072	9648	3105	939
9	Lezhe	21768	16372	1179	4684
10	Shkoder	37642	28000	5717	2090
11	Tirane	28050	20301	1856	717
12	Vlore	23287	7262	7385	2925
Republic		299077	211454	53339	24494

Table 2: Livestock farms

No	Region	Farms with :			
		horses/donkeys	poultry	chicken	becchives
1	Berat	8295	18827	18827	432
2	Diber	8195	20360	20360	1437
3	Durres	2097	23078	23078	554
4	Elbasan	7147	30049	30049	678
5	Fier	12030	42426	42313	1244
6	Gjirokaster	3041	7140	7140	630
7	Korce	9725	19383	19290	2015
8	Kukes	3174	8367	8367	1941
9	Lezhe	1144	20123	20123	488
10	Shkoder	3330	35113	35113	870
11	Tirane	3800	27810	27810	281
12	Vlore	12392	21449	21449	2600
Republic		74369	274124	273319	131071

The increasing of the number of cattle and livestock for the last 10 years period has significantly reflected in the increasing of the quantity of milk from cattle and sheep, and the reduction of the quantity of milk produced by goats. The quantity of eggs produced during the last decade is increasing from year to year, honey also has increased the quantity of production in this 10-years. Is quadruplicated the amount of chicken meat production, increasing in 60 the amount of pig and lamb meat production.

Table 3: Livestock production (in 000 tons)

No	Emertimi	2000	2005	2009	2010	2011	Description
1	Qumesht	948	1076	1045	1070	1101	milk from:
	lope*	807	930	907	930	955	cows*
	dele	70	75	75	77	79	sheep
	dhie	71	71	63	63	67	goats
2	veze (milion kokra)	530	738	811	846	858	eggs (in million)
3	lesh	3.4	3.4	3.2	3.3	3.4	sheep wool
4	mjalte (tone)	1076	1816	2745	2886	2898	honey (in ton)
5	Mish, peshe e gjalle	112	133	143	145	147.9	live weight of meat
	gjedhi	63	68	66	68	68.7	cattle
	te imtash	35	41	44	44	45.3	sheep and goat
	derri	10	15	16	16	16.8	pig
	shpendi	4	9	17	17	17.1	poultry

*is included also the milk for calves feeding.

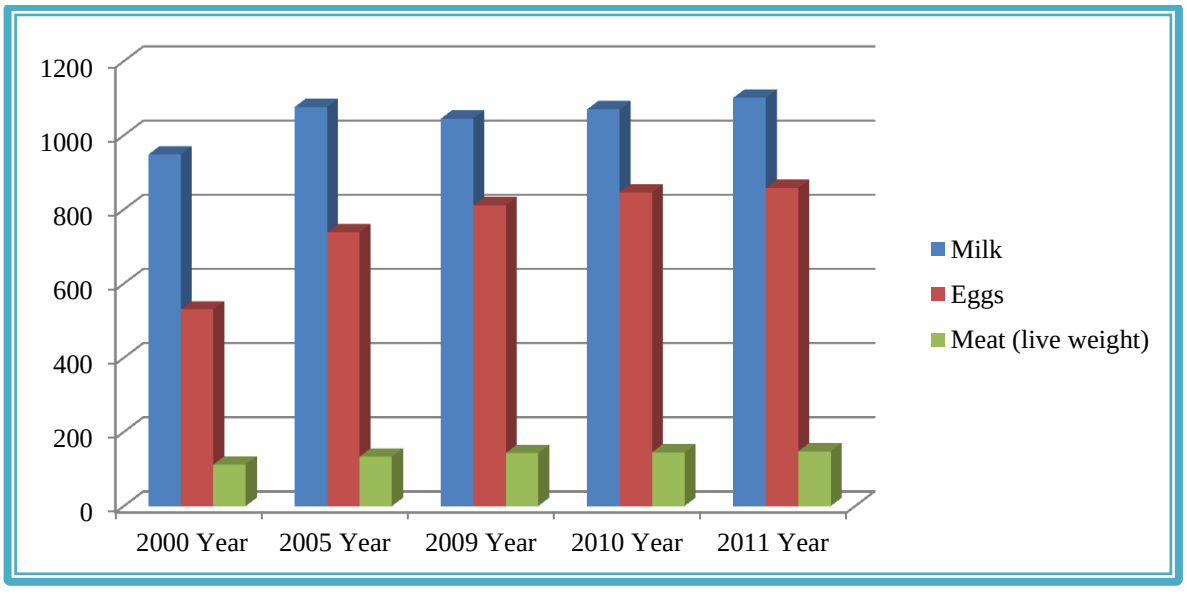
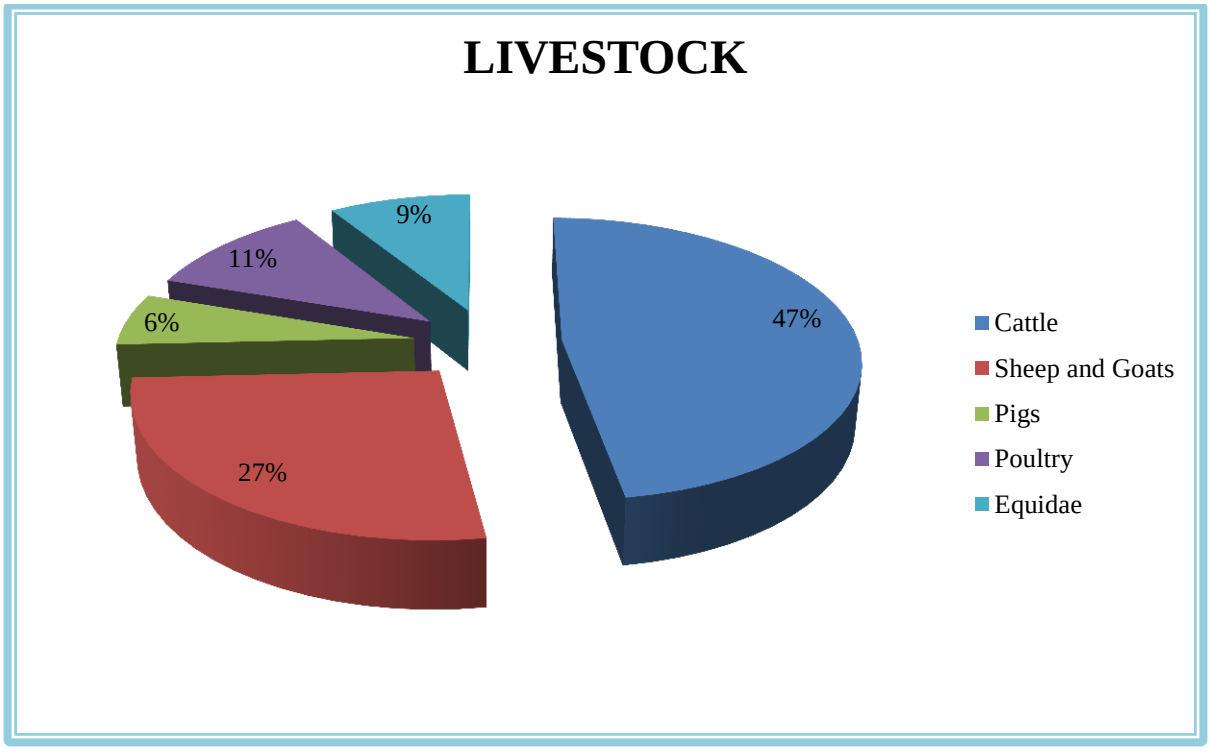


Table 4: Livestock structure (in livestock unit)

No.	Region	Total	Cattle	Sheep and Goats	Pigs	Poultry	Equidae
1	Berat	100	37	37	2	11	13
2	Diber	100	57	26	1	5	11
3	Durres	100	55	13	4	23	4
4	Elbasan	100	52	28	1	9	11
5	Fier	100	49	17	5	22	8
6	Gjirokaster	100	28	58	1	3	10
7	Korce	100	36	34	2	14	14
8	Kukes	100	72	18	1	3	7
9	Lezhe	100	51	13	28	4	3
10	Shkoder	100	52	15	20	8	5
11	Tirane	100	65	17	1	11	7
12	Vlore	100	29	55	4	5	7
Republic		100	48	27	6	11	9



4. Agro-industry

Agro-industry and processing of agricultural and livestock products has experienced a high level of development before the '90, when processed and canned agricultural and livestock products where exported to Europe and beyond. The disorientation of the development of this sector due to the transformation from public to private companies has stopped developing for a decade. Policies at the national level for the promotion and development of the sector have brought rapidly to develop processing industry. So if in 2000 we had only 1844 enterprises in 2011 we have 2273 therefore we have an increasing of 18%. Although the rates of creating new enterprises are not very high for a period of 10 years the production in million lek (ALL) value is doubled. Investments in this sector have recognized fluctuations, they have reached maximum value in 2005 to 1236 million lek, while have known a decline in the coming years to reach in 2011 the level of investment of 2000. This is explained by the low level of investment in this sector from the state budget, inability to absorb funds from the EC programs for agro-industry and the cramp in the bank crediting system.

Table 1: Data on Agro-processing Industry

No	Emertimi	2000	2005	2009	2010	2011	Description
1	Numri i ndermarrjeve	1844	2060	2081	2156	2273	Number of enterprises
2	Numri i te punesuarve	9076	9865	10262	10804	11282	Number of employers
3	Prodhimi ne vlere mil leke	27990	42790	52731	55343	56524	Production, in million leke
4	Investimet ne agroindustri	898	2917	612	524	801	Agro industry investments, million leke
	Me mjetet e veta	831	1236	3901	336	6715	By establishment
	Nga buxheti			0.1	12.3	53	By budget
	Me kredi te huaja	50	237	12	12.7	9.7	By foreign credit
	Me kredi bankare	17	1444	220.1	163	114.6	By bank credit

If we refer to the employees in the agro sector we conclude that about 90.7% of enterprises have 1-5 employees, mainly members of their family and few skilled workers. Only 4.6% of these enterprises have about 10 employees. The above figures reflect not only the size of ventures operating in the field of agro-industry but also the quantity of their production.

If we evaluate their employment according to the sectors will ascertain that 51.5% of employees in the agro-industry sector are working in baking and pastry production, 13.6% those who work in the milk processing sector, 6.9% in oil production sector. Certainly the employment figures in the agro

sector figures are relative because informality in the economy is reflected in the lack of disclosure of the real workforce.

Table 2: Enterprises grouped by number of employees

No	Emertimi	Punetor/ Employers				Total	Description
		1-5 empl	6-10 empl	11-20 empl	up 20 empl		
1	Produkteve me baze mishin	47	4	7	9	67	Meat products
2	Konservimi I peshkut	1	1	0	4	6	fish products
3	Perpunim fruta perime	51	9	4	9	73	fruit and vegetable conserved
4	Prodhimi I vajit	159	3	0	2	164	oil production
5	Perpunimi I qumeshtit	311	12	9	2	334	Milk processing
6	Bloja	134	7	1	3	145	Flour from cereals
7	Prodhim buke dhe embelsira	1172	45	10	4	1231	Bread and sweeties production
8	Prodhim I pijeve alkolike	17	2	3	2	24	Dist alcoholic beverages
9	Prodhim I veres	94	2	2	2	100	Wine production
10	Prodhim i birres	11	1	0	5	17	Beer production
11	Prodhim i ujit min, pijeve fresk.	29	3	3	7	42	Water and soft drinks production
12	Te tjera	37	16	13	4	70	Others
Total		2063	105	52	53	2273	

Based on the data of Table 3 for the number of enterprises by activity we conclude that entrepreneurship based on meat and fish processing have remained more or less at the same level, we have a doubling of enterprises that process fruits and vegetables, a growing of 59% of entrepreneurship that elaborate olives and produce olive oil, have the same levels of enterprises that process milk because we have the same rhythem of creation of new enterprises and bankruptcy of the existing ones, a decrease in the amount of 64% entrepreunership for grain grinding, increase in the amount of 40% of enterprises for the production of bread and cakes as well as 78% increase in the production of wine and other alcoholic beverages.

From a simple analysis of these data we conclude that in agro-processing industry the sectors that have recognized the significant growth are the manufacturing sector of wines and other alcoholic beverages, the sector of olive oil production, the sector of bread and pastry production. For the development of the first two sectors have contributed massively the Albanian government policies to subsidize farmers that cultivate olive trees and vineyards, foreign donor programs in Albania as Oxfam GB, USAID, the World Bank and the banks crediting policies. Certainly the consumer access to local products (oil and wine) has changed; there is an increasing of consumer demand for local products not only for the quality but also for the fact that they are indigenous products.

Table 3: Number of enterprises by activity

No.	Emertimi	2000	2005	2009	2010	2011	Description
1	Produkteve me baze mishin	62	59	65	63	67	Meat products
2	Konservimi I peshkut	3	3	5	5	6	fish products
3	Perpunim fruta perime	16	22	24	22	32	fruit and vegetable conserved
4	Prodhimi I vajit	67	114	108	133	164	oil production
5	Perpunimi I qumeshtit	330	387	342	352	334	Milk processing
6	Bloja	406	259	171	163	145	Flour from cereals
7	Prodhim buke dhe embelsira	707	945	1102	1136	1182	Bread and sweets production
8	Prodhim i biskotave	3	14	17	17	35	Biscuits production
9	Prodhim cokollate dhe embels	21	13	13	14	13	Chocolate and sweets production
10	Prodhim erezash dhe salcash	4	8	2	4		Spices and sauces production
11	Prodhim i pijeve alkolike	58	48	35	22	24	Dist alcoholic beverages
12	Prodhim i veres	22	40	86	104	100	Wine production
13	Prodhim i birres	55	60	18	22	17	Beer production
14	Prodhim i ujit min, pijeve fresk.	55	38	39	36	42	Water and soft drinks
15	Te tjera	35	50	54	61	112	Others
	Total	1844	2060	2081	2156	2273	Total number of enterprises

By comparing the data of Table 3 with those of Table 4 we assume that only the bread and sweets production sector the growth rates of enterprises go in the same direction with the growth rates of

employees. In the sector of olive oil and alcoholic beverages production the number of employees has fallen compared with growth. This fact can be interpreted with the modernization of production lines or a better form of management.

Table 4: Number of employers by activity

No	Emertimi	2000	2005	2009	2010	2011	Description
1	Produkteve me baze mishin	357	724	959	1068	1142	Meat products
2	Konservimi i peshkut	428	556	835	912	988	fish products
3	Perpunim fruta perime	121	123	240	156	186	fruit and vegetable processing
4	Prodhimi i vajit	215	410	288	327	223	oil production
5	Perpunimi i qumeshtit	970	1126	1131	1122	1143	Milk processing
6	Bluarje	989	672	602	607	593	Milling
7	Prodhim buke dhe embelsira	2875	3476	3503	3636	3842	Bread and sweets production
8	Prodhim i biskotave	24	188	271	289	381	Biscuits production
9	Prodhim cokollate dhe embels	148	107	109	125	108	Chocolate and sweets production
10	Prodhim erezash dhe salcash	34	165	38	64	0	Spices and souses production
11	Prodhim i pijeve alkolike	565	451	214	84	173	Production of alcoholic beverages
12	Prodhim i veres	118	127	338	444	347	Wine production
13	Prodhim i birres	444	439	470	540	504	Beer production
14	Prodhim i ujit min, pijeve fresk.	625	644	818	870	857	Water and soft drinks production
15	Te tjera	1163	657	446	540	795	Others
	Total	9076	9865	10262	10804	11282	Total number of enterprises

Referring to the regional context in Vlora region since 2000 have been created 87 new enterprise in the field of agro industry average of 8 new enterprises / year, reflecting an increase in the number of employees to 33 employees / year, for an average of 4 workers for any new enterprise created.
This correlation between the number of enterprises created and the number of employees reflects the fact that the enterprises created are micro enterprises with a number of employees from 1-5.

Table 5: Number of enterprises by region

No	Region	2000	2005	2009	20010	2011
1	Berat	120	157	127	139	153
2	Diber	77	67	58	55	57
3	Durres	113	144	209	193	226
4	Elbasan	119	172	174	183	179
5	Fier	238	294	275	289	298
6	Gjirokaster	136	124	96	101	101
7	Korce	199	216	185	173	155
8	Kukes	37	26	26	25	34
9	Lezhe	67	82	93	89	91
10	Shkoder	183	169	147	150	160
11	Tirane	397	425	454	522	574
12	Vlore	158	184	237	237	245
Republic		1844	2060	2081	2156	2273

Table 6: Number of employees by regions

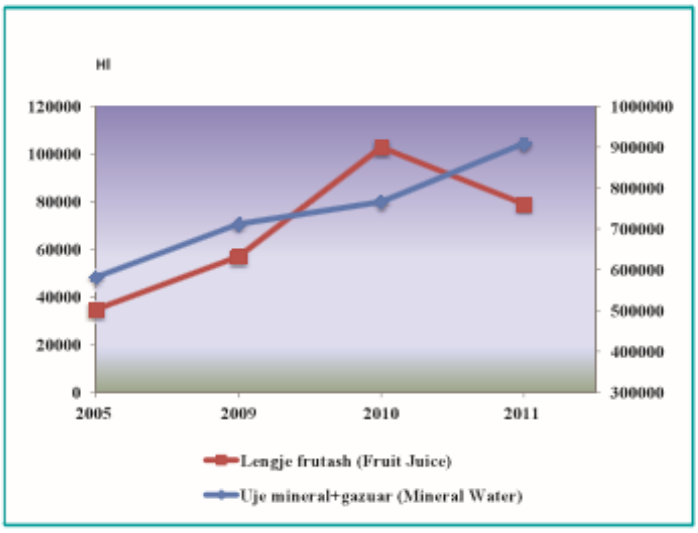
No	Region	2000	2005	2009	20010	2011
1	Berat	367	472	432	505	509
2	Diber	200	183	163	159	134
3	Durres	1212	857	948	974	1039
4	Elbasan	782	622	438	507	462
5	Fier	849	982	909	862	978
6	Gjirokaster	419	530	719	755	789
7	Korce	1057	948	689	645	598
8	Kukes	72	89	99	78	106
9	Lezhe	630	704	972	1110	1175
10	Shkoder	586	705	716	683	768
11	Tirane	2516	3230	3425	3777	3972
12	Vlore	386	544	751	749	752
		9076	9866	10261	10804	11282

Evaluating the processing of agricultural and livestock products in them we conclude that in Vlora region is produced 72 879 tons of mineral water, 2260 tons of wine(10.8% of the quantity of wine

produced in the country), Vlora Region also produces a significant amount of oil olive that occupies approximately 30% of olive oil production at national level.

Table 7: Processing of main agricultural and livestock products by Region (tons)

No.	Region	Wine	Alcoholic beverages	Mineral water	Vegetal oil
1	Berat	988	502	3100	0
2	Diber	0	0	1491	0
3	Durres	6510	5357	4553	0
4	Elbasan	599	145	1611	0
5	Fier	1498	0	17029	7264
6	Gjirokaster	4080	140	469997	1
7	Korce	468	393	2000	0
8	Kukes	0	258	1200	0
9	Lezhe	1283	562	0	0
10	Shkoder	867	245	112249	0
11	Tirane	2212	3958	221972	0
12	Vlore	2260	497	72879	
Republic		20764	12055	909080	12180



TIRANA REGION

Final Beneficiary : Fondi Shqiptar I Zhvillimit-Albanian Development Fund, Rr"Sami Frasheri" nr.10, 1001-1028, Tirana, ALBANIA
bbushati@albaniandf.org

1. The Region of Tirana and its Profile

The Region of Tirana and the capital city of Albania have gone through many changes during the last 20 years. During this time Tirana has become a city of different cultures and colors with a boosting economy and an ever-changing and dynamic structure.

Tirana has gone through and still faces important challenges in improving the quality of life of people that live, work, interact or visit the city. Meanwhile, villages along main roads have acquired an urban outlook due to the activities and industry that is currently in progress. Individuals find room and incentives to invest and create jobs in Tirana. Tirana has become the driving force for the country's economic, cultural and social development.

1.1 Climate

Tirana has a humid subtropical climate, since every summer month has more than 40 millimeters of rainfall, with hot and moderately dry/humid summers, and cool and wet winters.

Climate data for Tirana													
Month	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Year**
Record high °C	21	24	27	28	31	36	42	40	40	36	28	22	42
Average high °C	12	13	15	20	24	28	32	32	28	23	17	13	21.4
Average low °C	2	3	5	9	13	16	18	18	15	12	8	4	10.3
Record low °C	−10	−9	−10	−1	3	8	8	8	3	0	−6	−8	−10
Precipitation mm	143	132	115	104	103	68	42	46	78	114	172	148	1,265
Avg. precipitation days (≥ 1 mm)	12	10	11	11	10	6	4	4	6	11	13	12	110
Mean monthly sunshine hours	127.1	124.3	158.1	204	266.6	297	353.4	328.6	264	217	126	86.8	2,552.9
Source: Tirana Weather													

1.2 Population and demographic changes

Great demographic changes have happened all over the regions of Albania. Tirana, similar to any European city has been home to a large influx of families from all over the country. Main characteristics include external emigration, internal movements and lower fertility.

The Region of Tirana constituted as a local government unit on 31/11/2000 contains the two districts of Tirana and Kavaja and includes the capital city of Tirana, 5 municipalities, 24 communes with a total area of 1652.

Historical population of Tirana								
Year	**1703**	**1820**	**1923**	**1937**	**1955**	**1985**	**2001**	**2011**
Population	4,000	12,000	10,845	35,000	108,200	200,000	597,899	749,365

Table 1 Administrative and territorial division of the Region of Tirana

District	***Municipality***	***Towns***	***Communes***	***Villages***
Tirana	***3***	***3***	***16***	***167***
Kavaja	***2***	***2***	***8***	***66***
Region	***5***	***5***	***24***	***233***

Source: Regional Council of Tirana

The data from the Region of Tirana with regard to population vary considerably from the data recorded from the Population and Housing Census of INSTAT carried out in 2011.

In the meanwhile, the number of residents as reported by the Population and Housing Census of 2011 is remarkably lower from the civil registry records. Population census figures reflect the emigration levels as well as the recently moved population from other districts yet to register in their new settlement at the census period.

The average population density across the whole country reduced from 107 persons per square kilometer in 2001 to 97 persons per square kilometer in 2011. The population density in the prefectures of Tirana and Durrës indicates higher values compared to other prefectures, respectively 454 and 343 persons per square kilometer, due to the increase of population because of high flows internal movements

towards these prefectures.

Table 2 Size, population and density of the region, according to Census 2011 (INSTAT)

	Surface (km^2)	***Population of Tirana***	***Density (inhabitants/km^2)***
Population Census (2011)	***1 652***	***749 365***	***454***

Source: Region of Tirana, INSTAT

According to the data from the Census 2011, Tirana's population in 2011 included 749 365 inhabitants. The gender ratio is nearly equal with 50 percent of population being male and 50 percent being female.

Table 3 Population according to Census 2011

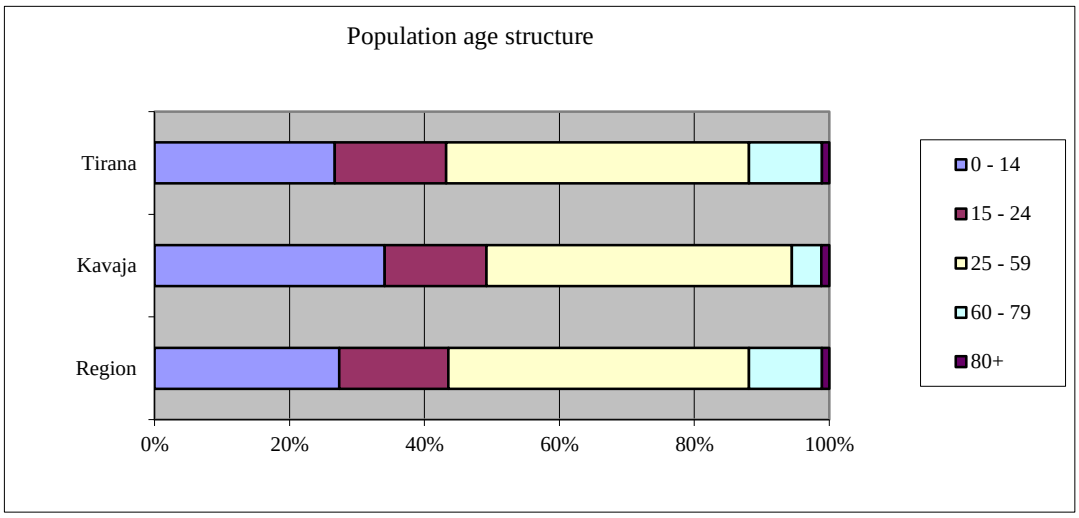
	Population	***Female***	***%***	***Male***	***%***	***Nr. of families***
Tirana	***749 365***	***378 778***	***50.54***	***370 587***	***49.46***	***196 218***

Source: Region of Tirana, INSTAT

The population density in the Region of Tirana is high and reaches up to 454 inhabitants per km², which is several times higher than the country's average. Naturally, Tirana has the highest density with 605.3 inhabitants /km², whereas Kavaja has a density of 272.3 inhabitants/ km. While Tirana is a typically dense European city, this density exerts pressure on service infrastructure and institutions, labour market and environment as well as social stress for the city's residents.

Family structure in Albania has changed and undoubtedly this is also the case for the Region of Tirana. The average number of family members in 1979 was 5.6 (4.6 in towns); in 1989 it was 4.7 (3.9 in towns) and today it has dropped to 4.2 members per family (3.9 in towns). The majority of families in the city of Tirana have 3-4 members whereas for the Region's communes and small municipalities this number varies between 4-5 members.

The average age of the region is 32.9 years that is higher than the country average of 31,4 years. The chart below shows the population structure according to age groups. The chart is based on data coming from the Population and Housing Census of 2012. The 2012 census shows that the population over the age of 65 years old in both districts of Tirana and Kavaja is just above 7 percent.



Source: Statistical yearbook 2011, MoAFCP.

The census data analyses demonstrate that these demographic changes are a direct consequence of internal and external migration. The district of Tirana has had the largest expansion due to internal migration. Districts like Tropoja, Dibra, Mirdita or Skrapar have lost in their population numbers as a result of internal migration towards central areas such as Tirana, Durres and Kruje evidenced by their enlarged population. On the other hand, Kavaja has experienced only a slight change in its population.

1.3 Internal migration in the district of Tirana

The region made of three main urban areas of Tirana, Durres and Kruja is the main focus of internal migration from northern and north-eastern areas of the country. Two main areas can be spotted within this expanding urban region around the airport: the Tirana – Durres axis which hosts the majority of industrial and commercial activities; and the suburban surroundings of Tirana and Durres where tens of thousands migrants have moved since the first post-communist years. This region is extremely heterogeneous as it encompasses the richest and some of the poorest and most socially disadvantaged areas of the country, the latter especially associated with peri-urban squatter settlements.

While observing these suburban areas in Tirana it was necessary to understand both the interconnections between internal and international migration and the way these lead to new forms of social exclusion.

Although their industrial and productive capacities were heavily affected by closure, dismissal and privatisation, since 1991 the district of Tirana has been attracting both foreign and domestic investments in industry. It is in this region where the state or the private sector, the construction business above all, offers the best and abundant employment opportunities in Albania. In the

context of post-communist weakening of state power, the closure and abandonment of the largest state industrial parks or agricultural complexes on the surroundings of the urban centre after 1991 provided a chance for many families from impoverished areas of north Albania to move in. Moreover, the district of Tirana has large expanses of fertile arable land that was also a decisive factor in the relocation of many rural families in the area. The hope of finding better educational and health services and better social and employment opportunities encouraged many families to settle in Tirana's peri-urban areas by illegally occupying industrial and agriculture compounds. Those who came from the remote mountainous north found in a more benign climate which was another incentive to settle in these areas.

Many families sold their village houses with the intention to build a new life in this area: sons often migrated with the intention to bring remittances to complete the construction of the new house. Usually, the migration of a family member is seen as an important opportunity for the entire family and all the available resources are collected to serve to the success of the migration project.

The confusion about the population growth in the district of Tirana stems from the fact that many internal migrants are not registered therefore the exact number remains unknown. Furthermore, the spontaneity of this migration and the new settlements has actually left these suburban areas somehow secluded from the urban areas themselves. Due to the lack of infrastructure and services, several migrants find themselves living in worse conditions than the ones they left in the first place. Family movements have brought many cases of children illiteracy and drop outs since they have to work to make ends meet. The newly settled areas suffer from the lack of drainage systems as well as absent health and social services.

Tirana still faces a continuous influx of especially labor active age groups. This influx puts the labor market in Tirana under continuous pressure despite any job openings, which happen more than any other district in the country.

1.4 Small family farms, their activities and the incomes they bring

In the Region of Tirana, in all of its 19 communes there are 32,170 small farm economies, or 8.1% of the countrywide business farm economies, that operate their activities. In these economies a total of 153,724 people live as grouped into 45,417 families with 1.4 families per farm, or 4.8 persons per farm. In the structure of the rural economy, the main grouping is made up of people between 25-54 years old who account for 40% of the total population, and the grouping of 15-24 years old with 19% of the total.

By viewing the age-group structure of the rural population as a whole, one can notice a disproportion between ages, which tends to be to the advantage of both the average ages and the

older ages, which testifies the tendency to an increase in the average age of the rural population. This has happened as a result of the young ages leaving the villages during the last 21 years whether to emigration abroad or to migrate towards the cities to work and settle there for good. This tendency can also be proved by taking a look at the average age of persons who manage or bear the main weight of work in these farms: 55.2% of them fall into the age span of 55-70 years old; 45.3% to the age span of 25-54 years old, and only 0.3% of them to age below 25 years old.

This tendency to a discrepancy in age structure would require taking urgent measures and developing specific policies towards establishing a closer link of young people with agricultural and livestock breeding activity in the capacity of farm managers because, if the contrary occurs, the percentage of the replacement of aged farmers with younger generations in a period of 10-15 years will be impossible and will cause massive desertion of rural areas and a drop in agricultural and livestock breeding activity.

Table 4 Age of farm operators

No.	Region	Age in Years			
		<25	25-64	>65	Total
1	Berat		18811	6387	25198
2	Dibër		20104	7132	27236
3	Durrës		22750	8789	31539
4	Elbasan		25545	7961	33506
5	Fier	83	42314	13696	56093
6	Gjirokastër	13	7320	3477	10810
7	Korçë	20	20829	10059	30908
8	Kukës	111	7440	3130	10681
9	Lezhë	317	15630	7415	23362
10	Shkodër		27087	11889	38976
11	***Tiranë***		***21587***	***11283***	***32870***
12	Vlorë		15828	13647	29475
Country Total		**544**	**245246**	**104864**	**350654**
%		**0**	**70**	**30**	**100**

Source: Statistical yearbook 2011, MoAFCP.

Unlike other district of the country, the Region of Tirana features a satisfactory educational level of farm managers who, in most cases, correspond to the male head family. About 46% of them have high-school education, with agricultural education and general education prevailing, while 53% of them happen to have only the 8-year education. Farm managers of higher education account for less than 1% and belong mostly to advanced ages.

This fair and sufficient educational level for the management of a relatively small farm is tarnished by the lack of information on markets, knowledge and adoption of contemporary technology and

methods of agricultural and livestock production, the use of up-to-date forms of processing and marketing the products which accounts for the low productivity in some of agricultural products.

Because of the nonperformance of agricultural schools and of young people's tendency to live in urban areas, the educational level of farms managers is likely to suffer a drastic decline in a few years. An alleviating factor in this respect would be a more qualitative service offered by specialists of the extension, the improvement of performance in 20 centers of agricultural information, the continuous training of specialists and farmers attended by better a distribution of human resources (agronomists and veterinarians), currently concentrated in cities, who make up a great potential for the prosperity of agricultural sector.

2. Agriculture and its structure in the Region of Tirana

Table 5. General data on Agriculture, Livestock and Agro processing of Tirana Region

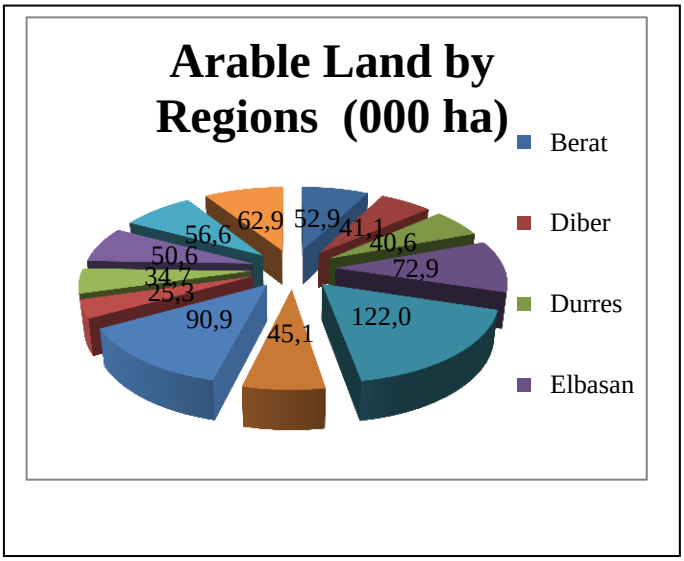
Nr	*Item*	Unit	Year 2012					
			TIRANA		*KAVAJA*		*REGION*	
			Area	Production	Area	Production	Area	Production
I	**AGRICULTURE**	ha	**21020**		**20093**		**41113**	
1	Cereals	ha	2484	9852	5871	24991	8355	34843
2	Vegetables Total	ha	2562	49645	2273	49623	4835	104061
	Out of which: Greenhouses	ha	41	2208	3	198	44	2406
3	Potatoes	ha	424	7369	347	4177	771	11546
4	Beans	ha	393	748	1296	1663	1689	2411
5	Fodder Crops	ha	10559	219747	8594	243587	19153	463334
6	**Fruit Trees**	ha	**4607**		**1709**		**6316**	
	Olives Total	Trees	464940		232419		697359	
	Olives in Production	Trees	325750	6100	136974	4637	462724	10737
	Fruit Trees in total	Trees	410820		391703		802523	
	In production	Trees	304118	5135	333941	8088	638059	13223
	Citrus Total	Trees	39175		30967		70142	
	In production	Trees	22699	329	21800	540	44499	869
	Vineyards Total	ha	447		323		770	
	In production	ha	420	3825	302	4230	722	8055
	Pergola Total	Trees	355344		116380		471724	
	In production	Trees	316642	3948	102320	2221	418962	6169
II	**LIVESTOCK IN TOTAL**							
	Cattle	Heads	31420		18570		**49990**	
	Small Ruminants	Heads	73230		49460		**122690**	
	Pigs	Heads	**2650**		**130**		**2780**	
	Poultry	Heads	306000		426000		732000	
	Milk Production							
	Cow	Heads	22160	62135	13800	40400	35960	102535
	Sheep & Goats	Heads	56675	4124	40218	2450	96893	6574
	Meat Production							
	Beef & Veal	Heads	20408	3831	13800	2950	34208	6781
	Lamb	Heads	55191	1200	40280	820	95409	2020
	Pork	Heads	3590	295	130	12	3720	307
	Chicken	Heads	286862	487	1966930	2443	2253792	2930
III	**Agro-processing in Total**	**Nr.**	**557**		**72**		**629**	
	Out of which:							
	Olive Oil Mills		22		8		30	
	Wine & Raki Production		10		1		11	
	Milk Processing		14		17		31	
	Processed Fruits & Vegs		4		1		5	
IV	**Land under Irrigation (ha)**		1793		2451		4244	
V	**Ag machineries**	Nr.	873		990		1863	
	Tractors	Nr.	297		246		543	
	Planting Machines	Nr.	94		149		243	
	Cutting machines	Nr.	73		107		180	
	Tilling Machines	Nr.	212		218		430	
	Combine Harvesters	Nr.	11		29		40	
	Mini Tractors	Nr.	186		241		427	
VI	**Number of Farms - Total**		**22598**		**15120**		**37718**	
VII	**Farm Size**			%		%		%
	Up to 0.5 ha		7891	***35.0***	1896		7704	
	0.5-1 ha		8945	***39.5***	3549		12494	
	1-1.5 ha		5201	***23.0***	2787		7988	
	over 2 ha		561	***2.5***	1714		2275	

Source: Statistical yearbook 2011, MoAFCP.

The district of Tirana possesses an area of land that amounts to 165,271 ha altogether from which 56,609 ha is farmland, 42% or 69,458 ha is forests, grasslands and pastures, with the rest being urban area or unusable land. The farmland is divided in 44,752 ha (or 79%) of arable land and 11,857 ha (or 21%) of fruit orchards.

Table 6 Land structure by regions (in ha):

Region	Arable Land	Non-arable land *(forestry, pastures & others fond)*
Berat	52908	126885
Dibër	41056	207447
Durrës	40568	35874
Elbasan	72872	257122
Fier	121961	67108
Gjirokastër	45111	243315
Korçë	90909	280123
Kukës	25292	212056
Lezhë	34736	127174
Shkodër	50625	305574
Tiranë	***56609***	***108854***
Vlorë	62873	207748
Country Total	***695520***	***2179280***

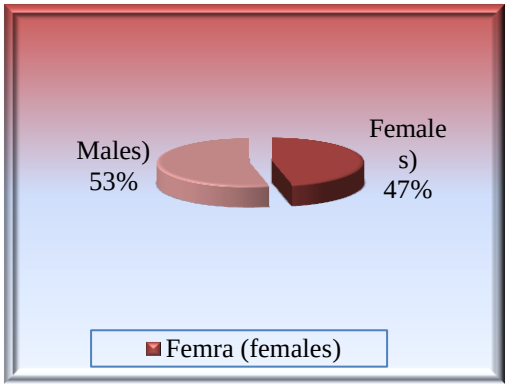


Source: Statistical yearbook 2011, MoAFCP.

Table 7. Farm and family size

No.	Region	Total Active Households	Total Farm Families	Average Families/ Household	Total Farm Population	Average Size of Household	Number of Females
1	Berat	25198	27610	1.1	116192	4.6	54389
2	Dibër	27236	29867	1.1	136974	5.0	66104
3	Durrës	31539	32900	1.0	144030	4.6	68620
4	Elbasan	33506	40130	1.2	170768	5.1	80775
5	Fier	56093	57675	1.0	270007	4.8	127272
6	Gjirokastër	10810	11176	1.0	41576	3.8	18887
7	Korçë	30908	35195	1.1	152388	4.9	70057
8	Kukës	10681	11422	1.1	56879	5.3	26687
9	Lezhë	23362	27646	1.2	108223	4.6	47902
10	Shkodër	38976	39019	1.0	178590	4.6	83661
11	***Tiranë***	***32870***	***33988***	***1.0***	***167241***	***5.1***	***74977***
12	Vlorë	29475	33510	1.1	120002	4.1	54966
Country Total		**350654**	**380138**	**1.1**	**1662869**	**4.7**	**774296**

Source: Statistical yearbook 2011, MoAFCP.



Source: Statistical yearbook 2011, MoAFCP

Lowland area of the District is gradually losing its rural character and is being urbanized. However, the villages situated away from the main roads continue to cultivate the farmland. Vegetables, potatoes, fodder crops, wheat and beans prevail in the structure of farm crops. Fruit-growing has traditionally been thriving, which is multifarious and features all kinds of fruits, olives and vines, and as far as livestock is concerns, it is mainly cattle, i. e. dairy cows, that prevail, but across villages farmers also breed small ruminants - mostly sheep.

The mountainous area of the Region of Tirana features the characteristic animal husbandry products, meat and dairy products, autumn fruits, honey, medicinal & aromatic plants, various teas, nuts and berries. The products of this area are biologically pure and as such their access to market is secured. These products shouldn't reach the consumer at the same price as the imported products and a specific market should exist for these products only, which should be packaged and labeled according to standards.

From the viewpoint of the productivity in some of its main crops the Region of Tirana is lagging somewhat behind in comparison with the average of the country as, for instance, the average productivity of vegetables in the region is 16.5 t/ha, whereas at the countrywide level it is 21 t/ha; of potatoes is about 9 t/ha, while at countrywide level it is about 15 tl/ha; of forages is 26 t/ha, while at countrywide level it is 30 t/ha; of sheep milk is 45 kg/head/lactation while at countrywide level it is 55.1 kg/head/lactation. Better results appear to be in the production of cow milk, beef and lamb, etc.

Table 8 Average working days in farm

Nr.	Region	Working Days on:				Days outside the farm
		Agriculture	Orchards	Livestock	Total	
1	Berat	137	94	129	361	55
2	Dibër	155	31	181	368	102
3	Durrës	184	47	171	402	375
4	Elbasan	234	56	237	527	35
5	Fier	147	71	112	330	149
6	Gjirokastër	82	30	165	278	209
7	Korçë	166	46	156	367	131
8	Kukës	157	40	253	450	160
9	Lezhë	97	48	154	299	147
10	Shkodër	85	33	149	267	68
11	***Tiranë***	**267**	**88**	**246**	**601**	**278**
12	Vlorë	99	84	109	292	251
Country Total		***155***	***59***	***165***	***379***	***160***

Source: Statistical yearbook 2011, MoAFCP

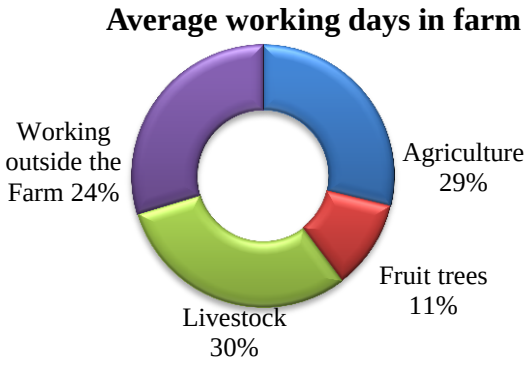


Table 9. Estimates of Gross Income from Crops and Livestock*

No.	Region	Farms		%	Gross Income from Sales *(000 ALL)*		Total	Income per Farm(Lek)
		Total	with Sales		Crops	Livestock		
1	Berat	25198	24611	97.7	3214600	2668185	5882785	233464
2	Dibër	27236	22406	82.3	1262392	2656528	3918920	143890
3	Durrës	31539	30205	95.8	2714714	4002581	6717295	212981
4	Elbasan	33506	32862	98.1	2556813	5380881	7937694	236907
5	Fier	56093	53975	96.2	8435191	7890819	16326010	291055
6	Gjirokastër	10810	9850	91.1	354513	2261391	2615904	241991
7	Korçë	30908	29971	97.0	4891515	4319733	9211248	298020
8	Kukës	10681	9879	92.5	215561	1856545	2072106	194000
9	Lezhë	23362	22424	96.0	956579	1730909	2687488	115036
10	Shkodër	38976	38061	97.7	3861846	5296625	9158470	234976
11	***Tiranë***	***32870***	***32597***	***99.2***	***3398425***	***4855664***	***8254089***	***251109***
12	Vlorë	29475	28745	97.5	4499464	4895841	9395306	318752
Country Total		**350654**	**335588**	**95.7**	**36361613**	**47815702**	**84177315**	**240058**

**Gross income from processed products are included, while income from greenhouses and commercial farms are excluded*
Source: Statistical yearbook 2011, MoAFCP

Table 10 Structure of main field crops' plantation in ha: *Source: Statistical yearbook 2011, MoAFCP*

Nr.	Region	Cereals in total	Specified					Vegetables In total	Fodder Crops
			Wheat	Maize	Rye	Barley	Oats		
I	**Berat**	**13666**	**8008**	**3278**	**10**		**2370**	**1638**	**13814**
1	Berat	9706	6082	1864			1760	1077	8693
2	Kuçovë	1262	791	391			80	315	1802
3	Skrapar	2698	1135	1023	10		530	246	3319
II	**Dibër**	**7375**	**2022**	**4998**	**80**	**5**	**270**	**1262**	**13730**
1	Bulqizë	1703	188	1488	22		5	191	2514
2	Dibër	4014	1297	2654	58	5		368	6369
3	Mat	1658	537	856			265	703	4847
III	**Durrës**	**6492**	**2445**	**3359**			**688**	**2334**	**18356**
1	Durrës	3684	1462	1599			623	1475	10895
2	Krujë	2808	983	1760			65	859	7461
IV	**Elbasan**	**21901**	**11884**	**7195**	**100**	**60**	**2662**	**2597**	**20780**
1	Elbasan	11859	6582	3225		60	1992	1494	12779
2	Gramsh	3152	1419	1333			400	185	2035
3	Librazhd	4054	1450	2384	100		120	420	4201
4	Peqin	2836	2433	253			150	498	1765
V	**Fier**	**31924**	**18449**	**10026**		**6**	**3443**	**6541**	**47758**
1	Fier	14764	7866	4447		6	2445	1873	21135
2	Lushnje	14632	9367	4447			818	4331	21873
3	Mallakastër	2528	1216	1132			180	337	4750
VI	**Gjrokastër**	**5805**	**3026**	**1250**	**18**	**29**	**1482**	**1215**	**11270**
1	Gjirokastër	1627	1247	132	4	29	215	345	5231
2	Përmet	2048	1014	450	14		570	375	3494
3	Tepelenë	2130	765	668			697	495	2545
VII	**Korçë**	**23594**	**15034**	**4634**	**427**	**2431**	**1068**	**2551**	**16806**
1	Devoll	4545	3061	695	43	422	324	295	3647
2	Kolonjë	1515	547	632	40	256	40	77	2165
3	Korçë	14304	9399	2376	274	1693	562	1813	7908
4	Pogradec	3230	2027	931	70	60	142	366	3086
VIII	**Kukës**	**5064**	**1176**	**3280**	**430**	**6**	**172**	**635**	**6211**
1	Has	1653	507	1126	20			203	1702
2	Kukës	2487	618	1281	410	6	172	262	1699
3	Tropojë	924	51	873				170	2810
IX	**Lezhë**	**6864**	**3411**	**3453**				**1738**	**13927**
1	Laç	1169	405	764				417	4529
2	Lezhë	5159	2930	2229				1107	8103
3	Mirditë	536	76	460				214	1295
X	**Shkodër**	**7083**	**1399**	**5684**				**3897**	**17430**
1	Malësi e Madhe	889	395	494				910	4740
2	Pukë	1409		1409				217	530
3	Shkodër	4785	1004	3781				2770	12160
XI	**Tiranë**	**9264**	**4790**	**3620**	**15**	**5**	**834**	**4893**	**17860**
1	Kavajë	6805	4278	1942			585	2331	7608
2	**Tiranë**	**2459**	**512**	**1678**	**15**	**5**	**249**	**2562**	**10252**
XII	**Vlorë**	**6633**	**2243**	**3417**	**1**		**972**	**1511**	**3889**
1	Delvinë	517	15	402			100	143	461
2	Sarandë	2138	97	2033	1		7	327	547
3	Vlorë	3978	2131	982			865	1040	2881
Country Total		***145665***	***73887***	***54194***	***1081***	***2542***	***13961***	***30813***	***201831***

Table 11 Farm Expenses for Fertilizers

Nr.	Region	Expenditure for: (in 000 ALL)				
		Pesticides	**Urea**	**Ammonium Nitrate**	***Di-ammonium* Phosphate**	**Superphosphate**
1	Berat	127354	186256	78588	216251	61358
2	Dibër	22398	23355	109902	58809	17248
3	Durrës	48766	104101	73945	64447	61561
4	Elbasan	51018	176901	206860	182610	127896
5	Fier	220686	462513	279372	456539	180986
6	Gjirokastër	27406	18076	22326	11126	3106
7	Korçë	89972	86318	146677	136123	1590
8	Kukës	12119	14404	25424	19508	15758
9	Lezhë	18032	61961	40112	47887	13476
10	Shkodër	97128	110653	144647	181889	4146
11	***Tiranë***	***105987***	***162375***	***131495***	***126629***	***87416***
12	Vlorë	77416	56076	136901	161303	13316
Country Total		**898282**	**1462990**	**1396249**	**1663120**	**587855**

Table 12 Farm Expenses in Livestock

Nr.	*Region*	*Expenditure for: (in 000 ALL)*				
		Fodder Crops	***Vet. Services***	***Medication***	***Transport***	***Others***
1	Berat	86312	53233	64636	8810	15970
2	Dibër	145306	43338	27888	2451	54121
3	Durrës	282200	72878	57795	19505	17771
4	Elbasan	58148	83997	62715	6274	14719
5	Fier	226692	97561	86493	30277	19311
6	Gjirokastër	127310	17751	19905	7049	22615
7	Korçë	157499	79615	44718	6336	52788
8	Kukës	222023	16991	17619	10541	7231
9	Lezhë	83324	32371	49682	12120	24094
10	Shkodër	185745	60940	25045	23246	2468
11	***Tiranë***	***256380***	***80195***	***80609***	***12265***	***26928***
12	Vlorë	184055	59344	84055	8214	23983
Country Total		**2014993**	**698214**	**621160**	**147087**	**281998**

Source: Department of Statistics 2012, MoAFCP.

Table 13 Plant Protection Chemicals Applied in Farms/Region

Nr.	Region	Nr of farms applying Pesticides	% of farms applying Pesticides	Applied Quantity (Kg)	Applied Quantity per farm (Kg)
1	Berat	21878	86.8	54325	2.0
2	Dibër	13549	49.7	6487	0.0
3	Durrës	17790	56.4	44324	1.0
4	Elbasan	17964	53.6	16414	0.0
5	Fier	40419	72.7	86032	2.0
6	Gjirokastër	7931	73.4	9906	1.0
7	Korçë	16539	53.5	23339	1.0
8	Kukës	5042	47.2	4028	0.0
9	Lezhë	11054	47.3	5729	0.0
10	Shkodër	22659	58.1	51731	1.0
11	***Tiranë***	***23182***	***70.5***	***33731***	***1.0***
12	Vlorë	21974	74.6	14583	0.0
Country Total		**219982**	**62.8**	**350629**	**1.0**

Table 14 Organic Farming in Regions (2011)

Region	Organic Farms	Total Area (Ha)	Field crops Ha					Orchards				
			vegetables	Fresh Herbs	Medicinal plants	Others	Total	Fruit trees	Olives	Vineyard	Citrus	Total
Berat	4	1004	0	0	1003	0	1003	0	0	1	0	1
Dibër	1	100	0	0	100	0	0	100	0	0	0	100
Durrës	22	632	0	0	610	0	610	3	9	11	0	22
Elbasan	4	299	0	0	289	0	289	0	10	0	0	10
Fier	5	78	0	0	77	0	77	0	1	0	0	1
Gjirokastër	2	7	0	0	7	0	7	0	0	0	0	0
Korçë	1	826	0	0	825	0	825	1	0	0	0	1
Kukës	0	0	0	0	0	0	0	0	0	0	0	0
Lezhë	1	150	0	0	150	0	150	0	0	0	0	0
Shkodër	15	169	0	0	155	0	155	1	13	0	0	14
Tiranë	***19***	***2400***	***2***	***0.5***	***2373***	***1***	***2377***	***5***	***14***	***3***	***1***	***23***
Vlorë	49	184	4	0.3	150	0	154	2	22	5	0	30
Country Total	**123**	**5848**	**6**	**1**	**5638**	**1**	**5646**	**113**	**70**	**20**	**1**	**203**

Table 15 Organic Production in Regions (2011)

Nr	Region	Production (kv)						Wine Liters		Brandy Liters		Olive oil Liters	
		Vegetables	Fresh Herbs	Fruits	Citrus	Olives	Grape	Centers	Production	Centers	Production	Centers	Production
1	Berat	0	0	0	0	0	2	1	800	2	200	0	0
2	Dibër	0	0	80	0	0	0	0	0	0	0	0	0
3	Durrës	0	0	54	0	94	2663	4	66300	3	5000	1	1724
4	Elbasan	0	0	13	0	420	40	1	2000	0	0	1	10920
5	Fier	0	0	0	0	100	0	0	0	0	0	1	2000
6	Gjirokastër	0	0	0	0	0	0	0	0	0	0	0	0
7	Korçë	0	0	216	0	0	0	0	0	0	0	0	0
8	Kukës	0	0	0	0	0	0	0	0	0	0	0	0
9	Lezhë	0	0	0	0	0	0	0	0	0	0	0	0
10	Shkodër	100	0	5	0	176	16	1	9	0	0	1	1500
11	***Tiranë***	***2611***	***100***	***47***	***100***	***92***	***309***	***0***	***1314***	***0***	***1000***	***1***	***18000***
12	Vlorë	1040	150	429	0	482	983	2	14000	0	1450	3	3910
	Country Total	**3751**	**250**	**843**	**100**	**1364**	**4031**	**9**	**85323**	**5**	**7650**	**8**	**38054**

2.1 Main Agricultural Processed Products

Olives and olive oil is one of the products with the greatest potential for the development of the region of Tirana. The mild Mediterranean climate and the several hundred years of old tradition of cultivation and use of olives, favors the interest in this crop that has a guaranteed consumer and industrial market. In the current situation the olive trees, dispersed everywhere in the region of Tirana, yield a low productivity as a result of the absence of organized services and the unimproved varieties that cause diseases and decrease their productivity.

There are 9 production lines, engaged in producing olive oil in the region. Olive residues are being discharged into environment and are used either as food for farm animals or as fuel for the boilers of the production line. Technological waters (after the separation of olive oil) are being discharged untreated.

Olives	Tirana
Total trees	464 940
Trees in production	325750
Yield	13.8 kg/tree

Source: Statistical yearbook 2011, MoAFCP

Field and greenhouse vegetables: Greenhouse vegetables constitute a very important product for the economy of the Region of Tirana as its early yield is much profitable and the consumer and industrial market has much demand for it. Greenhouse production is important as it is intensive and is being stretched over a longer span, thereby lowering its seasonality and bringing good profits to farmers. In recent times, the area of private greenhouses in the Region has grown to 50 ha and includes 400 farm families. Field vegetables make up a long-established feature for the small farming economies of Tirana and they go along with the tradition and experience the farmers have inherited. They provide a partial supply both for the market of the capital and the touristic markets of Durrës and Kavaja.

Late vegetables: Among them, the highland tomato is a characteristic one, a competitive and very special item for its taste and strong flavor.

Livestock products are among the main products of the highland area of Tirana. This area has a good tradition in raising small ruminants with their meat and dairy products of a very good quality. There are 122,000 heads of livestock in the Region of Tirana, an amount that tends to fall because of the migration of young population, which has contributed to a drop in agricultural and animal husbandry production.

Vines: In the hilly areas of the districts of Tirana vines have been cultivated since several centuries because of their mild climate and the many sunny days. The area planted with vines for the whole Tirana Region is 748 ha, and the vine yield amounts to 95.2 kg/tree on average. The enlargement of vine areas and the improvement of varieties could increase the market value of this product both for the consumer market and the processing wineries, which never lack in the district of Tirana.

Honey is a very special product of the highland area of Tirana, which currently accounts for 4,000 beehives and has a good tradition in beekeeping, particularly in the areas of Zallher, Berzhite, Shengjergj, and Vore. With regard to this product a persisting problem remains its standardization, packaging and marketing in suitable conditions in order to appeal to consumer demands. Its sale in foreign markets would raise the product competitiveness, would increase the incomes for families that engage in beekeeping and could also increase the chances for investment and expansion of this activity. Commercial agreements with European countries are currently lacking in Albania, and efforts to reach such agreements must also be an objective.

Flour-producing mills and **artisan flour-mills** produce and supply mostly wheat flour for all the bakeries in the region and further, since there are some big facilities with high production and storage capacities and high tech processing technology. Over 90% of the raw material (wheat) is imported.

Sausage production factories, milk-processing factories (15 entities that produce sausages, out of them 4 are really well equipped and sophisticated as far as the production technology is concerned, having invested large amount of capitals and the most updated production technology and ISO & HACCP certified. In addition to this, there are 11 entities that process milk with a capacity of 20-30 tons/day, but currently, these capacities are used at a level of 20-30% only, because of the raw milk supply issues.

Alcoholic drinks and beer producing facilities: (11 entities that produce wine and raki through distillation, and 4 entities that produce beer). The brewing of malt in beer factories is made mostly by using gas oil but also by electric power. The residues of the technological process consist in dregs that either are disposed of, or used as food for animals; the exhaust gases that are released from the burning of gas oil are discharged into air, while the washing waters used in technological lines are being discharged into the drainage system untreated.

Soft drinks – There are about 14 entities in operation that produce soft drinks, packaged water and fruit juices. The main problems they are responsible for deal with the generation of solid wastes and the discharge of technological waters into sewage systems where such ones exists.

Table 13. Production of processed products from farm

Nr	**Region**	**Bread** *(tons)*	**Wine** *(Hl)*	**Brandy** *(Hl)*	**Butter** *(tons)*	**Cheese** *(tons)*	**Curd** *(tons)*
1	Berat	8805	2145	11709	214	524	551
2	Dibër	3002	6124	11557	1012	556	3951
3	Durrës	334	2897	7519	80	700	404
4	Elbasan	15115	1813	10444	596	1637	1669
5	Fier	18062	14689	15468	135	579	383
6	Gjirokastër	835	881	8854	32	331	133
7	Korçë	11620	4710	10701	414	1456	909
8	Kukës	2395	0	2886	470	1603	638
9	Lezhë	5261	8495	13047	209	1383	158
10	Shkodër	2652	20498	11764	340	3437	58
11	***Tiranë***	***4706***	***3083***	***9600***	***213***	***644***	***491***
12	Vlorë	2630	18423	14705	54	1768	130
Country Total		**75415**	**83758**	**128254**	**3769**	**14618**	**9476**

Source: Statistical yearbook 2011, MoAFCP

Because of the scarcity in the surface area of arable land and of its fragmentation, the Region of Tirana has traditionally followed the intensive path of the development of agriculture while efficiently exploiting the limited resources of land and maximizing its production. Greenhouses and vines is one of these paths as plentiful harvests could be gathered in a very small area. While, accompanied by the processing of these products and the reduction of transportation costs, a reduced cost of production results that justifies the labor force.

For this reason, the Region of Tirana has traditionally concentrated the structure of production in three main directions, the greenhouse products (tomatoes, cucumbers, melons, condiments), livestock products such as milk and meat, and vines and fruit-growing.

The future of agriculture in the Region of Tirana intends to maintain these three main directions because of:

- ✓ *Suitability of land for such an intensive production;*
- ✓ *Sufficient, able and skilled human resources;*
- ✓ *Continuous market demand for such products.*

Viewed in the whole, 98% of productive farms of the Region perform a mixed activity made up of "crop, animal husbandry, and fruit-growing". Being located in the vicinity of three main cities, Tirana, Durres and Kavaja, the farms of this region are advantaged in terms of their connection with the market and the increase of production for the market. The farms producing exclusively for sale in the Region of Tirana are on steady increase and they, on their part, buy various inputs in the market such as raw material for the production.

The Region of Tirana ranks first in the country with regard to the farms that succeed in taking their products to the market, about 99.4% of them, at a time when the average of the country is 86.6%. This has leaded, in addition, to the average income for a farm to be 234,364 ALL (about 2.010 ALL/month/farm) from the 2010 sales, or 60% higher than the average of the country. Nevertheless, a great part of farms that are located on the highland area of Tirana, even though they figure among the farms that have access to the market, they still rank very low in sales figures, and on top of it they sell low-quality products by using archaic forms of marketing.

The average plot of the business farms in the Region of Tirana is 0.99 ha/farm, with a number of parcels of 0.26 ha each, which means that apart from the fact that the farm extends over an area of less than 1 ha, it is still fragmented into more than three parcels that often are situated some hundred meters away from each other. The unification of the small family farms and their enlargement constitutes the main element to encourage the modernization of the services to land and production and the increase of its productivity.

Regarding mechanization and methods of contemporary technologies, the farms in the Region of Tirana appear as follows: over 60% of them use tractors along with working the land by manual labor, 15% use mainly working animals and 25% of them use prevalently manual labor.

Over 95% of farms use, on a regular basis, fertilizers of the types of urea, ammonium nitrate and superphosphate, whilst 72.3% of them result to be using pesticides, a figure that is 12% higher than the average of the country. 29% of the farms of the district of Tirana and 43% of the farms of Kavaja use irrigation on a regular basis and particularly the farmers of Kavaja are among the most advanced ones in terms of their organization in the framework associations of water users.

Farmers' good will to organize the use of water has met with the extreme wear and tear of the irrigation system, which remains one of the main problems of agriculture requiring significant investment and a better management accompanied by the drawing up or improvement of the legal framework that could define more clearly the duties and responsibilities of associations of water users (or of any other unit that could be able to manage the use of water) and would punish them with sanctions in case of contraventions.

3. The current status of Agro-Industry

In the Region of Tirana, agro-industry is one of the sectors that are thriving most rapidly. There are 557 agro-industrial processing units, or 19% of such units at countrywide level.

Table 14 Number of enterprises by regions

Nr.	Region	2000	2005	2009	2010	2011
1	Berat	120	157	127	139	153
2	Dibër	77	67	58	55	57
3	Durrës	113	144	209	193	226
4	Elbasan	119	172	174	183	179
5	Fier	238	294	275	289	298
6	Gjirokastër	136	124	96	101	101
7	Korçë	199	216	185	173	155
8	Kukës	37	26	26	25	34
9	Lezhë	67	82	93	89	91
10	Shkodër	183	169	147	150	160
11	***Tiranë***	***397***	***425***	***454***	***522***	***574***
12	Vlorë	158	184	237	237	245
Total Number		**1844**	**2060**	**2081**	**2156**	**2273**

Source: Department of Statistics 2012, MoAFCP

Table 15 Number of employees by regions

Nr.	Region	2000	2005	2009	2010	2011
1	Berat	367	472	432	505	509
2	Dibër	200	183	163	159	134
3	Durrës	1212	857	948	974	1039
4	Elbasan	782	622	438	507	462
5	Fier	849	982	909	862	978
6	Gjirokastër	419	530	719	755	789
7	Korçë	1057	948	689	645	598
8	Kukës	72	89	99	78	106
9	Lezhë	630	704	972	1110	1175
10	Shkodër	586	705	716	683	768
11	***Tiranë***	***2516***	***3230***	***3425***	***3777***	***3972***
12	Vlorë	386	544	751	749	752
Total Number	**9076**	**9866**	**10261**	**10804**	**11282**	

Source: Department of Statistics 2012, MoAFCP

Table 16 Number of Food Processing & Production Facilities in Tirana Region

Nr	Item	**Unit**
	Agro-processing in Total	**574**
Out of which:		
1	Olive Oil Mills	9
2	Fruits & Vegetables Processing	7
3	Wine & Raki Production	20
4	Milk Processing Units	11
5	Fruits & Vegetables Processing Units	4
6	Ice Cream Producing Units	27
7	Beer Producers	4
8	Bread and other Bakeries	305
9	Meat Processors	15
10	Pastry & deserts producers	161
11	Flour Mills	11

Source: Department of Statistics 2012, MoAFCP.

Although the strong pressure and the effect of the Global Economic Crisis, the Agriculture and Agro-Industry, still remain the most vital sectors of economy and continue to show positive trends.

In 2011, GDP was estimated to have reached close to $13 billion. Major contributors to GDP according to 2010 preliminary data were: service sector with 57.6% including trade, hotels, and restaurants (20.9%), transport (6.3%), communication (3.4%), and other services 27%; agriculture 20.3%; industry 11.3%; and construction 10.7%. The government estimates growth to have reached 3% in 2011 and forecasts 4.3% growth in 2012. In 2011 unemployment officially stood at 13.3%. Half of the workforce is considered self-employed in the agriculture sector.

GDP per capita in 2011 is estimated to have reached $4,560. Although GDP per capita has steadily increased over the years, the country still ranks as one of the poorest countries in Europe according to major income indicators. Per capita GDP figures do not fully capture remittance income from the extensive network of Albanians abroad and income from the informal market, which the International Monetary Fund (IMF) estimates at 30%-40% of GDP. Remittances, a significant catalyst for economic growth in the past, have experienced a decline over the last few years after peaking in 2007. The Bank of Albania estimates that remittances fell by 16% in 2010 compared to 2009, and their share of GDP declined to approximately 7.6% in 2010. The downward trend continued during the first three quarters of 2011, though on a smaller scale.

Also, with help from EU funds, the government is taking steps to improve the poor national road and rail network, a long-standing barrier to sustained economic growth.

The country will continue to face challenges from increasing public debt, having slightly exceeded its former statutory limit of 60% of GDP in 2012. Strong trade, remittance, and banking sector ties with Greece and Italy make Albania vulnerable to spillover effects of the global financial crisis.

Following there are some macroeconomic indicators for the Albanian Economy:

- **GDP (purchasing power parity):** $25.86 billion (2012 est.), country comparison to the world: 121. $25.73 billion (2011 est.). $24.98 billion (2010 est.)
  note: data are in 2012 US dollars
- **GDP - real growth rate:** 0.5% (2012 est.). Country comparison to the world: 176.
  3% (2011 est.), 3.5% (2010 est.)
- **GDP - per capita:** $8,000 (2012 est.). Country comparison to the world: 128
  $7,800 (2011 est.), $7,500 (2010 est.)
  note: data are in 2012 US dollars
- **GDP - composition by sector:** A*griculture:* 20.4%, *industry:* 19.1%, *services:* 60.5% (2012 est.).
- **Labor force:** 1.071 million (2011 est.). Country comparison to the world: 142

- **Labor force - by occupation:** A*griculture:* 47.8%, I*ndustry:* 23%, *services:* 29.2% (September 2010 est.)
- **Unemployment rate:** 13% (2012 est.). Country comparison to the world: 134. 13.3% (2011 est.)
  note: these are official rates, but actual rates may exceed 30% due to preponderance of near-subsistence farming.
- **Population below poverty line:** 12.5% (2008 est.)
- **Distribution of family income - Gini index:** 34.5 (2008). Country comparison to the world: 87
- **Investment (gross fixed):** 25.8% of GDP (2012 est.). country comparison to the world: 42
- **Budget:** *revenues:* $3.262 billion. e*xpenditures:* $3.669 billion (2012 est.)
- **Taxes and other revenues:** 26.3% of GDP (2012 est.). country comparison to the world: 118
- **Budget surplus (+) or deficit (-):** -3.3% of GDP (2012 est.). Country comparison to the world: 114
- **Public debt:** 60.6% of GDP (2012 est.). Country comparison to the world: 47
  58.9% of GDP (2011 est.)
- **Inflation rate (consumer prices):** 2% (2012 est.). Country comparison to the world: 30.

Agriculture - products: Wheat, corn, potatoes, vegetables, fruits, grapes; meat, dairy products; sheep;

Industries: perfumes and cosmetic products, food and tobacco products; textiles and clothing; lumber, oil, cement, chemicals, mining, basic metals, hydropower

Industrial production growth rate: 3% (2010 est.). Country comparison to the world: 106

Current account balance: $1.45 billion (2012 est.) Country comparison to the world: 126

Exports: $2.121 billion (2012 est.). Country comparison to the world: 142

Exports - commodities: textiles and footwear; asphalt, metals and metallic ores, crude oil; vegetables, fruits;

Exports - partners: Italy 45.3%, China 7.8%, Turkey 6.3%, Greece 5.2%, Spain 5.1%, India 4.6% (2011)

Imports: $5.219 billion (2012 est.). Country comparison to the world: 127

Imports - commodities: machinery and equipment, foodstuffs, textiles, chemicals

Imports - partners: Italy 33%, Greece 12.2%, China 5.9%, Turkey 5.6%, Germany 4.3% (2011)

Exchange rates (Lekë (ALL) per US dollar):

103.3 (2012 est.)

100.9 (2011 est.)

103.94 (2010 est.)

94.98 (2009)

79.546 (2008)

According to INSTAT (Albanian Institute of Statistics), the Real Growth Rate of the Gross Value Added for Agriculture is as shown in the following table:

Table 17. Real Growth Rate of the Gross Value Added for Agriculture in 2012

	Quarter	**Growth Rate (%)**
Year 2012	Q1	1.8
	Q2	1.5
	Q3	1.4
	Q4	1.6

Source: INSTAT 2013.

The number of persons employed in these units is 2,828 hands, or 30% of all of the employed people in this sector at nationwide level, while in the agro-industry of the Region of Tirana there has been invested 55% of the total amount that was invested at the nationwide level which shows that in the Region of Tirana, for the most part, middle-sized and large-sized modern factories and production units have been already established and now are performing their activities.

More specifically, in the Region of Tirana is being processed 44% of flour, 18% of milk, 50% of sausages, 20% of processed fruits and vegetables, 78% of beer, 61% of alcoholic and soft drinks, 15% of olive oil.

The development of agro-industry in the Region of Tirana is conditioned, in the greatest part, by the expediencies of the development of business in the capital and little, or rather not at all, by the sources of raw materials for this industry. In spite of the encouraging figures mentioned above, raw materials for this industry are imported. The reasons for this vary greatly, but a major one is the failure to meet the need for raw materials as a result of the absence of contractual agreements between the agribusiness and farmers, the absence of organization of the offer on the part of farmers, the failure to meet the standards concerning the quality of agricultural products, and the high costs of production of agricultural products.

The Albanian fruit and vegetable processing industry in general, and the one of Tirana's region in special, consists of several relatively small, privately held firms using privatized facilities and equipment dating to the time of state-run enterprises and one new facility.

Most of them make essentially the same products: pickled vegetables, fruits in thin syrups known as compotes, olives, and some sauces. Most products are packed by hand in glass jars and pasteurized in hot water. Some are packed in vacuum pouches or trays, while others are packed in bulk (200 liter barrels) and either sold in bulk or re-packed.

Most companies have more theoretical production capacity than they actually use, but they also have expectations of needing more space and more efficiency sooner or later.

Because of their recent entry into the market, the Food Processors in Albania in general, and the ones of Tirana region in special, are neither fully capable of managing neither their operations, nor they are able to implement effective quality control and food safety systems. This lack of capability has had a detrimental effect on their competitiveness while preventing them from gaining market share in Albania and in the region. These food processing operations mainly produce sauce products such as Mayonnaise, Ketchup, Mustard, as well as more traditional products such as Sweet Red Peppers, Roasted Red Peppers, Pickled Cucumbers and other pickled vegetables, Fig Jam, fruits and tomato-based products. The three sauce products have been introduced relatively recently in order to have products that can be manufactured off-season. Some of the firms are exporting products regionally while one, Sejega, has products headed to the US market. None of these companies is producing frozen or dehydrated products.

The regional food industry universally harbors a common fear of the future grounded in the following fundamental problems:

- Availability and cost of raw materials
- Cost and quality of packaging materials
- Cost of energy
- Reimbursement for VAT
- Cash flow difficulties inherent in seasonal operations

While some companies are trying to introduce products that are not seasonal, none of the above problems have purely technical solutions. However, the industry is also suffering from problems that do have technical solutions:

- Domestic products tend to be inferior to imported products. As a result, the domestic market for many of these products, especially sauces, is dominated by imports. Much of the industry is in denial about this issue.
- The packaging of domestic products, particularly for the sauces, is inferior to the imports.
- Processors tend to be generally ignorant of international standards for manufacturing and for labeling.
- Many food safety practices are inadequate.
- Processes are at times redundant or otherwise unnecessary.

- Poor quality raw materials are frequently used.

The Albanian food processing industry is often said to have good potential. This claim is supported by the sound growth rates recorded in recent years. The following factors are mentioned as advantages:

- Motivated and well educated workers
- Relatively low labor costs
- Excellent growing conditions for a large variety of crops
- The potential marketing advantages of early season production
- The positive attention of several aid organizations
- Supportive attitude towards the sector from the Albanian government.

While the potential of a number of sub-sectors of the Albanian food processing industry is often referred to as high, the overall comparative position is repeatedly qualified as low. A number of hurdles could be mentioned which are applicable for the food processing industry in general. The food processing industry has, compared to many other countries, a relatively short history. Most of the former structures and companies disappeared in the early 1990s or had to be reconstructed to meet the needs of modern open economies. The most pressing problems for the sector are as follows:

- The predominance of small-scale production systems in primary production, and corresponding problems with domestic supply (quality and volume) dependency on imports of raw materials, leading to a relatively high cost structure, old equipment and facilities, which cause inefficient production and problems with quality assurance;
- Non-existent or underdeveloped supply chain management
- Poorly developed marketing, weak branding, and often weak language skills
- Weak financial positions, and low capacity to access to financing.

BOSNIA AND HERZEGOVINA TERRITORY

Project IPATECH - Miniaturization technology: synergies of research and innovation to enhance the economic development of the Adriatic

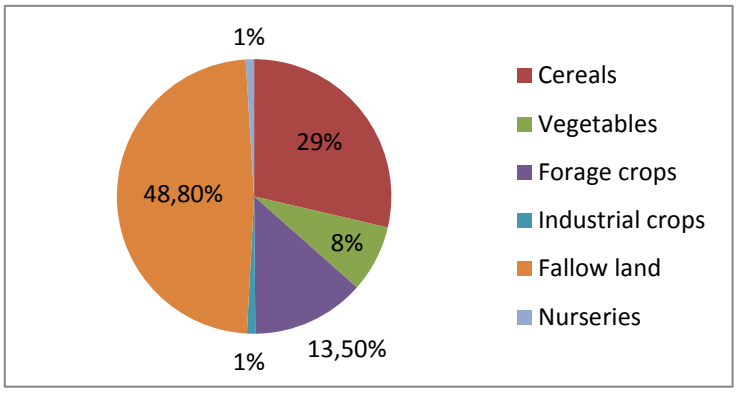
1. Short description of Bosnia and Herzegovina

Final Beneficiary: Udruga poduzetnika i poslodavaca Žepce-Association of Entrepreneurs and Employers Žepce, Stjepan Radic, b.b., 72230, BOSNIA-HERZEGOVINA. upipzepce@gmail.com

Total area of Bosnia and Herzegovina is 51.209,2 km^2 of which the 51.197 km^2 is mainland area and 12,2 km^2 is sea area. From the mainland area 5% are lowland, 24% highland and 29% limestone area. Forests and woody areas are covering approximately 50% of B&H area while agricultural land covers 2,5 million acres or 0,7 acres per capita. The soil cover in B&H is heterogeneous. Approximately 86% are auto-morphic soils, and the remaining 14% are hydro-morphic soils. A large part of B&H is exposed to the water erosion, especially in the central and southern part.

According to the statistic data from 2011th arable land by the use method are covering 1.009.000 acres of which 527.000 acres are planted, 478.000 acres are fallow land and uncultivated arable land and 4.000 acres are nursery gardens and other arable lands.

Graph 1. Arable land areas by use in B&H, 2010



Source: Agriculture Report for B&H, MVTEO, 2011

Bosnia and Herzegovina is bordered by the Serbia in the east, Montenegro in the southeast, Croatia in the north, west and 12 kilometres on the south with the coast on the Adriatic Sea. The landscape varies from high mountains in the central area to arable land on the north and the Mediterranean vineyards in the south. Most of the towns are located in the valleys and along riverbeds. As for the climatic conditions, the summers are hot and humid, and last from May to September, while winters

are usually foggy and snowy, and last from November to February. Autumn and spring are generally short and slightly change the seasons.

According to the Agency for Statistics of B&H in 2011th year the GDP of B&H was 13.122 million Euros and GDP/capital 3.471 Euros (estimated population 3.839.737). In year 2009 GDP in agriculture was 926,9 million Euros. According to the data on Labour Force for year 2010 made through Survey by Agency for statistics, the agricultural sector employs 166,000 employees. Proportion of employment in the agricultural sector in year 2010 was approximately 20%.

Areas sown in year 2011 amounted: cereals 303.000 acres, fodder 138.000 acres, 78.000 acres, vegetables and industrial crops 8.000 acres. In the structure of sowing in year 2011 increase of sown land is evidential. Increase of sown cereals by 3,41%, forage crops by 1,5%, industrial crops by 14,3% and vegetables 2,6% compared to year 2010.

Table 1. Production of grains in B&H year 2011

Crop	**Harvested area/acres**	**Production/tons**	**Index 2011/2010(%)**
Wheat	58.400	210.004	44,4
Rye	3.295	9.665	30,2
Barley	20.745	65.667	30,9
Oats	10.007	27.006	36,1
Corn	195.970	764.119	-10,5
Buckwheat	584	926	13,5
TOTAL	**289.001**	**1.077.387**	

Source: Report on agricultural field for B&H, year 2011, MVTEO B&H, 2012

According to the data from previous table is visible that in year 2011 the production of grains is increase except Corn whom production is reduced by 10,5% compared with year 2010.

Table 2. Production of industrial crops in B&H year 2011

Crop	**Harvested area/acres**	**Production/tons**	**Index 2011/2010(%)**
Oilseed rape	772	1.530	31,1
Soybean	3.884	6.748	-15,7
Tobacco	1.456	1.835	-1
TOTAL	**6.112**	**10.113**	

Source: Report on agricultural field for B&H, year 2011, MVTEO B&H, 2012

Production of oilseed rape in year 2011 is increase by 21,1% in compare with year 2010 while production of soybean and tobacco is reduced.

Areas sown with forage crops in year 2011 was 138.000 acres or 1.5% more compared to year 2010. Total production of forage crops in year 2011 was 771.999 tons. In the structure of production dominate corn for fodder 56,8%, clover 14.5%, alfalfa 13.9% and grass clover mixture 11.1%. Proportion of other forage plants in structure of the sowing is 3.5%.

Table 3. Production of forage crops in B&H year 2011

Crop	**Harvested area/acres**	**Production/tons**	**Index 2011/2010(%)**
Clover	42.823	112.400	-14,7
Alfalfa	33.640	107.388	-10,7
Vetch	412	1.038	-14,2
Mixture of grasses and grains	3.332	12.662	70,5
Grass clover mixture	26.550	86.153	-6,3
Corn for fodder	24.376	438.816	0,1
Fodder beet	1.343	13.582	-5
TOTAL	**132.476**	**771.999**	

Source: Report on agricultural field for B&H, year 2011, MVTEO B&H, 2012

In the production of vegetables in B&H largest area and largest production is covering potato. Production of potato in year 2011 is increase by 9% compared to year 2010. At the same period the production of onions and tomato is also in increase while production of other vegetable crops is reducing the production.

Table 4. Production of vegetables in B&H year 2011

Crop	**Harvested area/acres**	**Production/tons**	**Index 2011/2010(%)**
Potato	37.127	412.696	9
Carrot	1.924	20.693	-9,5
Onions	5.141	39.909	7,4
Garlic	1.698	5.649	-10,6
Beans	9.300	11.873	-6,1
Peas	1.312	3.305	-6,2
Cabbage and kale	5.622	72.391	-10,3
Tomato	3.589	45.942	25,4
Peppers	3.431	37.071	-3,5
Cucumber	2.886	26.580	-3,6
TOTAL	**72.030**	**676.109**	

Source: Report on agricultural field for B&H, year 2011, MVTEO B&H, 2012

Total number of productive trees in year 2011 was 22,11 millions or 2,5% more compared to year 2010. The most frequent fruit species are Plum (52,5%), Apple (23,9%) and Pear (10,4%). Total production of various fruits in year 2011 was 294.203 tons.

Table 5. Production of fruits in B&H year 2011

Fruits	**Number of productive trees**	**Production/tons**	**Index 2011/2010(%)**
Apple	5.284.959	75.334	5,1
Pear	2.302.712	28.284	23,5
Plum	11.616.507	157.504	0
Cherry	761.652	11.247	14,3
Sour cherry	686.825	4.292	12,6
Peach	565.632	8.718	0,1
Apricot	107.269	1.395	12,3
Quince	113.934	1.161	1,2
Walnuts	559.971	5.251	7
Almond	12.618	86	7,5
Tangerine	3.530	23	-10,9
Lemon	3.250	14	-34,9
Fig	63.390	741	2,2
Olive	31.300	153	24,4
TOTAL	**22.113.549**	**294.203**	

Source: Report on agricultural field for B&H, year 2011, MVTEO B&H, 2012

Production of soft fruits in year 2011 was on the surface of 2.394 acres. Total production of soft fruits was 18.276 tons of which Strawberry part were 48,2% and Olive 51,7%. Production of Raspberry in year 2011 is increase up to 19% compared to year 2010 while production of Strawberry in the same period is reduced for 14,4%.

Table 6. Production of soft fruits in B&H year 2011

Fruits	**Harvested area/acres**	**Production/tons**	**Index 2011/2010(%)**
Strawberry	1.174	8.817	-14,4
Raspberry	1.220	9.459	19,2
TOTAL	**2.394**	**18.276**	

Source: Report on agricultural field for B&H, year 2011, MVTEO B&H, 2012

Table 7. Numerical state of livestock in B&H year 2011

Species	Numerical state of livestock	Index 2011/2010(%)
Cattle	455.000	-1,5
Sheep	1.021.000	-2,4
Pig	577.000	-2,2
Hors	19.000	0
Poultry (pieces)	18.703	-14,2
Egg laying hens (pieces)	3.646	-3,4
Goat	65.000	1,6
Beehives (pieces)	382	4,1

Source: Report on agricultural field for B&H, year 2011, MVTEO B&H, 2012

Numeric state of livestock of B&H in year 2011 is reduced in most of the livestock species and biggest part of reduction is noted in poultry production. Increase of production is noted in breeding of Goats and in sector of Beekeeping. In production of livestock products occurred the reduction of all product productions (Table 8.) of which the biggest reduction is noted in production of eggs and goats milk.

Table 8. Production of livestock products in B&H year 2011

Products	TOTAL	Index 2011/2010(%)
Cow's milk (litres)	667.158	-3,8
Sheep milk (litres)	17.610	-3,8
Goat milk (litres)	7.337	-9,9
Wool (tons)	1.331	-3,7
Eggs (pieces)	609.841	-12,1
Honey (tons)	3.059	-8,4

Source: Report on agricultural field for B&H, year 2011, MVTEO B&H, 2012

Total production of Cow's milk in year 2011 was 667 million litres or 4% less than year 2010. In year 2011 the dairy plants are repurchased 213.1 million litres of milk from agricultural producers. During the year 2011 in B&H was 28 dairy plants that were working. Beside registered dairy plants works also small in house family dairy plants that are explicitly oriented at the local market. Production programs of small dairy plants are unilateral and oriented to conventional dairy products, which makes them very vulnerable on the market in competition that they often cannot endure. Dairy plants in B&H are during year 2011 processed 239,1 million litres of milk.

Production program of dairy plants consists of 12 types of dairy products with around 35 products. It is also oriented towards short term consumer products. Basic production program that dairy plants produced in year 2011 is UHT sterilized milk, pasteurized milk for consumer, yogurt and fermented drinks, cream and sour cream, cheese, butter and dairy spreads. Global structure of milk processing in dairy plants of B&H makes 76,6% consumer fluid and milk products and 23,4%permanent products. Compared with year 2010 in year 2011 in B&H production most of the milk products have positive growth. Production of UHT sterilized milk is bigger by 6,7%, yogurt and milk drinks by 3%, fresh cow cheese by 2%, dairy spreads by 2,6% and processed milk by 6%.

Export of agricultural products form B&H has the trend of continuous growth for year 2005 that also did not stopped even in year 2009 when the consequences of world economic crises are reflected on the export of agricultural products - reduced up to 9%. Due to the larger percentage of export growth in comparison to import coverage of export by import of agricultural products in period 2005 - 2010 is doubled. Mentioned data are still at quite unpleasant level and amounts only 22%. Total import of agricultural products in year 2010 amounts 2.560 millions BAM that represent 19% of total B&H import. Total export of agricultural products in year 2010 amounts 613,8 millions BAM that represents 7% of total B&H export. In total B&H export of agricultural products the countries signatories of CEFTA are participating with 57,21% while countries members of EU are participating with 32,17%.

Administrative organization of Bosnia and Herzegovina: two entities, Federation of B&H (approximately 50% of total territory), Republic of Srpska (approximately 49% of total territory) and Brcko district that takes approximately 1% of total territory.

Lower level of administrative units in Federation of B&H is canton (total 10 cantons that consist 80 municipalities) while the Republic of Srpska consist of 63 municipalities. Economically speaking country is divided into five economic regions (Northwest region, Central Bosnia Region, Northeast region, Sarajevo region and Herzegovina region).

Economic region Central Bosnia covers an area of 5.295,91 km^2 that is approximately 10,3% of total territory of B&H and gathers 16 administrative units (municipalities), 8 municipalities in Zenica-Doboj canton, 7 municipalities from Middle Bosnia canton and 1 municipality from republic of Srpska. In this region lives approximately 570.000 habitants with average population density of 108 inhabitants/km^2 that is according to OECD classification ranks in rural areas. Rural areas in B&H are covering 88,9% of total area and in this area lives 70,4% of total number of habitants. According to the data gathered by OECD in B&H exists 141 municipalities of which 115 are considered as rural with average population density of 52 inhabitants/km^2.

When it comes to agricultural production the Central Bosnia Region is relatively underdeveloped in comparison with the rest of B&H due to the fact that agricultural production in this area before was extensive and based on individual households. Today the agriculture and rural development are representing one of the strategic sectors for development of region and opportunity for reducing unemployment. Arable land, as the greatest natural resource, favourable climatic conditions and water quality provides opportunities for the production of fruits and vegetables on open fields and in greenhouses, organic farming, production of medicinal and aromatic plants, development of livestock breeding, beekeeping and fish farming. The industry for the processing of agricultural products is emerging in: production of milk and milk products, meat production and processing, storage and processing of fruits and vegetables...

Today when the market of consumer goods is consolidated of which the products from food industry takes bigger part, domestic farmers are faced with numerous challenges: meeting of quality standards in food production, product placement, availability of centres for quality testing and certification of agricultural products, and the establishment of added value system, branding and protection of indigenous products.

Fragmentation of estates (average size of households 2,5 acres), low productivity of work, outdated technology and machinery, no knowledge, low investment capacity and market instability are just some reasons of present state of agriculture in Bosnia and Herzegovina and Central Bosnia Region.

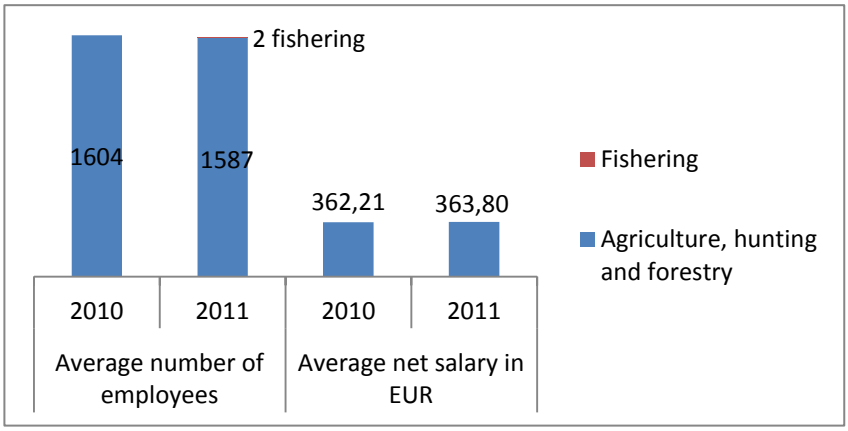
Central Bosnia Region with its bigger part is located at the area of two cantons - Zenica Doboj canton and Middle Bosnia canton. Below is presented situation Agrofood sector in these two cantons.

State of Agrofood sector in Zenica-Doboj canton

The total are of Zenica-Doboj canton is 3.326 km^2 and gathers 12 municipalities: Breza, Doboj Jug, Kakanj, Maglaj, Olovo, Tešanj, Usora, Vareš, Visoko, Zavidovići, Zenica i Žepče. Relief features and elevation of the whole area of the canton are in the range of 140 -1472 meters above sea level. Northern parts of canton have lowest elevation from 140 - 500 meters above sea level and also have characteristics of continental climate. Southern parts of canton have elevation from 500 - 1000 meters above sea level and presents mountain and high-mountain area with typical continental and semi continental climate. Central parts of canton present the high mountainous area and its including the mountain massifs: Ravan, Konjuh, Smolina, Zvijezde i Čemer mountains (Pogar - 1.145 meters and Karasovina - 1.472. meters above sea level). According to the structure of total agricultural area (110.946 acres) in the Zenica-Doboj canton the arable land takes 95.656 acres or 86,22% and uncultivable land covers 15.290 acres or 13,78%. Forests at the area of Zenica-Doboj

canton represent one of the most important natural resources. The forests are covering 59% of the total area of Zenica-Doboj canton of which 79% are high forests and 16% are coppice forests deciduous and conifer trees.

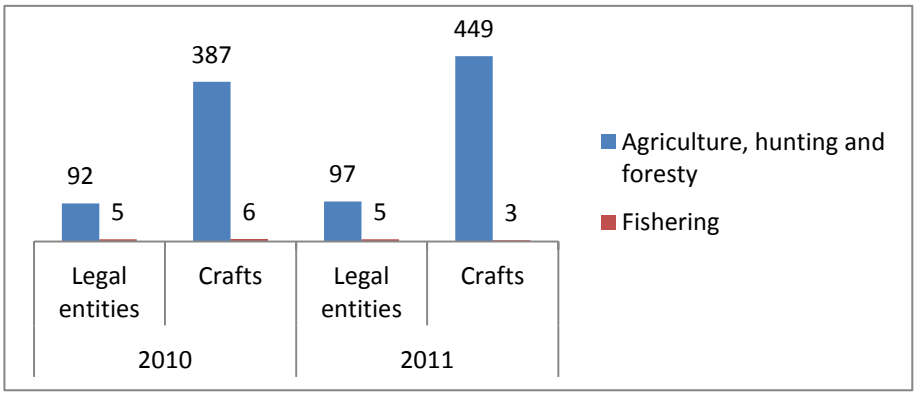
Graph 2: Number of employees and average net salary in sector of agriculture, hunting, forestry and fishering in Zenica - Doboj canton



From the graph above is visible that in year 2011 came to decreise of employed in observed sectors for approximately 1% while the average salary remain unchanged (Graph 1.).

In the same period came to increase the number of registered legal entities (increase up to 5%) and crafts (increase up to 16%) (Graph 2.). Registered legal entities, crafts and employees in Fisheries sector in this canton are not significant due that canton don't have significant capacities for this agricultural sector and population don't have tradition on dealing with this activities.

Graph 3: Number of legal entities and crafts registrated in sector of agriculture, hunting, forestry and fishering in Zenica – Doboj canton



Agricultural areas of the Zenica -Doboj canton are covering 1/3 or 110.535 acres, arable land covers 89.701 acres while 20.834 acres covers the grassland.

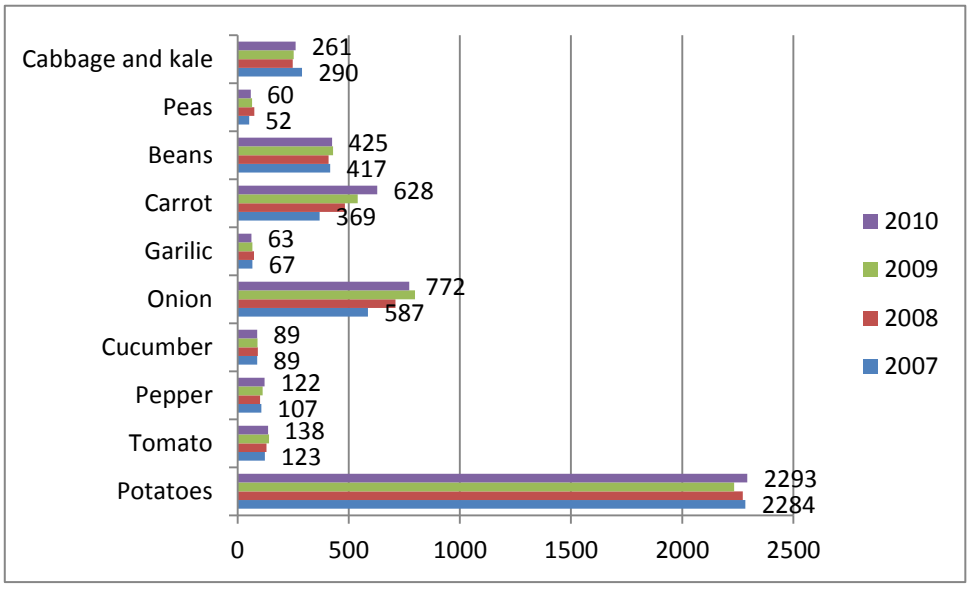
In the following table are presented the areas of agricultural land by the use in all municipalities in canton.

Table 9. Agricultural areas in municipalities of Zenica-Doboj canton

	Arable land/ acres	**Fruit orchards/ acres**	**Meadow/ acres**	**TOTAL/ acres**	**Grassland/ acres**	**TOTAL/ acres**
Breza	1635	395	850	2880	250	3130
Doboj Jug	457	80	2	539	33	572
Kakanj	2860	1280	6810	10950	944	11894
Maglaj	***5360***	***763***	***234***	***6357***	***1006***	***7363***
Olovo	2893	100	4357	7350	2100	9450
Tešanj	7842	856	1273	9971	738	10709
Usora	947	11	159	1117	129	1246
Vareš	1770	442	5298	7510	1320	8830
Visoko	5729	1085	1446	8260	9022	17282
Zavidovići	***6856***	***1431***	***2633***	***10920***	***2974***	***13894***
Zenica	***5112***	***1816***	***8436***	***15364***	***1178***	***16542***
Žepče	***6961***	***768***	***754***	***8483***	***1140***	***9623***
TOTAL	**48422**	**9027**	**32252**	**89701**	**20834**	**110535**

In year 2009 areas planted with agricultural production covered 48.422 acres, crop production covered 23.454 acres, fodder crops covered 11.302 acres, maize covered 8.155 acres and industrial plants 19 acres.

Graph 4. Areas sown with vegetable crops presented in acres in Zenica-Doboj - 2007 – 2010



From the previous graph is visible that in the period 2007 - 2010 in Zenica-Doboj canton didn't cam to large scale changes in production of vegetable crops. Largest change happened in production of Carrots whom production increased up to 70% in year 2010 in comparison with year 2007. Production of onions increase up to 30% while the production of other agricultural crops remains nearly on the same level.

Table 10. Review the situation of fruit growing in area of Zenica-Doboj canton - 2010 - 2011

Fruits	2010			2011		
	Number of productive trees	Yield		Number of productive trees	Yield	
		TOTAL tons	Kilograms/ tree		TOTAL tons	Kilograms/ tree
Cherry	62.410	641	10,3	59.675	740	14,1
Sour cherry	43.480	319	7,3	28.855	270	9,4
Apricot	3.805	48	12,5	2.860	36	12,7
Apple	412.108	5.831	14,1	428.417	5.837	13,6
Pear	157.806	1.890	12,0	161.480	1.874	11,6
Quince	8.950	110	12,3	9.215	104	11,3
Plum	558.145	5.738	10,3	569.525	6.141	10,8
Peach	4.950	56	11,3	5.300	58	10,9
Walnuts	28.500	357	12,5	32.970	358	10,9
Grapes	22.300	40	1,8	22.300	29	1,3

On the area of Zenica-Doboj canton in year 2011 is registered increase the number of productive trees of Apple, Pear, Plum and Walnuts.

Table 11. State of livestock on the area of Zenica-Doboj canton - period 2005 - 2010

Year / Livestock species	2005 Pieces	2006 Pieces	2007 Pieces	2008 Pieces	2009 Pieces	2010 Pieces
Cattle	48.502	49.703	45.244	48.224	45.380	43.045
Sheep	98.852	107.984	108.741	96.629	87.497	89.695
Goats	8.759	8.495	10.266	9.208	9.499	9.199
Pigs	12.870	13.704	13.750	14.700	13.830	13.228
Horses	2.134	1.620	1.719	1.630	1.325	1.211
Poultry	513	743	822	848	878	7.99
Beehives	24.979	30.690	26.210	26.365	28.592	29.785

During the period 2005 - 2010 on the area of Zenica -Doboj canton is decreased number of Cattle, Sheep's and Horses while the number of Goats, Poultry and Beehives is increased. Decreased

number of Cattle is caused by the lack of milk stations for repurchase and very low price of milk repurchase. Decreased number of Sheep's is caused by occurrence of the disease brucellosis.

Table 12. Realized production quantities of milk, honey, eggs, and wool in Zenica-Doboj canton - period 2005 - 2010

Year / Type of production	2005	2006	2007	2008	2009	2010
Cow milk (liters)	47.522	50.385	49.118	51.149	52.133	50.358
Per milking cow (liters)	1.635	1.669	1.670	1.711	1.889	1.923
Sheep milk (liters)	2.202	2.457	1.984	1.771	1.546	1.588
By milking sheep (liters)	48	49	41	46	43	40
Goat milk (liters)	908	758	1.391	977	1.085	1.196
By milking goat (liters)	152	134	215	166	185	195
Wool (tons)	125	139	128	113	103	103
Per sheep (kilograms)	1,5	1,5	1,4	1,4	1,4	1,3
Eggs (pieces)	31.192	27.426	26.777	29.953	35.411	39.325
Per chicken (pieces)	154	142	154	144	144	147
Honey (tons)	191	249	213	192	279	211
Per beehive (kilograms)	8	8	8	7,3	9,8	7,1

According to the data presented in previous table it is visible that in observed period came to increase of cow milk production and production of milk by milking cow. If we take in consideration that decrease of cattle number happened but production of milk production increase we can conclude that households increase their productivity in Zenica-Doboj canton.

Legal entities of Agrofood sector from Zenica-Doboj canton are presented in the following tables.

Table 13. List of economic entities in Zenica-Doboj canton from the milk and meat sector

Name of the economic entity	Place	Number of cooperatives	Number of employees
Milk processing companies			
Zenička industrija mlijeka „ZIM“	**Zenica**	**1271**	**95**
Sarajmilk, Maglaj	**Maglaj**	**200**	**26**
Sir-Dedić	**Breza**	**51**	**5**
OPZ“Zlatna Kap“	**Tešanj**	**10**	**2**
Buyers - collectors of milk			
UŽ „Poljoprivrednice Usorsko-Tešanjskog kraja“	**Tešanj**	**114**	**2**
OPZ“Ze-Vis“	**Zenica**	**16**	**3**
OZZ“Moštre“	**Visoko**	**10**	**3**
PZ“Lastavica“	**Zenica**	**10**	**2**
„Inmer“	**Gradačac**	**61**	
„Milkos“	**Sarajevo**	**10**	
Processors of beef and sheep meat			
„Suša Commerce“	**Visoko**		**79**
„Semić“doo	**Visoko**		**55**
„Vimes“doo	**Visoko**		**30**
„Vimar“doo	**Visoko**		**30**
„Zmajevac Franca“	**Zenica**		**15**
Chicken meat processors			
„Brovis“ d.d.	**Visoko**		
„Madi“doo	**Tešanj**		
„Perutnina“	**Breza**		

On the area of Zenica-Doboj canton there are 24 legal entities that are working in the sector of milk and meat.

In the sector of fruits and vegetables there are not sufficient processing capacities. Largest part of work is repurchase of fresh fruits and vegetables that is placed on the market like fresh yield or it's processed in industries that are located in other cantons.

Table 14. List of purchasers of fruits and vegetables in Zenica-Doboj canton

Name	Place	Number of cooperants	Number of employees
OZ "Ideal"	**Visoko**	**120**	**5**
OZ "Bios"	**Visoko**	**95**	**12**
PZ "Poljar"	**Žepče**	**500**	**2**
PZ "Malinar"	**Zavidovići**	**75**	**2**
OZZ "Žepački rolend"	**Žepče**	**200**	**2**
OPZ "Teraprim"	**Kakanj**	**40**	**2**
D.D. "Voćar piramida"	**Visoko**	**25**	**6**
„Fruti-Fungi"	**Visoko**	**80**	**4**

Table 15. List of producers of grain mill products in Zenica-Doboj canton

Name	Place	Number of employees
„Dukat"doo	**Tešanj**	**12**
„BB Commerce"	**Olovo**	**4**
„Mlinpek"	**Žepče**	**4**
„Klas"	**Olovo**	**8**
„Mijić"	**Žepče**	**4**
„Muzuri"	**Visoko**	**8**

Table 16. List of producers of non-alcoholic beverages, fruit juices and bottled water in Zenica-Doboj canton

Name	Place	Number of employees
„Princes“	**Tešanj**	**5**
„Tešanjska vrela“	**Tešanj**	**8**
„Zema“	**Zenica**	**4**
„Celvik“	**Tešanj**	**6**
„Toto“	**Zenica**	**3**
„La Fragola“	**Zenica**	**3**
„Saraj-Milk“	**Maglaj**	**4**

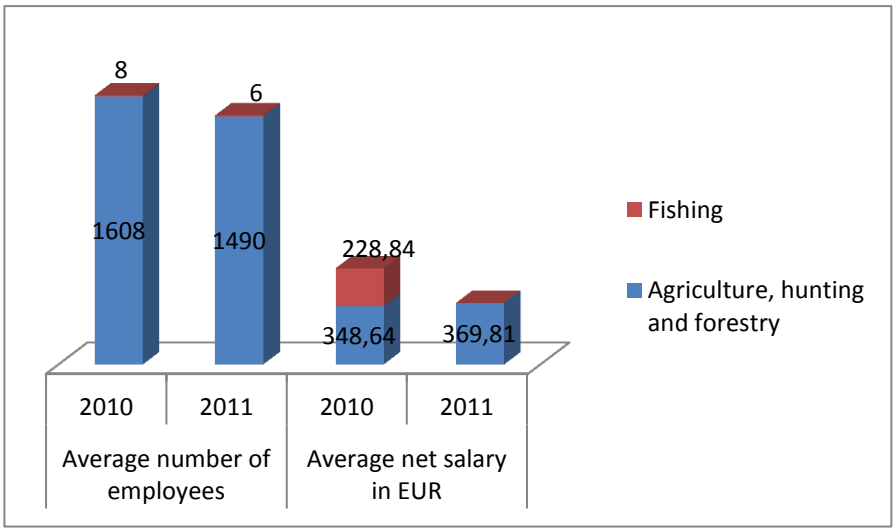
On the area of Zenica-Doboj canton in Žepče municipality OPZ “AGROFARM” is working and conduct repurchase of medicinal and aromatic plants and produce essential oils. Mostly repurchase the Melissa Officinalis L. herb. OPZ “AGROFARM” gather 35 cooperants that breed Melissa Officinalis L. on total surface of 9 acres.

State of Agrofood sector in Middle Bosnia canton

Middle Bosnia canton covers 6 municipalities: Travnik, Jajce, Gornji Vakuf, Donji Vakuf, Bugojno and Kiseljak. Total area of Middle Bosnia canton is 3.199 km^2. From the total area 57% is covered by forests, 34% by agricultural land. Timber stock amounts 38 million cubic meters of timber of which 46% are conifers. Meadows cover 35.349 and grassland 25.388 acres.

Area of this canton is mostly belongs to the hilly and mountainous agricultural areas, where livestock breeding dominates as the most important branch of agriculture. In the area of agricultural crops: grains (corn, barley, wheat, oats, rye ...), vegetables (potatoes, cabbage, onions, beans, etc.) and forage (grass and clover mixtures, silage forage and fodder beet). In the area of livestock breeding the most grown are cattle, sheep’s, goats and horses. In year 2010 agricultural production was carried on 1.799 acres of which breeding of grains on 1.466 acres and fodder on 263 acres.

Graph 5: Number of employees and average net salary in sectors of agriculture, hunting, forestry and fishery - period 2011 - 2011



From the previous graph is visible that in year 2011 came to decrease of employed number in sector of agriculture, hunting and forestry but in the same period occurred to increase of average net salary employed in this sector. Sector of Fishery don't have significant impact in this canton. In the period 2010-2011 in Middle Bosnia canton occurred increase of registered legal entities and crafts number in all observed sectors.

Graph 6: Number of legal entities and crafts registrated in sector of agriculture, hunting, forestry and fishering in Central Bosnia canton

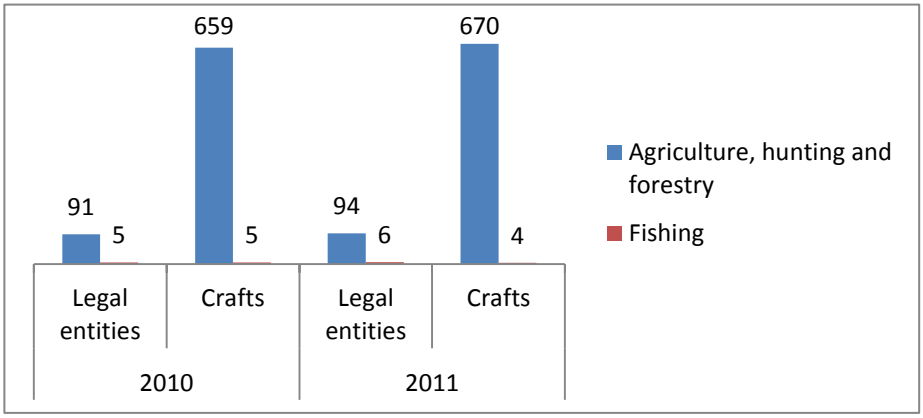


Table 17. The amount of harvested grain, forage crops and vegetables in the Central Bosnia canton period 2010 - 2011

Crops	2010			2011		
	Harvested area/acres	Yield/tons		Harvested area/acres	Yield/tons	
		TOTAL	/acres		TOTAL	/acres
Wheat	1.735	5.554	3,2	1.641	5.515	3,4
Rye	421	1.314	3,1	395	1.299	3,3
Barley	1.021	3.176	3,1	994	3.243	3,3
Oats	439	1.105	2,5	454	1.304	2,9
Corn grain	1.156	2.970	2,6	1.112	2.832	2,5
Potatoes	3.197	25.149	7,9	3.212	28.543	8,9
Carrot	92	537	5,8	100	656	6,6
Onions	351	2.104	6,0	360	2.468	6,9
Garlic	69	335	4,9	79	449	5,7
Beans	613	985	1,6	641	1.192	1,9
Peas	65	111	1,7	70	131	1,9
Cabbage and Kale	610	7.551	12,4	645	7.983	12,4
Tomato	77	355	4,6	91	441	4,8
Pepper	57	256	4,5	57	255	4,5
Cucumber	87	517	5,9	94	622	6,6
Clover/Hay	1.977	9.291	4,7	2.001	9.567	4,8
Alfalfa	1.698	8.536	5,0	1.678	8.680	5,2
Corn for fodder	753	11.778	15,6	716	7.523	10,5
Fodder beet	212	2.890	13,6	245	2.535	10,3
A mixture of herbs and pulses	110	326	3,0	101	305	3,0
Grass and clover mixture	1.780	9.566	5,4	1.787	8.696	4,9

According to the previous table it is visible that sown areas and yields in years 2010 and 2011 are not sufficiently changed. Biggest parts in production have production of potatoes than after this goes wheat and fodder crops.

Table 18. Number of productive trees and accomplished yields of fruits in Middle Bosnia canton period 2010 - 2011

Fruits	2010			2011		
	Number of productive trees	Yield		Number of productive trees	Yield	
		TOTAL tons	Kilograms/ tree		TOTAL tons	Kilograms/ tree
Cherry	14.130	380	26,9	15.513	308	19,9
Sour cherry	6.760	119	17,6	7.720	116	15,0
Apple	202.300	2.782	13,8	208.050	2.546	12,2
Pear	97.800	1.062	10,9	99.900	1.068	10,7
Quince	1.565	10	6,5	1.670	20	12,2
Plum	360.500	3.501	9,7	369.500	3.872	10,5
Walnuts	28.680	311	10,9	38.250	336	8,8

Data from previous table represent that in Middle Bosnia canton biggest areas are planted with orchards of apples, pears and plums and that their number is increased compared to 2010 and 2011. Other fruit cultures also show a rising trend, but on a smaller scale.

Table 19. Number of livestock in Central Bosnia canton - period 2010 - 2010

Year / Name	2010	2011
Cattle	**29.412**	**29.695**
Sheep's	**87.798**	**87.090**
Pigs	**11.918**	**14.210**
Horses	**1.553**	**1.465**
Poultry	**189000**	**202000**
Goats	**3.640**	**3.449**
Rabbits	**990**	**880**
Beehives	**17.890**	**19.393**

Data from previous table represent that in Middle Bosnia canton larger part in livestock are sheep's and cattle. Number of observed period is not significantly changed. In this period occurred the increase of beehives number.

Table 20. Realized production quantities of milk, honey, eggs, and wool in Middle Bosnia canton period 2010 - 2011

Year / Name	2010	2011
Cow milk (liters)	34.558	35.951
Per milking cow (liters)	1.725	1.781
Sheep milk (liters)	4.137	4.064
By milking sheep (liters)	64	63,6
Goat milk (liters)	400	383
By milking goat (liters)	156	160
Wool (tons)	139	151
Per sheep (kilograms)	1,7	1,9
Eggs (pieces)	24.042	25.042
Per chicken (pieces)	168	163
Honey (tons)	154	160
Per beehive (kilograms)	8,6	8,2

Data from previous table represent that in observed period didn't become to significant changes in achieved quantities of milk, honey and eggs production. Livestock also was not changed in this period.

In the following text is presented the state of Agrofood sector in 4 municipalities from Central Bosnia Region - municipalities of Žepče, Zavidovići, Maglaj and Zenica. Producers of Agrofood products from these four municipalities will be target group for the "IPATECH" project and due that specific part of this analysis will be devoted to these municipalities.

State of Agrofood sector in Žepče Municipality

Žepče municipality is located in central part of Zenica-Doboj canton and covers area of 282 km^2. According the estimated results currently in Žepče municipality lives 31.067 habitants, of which 4.800 are in the city, while the rest of population lives in surrounding area (villages). Average population density of the municipality is 110 habitants/km^2. Žepče municipality have the moderately continental climate with very cold winters and warm summers. The base of hydro graphic network is Bosna River. There are 14 sources of clean drinking and mineral water on the territory of Žepče municipality.

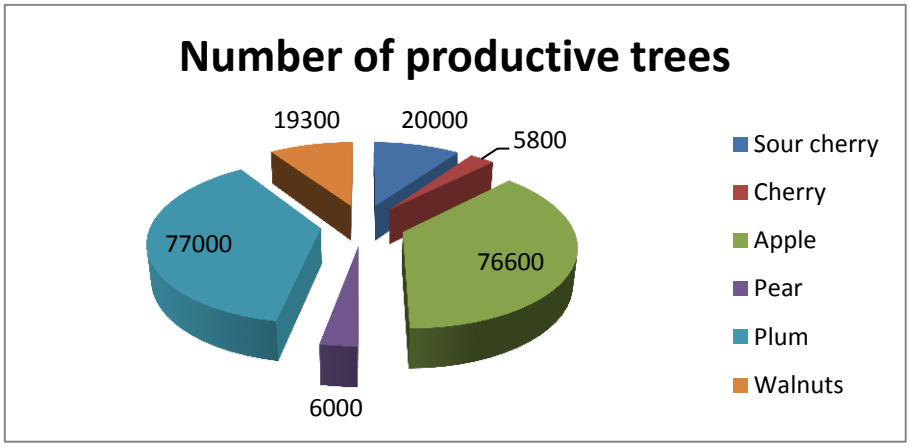
Table 21. Preview of total surfaces of Žepče municipality including allocations of agricultural land

Type of land	Surface (acres)	%
Arable land and gardens	1.294	28,8
Orchards	738	16,4
Meadows	1.140	25,4
Grassland	1.317	29,3
TOTAL agricultural land	**4.489**	**100**
Forest land	17.669	94
Barren fields	1.215	6

Source: Development strategy of Žepče municipality 2011-2018

Fruit growing is one of the agricultural branches which in Žepče municipality increased production.

Graph 7. Number of fruit productive trees in Žepče municipality in year 2010



Source: Development strategy of Žepče municipality 2011-2018

On the territory of Žepče municipality in past few years is intensified breeding of soft fruits especially Raspberries and Blackberries. In year 2010 breeding of soft fruits was on the surface of 60 acres of which 51 acres of Raspberry and 9 acres of other soft fruit species.

In year 2010 on the territory of Žepče municipality grains were breeding on the surface of 553 acres of which 114 acres was vegetables and 958 acres fodder crops. Greenhouse production takes significant place in agricultural production and cover surface of approximately 1,6 acres. The production in greenhouses mainly is breeding of Tomato, Peppers, spinach and Onions.

Livestock production on the territory of municipality in past few years notes reduce of production, mostly because of high prices food for the livestock, land fragmentation and the lack of long-term plans for the development of livestock farming. In year 2009 on the territory of municipality is registered 4.450 cattle, 11.800 sheep, 6.050 pigs, 27.000 pieces of poultry and 1.850 beehives.

Agriculture of Žepče municipality is based on household agricultural farms. By the end of year 2012 in Žepče municipality is registered 1.115 household agricultural farms and approximately 10 crafts that are working in agricultural sector. There are 4 cooperatives, 8 associations from various agricultural sectors that are operating and gather approximately 1000 members/cooperants.

In Žepče municipality in year 2008 "Agroinkubator Žepče" is established by the Association of entrepreneurs and employers Žepče. Agroinkubator Žepče works as infrastructural support to development of agribusiness, gather and networking associations, cooperative, SMEs and crafts from agribusiness sector. Tasks of Agroinkubator Žepče are increase of quality and quantity of products, placement of products on the market, business connection of individual agricultural producers and SMEs, integration of agribusiness in the flows of entrepreneurship and registering agricultural activities, continuous educations of agricultural producers and follow up of productions. Within the Agroinkubator Žepče operates expertly counselling service of Agronomy.

Size of Agroinkubator Žepče is 620 m^2 with complete infrastructure built in. Amenities: hall for educations, pedological laboratory for testing soil quality, reefer capacity 300 m^3 (operating mode +4°C, premises for associations and cooperatives, storage premises, facility and equipment for production of essential oils, multifunctional drier and equipment for fruit chips production.

Within the Agroinkubator Žepče the production of medicinal and aromatic plants is organized (Lemon Balm - Melissa Officinalis L.) and production of essential oil made of this plant. Cooperants 30 of them are breeding Lemon Balm - Melissa Officinalis L. on the surface of approximately 10 acres. Production is made on the areas of Žepče, Zavidovići, Maglaj and Zenica municipalities. In the facility for production (distillery) of Lemon Balm - Melissa Officinalis L. essential oil is produced and placed on the market trough General agricultural cooperative "Agrofarm" Žepče.

State of Agrofood sector in Maglaj Municipality

Maglaj municipality covers area of 289km^2 and in this municipality lives approximately 23.000 inhabitants. Climate is moderately continental with warm summers and moderately cold and snowy winters. Average yearly temperature is 10°C and average annual precipitation of 700-1500 mm/m^2. The backbone of hydro graphic network consists of the river Bosna with smaller rivers. The average population density is 81 inhabitants/km^2 that can be characterized as a predominantly rural area.

Table 22. Review of total surface in Maglaj municipality including allocation of agricultural land

Category of land	Surface/ acres
Arable land and gardens	7.581,10
Orchards	1.089,40
Meadows	487
Total arable land	9.157,50
Grassland	2.477,30
forest land	14.736,40
Barren land	1.214,50
TOTAL	27.585,70

Source: Development strategy of Maglaj municipality 2012-2020

Agricultural land covers 40,3% of total municipality surface of which Arable land 78,8% and Grassland 21,2%. Breeding of Corn, Potato and Apples are dominating in agricultural production.

Table 23. Production of agricultural crops in Maglaj municipality, 2011

Type of production	**Production/tons**
Field Crop Production	
Wheat	162
Corn	336
Rye	10
Fruit growing	
Apple	225
Pear	38
Plum	58
Vegetables	
Potato	832
Peppers	19
Onions	135

Source: Development strategy of Maglaj municipality 2012-2020

In livestock production of municipality biggest part covering the poultry production and cattle and sheep growing. Positive trend in sector of agriculture shows the production of milk. In year 2011 there are two dairy farms that work on the territory of Maglaj municipality and they are repurchased approximately 400.000 liters of milk.

In year 2011, 16 crafts and 6 SMEs from the sector of agriculture, hunting and forestry were registered. Also on the territory of Maglaj municipality 3 agricultural cooperatives and 10 associations form agricultural sector are working.

Agricultural production in Maglaj municipality is based on the family agricultural households and there are 500 family agricultural households registered so far.

State of Agrofood sector in Zavidovići municipality

Zavidovići municipality is covering area of 521 km^2. Agricultural land is covering 180 km^2 (Arable land 60 km^2 and forest land 320 km^2. The most important water resources in are the rivers Bosna, Krivaja and Gostović. It is estimated that on the area of Zavidovići municipality lives approximately 38.000 inhabitants with average density of 73 inhabitant/km^2. Rate of unemployment is 56%.

Table 24. Review of total surface in Zavidovići municipality including allocation of agricultural land

Category of land	Surface/ acres
Arable land	7.691
Orchards	1.300
Lawn	2.923
Grassland	3.208
Highly cultivated (hothouse)	1
Irrigated land	41.510
Forest	39.961
Barren land	2.120

Source: Strategy of integrated development of Zavidovići municipality for the period 2012-2016

Production of field crops is covering 427 acres, production of fodder crops covers 3.900 acres, vegetable production covers 220 acres and production of orchard production covers 47 acres.

Table 25: State of livestock in Zavidovići municipality

Species	Quantity
Cattle	4.000
Sheep	4.300
Goats	1.000
Poultry	25.000
Beehives	2.500

On the area of Zavidovići municipality 4 million liters of milk is produced, approximately 25% of this production is processed in private farms.

There are 4 associations of farmers and 2 agricultural cooperatives that are working in Zavidovići municipality and they are gathering approximately 600 members/cooperants. Agricultural production is based mostly on small individual producers approximately 15.000 of them, there is also 40 registered crafts from the agricultural sector.

2. State of Agrofood sector in Zenica municipality

Zenica municipality covers an area of 558,5 km^2 in which lives approximately 127.000 inhabitants. Approximately 66,2% of inhabitants lives in urban part of municipality, while 33,8% lives in rural area. According to the OECD criteria Zenica municipality can be characterized as urban area. On the area of Zenica municipality around 8.500 households their livelihood is realized exclusively through agricultural production while 4.500 of households are realising 50% of their livelihoods though agricultural production.

Climate is moderately continental with warm summers and cold winters. Average yearly temperature is 10,4 ^oC, average annual precipitation is 804 mm and are unevenly distributed throughout the year, but there are not extremely dry months.

In the structure of agricultural land biggest part are covering the Meadows 8.436 acres that represent 51% of total agricultural land. Arable land and gardens are covering 30,90% (5.112 acres). Orchards are covering 10,98% and grassland covers 7,12% of total agricultural land.

In year 2010 on the territory of Zenica municipality following productions were performed: agricultural on 601 acres, vegetable on 1309 acres, fodder crops 134 acres and orchards 1816 acres. The greenhouse production is conducted on the surface of 4.460 m^2 and a mainly seasonal vegetable is produced.

Structure of livestock on the area of Zenica municipality is composed of 7.200 heads of cattle, 23.000 sheep's, 1.100 goats and 200.000 poultry. Total livestock production is 8.688 liters of milk, 30 tons of wool, 42.250 eggs and 45 tons of honey. There are 70 business subjects that are working in the agrofood sector and they are repurchasing agricultural products from the dairies, fruits, vegetables, mushrooms and poultry sectors.

On the area of Zenica municipality 4 agricultural cooperatives and 5 agricultural associations are working. There are also 76 registered business subjects from the sector of agriculture, hunting and forestry.

2.1 The importance of agricultural associations and cooperatives to develop agribusiness in the area of Žepče, Zavidovići, Maglaj and Zenica municipalities.

At the 4 municipalities of Zenica-Doboj Canton (Zepce, Zavidovici, Maglaj and Zenica), where the project IPATECH will be implemented, 27 associations of farmers and 13 agricultural cooperatives is registered. Agricultural associations and cooperatives gathering a large number of farmers/members that through organizing and pooling solve problems and barriers they face in their operations. Associations and cooperatives are working with NGOs and agencies that develop and

implement development projects, funded by national and international donors. Cooperation is reflected in the partnership in implementation of the projects and/or organizations and their members are beneficiaries of the project. Through the implementation of these projects are strengthen the capacities of associations and their members, and developed business activities that enable the realization of beneficiaries' incomes for their households.

In the area of Žepče municipality beside Agroincubator and OPZ "Agrofarm" Žepče that have been mentioned above, a significant role in the development of agribusiness have the association "Proizvođači maline - kooperanti" Žepče which gather more than 350 cooperants. The association brings together producers of raspberries and blackberries plantations, which mediates the procurement of planting materials and intermediate goods, and organize the purchase of products. In the year 2012, the association's cooperants have launched approximately 350 tons of fresh raspberries and blackberries. The association brings together producers of raspberries and blackberries plantations, which mediates the procurement of planting and raw materials, and organizes the repurchase of products. The Association acquires the necessary equipment for its cooperants through various projects and organizes educational workshops, which is necessary for proper growing berry fruit. In municipality Žepče acts Beekeepers Organization' Žepče "which brings together about 60 members, and its aim is to strengthen the beekeeping in Žepče municipality. The Association organizes educational workshops for its members. In the area of municipality Zavidovići operates association "Poljoprivrednik" Zavidovići that brings together producers of various agricultural crops. The goal of the association is to develop greenhouses and trees planting berries and finding markets for the joint marketing of manufactured products to the market. In order to solve part of the problem faced by agricultural producers it is necessary to do their networking (fragmentation, insufficient quantity of the product for the market, lack of funding for marketing and market research, lack of information on market trends and available incentives for production). By joint action through associations and cooperatives agricultural producers will help to solve the problems and obstacles they face in their operations. Joint market will increase their aggregate supply, which will allow them permanent presence in the market and easier products placement. Operating through organizations is important in terms of EU funds use that will be available for direct B&H agribusiness development, such as the IPARD program.

CROATIAN TERRITORY

Project IPATECH - Miniaturization technology: synergies of research and innovation to enhance the economic development of the Adriatic

1. The rural area of the Zadar County

Final Beneficiary HRVATSKA GOSPODARSKA KOMORA- CROATIAN CHAMBER OF ECONOMY, Rooseveltov trg 2, 10000, Zagreb, CROATIA. mmisulic@hgk.hr

1.1 State of the rural area and territorial – development wholes of the Zadar County

According to the Organisation for Economic Co-operation and Development (OECD) classification of rural areas, the only internationally recognized definition of rural area, out of the total number of 229 settlements in the Zadar County, 210 of them are rural areas, which is 92% of the total number of settlements. A high proportion of rural areas versus urban areas is recognizable also in the distribution of the territory. Thus, out of the total of 3,643.33 km ² of the Zadar County, 92.8% is rural area. The rest of the County's territory is an urban area.

The distribution of the population shows a little different structure in favor of urban areas. Namely, 48% of the county population lives in rural areas. The rest, 52% of the total County's population lives in the urban areas of the county, which is another evidence of a great dispersion of the population in rural areas (with regard to the territory covered by rural areas).

The situation is not very different from those in EU countries, where over 56% of the population in 27 EU member countries lives in rural areas, which covers 91% of the territory. These figures indicate the extreme importance of rural development for the EU.

According to the OECD criteria at regional level, the Zadar County falls in the category of Significantly rural regions with 15-50% of the population living in local rural areas. Out of the total county's population, 48% live in rural areas.

2. The economy of rural areas of the Zadar County

2.1 Main economic indicators

Zadar County's economy is based on tourism, trade, particularly maritime, agriculture, fisheries and mariculture, and industry, handicrafts and services. Economic activity in the county is realized through the active participation around 3,000 companies and more than 3,500 trades. On average, on every 21 citizen in the county a company or a craft operates.

The tourist and hotel and restaurant offer of the region is various and of high quality, and meets the motives and interests of urban milieu tourists, boaters, recreational tourists, hikers and swimmers.

Out of categorized tourist facilities there are 12,493 beds in hotels and resorts, 52,627 beds in private rooms, apartments and guesthouses, 15,400 in camps, while in 6 marinas 4,880 berths are offered, of which 3,000 in the sea and about 2,000 dry berths.

Of all industries of the Zadar County the most important is manufacturing industry in whose structure the food and beverage industries dominate, which make up 25.4% of the total volume of industrial production. The share of industry in the overall economy of the county in recent years significantly reduced in comparison to other sectors and accounts for about 17% of total revenues.

Due to the strong privately owned fishing fleet, excellent fishermen known throughout the world and known fish – processing enterprises, Zadar County ranks among counties with the most developed fisheries in Croatia. In recent years, tuna fish farming in cages and salting of small pelagic fish (anchovy and sardine) developed.

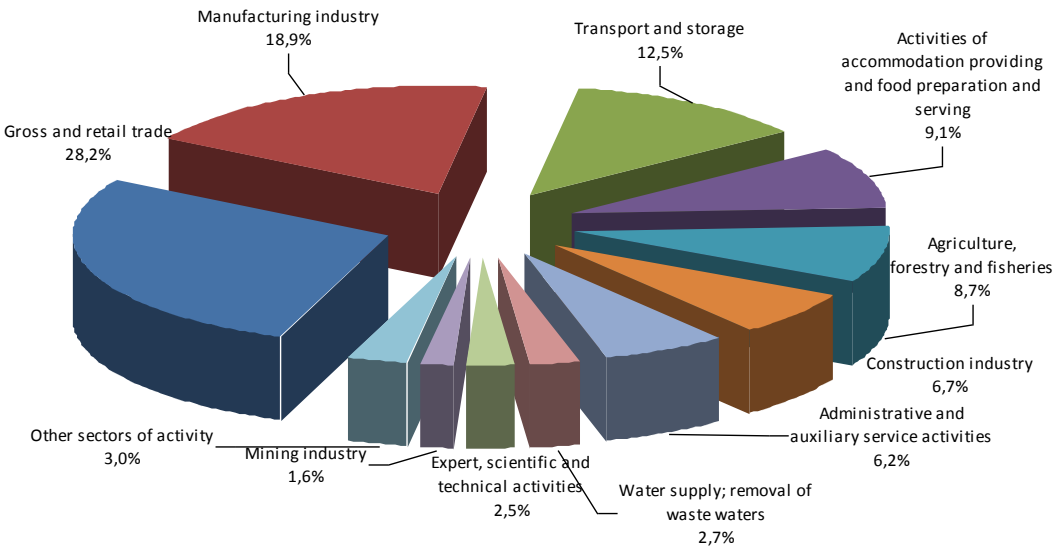
Abilities of agricultural production are based on about 59,000 hectares of arable land. The main branches of industry are: fruit growing, viticulture and vegetable growing. In recent time, significantly investments are made into cultivation of new intensive fruit plantations.

In the last few years significant growth rates are generated by sectors of tourism, construction and utility sector in crafts and small enterprises.

Maritime transport and tourism contribute most to the foreign trade with the world through services exports, while manufacturing and fisheries make up the majority of trade with the world. In 2011 the businessmen of the Zadar County have earned a total income of 1.4 billion euros. Of rural areas, the greatest revenue is realized in the municipalities and towns of: Poličnik (4.10%), Kali (3.29%) and Benkovac (3.01%).

The large drop in investments is a warning information because it indicates the decline in economic activity in rural areas in the Zadar County. It is also a warning for the future, because the reduction in investments results in a rise in unemployment, decrease of income and general economic stagnation of the territory.

Fig. 1 Total revenue structure of the Zadar County economy by sectors in the period I – IX 2012



In the total revenue structure of the Zadar County for the period January – September 2012 the share of the activity of Agriculture, forestry and fisheries is 8,7%. The county's total income was 1,05 billion euros, and the agriculture, forestry and fisheries 91,2 million euros. This activity accounts for only 8,7% of the total county's revenues, and 8% of the total county's expenditures.
In 2011 it was 8,3% and the total revenue of the county in 2011 was 1,4 billion euros.
Number of the persons in the Zadar County employed in the sector Agriculture, forestry and fisheries is around 1,276. The total number of employed persons in the county is around 50,000.

Exports

The Zadar County export is largely based on products of fish, then aluminum, machinery, plastic masses, etc. Most of the exporting firms are located in rural areas, which is evidence of export potential of rural areas that can not be neglected. The reason is the accommodation of production facilities mainly outside of urban areas enabling lower costs of land, labor power and other costs in relation to the town territory. These are the real benefits that can be used by the proper management of land by state and local government units, by establishing more favorable conditions for entrepreneurs and attracting new investments. With such a policy it is extremely important that the export is based on the domestic production of high added values that certainly has to be encouraged and on which a future strategy is to be built.
In the total foreign exchange trade of the Zadar County in 2001 the leading position is taken by the Municipality of Poličnik, followed by the Town of Zadar, Kali, Town of Benkovac and Municipality of Stankovci. These data show the export potential of rural parts of the county, especially the Municipality Poličnik which has prospered thanks to good management of its business zones. Also, in export already traditionally strong is the insular municipality of Kali whose exports is based on fisheries. The most important export products of the Zadar County' are raw fish, then aluminum, machinery and plastics. It is important to emphasize that the most of the exporting companies in the Zadar County are located in rural areas of the county.

3. Entrepreneurship

3.1 Structure of entrepreneurship

In the Zadar County, 98% of the companies are included in the category of small business. This information corresponds to the situation in the country and in most of the EU countries, and shows a significant share of small businesses in the economy.

The industry in the past period has been the backbone and driving force in the development of the Zadar County, despite the fact that in the last decade, other, especially service activities recorded faster growth. By all criteria, the most important is the manufacturing industry, on the second place, after trade, by total revenue and number of employees.

From businesses in agriculture, we can emphasize the following:

• Vigens Ltd, Kožino-Primorje- 4.5 to 5,000,000 liters of milk (leased 484 hectares of arable land for the production of fodder and 290 hectares of other land in lease predicted for the planting of permanent crops);

• Vrana Ltd. Jankolovica - a total of 872 hectares leased, of which vineyard of table grapes 30 hectares, 10 hectares of olive groves, vegetable production in the open on 58 hectares, the production of vegetables in greenhouses 7.7 hectares, and on the remaining land forage production, milk production of about 3 million liters per year, 24 million eggs per year, production of sauerkraut of a thousand tons per year;

• Nova Zora – Konzum s.c. Sv. Filip i Jakov – vegetable production and field crops production on 200 hectares;

• Maraska Ltd. Zadar - production of alcoholic and non-alcoholic beverages and 212 hectares of agricultural land leased on which a plantation of cherry marasca was erected;

• Badel 1862 s.c, Benkovac wineries - production of alcoholic beverages, in lease 250 hectares of agricultural land on which 130 hectares of wine grapes were built in Korlat, 70 ha in Dubrava (Miranje) and 50 ha in Pristeg;

• Paška sirana s.c, Pag - cheese factory for cheese production of 700-800 tons per year.

4. Crafts and trades

The Zadar County has a long tradition of craftsmanship which, along with other small and medium entrepreneurs, form the core of the economic structure. There are around 4,000 crafts in the county.

Traditional crafts are crafts that require special craft skills and knowledge in the operation and which are performed mostly by manual labor, and which by the techniques of production and the function, purpose and form rely on patterns of traditional culture, and in this respect could symbolize the local, regional or national identity.

By diversification of rural economic activities, farmers and other rural population in recent times are trying to secure additional sources of income. Rural tourism, traditional crafts, direct sales, facilities for sale at the farm, non-agricultural services or facilities for the use of renewable energy resources are contributing to the development of rural areas.

Among the activities of the crafts sectors, certainly the greatest importance has the rural tourism.

5. Cooperatives

Zadar County has about 170 registered cooperatives with approximately 3,000 members. Only about 70 cooperatives duly submitt a final bill, which makes 5.6% of the total number of cooperatives in Croatia. In these 70-odd cooperatives there are 160 registered employees.

The largest number of cooperatives in the Zadar County is in the area of agriculture. A large number of cooperatives are registered, but they are not active. It is necessary to associate familiy agricultural farms in cooperatives because each family agricultural farm is too small a manufacturing entity to be an equal partner on the market, it cannot produce the required quantity, realize the required quality or maintain continuity of production, nor can it conveniently purchase raw material, apply modern technological procedures, process and sell ready-made technological products.

Among active cooperatives are the following:

• PZ „Nova Zora - Konzum" from Sv. Filip i Jakov - on approximately 50 hectares it deals in production of brassicas, carrots and leeks.

• PZ"Maslina i vino" from Polača – on the land of about 40 hectares an oliveyard, a vineyard and a fig trees plantation are erected, and it has its own winery

• PZ" Korijeni" from Podgradina (a family cooperative) - on a part of agricultural land of about 10 hectares, it is engaged in the production of fruit (peaches and nectarines, cherries) and vegetables, and on a piece of land the vineyard is raised

• PZ „Drobnica" from Preko - with olive oil mill and olive processing, it has leased 3.0 hectares of agricultural land on which there is an ecological olive grove.

Agricultural biodiversity of Dalmatia and the Zadar County

Agricultural biodiversity is extremely significant portion of biodiversity in general, and its importance is even greater because of the economic effect which a proper evaluation of indigenous varieties and breeds can have on the revitalization and development of rural areas of the county.

A recent study of traditional herbs and domestic Dalmatian animals ascertained a total of 40 wild species with high potential in agriculture and 328 cultivars or varieties, breeds and strains. Particularly interesting is a huge number of local traditional varieties of olives with 37 varieties, of grape with 82 varieties and other fruit species with 94 varieties and numerous aromatic, spicy, medicinal, honey, ornamental and edible wild plants.

Due to new trends in agriculture in the last fifty years, primarily the industrialization of agriculture, the domination of monocultures production and the introduction of dedicated hybrids, traditional varieties and breeds are becoming endangered and are rapidly disappearing.

The agricultural biodiversity of Dalmatia is not sufficiently explored, preserved, protected, promoted and used in further selection, nor recognized as economically important in creating original and distinctive premium agricultural products of Dalmatia, as well as a tourism potential and an important tool for the preservation of the existing Dalmatian landscape.

6. Overview of the most important indigenous cultures of Dalmatia and the Zadar County

Olive

Olive is the most numerous fruit type grown in Dalmatia, and its economic value is shown by the fact that on the Croatian coast in the olive growing and production 45% of the families are involved, either as a primary or secondary activity, and with the islands included, 93% of the families. Today in the region of Dalmatia approximately 3.5 million olive trees are grown, with a tendency of increase. At the same time, the number of other fruit species, with the exception of the vine, is in stagnation or declining. Olives in Dalmatia are produced almost exclusively for oil, while other uses are less visible.

The dominant variety of Dalmatia is oblica, which occupies over 50% of the assortment, and it is followed by lastovka and levantinka. According to their economic, genetic, selective, cultural, historical, landscape, habitat values, their authenticity, vulnerability and the impact on the general biodiversity, has been allocated seven most important varieties have been singled out: Oblica, Lastovka, Bjelica, Dužica, Paštrica, Levantinka and Drobnica.

Fruit cultures

In the Zadar county most important fruit cultures, after olive, are: cherry, marasca, fig, almond, and the differences derive from the composition of a particular varietal subregion. Carob is cultivated only on some suitable sites in the area, mainly as a self-sown crop in the insular part of the county.

According to its economic, genetic, selection, cultural, historical, landscape, habitat values, its originality, vulnerability and the impact on the overall biodiversity two varieties of figs were selected: Petrovača bijela i Zamorčica; two varieties of almond: Čarski kasni and Knez Črnomir; and several types of cherry, of which Brač-2, Brač-6 and Recta are predominant.

Vine

Today in Dalmatia 82 varieties are present, out of which for their economic, genetic, selection, cultural, historical, landscape, habitat values, their authenticity, vulnerability and impact on overall biodiversity, several varieties have been singled out for the Zadar county: Maraština, Plavina, Babić, Crljenak kaštelanski, Plavac mali, Debit (not endangered), Lasina (very rare), Gegić,

Svrdlovina, Zadarka (rare), then exceptional rarities like Galac, Dugoviska, Petovka, Silbijanac, Trišnjavica etc.

Although vine, compared with other cultures of the Dalmatian coast, is explored enough, there is still a lot of work on conservation, characterization, economic evaluation and revitalization. In this terms, it is necessary to complete an inventory of all viticultural area and complement the existing collections.

In order to use the wealth of indigenous varieties, tradition of wine making and tourist importance Dalmatia for an appropriate economic advantage, an economic evaluation of cultivars for their introduction into production, and creating a system of selection and planting material production is to be executed. Efforts to revitalize the indigenous variety needs should be followed by a proper marketing support, as well as modernization of production technology of wines in order to repair their quality.

Vegetables

In Dalmatia there is one half of the total Croatian area of commercial vegetable production intended for consumption in the fresh state and a third of all protected objects intended for breeding of vegetables. In the commercial production of vegetables intended for market foreign hybrids and varieties of vegetables, among which frequently one or a small number of cultivars dominate, by which agro-bio-diversity is extremely reduced, are almost exclusivelyc used.

Traditional varieties of vegetables and local vegetable populations are almost exclusively represented in the gardens and smaller yards and are intended for use in their own household. Their seed and reproducting material are produced and maintained exclusively on the family farms and are spread primarily by exchanging in an inner field. Trade of reproductive material of traditional varieties of vegetables in Dalmatia has never been developed, as well as systematic care about preserving their genetic identity. By depopulation of rural areas, particularly islands and the Dalmatian hinterland, and by migrations of the inhabitants which at the Dalmatian territory was especially expressed at the time of Homeland war, a number of traditional varieties, carefully maintained over a long period, were irretrievably lost, and the few remaining are in great danger to disappear.

In Dalmatia the existence of 15 traditional varieties of vegetables, out of which 3 were excluded for the Zadar County territory, was established, namely: domestic collard greens, *kozjak* homemade emery, *brgudski* winter onion. All these traditional vegetable varieties are highly endangered, and some are probably permanently lost.

Crops

According to its economic, genetic, selection, cultural, historical, landscape, habitat values, its originality, vulnerability and the impact on the overall biodiversity, a total of eleven crops and varieties for the area of Dalmatia, two of which are essential for Zadar region, have been singled out: Dalmatian pyrethrum and broom.

The territory of Dalmatia is abundant with eco-types of arable crops derived from natural selection under organic conditions of the production area and due to natural hybridization, and they represent a source of characteristics and genes for future selection. However, a question remains about how much of that wealth was preserved by today since the scientific research

researches of Dalmatian field crops are neglected. By the disappearance of crop production in Dalmatia, not only that the biodiversity of arable cultures is lost, but also the accompanying plants, animals and mushrooms are disappearing, which are associated with five plant covers (cultivated agricultural areas-grains, cultivated agricultural areas-except grains, crops-mix of lawns and shrubbery, crops and urban areas and crops with water surfaces, including irrigated areas).

Meadows and pastures

In the floristic richness of Dalmatia especially standing out is Dalmatian karst grassland which are, by the species richness, are among the richest plant communities in Europe. They, in economic terms, have almost never been investigated, although the pasture and mowing of these species has for centuries been the basis of livestock breeding of Dalmatia. By the simultaneous disappearance of livestock and depopulation on huge Dalmatian vastnesses, the healing process (succession) started, which makes Dalmatian karst grassland, meadows and pastures, becoming one of the endangered plant covers in Dalmatia and associated plant and other related species are also threatened.

According to its economic, genetic, selection, cultural, historical, landscape, habitat values, its originality, vulnerability and the impact on the overall biodiversity, the six original meadow and pasture species have been singled out (all are present in the Zadar County): djetelina dalmatinska (Trifolium dalmaticum) (clover), djetelina rumena (Trifolium incarnatum molinerii), grahorica dalmatinska (Vicia dalmatica) (vetch), kostrika perasta (Brachypodium pinnatum), kršin primorski (Chrysopogon gryllus) and vlasulja dalmatinska (Festuca dalmatica).

In Croatia so far 4,275 plant species were found, and, with subspecies included, 5,347 plant species. By number of species Croatia is ranked seventh in Europe, but by the number of species per unit of the state area it is in third place, behind Slovenia and Albania. If only the Dalmatia would be singled out, it would be the first in Europe by the number of species per unit of the space area. At the same time, about 11% of plant species of Croatia are endangered, most of which in Dalmatia.

Dalmatia is a region of exceptional plant abundance, especially aromatic, spicy, herbal, honey, ornamental and edible wild plants.

The value and potential of aromatic and spicy, herbal, honey, ornamental and edible wild plants of Dalmatia are exceptional and in several main directions: biodiversity, selection value, economic value, honey value, aesthetic value, food value, industrial and landscape value.

According to its economic, genetic, selection, cultural, historical, landscape, habitat values, its authenticity, vulnerability and the impact on the overall biodiversity ten cultivars and species (all are present in the Zadar County) are singled out: primorska kadulja (Salvia officinalis) (sage), budrovka (Lavandula hybrida), dalmatinski uspravni ružmarin (Rosmarinus officinalis) (rosemary), domaći primorski vrisak (Satureja montana), obična agava (Agave americana), ukrasna iglica Biokovo (Geranium macrorrhizum), matar (Chritmum maritimum), mirta (Myrtus communis) (myrtle), planika (Arbutus unedo) and divlja riga (Diplotaxis tenuifolia).

7. State of the agricultural land in the Zadar County

According to data from 2003 Agricultural Census, the land area of the Zadar County is 422.951 ha; of that 55%, or 231,746 ha are under agricultural area. Only 9% or 30% of arable land is used. Useful land in the county are karsts fields.

Table 1 UAA distribution in Zadar County

Type of cultivation	Ha
arable land and gardens	45,868
Orchards	2,515
olive groves	2,727
Vineyards	5,931
Meadows	11,935
TOTAL arable land (ha)	68,976
Pastures	162,770
TOTAL	231,746

8. State of the most important sectors of rural development

8.1 Agricultural sector

Agriculture - particularly the growing of olives and production of high quality olive oil, viticulture and high quality wines production, production of early vegetable cultures, but also cattle breeding and poultry farming, and fishing with mariculture - have a long tradition in the Zadar County. The existing resources (agricultural land, favorable climate, possibility of securing irrigation, spacious and rich waters) on one hand, and the tourism sector as a potentially important market for high quality (traditional, recognizable,"healthy" grown) products on the other hand, are conditions likely to allow further successful development of agriculture and fisheries, and their associated activities, as a significant element of overall sustainable development at the territory of the Zadar County.

The current agricultural structure is very unfavorable for intensive development of contemporary and specialized agricultural production and is the main obstacle to achieving production competitive with the European Union agriculture. Markedly adverse is the size of properties, and the fragmentation of plots is one of the main obstacles to a rational use of production potentials.

Of the total number of agricultural farms as much as 94% are those with the land of 3 hectares or smaller than 3 ha. Private estates are generally dispersed in a dozen small plots. The reason for the dispersion and fragmentation is the traditional division of rural households. So fragmented a property does not allow for a modern and competitive agricultural production and are not able to provide long-term existence of domestic agricultural economy. Necessary is a process of consolidation of farms and arable land, which would have to be organized and carried out with the assistance of competent professionals under coordination of the County.

The largest number of agricultural farms, except for the town of Zadar, is registered in the town of Benkovac (1,187), the town of Pag (370), the town of Obrovac (329) and municipality of Posedarje (324).

Table 2 Number of registered farms in Zadar County

	Family farm	Craft	Others	Company	Cooperative	Total
Zadar County	7173	69	4	43	23	7312

8.2 Plant production

The Zadar County area has ideal climate and soil conditions for plant production. Therefore, this area has a long tradition in the cultivation of fruit (cherry marasca, peach, nectarine, almond, cherry, fig and apple), of vegetables, both in the open and in the greenhouses, olive trees and vines.
The Ravni kotari area in the town of Zadar hinterland contains 30% of the arable agricultural land in Dalmatia and has a great potential for more intensive production and income. There are more than 2,500 hours of sunshine per year in Ravni kotari, which makes it one of the clearest Croatian areas. These conditions allow a longer vegetation of thermophilic cultures and the production of winter vegetables in the open and in the greenhouse. The war greatly reduced agricultural production which still has not yet recovered and is at a much lower level than possible.
According to the Croatian bureau for Agricultural Advisory Service-Zadar County Branch Office, the current production is about 40,000 tons of vegetables, 8,000 tons of fruit, 500 tons of table grapes, 5,000 tons of olives and 12,000 tons of wine grapes.

8.3 Farming

Crops in this region have a significant role, as for their growing for food for people and animals, and also because of the rotation by which optimal effects of vegetable growing are achieved. Of total area of karst field, in the future for farming-vegetable crops it can be counted on 6,000 hectares of land.
The lack of irrigation systems greatly hinders crop production as these plants have high water needs.
The current crop production mainly comes down to wheat, corn for grain and silage, alfalfa and barley, and in recent times, foraging intercrops (fodder kale, winter mix) and a little of soybeans and sorghum.

8.4 Vegetable growing

Vegetable production has always been an important production sector in the Zadar County. The present production, according to the data of the Croatian bureau for Agricultural Advisory Service-Zadar County Branch Office, is about 40,000 tons, or about 50% of the pre-war production.But, the possibilities of this territory are much bigger, and it is estimated that abotu 120,000 tons of various vegetables on about 7,000 hectares of adequate land can be produced at the Zadar County territory.
According to the Croatian bureau for Agricultural Advisory Service-Zadar County Branch Office, today's vegetable production in the open occurs on the surface of about 1,000 ha and provides

30,000 – 40,000 tons of vegetables per year, while in protected areas 9,000 tons of vegetables are produced on 22,2 ha, of which on 9,0 ha a hydroponic cultivation is present.

The vegetables produced in the open are are brassicas, lettuce, leeks, potatoes, root vegetables (carrots, celery, parsley), Swiss chard, spinach, tomatoes, peppers, watermelon and cantaloupe, while in the greenhouses tomatoes, peppers, cucumbers, lettuce and chard.

The total surface of used arable land and gardens is 4,095 ha.

Because of the great potential for the production of vegetables in the Zadar County, the area under vegetables should be increased, and especially invest into production in greenhouses in order to achieve a self-sufficient and continuous vegetable production for the Croatian market and exports.

A big problem for the present and future producers is the lack of adequate selling and finishing and storage capacities. For this it is necessary to ensure conditions within the land policy, the system of production aid, insurance of favorable development credit lines and education of manufacturers.

8.5 Fruit growing

Fruit production in Zadar County has a long history. This area before the Patriotic War was the largest producer of fruit in the region. The war, which took place in the most developed areas of fruit production, caused a lot of damage. It is estimated that over 80% of the fruit fund was destroyed.

The current production is around 8,000 tons of various fruit kinds of fruit on 977.9 hectares, 500 tons of table grapes and 12,000 tonnes of wine grapes on total of 1,571.0 ha and 5,000 t of olives on 3636.0 ha. The total land surface under permanent plantations in the Zadar County is 6,184.9 hectares.

In fruit production peaches and nectarines, Marasca cherry, apple are represented, and in recent years plantations of cherries and figs are raised. When lifting orchards, along with investment in plant material, also significant investment in the protection from the hail and in the irrigation system are needed. The Zadar County, its Administrative department for agriculture, participates in the preparation of the project documentation for systems of irrigation. Moreover, the Zadar County participates in the co-financing of purchase of plant material for raising permanent crops and also in co-financing of insurance premiums for crops and plantations.

Processing of fruit in Croatia is not given enough attention. In strategic documents of development of fruit growing the surface and the production of fruit are always analyzed from various points of view, and they always bypass the processing sector and finalization of fruit production. The largest gap is felt in the sector of fruit processing (production off fruit syrups, juices, concentrates and similar products of fruits).

8.6 Enology and viticulture

Winemaking in Zadar County has a long tradition and is an important branch of agriculture production. In the pre-war period in the county under the vineyards there were approximately 6,300 ha with 36.5 million planted vine, while after the war the area significantly decreased. According to the regionalization of vineyard areas of the Republic of Croatia, at the Zadar County territory there are three vineyards: Paško vinogorje, Zadarsko – biogradsko vinogorje and Stankovačko vinogorje.
Recent data, according to the assessment of the Croatian bureau for Agricultural Advisory Service-Zadar County Branch Office, show that the area under vineyards is increasing day by day and amounted to 2,000 ha with approximately 10 million vines. Of the total vineyard production, the red varieties account for 77.30% (plavina crna, syrah, merlot, cabernet sauvignon, grenache c.), and the white varieties 22.70% (debit bijeli, maraština bijela, ugni blanc, gegić bijeli).
In the so-called Arkod system of the Republic of Croatia 204.68 ha under vineyards are enrolled. The real situation, however, is different because the registration into the system is not obligatory, and only those agricultural producers who for their production receive incentives are enrolled.
Conventional grape production is the most widespread, under integral production there are 66.38 ha cultivated by 7 family farms, while the ecological viticulture is developing and 23 family farms maintain their vineyards in that way on 130.25 ha.
Zadar County vintners are working more and more on the modernization of their processing capacities and promotion of their wine, and so 21 winemaker registered 83 wines as wine with protection of controlled geographical origin, according to the decisions by the Ministry of Agriculture, Fisheries and Rural Development.
Great untapped opportunities in viticulture and enology can be used by a long-term strategy of development of Croatia as a tourist destination with agriculture as the inevitable factor.

8.7 Olive growing

Olive growing tradition in these parts is more than 2,000 years long. In the Zadar County olive is the most numerous fruit with approximately 832,000 fruit trees, from whose fruit outstanding domestic oil of excellent quality and taste is produced.
The climate of the county is one of the variants of a modified Mediterranean climate and its main features are favourable for olive growing.
Number of trees in the last century has been falling, the old olive groves were abandoned, and new ones are not raised.
The reason for the drastic decline in the number of olive trees in the period from 1939 to 1988. is the systematic abandonment of villages and settlement in towns. However, from 1988 to 1995 olive

growing stagnated and declined because a large number of trees was destroyed in the Homeland war, especially in mainland of the county. In the last ten years are the old olive trees plantations are renewed and new and contemporary olive trees plantations are raised. Ministry of Agriculture incentive funds allow all interested parties to establish new plantations, limiting the minimum area to 0.5 ha. In this way, since 2000 by 2009 773 ha of olive groves were raised. Of this, 95% was achieved in coastal and inland parts of the county, and only 5% on islands (islands of Pašman and Ugljan).

On the mainland part of the county the highest number of olive trees is located in the vicinity of Biograd in Vrana - Pakoštane area, the area of Benkovac and Obrovac.

The olive varieties present on the islands are puljizica, karbunčela, oštrica, drobnica, levantinka, lastovka, slivnjača and dužica, while on the mainland there are the varieties oblica, drobnica, krvavica, levantinka, lastovka and karbunčela, and the introduced varieties leccino, pendolino, frantoio, cucco, itrana, ascolana tenera and others.

Apart from constructing new and the renovation of old olive trees, facilities for processing olive fruits into oil (oil mills, oil refineries) were opened in the county. According to the data of the Ministry of Agriculture, Fisheries and Rural Development, there are 21 mills in the county.

Substantial financial resources of the Ministry of Agriculture, Fisheries and Rural Development and of the local government units were spent on educating oil producers, because only the united (knowledge and money) could lead the renovation of olive in the direction of high and profitable production, and offer at the market high quality oils. Ecological conditions of production, experience from the past and modern technological processes show that they are able to meet their own needs and ensure production also for the export.

8.8 Animal husbandry

The war negatively affected the development of animal husbandry in the county. The main branches of livestock breeding before the war were cattle, sheep and goat farming, while today sheep farming is the dominant branch of animal husbandry.

Number of farmers and number of cows in Zadar County

Table 3 Number of farmers and number of heads in the Zadar County

	N° of farmers	N° of heads
Sheep	1650	94575
Cows	398	2741
Goats	232	12158
Bee colonies	100	8409
Donkeys (original and protected)	61	182

Source: Croatian agricultural agency, 2011

Lately in Zadar County the interest of breeders of sheep and goats grows, as well as manufacturers of cow's milk for the registration of mini dairies on family agricultural farms.

To facilitate the production and marketing of products, but also to allow to get concessions on the state pastures. It is also important to stimulate associating of farmers in agricultural cooperatives.

The future development of livestock breeding in the Zadar County should be directed towards the development of small farms, intensification of sheep and goat breeding production and better utilization of grazing capacities.

8.9 Organic farming

Most of the agricultural production in the Zadar County takes place is still performed in conventional way, however, one can notice a growing trend of transition from conventional to the integrated and organic farming production.

In addition to state incentives to organic farming, some counties in Croatia , and among them the Zadar County, have created their own system of support to organic agriculture through: a) assignment of county financial incentives, b) complete or partial reimbursement of professional inspection and certification costs, c) insurance of sales of eco-products at trade shows (source: Croatian bureau for agricultural advisory service).

The Zadar county in 2009 developed an action plan of development of organic farming in Dalmatia and also founded the Committee for organic farming in order to encourage further strengthening of this direction of agriculture. The Committee consists of representatives of the County's administrative departments, branch offices of the Croatian bureau for agricultural advisory service, registered eco-producers and the Zadar County Development agency. It is intended to develop these organic farming activities:

- vegetable agricultural production on existing (revitalisation) and newly planted plantations – outdoor and in protected areas (olive growing, viticulture, Mediterranean fruit growing, cultivation of medicinal and aromatic herbs, vegetable growing, farming);
• extensive and semi-intensive sheep and goat breeding as well as other traditional livestock breeding branches (eg revitalization of breeding donkeys, mules and other equines);
• beekeeping;
• production of high quality ecological traditional food products with a geographical indication (sheep and goat cheeses, cured meats, premium wines, extra virgin olive oil and homemade canned olives, honey and other beekeeping products, dried and canned fruits, vegetables, mushrooms, medicinal and spice herbs, pharmaceutical and cosmetic natural products based on domestic raw materials);
• mariculture (shellfish farming, fish farming) and aquaculture in fresh waters;
• sustainable fisheries in accordance with the FAO code of responsible conduct.
Among the Dalmatian counties most organic producers and surfaces are registered in the Zadar County. First ecological olive oil in the Republic of Croatia was produced in the Zadar County by Nikica Žampera in the year 2004.
In the Arkod system there are 43 family farms registered and the total surface of land on which the organic farming is performed is 846,7 ha. The products cultivated are olives (10 olive growers on 46,7ha), roughage (490,9 ha), medicinal herbs (9,9 ha), fruit species (figs, plums, blackberries etc) (2,7 ha), mixed vegetables (0,9 ha), goats (100), hives (22), chickens (260), horse (1) etc.
Because of the war, as well as a large displacements of population which before the war was engaged in agriculture, large agricultural areas remained untreated for years. Such surfaces are excellent prerequisite for the development of organic farming and an opportunity that should definitely be used to in order for this area to become known for its quality ecological products that could eventually be placed on the market through tourism. The success of organic production is not measured only by kilograms and tons produced, but also by a contribution to the conservation of natural resources of Croatia (soil, water, air) and by increasing the quality of living.

8.10 Fisheries and Aquaculture

The coastal area of the county, which includes the coastal strip of land, islands, and, because of their number and distribution, almost all waters of the county, is certainly its most notable development resource. Fishing is the traditional activity of the Zadar coast and islands and the source of existence of a large part of the coastal and island population. The Zadar County is a known fishing area due to the favorable climate, geomorphological and biological conditions. Fish processing in Zadar County has a centuries-old tradition. First fish cannery factories in the Adriatic

were founded in Zadar. Processing capacities of the enterprises Adria, Mardešić, Marituna, Ostrea, fishing cooperative Ribarska sloga and Gavros occupy a leading position in the Croatian fish industry. In these factories canned fish, salted fish, assembled fish and fish meal. Much like fish farming and processing, it is an export oriented activity exporting to Italy, Czech Republic, Poland, Hungary and Bosnia and Herzegovina.

In Zadar there is a Regional unit of the Directorate of Fisheries of the Ministry of Agriculture, Fisheries and Rural Development, engaged in the field of fisheries. In the branch office of the Croatian bureau for agricultural advisory service a Department of Fisheries was established.

Fleet

In the Registry of the Croatian fishing fleet 4,039 vessels are registered. The largest percentage of the fleet (over 80%) are vessels of less than 12 m of length, which also constitute the largest share in the power of the fleet (about 50% kW). The most important part of the overall tonnage of the Croatian fishing fleet consists of purse seines and the most significant part of the total power are multipurpose vessels.

Fishing fleet of the Zadar County has 601 vessel (14.9% of the total number of vessels in the fishing fleet of the Republic of Croatia), of which 109 trawlers, 95 purse seines and 397 other vessels.

Catch

In the total catch of fish and other marine organisms in Croatia Zadar County's share is 42%.

Zadar County, although it doesn't have the strongest fishing fleet, still leads in the overall catch compared to other Croatian Adriatic counties.

Croatia's total catch in 2010 was 52,397.00 tonnes, and the Zadar County's 22,171.00 tonnes, according to the data of the Ministry of agriculture, fisheries and rural development.

In the catch dominant is blue fish, which makes almost 96% of the total amount of caught fish and other marine organisms.

Businesses in fisheries

In the Zadar County there are 368 active small and medium enterprises – whose core activities by NCEA are fishing and fish farming or services associated with them (source: Poslovna.hr, 2012). In the total of 368 subjects, 67 of them based in the town of Zadar, while the remaining 301 are based in the rural part of the Zadar County.

Thus one can conclude that the rural areas are carriers of economic sectors Fisheries and aquaculture and major generators of employment and self-employment in the rural parts of the County of Zadar, which is in accordance with the Croatian average. In Croatia almost 70% of

fishing, farming and processing takes place in rural areas and on islands where other income sources are limited.

It is important to emphasize export potential activities of fisheries and aquaculture which is a surplus activity. In year 2008 the exports of this activity was the greatest, it amounted to 30.4 million USD. Fish processing activity is highly export activity as exports significantly exceed imports.

8.11 Unloading points

Unloading in the Republic of Croatia is performed at 264 unloading points, out of which at 63 unloading points 95% of the total discharge is unloaded. According to the Ministry of Agriculture, Fisheries and Rural Development of the four major disembarkation points in 2010 for the little blue fish, three were located in Zadar County: Kali, Zadar and Biograd, and for trawl fishing and white fish catch out of the three most important discharging points, one was located in Zadar.

Because of the indented coastline and more settlements in coastal areas and on islands, in the Zadar County there is a large number of unloading sites: 34 were used in the year 2010.

8.12 Mariculture

Mariculture, as an activity of farming of marine organisms in marine or brackish water, has developed particularly rapidly and strongly in the county. By accepting the maritime orientation in the Zadar County, the mariculture becomes an equal partner in the management of the sea because it requires clean resources to achieve favorable economic impacts and it fits into the activities acceptable to the concept of sustainable development.

The Zadar County made a Study on the use of the sea and seabed of the county, which is one of the bases for the county's Master Plan, thus creating optimal conditions for the further development of aquaculture.

It is evident from the above table that out of the total amount of production of tuna, the Zadar County's share is 51%, and for the white fish it is 65%. Zadar County has the leading position in breeding of white fish and tuna. It is also important to note that all the fish farms are located in rural areas of the county, which also goes to the fact that rural areas are carriers of economic activities in the fisheries and aquaculture sector in the Zadar County.

Production of freshwater fish species (freshwater aquaculture) is carried out in the Republic of Croatia in two ways, as a warm-water (cyprinid, carp) species breeding and cold-water species breeding (salmonid, trout) species. In the county there is one fish farm for breeding trout on Una

river. With the existing fish farm, potentially interesting are development opportunities of freshwater fisheries on the rivers Zrmanja and Krupa.

In the Zadar County the main support to the farmers comes from the Advisory service of the Ministry of agriculture, which is responsible for the concrete implementation of all the measures of the ministry. The service provides assistance in the implementation of incentives in raising new perennial crops, providing assistance with technology issues in the production and provides assistance in applying the law. It is composed of experts from various fields (horticulture, animal husbandry, economics of agriculture, viticulture and enology). Professional help is also provided by the Zadar County Development Agency (ZADRA) - the agency that assists in the implementation of EU projects, then Croatian Chamber of Economy – Zadar County Chamber, which helps in education, promotion, appearance on the market, and also provides other important information from the agricultural and food industries, Croatian Chamber of Crafts and Trades – Zadar County Chamber of Crafts and Trades, Office for agriculture of the Town of Zadar, and the Office for agriculture of the Zadar County, which serve for the purpose of distribution of local funds for incentives, that are extremely small and insufficient compared to the needs. Cooperative associating is still in development and there are no strong cooperative entities that would start production. In recent years, cooperatives in fisheries such as RZ Omega 3 Kali and RZ Ribarska sloga Kali are strengthening.

With regard to the method of processing of agricultural products, it usually takes place on family agricultural farms or in small workshops. Big food industries are Maraska Inc, for the beverage production, which cooperates with the direct producers of sour cherries for the procurement of raw materials, then Paška sirana Inc, for the cheese production, Tvornica kruha Ltd, bread factory, and Vrana Inc, a big producer of cereals, milk, vegetables and eggs. A large portion of vegetables and fruit is sold in local markets and directly on the economy. Enough developed is a sector of olive processing and olive oil, but the quantities are small and there are no stronger brands developed. The situation is similar in the sector of wine. A number of small producers is present, but insufficiently strong for stronger brands or appearance on the market.

ISTRIAN COUNTRY

1. General Information of Istrian Country

Final Beneficiary : AZRRI-Agencija za ruralni razvoj Istre d.o.o. Pazin- AZRRI-Agency for rural development of Istria ltd Pazin, Šetalište pazinske gimnazije, 1, , 52000, PAZIN, CROATIA. info@azrri.hr

1.1 Description of the regional context analyzing the economic and geographic profile

The Istrian Region includes a large part of Istria - the largest Adriatic peninsula.

The most extreme west point of the Republic of Croatia is in the Istrian Region (Bašanija, promontory Lako) at the 45° of the northern latitude. Situated in the north-west of the Adriatic Sea, Istria is surrounded by the sea from three sides, while the northern border towards the continent is made up by a line between the Miljski Bay (Muggia) in the direct vicinity of Trieste and the Preluk Bay, right next to Rijeka. Such favorable geographic position, almost at the heart of Europe, half way between the Equator and the North Pole, Istria has always represented a bridge connecting the Middle European continental area with the Mediterranean.

The largest part of the Istrian peninsula, or 3.130 km^2 (90% of the surface), belongs to the Republic of Croatia. Most of the Croatian part of the peninsula is situated in the Istrian Region - 2.820 km^2, which is 4,98% of the entire surface of the Republic of Croatia. The remaining part belongs to the Primorsko-Goranska Region based on the administrative and territorial subdivision.

The length of the Istrian coast, along with islands and islets is 539 km. The west coast of Istria is more indented, and, together with islands, it is 327 km long. East coast, together with islets, is 212 km long. The majority of the Istrian coast is on the Karst and the limestone grounds. The sinking of Karst recess created specific and branched bays, such as the Pula port, the Medulin bay, the Rovinj coast, the Poreč coast and similar. Isolated limestone heights remained as islands. The coast is well developed with lots of bays,

deeper small bays, and river mouths. Except for a series of smaller islets in front of the coast from Poreč to Rovinj, the Brijuni archipelago stands out in the south.

Mild and wavy relief shapes rise up towards the central part of the peninsula, to reach their highest point in the north-east, on the mountain massif of Ćićarija and Učka - peak Vojak with 1396 m (situated in the Primorsko-Goranska Region).

According to the geological and geomorphic structure, the Istrian peninsula can be divided in three completely different areas. The hilly northern and north-eastern part of the peninsula, due to its scarce vegetation and nude Karst surfaces is also known as *White Istria*. South-west from White Istria stretches the area that is morphologically richer. These are the lower flisch mountainous tracts consisting of impermeable marl, clay, and sandstone, which is why this part is called *Grey Istria*. Limestone terrace along the coastline, covered with red earth is called *Red Istria*.

The basic characteristic of the climate of the Istrian peninsula is given by the Mediterranean climate. Along the coast, it gradually changes towards the continent and it passes into continental, due to cold air circulating from the mountains and due to the vicinity of the Alps.

1.2 Population

The population description is given in the following table:

TOTAL NUMBER OF INHABITANTS	206.344 or 4,65 % of the population of the Republic of Croatia
NUMBER OF MEN	99.969 or 48,45 % of the population of the Istrian Region
NUMBER OF WOMEN	106.375 or 51,55 % of the population of Istria
AVERAGE AGE	40,2
AVERAGE POPULATION DENSITY	73 inhabitants per square kilometer
POPULATION IN TOWNS	145.894 or 70,7% of the population
POPULATION IN MUNICIPALITIES	60.450 or 29,3% of the population

1.3 Economy

Istrian economy is very diverse. Istria is traditionally the most visited tourist region. It has a well-developed processing industry, construction industry, trade, sea fishing and fish growing, agriculture, and transportation. According to the number of economic subjects and according to financial indicators, the leading activities are processing industry, tourism, and trade.

In the field of industry, the most developed branches are shipbuilding, production of construction material (lime, cement, brick, stone), tobacco products, furniture, electric machines and appliances, parts for the automobile industry, glass, processing metals, plastic, wood, textile, and the production of food.

Great attention has been given to the revitalization of agriculture in the previous few years, which marked a big improvement in wine and olive growing, and in the system of ecologic food production.

In the last decade, unemployment rate in Istria has been moving between 10 and 14%; while it amounted to about 11% in 2009. In the merchandise exchange of the Istrian Region, processing industry has the largest share, almost 90%; and half of it is made up by shipbuilding. A positive trend of the economy business of the Istrian County was also recorded according to the consolidated financial result for the period between 1999 and 2002, which shows a significantly faster growth of incomes in relation to expenses.

The Istrian Region is carrying out a systematic construction of entrepreneuring infrastructure through programmes of co-financing, motivational crediting, establishment of supportive institutions, construction and equipment of business zones, promotion and education.

Istria is a region moving upwards on the scale of development cycle. Strategic geographic position and good traffic connections between Europe and the Mediterranean, preservation of natural resources, stability of regional politics and the collaboration with numerous regions abroad make Istria an attractive destination for foreign investments.

County			Economy
County		Population	GDP per capita in €
1	Zagreb	790.017	17.333
2	Istarska županija	208.055	12.933
3	Primorsko-goranska županija	296.195	12.000
4	Ličko-senjska županija	50.927	9.066
5	Koprivničko-križevačka	115.584	9.333
6	Varaždinska županija	175.951	8.533
7	Dubrovačko-neretvanska	122.568	10.000
8	Međimurska županija	113.804	8.000
9	Zadarska županija	170.017	8.266
10	Karlovačka županija	128.899	7.600
11	Sisačko-moslavačka županija	172.439	8.133
12	Virovitičko-podravska	84.836	6.400
13	Osječko-baranjska županija	305.032	8.000
14	Splitsko-dalmatinska županija	454.798	7.866
15	Bjelovarsko-bilogorska	119.764	7.733
16	Zagrebačka županija	317.606	7.733
17	Krapinsko-zagorska županija	132.892	6.533
18	Požeško-slavonska županija	78.034	6.266
19	Šibensko-kninska županija	109.375	7.466
20	Brodsko-posavska županija	158.575	5.333
21	Vukovarsko-srijemska	179.521	6.000

Economy in Croatian counties (2009)

	Croatia	Istrian County	(Istrian C. % Croatia)
Number of employees	1.349.882	79.202	5,9
Unemployed	308.738	6.374	2,1
Number of companies	71.803	6.229	8,7
Large companies	1.074	54	5,0
Medium-sized enterprises	2.969	180	6,1
Small enterprises	67.760	5.995	8,8
Total income	523.712	25.084	4,8
Profit after tax (2004)	27.683	1.808	6,5
Merchandise imports mil. USD (2005)	18.546	1.083	5,8
Merchandise export mil. USD (2005)	8.809	952	10,8
Number of tourists- 000 (2005)	9.995	2.505	25,1
Number of overnights -000 (2005)	51.421	16.650	32,4

Istrian economy

Sector	Total income in mil. €	%
Agriculture, hunting, forestry	56,02	1,63
Fishery	29,64	0,86
Mining	16,4	0,48
Processing industry	1.138,78	33,14
Electrical energy, gas and water	131,91	3,84
Construction	285,47	8,31
Trade	1.002,00	29,32
Hotels & Restaurants	341,91	9,95
Traffic	130,27	3,79
Finance	2,87	0,09
Real estate	220,82	6,44
Education	5,06	0,15
Health and social security	10,56	0,32
Other	57,81	1,68
Total Istrian County	3429,52	100

2. The agro-food sector

2.1 Description of the agro-food sector in Istrian County

Facts:

- 82.000 ha arable land
- 87.500 ha pastures
- 95.500 ha forest
- 5.800 registered farmers (only 1.000 as main activity)
- 68% of farmers has less than 5 ha of arable land and only 10% has more than 10 ha
- Average arable parcel is 0,22 ha

Agriculture - especially the growing of olives and production of high quality olive oil and wine production of excellent wines, the production of early vegetable crops, livestock breeding, fisheries and mariculture have a long tradition in the territory. The very good existing resources (agricultural land, favorable climate) on the one hand, and the tourism sector as a potentially important market for high-quality (traditional, recognizable, "ecological"grown) products, on the other hand, give a good perspective for further successful development of agriculture and fisheries and their supporting activities as important elements of sustainable development in the area.

The current agrarian structure is very unfavorable for the development of modern intensive and specialized agricultural production and is the main obstacle for the achievement of competitive agricultural production at EU level. The relatively positive fact is that the greater part (about 72%) of the total 169,000 ha of agricultural land (arable land and pastures) is privately owned, and a smaller part (28%) is owned by the state. However, the sizes of the parcels are very small and disperse.

Education of farmers, particularly in the area of application of modern technology in agriculture and fisheries, is not appropriate. The experience gained since 1990. to date clearly shows successful farmers are:

- using modern knowledge and technology;
- connected and rounded their possession;
- managed to create a recognizable brand.

Of the former big production and processing agriculture companies survived only Agroprodukt Pula and AgrolagunaPoreč, who are engaged in agriculture (processing about 2,000 ha).

Vegetable Growing

Vegetable production in recent times is becoming more interesting which is caused by a widespread increase in the absolute volume of supply of vegetables, especially by small and medium-sized farms that are subject to rapid restructuring. Vegetable production is almost entirely oriented to the tourist season. An organized production of vegetables for processing does not exist, except the tomatoes in Umag. The reasons for this are: limited production areas, limited use of irrigation water, and most importantly, so far all produced vegetables could well qualify for the local market (Rovinj, Poreč, Pazin, Pula and Rijeka). Thanks to the natural features of Istria, growing different vegetables, and therefore its bid in the market is possible throughout the year. The most common vegetable culture in Istria fields are potatoes, cabbage, kale, onions, garlic, cucumbers, tomatoes, cauliflower and peppers. The production is characterized of a small number of species and varieties of vegetables, often of limited quantities of seasonal and short supply. The causes of this situation are the manufacturers of disorganization and lack of market infrastructure, fragmented economies, insufficient irrigation systems, sorting, dryers and refrigerators for storing fresh vegetables, and other. One of the main constraints to further development of vegetable production is the lack of irrigation. There are two possible sources of water: the use of ground water in controlled conditions (there is the possibility of "contamination" sea water and permanently disabling wells) and use of water from the city or the main water supply.

Viticulture:

- 61% Malvasia
- 13% Merlot
- 8% Teran
- 3% Cabernet Sauvignon
- 15% Other

Viticulture and enology

Viticulture (and wine) is for Istria one of the most important agricultural sector with a centuries-old tradition. The most important and suitable agricultural land for the cultivation of vines is located in those production areas where most crops cannot grow. According to the orthophoto images from 2004. the area of Istria County has 4.278 hectares of vineyards, while in the Register of grape, wine and fruit wine has a 2790 ha vine 10,511,853 (approximately 3768 hectares of vines), and 2610 producers. The IstrianMalvasia is the most common with 61%, followed by 13% Merlot, Teran, 8%, 3% Cabernet Sauvignon, Ugniblanc 3%, 2% Chardonnay, and other varieties of 10% (2790 ha). In Istria, 54% of vineyards are older than 35 years, and 22% between 25 and 35 years. Approximately 83% of producers have than 1 ha of vineyards. Controlled protection of geographical origin in Istria has 79 wine producers, 248 hectares of wine in 1595. Annually in Istria produce 13,031 tons of grapes and wine trade is 56,723 hl (60% of wine with controlled origin, 40% table wine, and 164 producers). According to the data's from the Croatian Institute of Viticulture

and Enology, the Istria County has the highest vineyards in relation to other Croatian counties. A particular problem in viticulture is still insufficient domestic production of crops which ensured sufficient and high quality seedlings. Also, there are considerable difficulties in selling the grapes from small producers, as well as lack of vineyard cadastre. In terms of spatial plans for building wine cellars descriptively defined, but such sites by these conditions on the ground there. Creation of brand Istrian wines based on the quality of the existing resources with appropriate training of grape and wine will enable further development of this branch.

Olive Oil production

Istria is the north boundary area for olive cultivation, which has a predisposition to getting excellent quality oil, quality indigenous varieties, and clean, unpolluted soil pesticides suitable for organic production. It is estimated that Istria has about 900 thousands olive trees. Given the inadequate system of notification, it is necessary to establish a cadastre of olives in order to obtain accurate data on the surface of the olive groves in Istria. Therefore it is necessary to make the identification and inventory of olive groves, and processing the collected data in order to develop a strategy for future development of olive production in Istria. In the next period, it is necessary to study varieties of olives (DNA analysis) in Istria, in order to find and analyze the possible indigenous varieties (genetic variability in Istria), and then protect them. In fact, the variety Črnica which is widespread in the area of Buzet and Umag, but also in the Slovenian coastal region, Slovenia protected it as their native variety. It is necessary to establish some synonyms (different names for one variety) and homonyms (same name, and various sorts) of some sort. Accordingly it is necessary to the protection of Appellations of origin of olive oil in Istria.

When it comes to market and sell, it is necessary to point out that olive oil market in Croatia is still disorganized with a high proportion of the gray market. In addition, most of the olive growers holding olive oil as part of their strategic material reserves and markets as the "old" oil during the renewal of its reserves. Still present is the disproportion between the efforts and activities that are investing in improving production, processing and quality on one side and lack of organization in the areas of product markets from the olive (olive oil and table olives), a business organization of family farms engaged in producing and marketing for products from the olive tree on the other side. One of the most important task is to create brands of olive oil in Istria (brand) as the sum of all tangible and intangible characteristics of the product (trade name, symbol, logo, distinctive design), which distinguishes this product from the same or similar product from another area.

Fruit Growing

Fruit production in Istria is represented with a large number of fruit species. Most often occurs in mixed plantation and non-market production, and tends to decline. Fruit growing is less represented in the traditional cultivation by farmers in Istria, and hazelnut, which until about thirty years ago adorned every Istrian vineyard almost disappeared. Due to its favorable agro-ecological conditions in some areas there is a tradition of growing fruit, but modern fruit grow on modern plantations is rare, but not so much because of the lack of tradition but because of inadequate support measures by the national agricultural policy. Modern fruit growing is slowly entering into the practice of many farmers. Istria has conditions for growing peaches, cherries, pears, apples, plums, strawberries and other fruit varieties. In Istria today, a total of about 300 ha of plantations of fruit species as follows: about 100 ha of peach, plum, about 65 ha, about 35 ha of apple, pear, about 35 ha, shake about 25 ha, about 15 ha of walnut and other fruit, about 25 ha.

Total fruit plantation 300 ha:

- 100 ha peach
- 65 ha plum
- 35 ha apple
- 35 ha pears
- 25 ha cherry
- 15 ha walnut
- 25 ha other

Objective weakness of fragmentation of fruit producers and disorganization at the stage of sales, could be a considerable extent overcome by consolidating supply through producer marketing groups or associations, according to the experiences and legal determinations of the EU. Creating the conditions for business associate fruit through business associations or cooperatives, contribute to increasing economies of scale (returns to scale), reduce cost transport, sharing storage and processing capacity and more efficient performance in the market, including the availability of appropriate information on such preferences consumers (price, quantity and quality of products).

Livestock production

Livestock production has a tendency of continuous decline, both the total number of specimens of animals, and meat and other animal products. The number of livestock in the past ten years is decreasing, mainly due to unfavorable economic conditions in livestock production. This condition leads to a relatively small proportion of livestock (comparing with a total value of production in agriculture) which limits the development of forage crops production and utilization of pastures.

There are several reasons why livestock production is now in considerable difficulty. The first reason is the small size of family farms which limits the number of farm livestock. The second reason is the farmers' illusion that only slight changes in the traditional mode of production and management system and with the continued support and care of state institutions (especially the purchase and subsidies) can respond to new market economy conditions. However, without a thorough transformation of the organization of livestock production, substantial and qualitative

changes in the selection of livestock will not be possible to ensure the development of animal husbandry as a business. The third reason is the low productivity in livestock caused by inadequate nutrition and feeding systems, inadequate breed composition, difficulty in improving the quality of farm buildings, machinery and more. The future of animal production will depend primarily on changes in economic environment, the success of its new environment adaptation. Therefore, increasing the competitiveness becomes a precondition the existence of these important activities, particularly on family farms.

Ecological agriculture

In the area of Istrian County there are only seven ecological rural family farms which clearly indicate that on one hand the ecological production of food in Istria is present, but it is necessary to develop this sector more intensively. Current efforts and resources invested in programs of organic production of agricultural and food products (co-financed by the administrative department for agriculture, forestry, hunting, fishing and water management Istria) have a solid foundation for development, which is in line with the strategic goals and interests for sustainable development Istria. Although the County of Istria has very favorable conditions for development of ecological agriculture, farm operators are only sporadically interested in the possibilities to begin massive production. Anyway, organic food production has not yet received their rightful place. Among the first Croatian counties, Istria County has recognized the importance of ecological food production as one of the strategic commitments in the sector. Pioneering advantage of Istria is the most slowed the inability of active participation in international development projects, which was reflected in the lack of financial resources.. Continuous implementation of the program for production of bio-food (encourage pooling of interests, the promotion of typical and organic products, development programs of protection of origin and geographical origin and genetic materials, programs to encourage traditional and cultural heritage of the organization of trade fairs and exhibitions) has shown that the activities undertaken has yielded good results.

Rural tourism

Rural tourism development in Istria is based on sustainable development and the revitalization of existing traditional buildings and heritage, which gives a new tourist purposes. This form of tourism doesn't need to build new capacity, but, indeed, is faced with the challenges what is the best way to use existing structures. Istrian County and Istrian Tourist Board recognized the potential of rural Istria. The current capacity of the 184 households with 1430 beds (covered in a separate catalog of the Tourist Board) spread in different categories from real agritourism - where you can taste

traditional delicacies prepared in an original, local way, rural homes, rural family-run hotels rooms and apartments in rural households.

The Istrian Tourist Board in 2002 made a division of rural households in the following types: Rural households, rural holiday homes - traditional Istrian houses, B &B; Rural Family Hotels, Holidays on the road and wine tasting. With this type of tourism Istria is essentially increased value of the destination, especially in the rural area. In 2006 rural households in the County of Istria realized 76,578 realized overnights, 17% more than in 2005. Also, in 2006 RURALIS was established - a consortium of agrotourismand rural tourism in Istria, which included interest in the household, which aims to articulate and promote rural tourism in Istria as a whole-year fixed destination.

Typical products

European and world market of foodstuffs is glutted with new products competing by quality and price. Non specific products are not able to deal with a sharp competition among similar products, and consumers are often uncertain about the quality of purchased goods. Therefore the EU created in 1992 three types of food quality system: PDO (Protected Designation of Origin), PGI (Protected Geographical Indication) and TSG (Traditional Specialty Guaranteed). From 2005 Croatian producers have the same possibility of protecting their products as the EU producers, raising the competitiveness and identity of domestic production and products. The aim of the present paper was to clarify the possibilities for olive oil and table oil protection, as well as to give a contribution to faster integration of Croatia in to European and world products market by giving practical examples.

In the area of Istria there is a whole range of typical Istrian products. Unfortunately so far there is no comprehensive list of typical products, as well as their experiences from which it would be obvious why these products are specific to that area. The next objective is to evaluate high-quality products to indicating their specificity and also support the recognition of the whole area.

So far under the new regulation Croatia don’t have a protected product. Newer the less the Istrian County is worldwide known for the following products (since the products are specific for the Istrian County area translation is not possible) which will probably be protected in the near future:

- Istrian wines: Malvasia, Teran, Muškatbijelimomjanski, Muškatružamomjanska
- Istrianbrandies: Komovica, Ruda, Medenica, Biska
- Olive Oil
- Products from pork; Istarskipršut, Plećka, zarebnjak, Istarskekobasice, Panceta
- Milk products: Kravlji sir, Ovčji sir, Skuta
- Typical pasta: Fuži, Njoki, Makaroni, Ravioli
- Istrian desserts: Pinca, Povetica, Fritule, Kroštule, Cukerančić

- Istarskogovedo (Istrian Cattle)

Fishery

Fishery is a traditional activity in the Istrian County, with 3700 registered professional fishing boats, of which 470 longer than 14 meters and 920 registered fishing privileges to practice, represents 25% of Croatian total of the sector. The sector is highly market-leaning on the tourist economy and export.

In the last three years the total catch is constantly growing. Catches in 2005.amounted to about 5,000 tons.

2.2 Higher Education and Research structures

The most important agriculture institutions in the Istrian County are:

- Administrative Department for Agriculture, Forestry, Hunting, and Water Management of Istrian County. The most important institution in the Istrian agriculture coordination all the sector and implementing several crucial agriculture projects and programs.

- AZRRI – Agency for Rural Development of Istria: Agency is founded for the purpose of the joining public and private sector, and for preparing and implementation projects into a rural area. AZRRI is a first agency of this kind in Croatia with a specific purpose to coordinate production-wise activities into rural areas of Istria. The purpose of Agency for rural development of Istria Ltd. Pazin is a initiating of management and development programs into the rural areas of Istria.

- Fund for agricultural development and rural tourism in Istria. The fund was established in 1996 and is crediting farmers under very economic terms.

    - Institute for agriculture and tourism Poreč.The Institute is involved in a wide spectrum of activity of scientific research and commercial activities

    - The Croatian Agricultural Extension Institute in Istrian County(CAEI) was established through Government regulation in 1997 as an institute specialized for agricultural advisory public service. CAEI is financed by the state budget funds, and all service to its clients, family holdings primarily, are free of charge. CAEI is an expert agricultural organization which:

- assists farmers in their decision-making providing them with high quality information's;
- stimulates co-operation between family farmings and all institutions, companies, and individuals relevant for successful agriculture;
- is authorized for mediation in the implementation of support measures for development of agricultural farms and rural areas.
- MIH ltd Poreč: is a company that was established by Istrian County. MIH is an abbreviation of Made in Histria, and his foundation wanted to achieve an adequate evaluation and recognition of the original Istrian products, and providing aid to agriculture in Istria. Today the company operates successfully, has registered capital of 1,055,000.00 kuna and 4 employees. Although the founder is the Istrian County, MIH is a market-oriented business.

Agriculture educational structures:

- Agriculture College and High School Poreč

2.3 Policies and programmes for the agro-food sector

National Level

The Croatian Ministry of Agriculture and Forestry in the late 1999 initiated the development of most important agriculture legislation - Law on Agriculture, which is formally and legally united and determined the basic activities in the field of agriculture in Republic of Croatia. After that, step by step, Croatia put in force other laws, and key documents related to agriculture (fisheries) and rural area trying to harmonize with EU legislation.

Law on Agriculture

By adopting the Law on Agriculture Croatia fulfilled one of the essential preconditions for the implementation of systematic measures of agricultural policy, whether it is measures of market-price or structural policies, aiming at increasing productivity and economic efficiency of agriculture and its impact on the entire national economy. Law on Agriculture (the Act) regulates the objectives and measures of agricultural policy, users rights, peasant and family farms, institutional support, administrative tracking and reporting in agriculture and management and inspection.

Strategy for Agriculture and Fishery of the Republic of Croatian

The Strategy was adopted as a legal document of the Croatian Parliament in July 2002, including a comprehensive review and assessment of the current situation in agriculture (and fisheriy), including the branch and aspect. Specific objectives of this document are: (a) agriculture structure, (b) financing of agriculture, (c) organization of markets, (d) rural development, nature protection and environment, (e) business matching and market infrastructure, (f) the safety of food, and (G) institutional support to agriculture.

Croatian Rural Development Strategy

This document set four strategic objectives for rural areas, as follows:

(A) promoting the quality of life and reduce the differences in relation to urban areas;

(B) conversion into attractive places to live and work

(C) contribute to general development complementary to the urban areas;

(D) successful engaging in a market economy.

Finally, within each priority individual activities were proposed aimed to specific issues of rural development.

Law on State subventions in agriculture, fishery and forestry

This Law replaced the previous Law on financial incentives and allowances in agriculture and fisheries from 1999. In 1999 the State is significantly changing the way of encouraging agricultural production, including changes and extension of the territorial distribution of incentives. This Law made the following key changes in agricultural policy:

- Separation of commercial farms from non-commercial,
- Compulsory enrollment agriculture producer in the register of farms,
- Compulsory Involvement in the system of value added tax (VAT) of all commercial economies in the next period.

<u>*Regional level*</u>

Regional Operative Programme (ROP) of the Istriancounty in 2006-2010

This document is a planning tool for effectively and efficiently managing the development of Istria. This is a common instrument that The European Commission uses to enhance the regional developing for countries that are preparing to join the European Union.
The ROP has clearly highlighted and defined the vision within four strategic objectives:

- Competitive economy
- Development of human resources and high social standard

- Balanced and Sustainable Development
- Recognition of the Istrian identity (branding)

Master plan of Istrian tourism 2002 – 2010

The plan was divided in two phases. In the first phase a master plan was elaborated for each of the seven tourist clusters, which included the following documents:

- A development model of tourism,
- Competitiveness Program,
- Opportunities and investment,
- Marketing Plan and
- Implementation plan

Master plan "recognizes" the diversity of individual units in Istrian - clusters, which will shape the reality of the new products that must be competitive in the market and mutually complementary. After a series of researches, analysis, polls, discussions, workshops, a new Istrian tourism future was crystallized in six coastal cluster and the cluster of interior of Istria.

Strategic development program of rural areas of Istria (2008-2013)

This document is a strategic document and a tool for effectively and efficiently managing the development of agriculture, fisheries and rural areas of Istria. The main promoter (leader) is AZRRI - Agency for Rural Development of Istria, Ltd. Pazin, and the Department of Agriculture, forestry, hunting, fishing and water management of Istria.

2.4 Agriculture Funds

National funds

The national funds for agriculture and rural development are regulated by the two essential laws – Law on Agriculture and Law on State aid in agriculture, fisheries and forestry. The Law on State aid in agriculture, fisheries and forestry provides four different models of support for different target groups or beneficiaries.

These models are:

- model of production subsidies (direct payments),
- model of income support
- model of capital investments
- model of rural development

European funds

IPARD

IPARD is a new pre-accession European Union program for the period of 2007. - 2013. It is an integral part of the IPA (Instrument for Pre-Accession Assistance), its component V. Rural Development. IPARD program will be implemented through three main objectives and strategic priorities:

1. Improving market efficiency and implementation of Community standards
   1.1. Investment in farms
   1.2. Investment in processing and marketing
2. Preparatory steps for implementation of agricultural and environmental measures and local rural development strategies
   2.1. Actions to improve the environment and landscape
   2.2. Preparation and implementation of local rural development strategies

3. Development of rural economy
   3.1. Investment in rural infrastructure
   3.2. Diversification of economic activities

Final beneficiaries of IPARD programs, depending on the measures can be family farms in the VAT system, trades and businesses, which means that the limitations in this sense does not exist. For the period 2007. - 2011. within the IPARD program for the Republic of Croatia it will be available 179 million euros.

LEADER Program

One of the main characteristics of the implementation of rural development in rural communities is placing emphasis on the local population, thus it is confirmed as a major factor in the overall development of rural areas. It is this peculiarity of confidence in the people who live in rural areas and their ability to discover what best suits their environment, culture, traditions and skills of working makes the specificity of LEADER projects. LEADER - "Links between actions for the development of the rural economy", an initiative of the European Community mobilization and implementation of rural development in rural communities through local partnerships of public and private sector ("Local Action Groups").Enhancing motivation and skills are the key issues to be addressed in order to determine the prerequisites for rural development based on local resources and initiatives. Experience in Croatian interest groups say that the motivation of primary importance. Therefore we must put emphasis on the establishment of the LAG's - not only in terms of informing

the potential LEADER-a, but also support the process of identifying and establishing LAG's. This program will be available for Croatia after entering in EU. The overall objective of the LEADER approach is' to promote rural development through local initiatives and partnerships. The objectives of LEADER Program is:

- improving rural living and working conditions,
- creating new, sustainable revenue opportunities,
- preserving and creating new jobs,
- diversification of economic activities

Istrian Program for permanent plantations (1994-2009)

- 15 mil. EUR of support
- 840 ha of vineyards
- 2.000 ha olive trees
- 120 ha fruit

Regional funds

The region of Istria trough its Department of Agriculture is implementing several crucial projects for the Istrian agriculture. The activities are strongly supporting the production and preservation of local autochthon products. Also, one of the most important activities is the Program for the increscent of plantations. The County with the municipalities is within this program financing 2/3 of the plantation costs. Within this program from 1994 to 2009 the County has supported the farmers with approx. 15 million euros.

2.5 Innovation Support Infrastructures

The innovation and support entities were elaborated within chapter "2.2. Higher Education and Research Structures". The following table shows the new initiatives of the Istrian County regarding the establishment of science development centers in the agriculture and rural development sector.

SCIENTIFIC RESEARCH CENTERS	LOCATION	BUDGET € (in millions)
Center for regional and rural development	Pazin-GortanovBrijeg	3
Center for the preservation of biodiversity	Pazin	1
Center for the development of olive oil production	Vodnjan	1,5
Center for the development of viticulture and enology	Poreč	1,5
Center for the development of mushroom growing and truffles	Buzet	0,75

GREEK TERRITORY

Project IPATECH - Miniaturization technology: synergies of research and innovation to enhance the economic development of the Adriatic

E.C. BIC of Epirus
ΚΕΝΤΡΟ ΕΠΙΧΕΙΡΗΣΗΣ & ΚΑΙΝΟΤΟΜΙΑΣ ΗΠΕΙΡΟΥ

1. General information – region of Epirus

Final Beneficiary : BIC EPIRUS- EC BUSINESS INNOVATION CENTER OF EPIRUS, SCIENCE AND TECHNOLOGY PARK OF EPIRUS, UNIVERSITY CAMPUS OF IOANNINA, GR 45110, Ioannina, GREECE. bicepirus@ioa.forthnet.gr

The Epirus Region, is a geographical and administrative region in northwestern Greece. It borders the regions of West Macedonia and Thessaly to the east, West Greece to the south, the Ionian Sea and the Ionian Islands to the west and the country of Albania to the north. The region has an area of about 9,200 km2 (3,600 sq mi). It is part of the wider historical region of Epirus, which overlaps modern Albania and Greece but mostly lies in modern Greek territory.

From January 2011, according to the reform introduced by the Kallikratis Programme (Act 3852/2010) the prefectures were abolished and replaced by regional units. The former municipalities and communities were re-structured to form only 18 new municipalities.

There are two industrial zones (Ioannina – Preveza) and the Manufacturing Park (near Igoumenitsa). The region includes a considerable number of nature protected areas: 29 Natura 2000 and a Ramsar site (Amvrakikos Gulf). The coastal biotopes (the Delta of Kalamas and Aheron, the Kalodiki marsh and Amvrakikos Gulf) host rare species of birds like the silver pelican.

1.1 Demographics

Around 350,000 people live in Epirus. According to the 2001 census, it has the lowest population of the 13 regions of Greece, and represents the 3,3% of the total population of Greece. This is partly due to the impact of repeated wars in the 20th century as well as mass emigration due to adverse economic conditions. The capital and largest city of the region is Ioannina, where nearly a third of the population lives (61.629 inhabitants). The towns Igoumenitsa (8.722 inhabitants), Preveza

(16.321 inhabitants) and Arta (19.435 inhabitants), are the capitals of the corresponding prefectures.The great majority of the population are Greeks, including Aromanians.

According to research conducted by a Romanian ethnographer in 1994, native Albanian is dying fast, and attempts to find Albanian-speakers in the region proved unsuccessful.

The delineation of the border between Greece and Albania in 1913 left a number of Albanian-populated villages on the Greek side of the border (and the Greek-populated villages and cities in the region called Northern Epirus on the Albanian). Coastal parts of the region in Thesprotia were populated in the past by an Albanian minority (Cham Albanians) along with the majority of ethnic Greeks.

The 1981 urban population of the region, expressed in percentage terms, is much lower than the corresponding percentage for the entire country (24.2% compared to 58.1% for Greece). The urban population shows a steady increase during the period from 1961-1991, reaching 27.6% of the total population in 1991 (compared to 18.6% in 1961). The largest increase took place in the '60's (5.1%), followed by the '80's (3.4%). The 1981 semi-urban population of the region, expressed in percentage terms, is closer to the corresponding percentage for the entire country (9.1% compared to 11.6% for Greece). In contrast to the semi-urban population of the entire country, which remained stable, the semi-urban population of the region shows a steady increase during the period from 1961-1991, reaching 13.1% of the total population of the region in 1991 (compared to 8% in 1961). The rural population of the region, expressed in percentage terms, has decreased from 73.4% in 1961 to 59.3% in 1991. The average yearly rate of decrease of the rural population during the period 1961 through 1991 was 0.84%9. The 1981 rural population of the region, expressed in percentage terms, is more than twice the corresponding percentage for the entire country (66.7% compared to 30.3% for Greece). The highest percentage of urban population is in the prefecture of Ioannina, followed by the prefectures of Arta and Preveza, while the prefecture of Thesprotia has no urban population at all. The highest percentage of semi-urban population is in the prefecture of Thesprotia, followed by the prefecture of Preveza. The prefecture of Thesprotia also has the highest percentage of rural population. With the exception of the year 1961, the lowest percentage of rural population is found in the prefecture of Ioannina.

1.2 Economy

Epirus has few resources and its rugged terrain makes **agriculture** difficult. Sheep and goat pastoralism have always been an important activity in the region (Epirus provides more than 45% of meat to the Greek market) but there seems to be a decline in recent years. Tobacco is grown around Ioannina, and there is also some farming and fishing, but most of the area's food must be imported from more fertile regions of Greece. Epirus is home to a number of the country's most famous dairy

products' brands, which produce feta cheese among others. An important area of the economy is also tourism, especially eco-tourism. The natural beauty of the area, as well as the picturesque villages, have made Epirus a strong tourist attraction.

Primary sector

The primary sector employs 22,15% of the region's workforce. (2001 census). 14.11% of the land in Epirus (in 1981) was used for agricultural holdings, 50.97 was grassland and 26.23% was covered by forests (compared to 29.9%, 39.8% and 22.4%, respectively for the country as a whole). Only 33.2% of land used for agricultural holdings is flatland, compared to 55.7% for the country as a whole. In 1989, 37.4% of the land used for agricultural holdings was irrigated (compared to a national average of 29.9%). The largest percentage of irrigated land is located in the prefecture of Arta (54.3%), followed by the prefecture of Preveza (43.1%). The geomorphology of the region (unavailability of flatland, extensive grassland and forests, rich water resources) has contributed to its comparative advantage in stock-farming, forestry and fisheries, while farming is less developed and serves mainly to satisfy stock-breeding demands. More specifically, stockfarming accounts for 62% of GRP in the primary sector; farming accounts for 35%; forestry accounts for 2%; and fisheries account for 1%. Sheep and goat breeding account for 17.8% of total Greek production, and poultry and pig breeding for 14.5%, each. Cattle breeding is rather less developed, accounting for 6.6% of the national total.

For the year 1991 the main agricultural products of the region were olive-oil (4,559 thousands of tons), potatoes (38,307 tons), tomatoes (32,127 tons), citrus (173,760 tons). For the same year the main farming products of the region were meat (52,806 thousands of tons), milk (131.194 tons) and eggs (132.346 thousands of tons).

Epirus: Main Agricultural Products 1991

Product	Tons
Olive-oil (thousands of tons)	4,559
Tobacco	2,110
Cotton	1,975
Cereals	3,947
Citrus	173,760
Apples	1,752
Peaches	1,470
Potatoes	38,307
Tomatoes	32,127

The prefecture of Ioannina has rather developed sheep and goat, bird and pig breeding industries. The main agricultural products are cereals, corn, rye and barley, which serve to meet local stock-breeding needs. The main agricultural products in the prefecture of Thesprotia are **olives, corn and clover**. Sheep, goat and pig breeding are relatively developed but generally declining. Fishing is not as developed as it should be and the few fisheries in the prefecture specialise in dorado and bass. The

Epirus: Main Farming Products 1991

Product	Tons
Meat (thousands of tons)	52,806
Milk	131.194
Soft Cheese	11.630
Hard Cheese	3.459
Eggs (thousands of pieces)	132.346

prefecture of Preveza produces garden produce in greenhouses. Agricultural products, produced in the prefecture, also include edible olives used for oil production. Sheep and goat breeding is relatively developed, as is pig breeding, especially in the region of Filippiada. Fishing is also developed, with a number of trout fisheries along the river Louros and the shores of Amvrakikos Bay. The agricultural products of the prefecture of Arta, with the exception of citrus production, supply its especially developed sheep and goat breeding industry. The prefecture's citrus production supplies the two juice factories in the region.

The primary sector employs the largest percentage of the region's workforce (45.8% in 1990 while 22,15% on 2001). Approximately 22% of the workforce employed in the primary sector were men and 23% were women. Generally, production takes place in small, family-operated units, with the exception of few larger pig and bird breeding units. It is noteworthy that in 1987, only 7% of the total number of households employed in the primary sector declared farming and/or stock-breeding as their exclusive occupation and approximately 40% of the members of households employed in the primary sector had a second occupation.

Secondary sector

The secondary sector is less developed compared to the rest of the country and employs only 19,73% of the region's workforce (1990). The manufacturing industry in Epirus is underdeveloped compared to the rest of the country. Although the region has approximately 3.3% of the country's population and produces between 2.3 to 2.5% of the Gross National Product, manufacturing in Epirus contributes only between 0.6 to 1.4 of the manufacturing Gross National Product. Manufacturing accounted for 39% of GRP in 1987 (up from 33% in 1970).

In 1988, there were 3,661 manufacturing units operating in the region. Clearly, the largest number of manufacturing units (54.5%) are located in the prefecture of Ioannina, followed by the prefecture of Arta (with 18%). Specifically, in the prefecture of Ioannina, there are approximately 80 marble production units, approximately 30 dairy product units (the largest one being the Dodoni Milk factory), close to 500 poultry farms, a significant number of meat and egg factories, some chemical factories, food and beverage units (three modern wineries in the Metsovo-Zitsa area, three bottled water factories, a Coca-Cola plant, three animal feed units, a number of pig factories and fisheries specialising mainly in trout), building and related material units, machinery units, wood product units (specialising mostly in furniture and roof materials), approximately 130 metal product units, jewellery units and textile factories. The prefecture of Thesprotia has a very underdeveloped manufacturing sector, the only exception being the operation of one textile factory near Filiates. The largest number of manufacturing units in the prefecture of Arta are in the food and beverage sector. There are two large juice factories, five alcoholic beverage plants, pork-meat and meat plants, a

large chocolate factory, some small building and related material units, small wood product units, small metal product units, small textile factories and a number of small dairy product units. The prefecture of Preveza has only a few small dairy product units, small building and related material units, and one large textile factory. There are approximately 9 factories operating in the newly founded industrial zone located near the town of Preveza.

Most manufacturing units are small, exploit local materials and offer their products mainly in local markets. Most manufacturing units employ less than 50 persons. Only 17 units employ more than 50 persons and of these, only 4 employ over 200 persons (in the food and textile industries. The secondary sector employs the smallest percentage of the region's workforce (20.4% in 1990, up from 17% in 1970). The largest employers in the region are the food, wood textiles, metal products, non-metallic minerals, transport equipment and clothing and footwear industries (in descending order), all employing a larger percentage of the regional workforce than the national average (with the exception of the transport equipment industry). Employment in the food, beverage, clothing and wood industries decreased in the period between 1978 and 1988, while employment in the textiles, printing, rubber, chemical, electrical supply and transport equipment increased during the same period.

The underdevelopment of the manufacturing sector is due to the **small size** of the majority of units, the specialisation in traditional sectors characterised by low profitability, the lack of technology and specialised personnel, and the low level of investment.

Tertiary sector

The tertiary sector employs 53,30% of the economically active population and is dominated by the tourism industry. The gross domestic product per capita represents the 81,88% of the corresponding country's average (2003). In general, most of the basic economic indices for the Region are lower than those of the corresponding national average.

The tourism industry dominates the tertiary sector, even though it is not particularly developed throughout the region, with the exception of the town of Parga (prefecture of Preveza) and some areas along the Ionian coastline. Development is hindered by the lack of infrastructure and limited promotional activities. The region has only 2.2% of the country's hotel units and 1.8% of its capacity41. In 1990, there were 132 hotels, with a total capacity of 6,644, 16 camping sites (with room for 3,909 campers) and 2,011 'rooms-to-let' units (operating under the authority of the National Tourism Organisation) with a total capacity of 4,27542. Only 28.1% of the tourists were foreigners43. The tertiary sector employed approximately 33.8% of the region's workforce in 1990.

Employment in the tertiary sector appears to be on the rise, due mainly to the development of the tourist industry and increased demand for services. The tertiary sector is absorbing the workforce

which is departing from the primary sector. Commerce in the region employs 6.2% of the region's workforce (1990). In 1988, the number of stores in the region was about 6,000, employing an average of 1.8 persons per store. 50% of the stores in the region and 51% of the workforce employed in commerce are located in the prefecture of Ioannina .

It is considered one of the most problematic regions in the European Union (EU) with an EU ranking of 13 for the year 1987 and an EU index of 54.4. Indices on the basis of Gross Regional Product (GRP) place Epirus in last place with a GRP index of 73.8 for the year 1974 and 81.4 for the year 1981 (on the basis of a GRP index of 73.8 for the year 1974 and 81.4 for the year 1981 (on the basis of a GRP index of 100 for Greece as a whole).

1.3. Transportation infrastructure

Epirus has historically been a remote and isolated region due to its location between the Pindus mountains and the sea. In antiquity, the Roman Via Egnatia passed through Epirus Nova, which linked Byzantium and Thessalonica to Dyrrachium on the Adriatic Sea. The modern Egnatia highway, which links Ioannina to the Greek province of Macedonia and terminating at Igoumenitsa, is the only highway through the Pindus mountains and has served to greatly reduce the region's isolation. The Aktio-Preveza Undersea Tunnel connects the southernmost tip of Epirus, near Preveza, with Aetolia-Acarnania in western Greece. Ferry services from Igoumenitsa to the Ionian islands and Italy exist. The only airport in Epirus is the Ioannina National Airport, while the Aktion National Airport is located just south of Preveza in Aetolia-Acarnania. There are no railroads in Epirus.

Roads

Due to unfavorable geomorphologic conditions, the development of both intra-regional and trans-regional road networks has been difficult and unsatisfactory. This has contributed to the region's historic isolation and its lack of development. Recent developments in Albania and the former Yugoslavia have increased the importance of improving both the national and regional road transportation networks in order to take advantage of new opportunities. National Road E-951 connects Ioannina with Arta, Amphilochia and leads to Antirrion. It is the main route connecting Epirus with the rest of Greece to the south. Generally, the E-951 is in good condition and the quality of the pavement is good. However, the Rio-Antirrion sea-passage, which is affected by weather conditions, as well as heavy traffic in the Rio-Antirrion area, disrupts passage to the south. To the north, the E-951 connects with the E-90/E-853, leading to Kalpaki and ultimately to Kakavia on the Greek-Albanian border. This road is generally in good condition and construction is underway to improve it further. To the north-west, the E-90 leads from Kalpaki, Konitsa, and Kozani. National

Coastal Road, E-55, connects the ports of Preveza and Igoumenitsa and will be extended southward to the Prefecture of Etoloakarnania via the underwater connection of Aktio with Preveza, and northward to the Greek-Albanian border, near the town of Sagiada in the Prefecture of Thesprotia20. The East-West group of national roads servicing the region are noted on Map 2. National Roads E-90/E-92 connect the port of Igoumenitsa with Ioannina and Metsovo, and the extension of the E-92 to the east links the region with the rest of Greece through the Katara saddle (to Trikala and Volos). However, the E-92 is in poor condition which creates traffic problems year-round. In the winter, the Katara saddle is unusable during snowstorms. Traffic problems have increased since the outbreak of hostilities in the former Yugoslavia. National Road No. 21 links Preveza, Philipiada and Arta and extends eastward via National Road 30 to Trikala and via regional Road No. 12 to Karditsa. Both extensions are under construction. Finally, the road from Aktio to Vonitsa to Amphilochia, although it does not belong to the region of Epirus, connects the E-55 with Antirrion.

The initial design of the proposed Egnatia Road, with its branch to Volos and its relation to the rest of the National road-transport network, are noted on Maps 3 and 4, respectively. The Egnatia Road will link Igoumenitsa with Ioannina, Metsovo, Kozani, Veria and Thessaloniki. Its total length will be approximately 150 km and its estimated cost of construction is 1 BECU21. Sections of the Egnatia Road, which are currently under construction and are cofinanced by the INTERREG program, are the Metsovo Tunnel (total length: 3,485 metres and estimated cost 70 MECU), the Anilio and Malakasi 'B' tunnels (total length: 325 metres and 200 metres, respectively and estimated total cost: 8.7 MECU), and the first part of access to the Metsovo Tunnel (total length: 22 km and estimated cost: 40 MECU). The construction of the Egnatia Road is considered instrumental to the lifting of the isolation of the region of Epirus, and is expected to serve as a major link between Central Europe and the Middle East and to contribute to the region's social and economic development, especially in light of the current political situation in the former Yugoslavia. The existing road-transport network, connecting Greece with Central Europe through Yugoslavia.

Harbours

The two ports of Epirus in the Ionian Sea are the port of Preveza, to the south, and the port of Igoumenitsa, to the north. As mentioned previously, the port of Preveza cannot be expanded as it is located at the entrance of Amvrakikos Bay, which is protected under the Ramsar Treaty. It is small and lacks infrastructure. The port of Igoumenitsa also suffers, due to lack of infrastructure and organisation, yet it has potential for expansion in order to serve as a gateway from Greece to Central and Western Europe. The port is used for the transportation of passengers, and, along with the port

of Patras, serves the main bulk of the transport of Greek products to Central Europe via Italian motorways.

Airports

There are two airports in the region of Epirus (Ioannina, Aktion). The larger of the two is located in the town of Ioannina. Daily flights connect Ioannina with Athens and Thessaloniki and weekly flights with Tirana, Albania. Domestic flights are operated by Olympic Airlines and are conducted by small propeller-driven planes (ATR-42 and ATR-72). Although the runway is suitable for the landing of larger planes, a lack of infrastructure and reliable flight security systems has inhibited such flights. Some improvements have been made (co-financed by the Structural Funds) which include the expansion of the facilities, runway lighting installation, the fencing of the airport area and the installation of certain radio transmitters). The airport of Aktio is located at the southern end of the region, across from the port of Preveza. It is a military airport, but it is used by Olympic Airways for flights and, in the summer, for international charter flights. Both its military character and its distance from Ioannina have inhabited its further development.

Railway

There is no railway network in Epirus.

1.4 Geomophology and land use

Greek Epirus, like the region as a whole, is rugged and mountainous. It comprises the land of the ancient Molossians and Thesprotians and a small part of the land of the Chaonians the greater part being in Southern Albania. It is largely made up of mountainous ridges, part of the Dinaric Alps. The region's highest spot is on Mount Smolikas, at an altitude of 2.637 metres above sea level. In the east, the Pindus Mountains that form the spine of mainland Greece separate Epirus from Macedonia and Thessaly. Most of Epirus lies on the windward side of the Pindus. The winds from the Ionian Sea offer the region more rainfall than any other part of Greece.

The Vikos-Aoos and Pindus National Parks are situated in the Ioannina Prefecture of the region. Both areas have imposing landscapes of dazzling beauty as well as a wide range of fauna and flora. The climate of Epirus is mainly alpine. The vegetation is made up mainly of coniferous species. The animal life is especially rich in this area and includes, among other species, bears, wolves, foxes, deer and lynxes.

The geomorphology of Epirus is largely mountainous, with an abundance of surface waters (rivers, lakes and lagoons), extensive forests and unique flora and fauna. The total area of Epirus is 9,203 square kilometres of which 9,7% is flat land, 12,9% is semi-mountainous and the remainder is

mountainous. Although figures vary according to the source used, approximately 15% of the land area is devoted to agricultural holdings, 55% is covered by grassland and used for mountain grazing, 26% is covered by forests and 2.5% is covered by surface waters. Urban and related activities account for the use of the remainder of the land. The region is dominated by the mountain-range of Pindus whose highest peak reaches approximately 2.6004. Pindus, which enters Greece from Albania, constitutes a natural barrier to the east between Epirus and the rest of Greece and is the main reason for the region's historic isolation. In general, the region has poor communication routes both internally and externally. On the west coast of the region, the port of Igoumenitsa lacks the necessary infrastructure to service large numbers of passengers and large volumes of freight merchandise and is not connected to the rest of Greece by adequate transportation networks. The port of Preveza, although well organised, cannot be expanded since it is located in the Amvrakikos Bay, which is protected under the Ramsar Treaty. The rather long and cumbersome route toward southern Greece is interrupted by the sea passage of Rio- Antirrion, which is sensitive to weather conditions.

The climate of Epirus is Mediterranean in the west and south, with hot summers and cold winters in central Epirus and cold in the mountainous regions, where both rainfall and snowfall are commonplace. The mountain-range of Pindus is covered by snow year-round. The region of Epirus is traditionally described as underdeveloped5. It is characterised by low birth rates, aging of the population, a wide dispersion and polarisation of settlements and a tendency towards the accumulation of the population in urban and semi-urban areas

The predominately mountainous geomorphology of the region has determined much of the land use and the economic activities in the region. Plains, basins and flatland areas are located mainly in the south, in the prefectures of Preveza and Arta, and in the west, in the prefecture of Thesprotia. The percentage of irrigated land, in 1991, was 36.6% in the region, 54.4% in the prefecture of Arta, 20.3% in the prefecture of Thesprotia, 25.5% in the prefecture of Ioannina and 42.8% in the prefecture of Preveza. These percentages are largely unchanged from their 1977 levels. 14.11% of the land area is devoted to agricultural holdings compared to a national average of 29.9%. Surface waters cover 3.23% of the land, compared to a national average of 2.34%.

Urban settlements account for 3.81% of the region, compared to 3.71% for the country as a whole. The largest utilised agricultural area is located in the prefecture of Preveza and the smallest in the prefecture of Ioannina. Forests cover 26.23% of the region compared to a national average of 22.36%. The largest area covered by forests is located in the prefecture of Arta, followed by the prefectures of Ioannina, Preveza and Thesprotia. More specifically, the exploitable forest areas in the prefecture of Arta are located in the northern and northwestern part of the prefecture. Timber production consists mainly of fir and oak. The forest areas in the prefecture of Preveza show intense

signs of erosion and are not suitable for exploitable reforestation, while the forest areas in the prefecture of Thesprotia are not suitable for exploitation. The exploitable forest areas in the prefecture of Ioannina are located in the north-eastern part of the prefecture (in Konitsa, Metsovo, Zagoria and Pogoni). They consist of fir, pine, beech, oak and other evergreen trees. Timber production from the prefecture accounts for over 94% of total regional production. However, the current level of production does not fully utilise the potential of the prefecture, largely due to lack of infrastructure, problems related to property status, land-use conflicts and the unavailability of machinery.

2. Profile of the agro-food enterprises

Citrus trees

In the regional unit of Artas nine packaging companies exist in the area, while five exist in the regional unit of Thresprotia and four in the regional unit of Preveza. The companies have domestic and export orientation. The companies of the regional unit of Artas export to: Finland, FYROM, Albania, Bulgaria, Poland, Chezh Republic, Serbia, Bosnia,Ukraine, Slovakia, Sweden, Hungary, Moldova, Canada, Denmark, Montenegro and Belarus. The one of the regional unit of Thresprotia exports to the Eastern and central Europe and the Balkan countries.

The following tables provide information concerning the cultivated area and the production in tons of the citrus trees and more specifically, in oranges, lemons and tangerines. As it can be seen from the next tables, the total production of Epirus region in citrus trees is 268.750 tons (2010). Moreover, the area produces organic citrus trees at about 445 acres in total (regional unit of Artas).

The total amount of exported citrus trees in the area in 39.565 tons of oranges and 42.200 tons of tangerines, 20 tons of lemons and 20 tons of grape fruit.

Kiwi

The Region exports kiwi to FYROM, Albania, Bulgaria, Polland, Check Republic, Serbia, Ukraine, Egypt, Libanon, Hungary, Jordan and Russia and the amount of exports is estimated to be on total 30.300 tons. Moreover, organic farming of kiwi is exists in the region (regional unit of Artas) producing 230 tons of kiwi.

Olive

Oil production reached 6.000 tons depending on weather conditions and alternate bearing trees. The pressing machines of the olives are 46 while there are 5 approved companies that produce small amount of oil.

Olives

The production of olives is very important in the Regional unit of Artaa that reaches 51,900 acres. 15% of groves are near the river Arachthos (Neochori Cut Loutrotopos, Sykies, Peranthi) while the remaining 15% is located in the mountainous Arta. In regional unit of Preveza there are about 21,100 acres of olives and in the regional unit of Thesprotia 27,950 acres. The production of olives in Arta has reached 25,000 tons last year. Organic farming of olives is also a small but important percentage of the local production.

Potatoes

About 5,120 hectares with a production of 18,400 tons of potatoes are in Ioannina and Preveza. The superior quality is mainly due to the particular soil and climate conditions of the region and secondly the long experience of the producers.

Legumes

Across the region about 3,700 acres of legumes are cultivated and the largest area is located in 4 villages of Parga (Lantern). Given the developed tourist Zagori, increasing their culture can provide an additional income to producers and a quality local product to visitors.

Viniculture

The vineyards, with a long history and tradition in the region of Epirus in the 16th century, was one of the few options for dealing with agriculture due to intense terrain that does not allow the growth of large and mechanized farming. The vine stretching over several thousand acres (200,000) throughout the region of Epirus focusing on famous Zitsa. Today in Epirus region cultivated a total of about 5,750 acres of wine grapes.

Winery

In the area of Zitsa but also in Metsovo, which are the second main wine growing regions in the regional unit of Ioannina, except Debina grown and the white varieties Chardonnay and Traminer and the red Cabernet Sauvignon and Merlot are also cultivated. The wine Zitsa is PDO while other three wines are PGI.

Forage plants

Forage plants are the predominant crop irrigated land of Epirus reaching 326.359 tons. The last year has appeared and cultivating organic farming of forage plants in the region. Organic forage is the only certified quality class.

Dairy products

With raw material of continental fresh goat's milk and with respect for tradition, now in Epirus operate three of the major industries of milk and cheese and even 35 small and medium milk processing units, offering consumers fresh products of high nutritional importance. It is characteristic that in the year 2010, according to the Greek Agricultural Organization-Dimitra (Dimitra-EL.G.O.), Epirus Region recorded 8,415 sheep and goat farmers and 191 dairy farmers, a number that indicates the need for support in the industry.

Dairy products includes Epirus fresh pasteurized milk, the traditional (with skin) yogurt and fresh butter. The most dynamic products in the area is galotyri the kefalograviera, the Metsovone and feta cheese which are registered as products with Protected Designation of Origin (PDO).

Fishery

The Epirus region supports a large part of economic activity in the fisheries and aquaculture. Has extensive fishing grounds along the coastline of both the Gulf and Amvrakikos the Ionian Sea and rich network of inland waters. The quantities of these fish (shrimp, sardines, mullet, cuttlefish and Striped) have a variation in annual production which is expected for natural populations. The production of shrimp in recent years ranging from 50 to 140 tons / year of sardines from 100 to 300 tons / year of mullet from 20 to 130 tons / year of Striped from 10 to 50 tonnes / year while the soup 50 to 120 tons / year.

3. Operational programme of thessaly-mainland greece-epirus

The three regions Thessaly, Mainland Greece and Epirus, covered by the Regional Operational Programme of Thessaly - Mainland Greece - Epirus, encounter common problems that allow the synthesis of a single strategy with common goals for all of the territorial section of Thessaly, Epirus and Mainland Greece. This is because all three regions face the problems which largely make up the image of delayed development of the Greek territory outside of the metropolitan areas.

The Strategic Goal for the Thessaly, Sterea Ellada and Epirus Region for 2007- 2013 consists of boosting competitiveness, appeal and the outward orientation of the economy by improving regional and social cohesion and adopting sustainable models for development of productive activities and sound management of the natural and built environment. This goal will be achieved by dynamically utilizing the Region’s comparative advantages in a new environment, in which investments in knowledge, quality, innovation and networks will play an increasing role over the years. The urban centres will be the dynamic pillars supporting the entire development effort.

The Development Objectives for the Thessaly, Sterea Ellada and Epirus Region are to:

1. Improve competitiveness, outward orientation, quality and the innovation strength of enterprises
2. Improve accessibility through the creation and upgrading of infrastructure, as well as intraregional and interregional transportation networks
3. Develop human resources
4. Sustainably manage of the natural and built environment, as well as natural resources
5. Strengthen intraregional economy and social cohesion
6. Increase interregional cooperation
7. Benefit from tourism and cultural heritage for sustainable development
8. Promote digital convergence

3.1 Sectoral operational programme "competitiveness and entrepreneurship

The Operational Programme (OP) "Competitiveness and Entrepreneurship" details the strategy for the reinforcement of competitiveness and outward oriented entrepreneurship of the Greek economy in the framework of the overall National Development Strategy for the new period 2007-2013.
The OP provides funding to the 8 "Convergence" Objective regions, with the contribution of the European Regional Development Fund (ERDF). The Total EU Co-financed Budget amounts to EUR 1,519,000,000.
The OP interventions support the following sectors:

- o research, technology and innovation
- o processing – services – trade, mainly in the form of State aid
- o consumer protection
- o energy and promotion of renewable forms of energy
- o tourism, culture and the health sector

The core development goal of the Competitiveness and Entrepreneurship OP for the period 2007-2013 is "the improvement of the competitiveness and outward orientation of the country's enterprises and production system, with special emphasis on the dimension of innovativeness". The rationale that governs the strategy emphasises the shift of public support towards increased added value interventions and sectors, towards actions fostering the ability to incorporate new technologies into the Greek production system and the adaptation of generated innovations, as well as the improvement of the country's outward orientation through its interconnection with global integrated product and service production systems, the reinforcement of international collaborations between bodies and enterprises, the growth of the exports of goods and services, etc.
Priority Axes-Main Categories of Actions

The General OP Goals operationally correspond to the Priority Axes of the OP. In particular:
Priority Axis 1 “Creation and utilisation of Innovation supported by Research and Technological Development” aims at the acceleration of the transition to a knowledge economy, the incorporation of research, technology and innovation into the country’s productive fabric, as its principal motor for development and competitiveness, as well as the broad dissemination of the results of research and innovation in the Greek economy and society
Priority Axis 2 “Reinforcement of entrepreneurship and extroversion” seeks to foster outward-oriented entrepreneurship as the only available means for the productive upgrade of the country towards high value added goods and services, characterised by high quality, environmental awareness, incorporation of knowledge and innovation
Priority Axis 3 "Improvement of entrepreneurial environment” aims at the improvement of the entrepreneurial environment, including, among others, actions for consumer protection and the development – improvement of supportive structures and mechanisms geared towards enterprises
Priority Axis 4 “Completion of the country’s energy system and reinforcing sustainability” aims at ensuring the country’s energy supply and its accession to international energy transport networks, the rational management of natural resources and the promotion of renewable sources of energy

3.2 New legislative framework for science, technology and innovation

The Bill of the Ministries of Development, Competitiveness and Shipping and National Education and Religious Affairs for Science, Technology and Innovation was issued in the Parliament on July 26 2007. The aim is, with the implementation of the new institutional framework, for Greece to spend 1.5% of its GDP for research by 2013, in order to promote innovation and therefore to develop all the vital sectors of the economy. The objective of the new legal framework is to create opportunities for frontier research, to support international research cooperation, to promote the knowledge economy and to make Greece competitive globally, by improving its position in the global research community. Also among the key objectives is the establishment of the principle of excellence in frontier research.
More specifically, the provisions of the Bill refer to the context in which in the coming years the area of Research and Technology will operate, appropriate institutions will be set up, options and directions will be identified and scientific and research efforts and methods of evaluation will be financed. In addition, all issues concerning the management of research centers, the state and development of their staff and their collaboration with universities and colleges will be arranged.
Given the need to adapt the research system to the needs of Greek economy, sustainable development, entrepreneurship and exploitation of human resources, both those located in Greece

and abroad, the Bill emphasizes on promoting innovative research and creating the conditions for closer cooperation between research centers and industry, as well as between research institutions and universities.

In order to strengthen basic research and to support it with national funding, the Bill foresees the implementation of the National Programme for Research and Technology, within the framework of which research projects will be implemented, studies will be elaborated and programs and actions will be implemented, both from public and private entities, from Greece and abroad.

The design, implementation, management and control of the National Programme for Research and Technology will be made by the institutions of research policy, namely the Interministerial Commission for Science and Technology, the Ministry of Development, Competitiveness and Shipping through the General Secretariat for Research and Technology, the Ministry of National Education and Religious Affairs, the National Council for Research and Technology and the National Organization for Research and Technology, a new entity, which will have as a mission the implementation and managing of actions of basic, applied-technology research and innovation.

4. Other information

The Region participates in many European projects such as E.R.A. - European Rural Almanac, WOODE3 - Wood Energy Exploitation for Entrepreneurship, HuRiSu - Human Rights Sunrise, Surf-NUTURE - Sustainable use of regional funds and nature, CYCLO Cycling Cities - Local Opportunities for Sustainable Mobility and Tourism Development, MISRAR - Mitigating Spatial Relevant Risks and Towns, ADRIMOB, HIDDEN - Hidden Innovation Initiatives for SMEs, ICS - SMEs and Cooperative Economy for Local, "A Sustainable Development for Green Mountain Areas", "Energy Sustainability for Adriatic Small Communities".

However, the implementation of major EU co-financed projects such as the Egnatia motorway, the western road axis, the new harbor of Igoumenitsa (the "gate" to the west) and the Aktion sub marine tunnel, have created more favorable conditions for the development of the region. New development axes are being established parallel to the above mentioned road axes converting Epirus to a focal point between Italy, Northern Greece and Balkan Countries.

The Region of Epirus has the following comparative advantages concerning entrepreneurship and innovation:

- Development of new innovation policies, such as the Regional Information Society and the Entrepreneurship through innovation in Epirus. More specifically, the Region of Epirus, through its participation in such Programmes, gained the ability to form policies in the sector of innovation for SMEs, having as an overall objective the effective collaboration

between SMEs, public authorities and service providers, the creation of policy framework for covering the innovation needs of enterprises with the activation of public and private support stakeholders and the diagnosis of the technological and innovative needs of enterprises

- Continuous growth of the transnational trade with the Balkan countries
- Enhancement of the competitiveness of agriculture. The Region has a comparative advantage in the production of branded agricultural and livestock quality products, which show increasing demand in the Greek, European and International markets
- Existence of basic conditions for tourism development, given the unique natural beauty of the area, its cultural heritage, its geographical position and the prospects for lifting isolation with the implementation of major infrastructure projects. Between the areas, which fulfill the conditions for tourism development are the coastal zone of the Ionian Sea and the mountain zones of the inland, which have ecological and cultural richness and are open for the development of "soft" types of tourism
- The dynamic development of the University of Ioannina (especially the sector of new technologies, Information Society and Medicine), which contributes in the creation of the necessary conditions for the emergence of the city of Ioannina and of Epirus in general as a center of education, innovation and of services with interregional and transnational scope, as well as the more dynamic presence of the Technological Educational Institute, which has departments in different cities of Epirus.