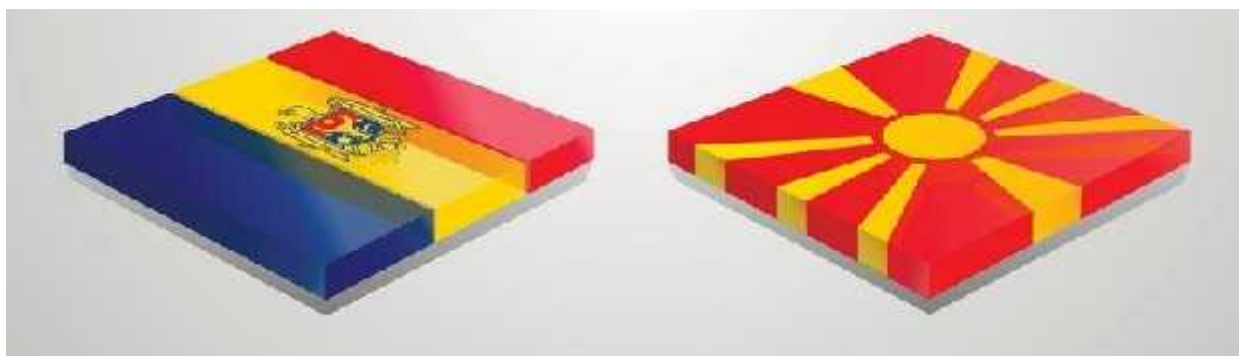


**CROSS-COOPERATION SECTORS BETWEEN
THE REPUBLIC MACEDONIA AND
THE REPUBLIC OF MOLDOVA:
COMPARATIVE ANALYSIS**



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Content

Abbreviations	6
Executive summary	8
1. Introduction	9
2. General socio-economic context of the Republic of Macedonia	13
2.1. Rural Areas	13
2.2. Mountainous areas	13
2.3. Agricultural regions	13
2.4. Demographic situation	14
2.5. Administrative systems	16
2.6. Economic drivers, productivity and growth.....	17
2.7. Labour market.....	20
2.8. Education system	21
2.9. University education in agriculture.....	22
2.10. Non-formal education in Agriculture.....	23
2.11. Land use and ownership.....	24
2.12. Agriculture land and area.....	24
2.13. Lease of agriculture land in state ownership.....	25
3. Performance of the agricultural, forestry and food sectors in Macedonia	26
3.1. Agriculture employment and labor productivity.....	26
3.2. Agriculture holdings, farm structure and typology	26
3.3. Statistical indicators of agriculture in the Republic of Macedonia	27
3.4. Major agricultural products.....	28
3.5. Crop production	29
3.6. Livestock production	31
3.7. Organic production	32
3.8. Food Processing Industry.....	33
3.9. Foreign Trade in Agri-food Products.....	35
3.10. Advisory services.....	35
3.11. Access to credit	36
4. Environment and land management in Macedonia	38
4.1. Climate change impact on agriculture, needs for adaptation and mitigation measures	38
4.2. Soil quality and erosion.....	39
4.3. Renewable energy	39

4.4.	Use of pesticides and fertilizers	40
4.5.	Rural economy in Macedonia	40
5.	Rural tourism potential in Macedonia.....	42
5.1.	Legal framework for the development of rural tourism.....	42
5.2.	Institutional facilities for developing rural tourism	42
5.3.	Human resources.....	43
5.4.	Accommodation and catering facilities.....	43
5.5.	Funding opportunities	43
5.6.	Promotion and development of SME in the rural areas	44
5.7.	Crafts.....	45
5.8.	Provision of services in rural areas	45
6.	Infrastructure provision in Macedonia.....	47
6.1.	Social Infrastructure	47
6.2.	Technical Infrastructure	47
6.3.	Cultural heritage and built environment in villages	47
7.	National support policy for agriculture and rural development in Macedonia	48
7.1.	National Strategy Objectives for Agriculture and Rural Development	48
7.2.	Lesson learnt from IPARD I implementation	50
7.3.	National strategy objectives for agriculture and rural development under IPA.....	52
7.4.	Identification of the needs and SWOT summary of overall strategy and sectors (Macedonia) 53	
7.5.	Enhancing competitiveness of the agricultural value chain	55
7.6.	Promoting sustainable rural development.....	56
7.7.	Transfer of knowledge and innovation in rural areas.....	57
8.	General socio-economic context of the Republic of Moldova.....	58
8.1.	Definition of rural areas in the Republic of Moldova	58
8.2.	Demographic situation	59
8.3.	Administrative systems	62
8.4.	Economic drivers, productivity and growth.....	64
8.5.	Labour market.....	67
8.6.	Education system	70
8.7.	Land use and ownership.....	74
9.	Performance of the agricultural, forestry and food sectors in Moldova	78
9.1.	Competitiveness of agriculture and food processing	78
9.2.	Advisory services and knowledge transfer	91
9.3.	Agriculture education.....	92

9.4.	Access to credit	93
10.	Environment and land management in Moldova	95
10.1	Risks of land abandonment and marginalisation	95
10.2.	Climate change impact on agriculture, needs for adaptation and mitigation	96
10.3.	Biodiversity.....	97
10.4.	High nature value farming	98
10.5.	Water access.....	100
10.6.	Soil quality and erosion.....	101
10.7.	Use of pesticides and fertilisers	102
10.8.	Renewable energy	104
11.	Rural economy in Moldova.....	106
11.1.	Rural tourism potential.....	106
11.2.	Promotion and development of SME in the rural areas	108
11.3.	Crafts.....	108
11.4.	Provision of services in rural areas and access to the infrastructure	109
11.5.	Cultural heritage and built environment in villages	112
11.6.	Identification of the needs and SWOT summary of overall strategy and sectors (Moldova)	113
12.	National support policy for agriculture and rural development in Moldova	115
13.	Preparation and implementation of local development strategies – LEADER (lesson learnt from Macedonia).....	119
13.1.	Experience in local development strategies	119
13.2.	LEADER like initiatives	119
13.3.	LEADER in the national strategic and programme documents	120
13.4.	Institutional and Legal Settings.....	121
13.5.	Successful stories of implementation LEADER Programme at local level – LAGs in Macedonia.....	123
13.6.	National Rural Network.....	124
13.7.	Funding	124
13.8.	Fragility among rural communities, services and infrastructure.....	125
13.9.	The potential for cooperation in farming and in the food chain.....	126
13.10.	The role of municipalities bringing together rural stakeholders	126
13.11.	LAGs’ projects with impact on the rural society	127
14.	Conclusion.....	130
15.	Recommendations	131
References:	134

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Abbreviations

AWU	Annual Working Unit
CAP	Common Agricultural Policy
CLLD	Community Led Local Development
ECTS	European Credit Transfer System
EU	European Union
FACE	Foundation Agro-Center for Education
FASF	Faculty of Agricultural Sciences and Food
FDI	Foreign Direct Investment
GAO	Gross Agricultural Output
GDP	Gross Domestic Product
GVA	Gross Value Added
HACCP	Hazard Analysis and Critical Control Points
IARM	Institute of Accreditation of the Republic of Macedonia
IPA	Instruments for Pre-accession
IPARD	Instruments for Pre-accession for Agriculture and Rural Development
LAG	Local Action Group
LARD	Law of Agriculture and Rural Development
LAU	Local Administrative Unit
LDS	Local Development Strategy
LEADER	Liaison Entre Actions de Développement de l'Économie Rurale
LED	Local Economic Development
LFA	Less Favourable Area
LGRD	Local group for rural development
LSU	Livestock Standard Unit
MAASP	Macedonian program to support the Agricultural advisory services
MAFWE	Ministry of Agriculture, Forestry and Water Management
NARDS	National Strategy for Agriculture and Rural Development
NGO	Non-Governmental Organisation
NRDP	National Rural Development Programme
NUTS	Nomenclature of Territorial Units for Statistics
OECD	Organisation for Economic Co-operation and Development

PPP	Purchasing Power Parity
PPPs	Public-Private Partnership
RDN	Rural Development Network
SBEP	Small businesses expansion project
SEE	South East Europe
SIDA	Swedish International Development Agency
SME	Small-Medium Enterprise
SLED	Strategies for local economic development
SO	Standard Output
SSO	State Statistical Office
SWG	Standing Working Group
UAA	Utilized Agricultural Area
UN	United Nations
UNDP	United Nation Development Programme
USAID	United States Agency for International Development
NBS	National Bureau of Statistic of Moldova
GD	Government Decision
ANSA	National Food Safety Agency of the Republic of Moldova
MARDE	Ministry of Agriculture, Regional Development and Environment of the Republic of Moldova
AIPA	Agency for Interventions and Payments of the Republic of Moldova
ENPARD	European Programme for Agriculture and Rural Development for the countries neighboring the European Union
DCFTA	Deep and Comprehensive Free Trade Area Agreement between EU and Republic of Moldova

Executive summary

This research aims to assess the rural development perspectives and strategic sectors in Republic Macedonia and Republic of Moldova that can be considered cooperation sectors between the countries. Also, the research will serve as a handbook map for new created and existing LAGs or associative groups aiming to cooperate with other regional partners. A Local Action Group is a non profit-making structure formed of public and private organizations, especially from rural villages, from different socio-economic sectors.

Through the European Agricultural Fund for Rural Development (EAFRD), LAGs can apply for financial assistance in the form of grants to implement the Local Development Strategy of their respective territory.

Agriculture is important segment of Macedonian economy, as it impacts the economy significantly, by contributing with around 11.4% in total Gross Value Added (GVA). In addition to this, the agricultural sector is important for reducing unemployment rates and it provides employment for about 17.9% of the population. In the Republic of Moldova, agriculture continue to remain an important sector of economy. Even if declining, it is accounting for 12,2% of GDP in the year 2017. Food Industry accounts for more than 30% of the manufacturing, and it is contributing to other sectors such as transport, trade, financial and insurance activity.

Main characteristic of the Macedonian and Moldavian agriculture is its dual structure. This means that small farms are most common and dominating the sector. Almost of the holding operate on land less than one hectare. However, these is high level of land fragmentation.

In both countries, agricultural policy development is constructed as an adjustment towards the Common Agricultural Policy of the European Union. The process of EU integration resulted with positive changes in terms of better institutional capacities and legislation. Main goals of the national agricultural policies are the CAP objective and at the time this is the national agricultural strategies.

In order to achieve these objectives, there has been introduced increased budget, along with systemic establishment of policy through set of laws, strategies, programs and long-term plans.

Access to finance is essential for the agricultural enterprises, and even more, when it is necessary to invest in agriculture. The LEADER programme (is a European Union initiative to support rural development projects initiated at the local level in order to revitalise rural areas and create jobs. The main concept of the LEADER approach states that the development activities are more effective and efficient if decided and implemented at the local level, by local actors, according to transparent procedures. The LEADER approach is a perfect tool that corresponds with the challenges Moldova for solving the economical-social situations.

The experience of Macedonia which have implemented LEADER mechanism show that it can be used as an accelerator for the real change at the local level. Most LEADER grants are usually administered by local action groups (LAGs). LAG members are drawn from private businesses (including people involved in forestry, farming and other rural businesses), the public sector and voluntary/community organisations.

1. Introduction

In the south-east part of Europe, in the South-west part of the Balkan Peninsula is located Macedonia. The country is spread on territory of 25713 km², of which 857 km² is water area and 24856 km² land area. According to the last Population Census, conducted in 2002, in Macedonia there were 2.02 million people living in Macedonia (SSO, 2018).

Agriculture is important segment of Macedonian economy, as it impacts the economy significantly, by contributing with around 11.4% in total Gross Value Added (GVA). In addition to this, the agricultural sector is important for reducing unemployment rates and it provides employment for about 17.9% of the population. In 2013, the Gross Agricultural Output (GAO) amounted for EUR 1385 million. Compared to 2005 this was increase of 22%. The agricultural area, of about 1264 thousand hectares, covers almost half of the total land area, out of which 32.7% as arable land and 64.2% as permanent grassland. Even though the largest share of the total land area is grassland, crop production has substantial significance in the Macedonian agriculture with a share of 76% in total agricultural production. Livestock production in the country marks insufficient and low production levels of animal feed, due to deficient capacity. Hence, the country is highly dependent on the imported feed (MAFWE, 2015). These unfavourable varieties and breed structure results with low level of yields. For example, as shown in Table 1 below, in 2015 the average wheat and milk yields were 2.70 t/ha and 2.91 t/head, respectively, which results shows decreased yields compared to 2005.¹

Table 1. Characteristics of the Macedonian agriculture sector 2005/2015

	2005	2015	2005/2015
Agricultural area (AA)(thousand ha)	1199	1264	1.05
Share of arable land in AA (%)	37.36	32.70	0.88
Share of crop in total agricultural production (%)	78.50	76.50	0.97
Average wheat yield (t/ha)	3.10	2.70	0.87
Average milk yield (t/dairy cow)	2.31	2.91	1.26

Source: SWG (AAP Data), 2016.

Main characteristic of the Macedonian agriculture is its dual structure. This means that small farms are most common and dominating the sector. Almost 60% of the holding operate on land less than one hectare. However, these is high level of land fragmentation. The average size of the utilized agricultural area (UAA) per holding is very low (1.9 ha). A research conducted by SWG in 2016 showed that the average livestock standard units (LSU) per holding is 3.79, whereas the share of the household with less than one unit is 24.61% of the total number of households. Standard output (SO) per holding is EUR 4819 whereas half of the holdings have a standard output less than EUR 2000 (SWG, 2016). These results are reflecting the act that individual

¹ Agricultural Statistics Database - FYR Macedonia (SWG / EC JRC IPTS Project, update: September 2015)

agricultural holdings participate with 86.9% in the creation of total SO, whereas land capacities and other natural resources are not fully utilized. In addition to this, there are other obstacles in the agricultural sector that hinder its development. The list is long and it goes with out-dated equipment and technology, low levels of productivity, lack of added value agricultural products. Moreover, lack of seasonal labour is also a significant problem that needs to be tackled, together with increased aging and migration of rural population, but also low level of education and management skills of the rural population. Macedonian peasants lack own capital and access to financial resources, therefore there is weak level of agri-food integration and low level of integration of research in the development of the agriculture limit the development of the sector.

Agricultural policy development is constructed as an adjustment towards the Common Agricultural Policy (CAP) of the European Union (EU). The process of EU integration resulted with positive changes in terms of better institutional capacities and legislation. Main goals of the national agricultural policy are the CAP objective and at the time this is the national agricultural strategy. In order to achieve these objectives, there has been introduced increased budget, along with systemic establishment of policy through set of laws, strategies, programs and long-term plans. However, there is still requirement for certain adjustments of some policy measures. Naturally, this adjustment of the national policies with the European policies to full compliance will continue up to country's full EU membership. The dynamics and scope of this process of adjustment largely depends on progress in the accession process and the beginning of accession negotiations (Ministry for Agriculture, Forestry and Water Economy (MAFWE) 2014).

As mentioned before, process of EU integration resulted with positive changes in terms of better institutional capacities and legislation. In reference with the institutional capacities, new institutions were established, among them the Agency for financial support of agriculture and the rural development and the Agency for food and veterinary. These two have strong organizational system. Improvements were recorded also in existing institutions. Existing agencies such as MAFWE and National extension agency have also improved their capacities and showed progress the process of adjustments towards to EU policies. Despite these improvements and developments, being consistent with the implementation of the legislation and its amendments remains main challenge for Macedonian agriculture institutions. This is mainly due to the changes of CAP, and strong pressure from the local stakeholders.

More intensive adjustment of the agricultural policy towards the CAP accelerated intensively in 2005, when the country received its status of member candidate country for EU. In 2007, first more significant and structural changes occurred, when the Law of Agriculture and Rural Development (LARD), the National Strategy for Agriculture and Rural Development (NARDS 2007-2013) and the IPARD Program (2007-2013) were adopted. There is continuous harmonization trend of the national agricultural policy, and the current LARD (from 2010), which serves as a legal framework of the agricultural policy in the country, is much more in line with the EU principles.

The latest NARDS (2014-2020) define new specific objectives, trying to follow the needs of the sector:

- a) Restructuring and modernization of the agri-food sector;
- b) Market regulation, organization of the food chain and improvement of the quality of agricultural products;

- c) Improving the living conditions and conditions for economic activities in the rural areas;
- d) Continuous access to knowledge and investment in human capital in agriculture;
- e) Completion of the functionality of the food safety system; and
- f) Sustainable management of natural resources and mitigation of the effects of climate changes (MAFWE, 2014).

In addition, multiple documents, such as annual and multiannual programmes for financial support of agriculture and rural development from national budget and from IPARD funds (2007-2013) were adopted in the policy.

Main aspects for further adjustment to the CAP are identified in NARDS 2014-2020:

- a) Gradual ‘decoupling’ of the direct payments;
- b) Rural development measures increase;
- c) Expansion of agro-ecological measures and cross compliance;
- d) Supporting young farmers; supporting small family farms, establishment of cooperatives;
- e) Vertical integration;
- f) Introducing market boards;
- g) Minimum quality standards;
- h) Mitigate the impact of climate change;
- i) Waste management, and improving energy efficiency (MAFWE, 2014).

The Republic of Moldova is a country in Eastern Europe, bordered by Romania and Ukraine.

Moldova declared independence on August 27, 1991, as part of the dissolution of the Soviet Union.

Moldova is a parliamentary republic with a president as head of state and a prime minister as head of government. It is a member state of the different international organisations like the United Nations, the Council of Europe, the World Trade Organization, the Organization for Security and Cooperation in Europe, the Organization of the Black Sea Economic Cooperation and aspires to join the European Union.

Moldova has a population of 3,550,000 (in 2017) but in the same time, alternative sources estimates that the number of population is 2.9 million people. The Republic of Moldova register a shift to an ageing society due to the lower fertility rate and gradual increase of life expectancy at birth, overlapped with intense age-specific migration of working age people to other countries, for both seasonal and long-term or even permanent work the registered migration of the population.

By far the largest city and capital is Chisinau. Spoken languages are Romanian, recognized regional languages are Ukrainian, Russian, and Gagauz.

The territory of Republic of Moldova can be divided into three agro-ecological zones:

- the North part of the country is a hilly zone with forests, step and meadow vegetation. It has the most fertile soil with a high water holding capacity,
- the Central part of the country is hilly and has deep valleys, less fertile soil, and is best for perennial crops like orchards and vineyards

- the Southern region has steppe to meadow terrain with both highly fertile and not as fertile types of soils. Due to higher temperatures and lower rainfall, this latter zone has only marginal production in the absence of irrigation.

Economic and financial system of the Republic of Moldova it is characterized by a high instability. GDP growth during has fluctuates between -6.5% and +8.9% during the last twenty years. Economic performance in 2017 was robust. Financial sector consolidation, lower interest rates, as well as strong domestic demand and a favorable external environment, propelled growth to 4.5 percent in 2017.

Exports were supported by strong agricultural production and increased manufacturing exports to the EU, reflecting the impact of new foreign direct investments. Imports growth, however, outpaced exports, which widened the current account deficit.

The budget outcome was well within program targets and public debt is estimated to have decreased to 37 percent of GDP, from 41.9 percent in 2016.

After peaking at 7.9 percent in late 2017, CPI inflation declined to 2.8 percent in May 2018.

Agriculture continue to remain an important sector in Moldova's economy. Even if declining, it is accounting for 12,2% of GDP in the year 2017. Food Industry accounts for more than 30% of the manufacturing, and it is contributing to other sectors such as transport, trade, financial and insurance activity.

Moldovan agricultural sector is composed of two major sub-sectors: corporate sector comprising large companies and the individual sector that includes peasant farms and household land in private property. Recent trends of the gross agricultural production in Republic of Moldova are characterized by high fluctuations of the gross agricultural product, depending first of all to changing climate and weather conditions.

Access to finance is essential for daily operations of agricultural enterprises, and even more, when it is necessary to invest in agriculture. Obtaining a bank loan to finance such long-term operations is difficult. At the same time, there are 448 professional participants in the non-banking financial market in the Republic of Moldova registered in 2017: 167 microfinance organizations, two central associations and 279 of licensed SCAs and activities. Savings and Credit Associations are an important source for working capital loans for rural smallholders.

Rural areas from the Republic of Moldova provide the possibility for the development of rural tourism, gastronomic tourism with ethnic local products and ecotourism. Some rural areas have also potential for the development of cultural and heritage tourism as well as culture-specialized tourist products (festivals, fairs, village celebrations, etc.).

2. General socio-economic context of the Republic of Macedonia

2.1. Rural Areas

According to the OECD methodology, rural area is an area on the level of municipality (NUTS V), where the number of inhabitants per settlement does not exceed 30,000 inhabitants in accordance to the national population census or the population density is below or equal to 150 inhabitants per km² of the municipality area.

Today the structure and the population of the rural areas in Macedonia are changing with varying intensity in time. Through the time there were different trends of development of the rural settlements, followed by development of traditional agriculture and animal husbandry. Eventually, as urban areas developed, rural areas were depopulated as people started moving to cities, hence there was fragmented continuity of traditional architecture. Contrary to urban areas which developed more and more, rural areas remained neglected with insufficient infrastructure facilities. With the fall of Yugoslavia in the beginning of the nineties, transition period started. After this period, focus was set on preparation of urban documentation for the villages. At this time, it was emphasized the need for more balanced development of rural area and emphasis was set on the quality of villages and living conditions. In Macedonia, rural areas cover 80% of the territory and 59% of the population of Macedonia lives in these areas (MAFWE, 2014).

2.2. Mountainous areas

Macedonia is characterized as predominantly mountainous country. Around 80% of its territory are hills and mountains, with average elevation of the terrain of 850 meters above sea level. For the purpose of the implementation of IPARD Programme, mountainous areas in the country have been designated at the level of settlements (LAU 2) above 700 m of altitude where natural handicaps and climatic conditions as well as steep slopes are limiting the opportunities for efficient agriculture activity. Designation was performed based on the territory belonging to a settlement (cadastral territory) and average values for the designation criteria - altitude at settlement level. In 2002, according to SSO, there were 734 settlements designated as 'mountainous' with total population of 244460 inhabitants (SSO, 2002).

2.3. Agricultural regions

Macedonia is characterized as country where due to the country's topography and climatic conditions different regions are unlike each other. As result of this, separate agricultural regions are identified, each of them with characteristic type of soil, terrain and micro-climate specifics. This influences the possibility for agriculture production. The informal division identifies 10 agricultural regions (NUTS 3) which correspond to the country's geographical valleys: Skopsko Pole, Kumanovsko-Lipkovsko Pole, Kochansko Pole, Ovche Pole, Polog, Pelagonija, Tikvesko

Pole, Strumichko pole, Ohrid-Prespa Lake Region and Gevgelisko-Valandovsko Pole. These regions are characterised with intensive agriculture activity and more than 90% of the agriculture holdings are performing their activity in these regions (MAFWE, 2014).

2.4. Demographic situation

According to the last population census conducted in 2002, almost 60% of the population in Macedonia lived in rural regions. As shown in Table 2 below, population density in rural areas is lower than the national average (69 vs. 81 inhabitants per km² of land area, respectively).

In 2012, SSO published official population estimates according to which in Macedonia in 564296 households there were living 2062294 inhabitants, with average 3.6 persons per household (higher than EU 27 average of 2.3). The average population density calculated on the total area of the country (25713 km²) is 80.2 persons per km². Compared to EU, where the average is 115, this number indicates low population density.

According to the territorial distribution of the population in Macedonia, about 44% of the total population lives in rural areas. In Macedonia, from 1767 inhabited places, only 3 of them had population more than 10000. In 1746 inhabited places live less than 10000 inhabitants. Most of the villages in the country have population less than 100 residents. In fact, in 2002 there were only 633 settlements with population of less than 100 inhabitants. The same year, there were 151 settlements with no registered population.

As Table 2 shows, in comparison with 2002, the population estimates from 2012 indicate that there was population increase. However, in 2012 population increase is most characteristic for the region of the capital city Skopje (80% of total population growth). Estimations related to rural areas, indicate that most of these areas have declining population trends (SSO, 2013).

Table 2: Population and territory of rural areas

Type of region	Population (Census 2002)		Population (estimates 31.12.2012)		Cadastral territory		Population Density (Census)
	Number	% of Total	Number	% of Total	Km ²	% of Total	Inhabitants / Km ²
Predominantly Rural regions	1206272	59.64	1218945	59.17	17418	72.26	69
Intermediate Regions	816280	40.36	84099	40.83	6668	27.74	122
Total	2022552	100	2062294	100	24106	100	84

Source: SSO, 2013

Similar to EU, in the last 30 years, Macedonia is faced with the challenge of ‘aging population syndrome’. From 1981 to 2012, the number of young people (0 to 19 years) declined from 41% to 23.9% of the total population. Moreover, increase from 8% to 12% was registered in the population aged 65 and above (SSO, 2012). This value is lower compared with EU average, where this group of population is estimated 17.9%. Biggest challenge for rural areas in Macedonia is how to attract and retain young population. According to the estimations from SSO in 2012, there is unsatisfactory rural age structure. This is particularly unfavorable Pelagonija (14.9%), East (13.2%), Vardar (13.1%), Southeast (12.4%) and Skopje (12.6%) region. In addition to this, same reports from 2012 show that the number of population has increased to total of 2065769 inhabitants. However, the it is important to mention that only 1% increase was registered in rural areas in 2012 compared to 2002. This increase is insignificant. In urban regions is 3.7% (SSO, 2012). As mentioned before, only in the region of the capital city Skopje there has been registered increase in the population of 80% in 2012 compared to 2002. Contrary, most of the rural municipalities experience decline in the population.

Almost 71% of the population in Macedonia belongs to the group of working age (between 15 and 64), and the average age of the population is approximately 40 years. From gender perspective, the structure of the population is as following; 76.8% of men are between 15-64 years of age and 52.7% of women being between 15-64 years of age. Table 3 below shows the population by age in 2012. As shown below, the share of the working age population is lower in urban regions (40%) than in the predominantly rural regions (60%) (SSO, 2012).

Table 3: Population by age in Macedonia

Type of region	Population below working age (0-15)		Population at working age (15-64)		Population above working age (65+)		Total	
	Population (000’)	% in total	Population (000’)	% in total	Population (000’)	% in total	Population (000’)	% in total
Predominant Rural	200822	16.5	878915	72	139665	11.5	1219217	100
Intermediate	147594	17.4	582710	68.9	116063	13.7	846552	100
Total	348416	16.9	1461625	70.7	255728	12.4	2065769	100

Source: SSO, 2013.

2.5. Administrative systems

Macedonian administrative system is organised and divided on state and local level. When Macedonia gained its member candidate status, the country adopted EU's NUTS policy² and it was integrated to achieve more efficient synchronization with EU administrative boundaries.

From state governance context, the power in the country is divided into legislative power (the Parliament), executive power (the President of the Republic and the Government) and judicial power (Judicial Council of the Republic). On the other side, local governance is organized by local self-government units on municipal level.³ The Municipality (LAU 1) is governed by Municipal Council and every four years Mayor election are held in every municipality. Individual settlements and towns within one Municipality (LAU 2) can and are allowed to establish forms of self-governance of Urban Communities or Local Communities (Fazliu, 2016).

In terms of territorial division, municipalities in Macedonia are classified in three categories; urban with headquarters in cities, rural with its headquarters in villages and the city of Skopje as agglomeration of 10 municipalities, with headquarters in the city of Skopje. These three categories together form 80 municipalities acting as LAU 1 administrative units. In accordance to this typology, there are 37 rural municipalities and 33 urban municipalities and the city of Skopje (10 municipalities). According to the SSO, in 2014 total number of settlements in Macedonia was 1767. Out of these 1767 settlements, there are 33 cities out of which 12 cities have less than 10000 inhabitants. The remaining 1734 settlements are defined as villages (SSO, 2014).

In rural municipalities in average there are living 20963 inhabitants. However, almost one third of these rural areas have less than 5000 inhabitants, and only 25 rural municipalities have total population of up to 10000 inhabitants. The total number of settlements up to 10000 inhabitants is 1746. Results from the research of the SSO show that out of 37 rural municipalities in total, there are 15 rural municipalities, which are close to urban centres. Moreover, out of these 15, seven municipalities are surrounding the capital city of Skopje (SSO, 2014). In general, these municipalities have a better human resource potential and better opportunities for business development based on efficient integration with urban centres. However, this varies significantly based on the size and development level, infrastructure facilities and distance to the urban center.

Low-population density, low number of inhabitants and distance from large urban centres create additional constraints to socio-economic development of rural areas. Rural areas outside urban municipalities register higher population decline. Further, these areas have less-educated labour force, hence much higher unemployment rates. Rural municipalities that are bordering or near the capital city have better prospects for socio-economic development.

² <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02003R1059-20180118&from=EN>

³ <http://www.libertasinstitut.com/de/MK/nationallaws/Law%20on%20territorial%20organization%20of%20the%20LSG.pdf>

2.6. Economic drivers, productivity and growth

In the past years, Macedonia had sound macroeconomic policy, which remained consistent and did not change significantly. However, the global economic crises did not surpass Macedonia. The crisis caused biggest contraction of the global economy in the last 80 years. Inevitably it caused decline in the Macedonian national economic activity, mainly through the external sector. In 2009, shrinkage of the global trade led to reduced demand for Macedonian export goods, in particular in those branches with highest share in the industrial production index. In 2009, the rate of real GDP growth decreased to (- 0.9%), while in 2012 to (- 0.4%) (MAFWE, 2014). This decline was followed by the political turmoil in the country in the period 2015-2017, when real GDP growth slowed down minimal 0.1% in 2017, compared to 2.9% in 2016. This was mainly driven by the decrease in investments. According to World Bank (2017), poverty (at USD 5.5/day at 2011 PPP) is estimated to have continued declining in 2017 and it is projected to have fallen to 21% in 2017, continuing a decreasing trend present since 2009.

To respond to the negative macroeconomic trends, National Bank of Macedonia responded with set of monetary measures intended to the commercial banks. In addition, Macedonian Government with the so called “anti-crisis” measures packages, introduced and implemented important structural reforms, with main focus on reducing regulatory burden and cutting red tape, improving the customs administration, but also by introducing flat tax on personal and corporate income. Two packages of anti-crises measures were implemented by the Government to prevent the decrease of the economic activities and to revive the economy. In 2013, the economy started to recover, and it registered positive rate and GDP growth of 2.9%, followed by 3.9% GDP growth in the first quarter of 2014. After the sharp decrease (- 1.6%) in 2009, the inflation rate has reached its pick of 4.7% in 2012. In 2013 the inflation rate dropped to 1.4%. Over the past 10 years, inflation rate maintained average 2.5%.

In 2017, public and publicly guaranteed debt declined to 47.5% compared to 2016, when this value was 48.4%. This is mainly because of drawdown on accumulated deposits to reduce new borrowing. According to the World Bank (2017), corporate lending remained subdued throughout 2017 (2.6%). Also, credit growth increased together with the demand of household sector for credit requests by 9.2%.

In 2013, primary sector in Macedonian economy accounted for 11.7% of GVA. In the same year, secondary and tertiary sectors accounted for significantly higher amounts. Secondary sector accounted for 20.7% of GVA, whereas the tertiary sector contributed with 67.5% of GVA. Highest contribution to the GVA had real estate, financial intermediation, renting and other business and social activities with almost 20%. By sectors, the contribution in GDP was as following: mining and quarrying, together with manufacturing and electricity and gas and water supply accounted with 14%; wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods accounted with 13%; agriculture, including forestry, hunting and fisheries accounted with 9%; and last but not least construction sector accounted with 8.5%. It is important to mention that, agricultural sector from being third most important contributor in GDP, dropped to fourth place. However, agricultural share in GDP remained steady and accounted with around 9%.

According to World Bank’s report in 2017, in Macedonia inflation rate remained low in that year and it was 1.4%. Compared to 2016, this value signified increase, when deflation was registered.

This increased value was due to rising prices of food and beverages, energy (including oil), clothing and footwear and communications.

In the past years, Macedonian economy had significant improvements in emerging economic drivers. However, despite these improvements, this is still not at satisfying level, as the country still has considerable challenges in achieving sustained rapid growth and reducing the unemployment rate. Employment structure in Macedonia compared by sector in 2012 was as following; primary sector, i.e. agriculture, forestry and fishing sector employed 24.8% of the working force. Secondary sector, i.e. industry and construction employed 23.4% and 51.8% of the working force were employed by the tertiary sector, i.e. services and others.

As mentioned before, the country is struggling with reducing the unemployment rate, especially among younger population. Despite slower growth, Macedonian economy in the past years registered improvements in the labor market. As table 4 below indicates, unemployment rate from 31% in 2012 decreased to 23.6% in 2016. From year to year perspective, employment rate grew by 2.4% in 2017. This increase was mainly driven by the employment subsidies in the first part of the year, through which almost one third of the net new jobs were created. Most of the jobs created were in wholesale and retail trade, accommodation and food services and manufacturing. Despite the facts and trend that employment rate has been constantly improving, it remains relatively at low level and it is 23%.

Macedonia's economy is largely dependent on external trade, making it vulnerable to economic trends and market movements of EU countries and other major trading partners. Structural economic reforms are crucial for future success of the economy. Structural reforms are needed for further development and improvement of the business climate, increased support to innovativeness, entrepreneurship and development of micro, small and medium-sized enterprises, but also promotion of human capital, as well as increased export support and external promotion. In addition to this, economic growth is highly dependent on public investments, such as investments in the infrastructure, which will further boost private investments, followed by job creation. Therefore, the government must consider increase of public investments.

Table 4. Selected economic indicators of Macedonia

	2012	2013	2014	2015	2016	2017
Real GDP	-0.5	2.9	3.6	3.8	2.4	1.9
CPI inflation (annual average)	3.3	2.8	-0.3	-0.3	0.2	1.2
Unemployment rate (%)	31.0	29.0	28.0	26.1	23.6	23.0
Exports of goods and services (% of GDP)	44.5	43.3	47.7	48.8	49.3	51.3
Imports of goods and services (% of GDP)	66.9	61.6	64.9	65.1	64.2	66.0
Net exports	-26.3	7.0	-8.0	-1.0	3.9	1.8
GDP per capita (in EUR)	3680	3930	4126	4374	4755	n/a

Source: World Bank, 2017.

The Foreign Direct Investments (FDI) related exports are linked with the automobile industry and mainly goods, namely catalysts and electronic dashboard components are exported. Moreover, significant contribution to the export growth had increased export of fresh fruits and vegetables, tobacco products and furniture. Contrary, traditional goods such as iron, steel, and apparel have fallen in importance. Although the economy had positive results on the export growth, Macedonia has been running persistent current account deficits, which was driven by high oil market price and electricity imports.

The Government undertook progressive programme for attracting FDIs into the country which resulted with attraction of important second-generation investments of already established companies in 2012 and 2013. Like the other economies similar to Macedonia, SMEs are the most represented in the economy in terms of size of enterprises. According to the definition, micro and small enterprises are employing 1-9 employees. There were 92% of total established enterprises in Macedonia that belong to this group of enterprises. Almost 90% of these had between 1-9 employees. In 2013, only 0.3% of the enterprises were employing 250 or more employees. Most of the active enterprises in the county are functioning in the wholesale and retail trade sector (35.7%). In the manufacturing sector, there are 11% active enterprises. Other important sectors include transport, storage and communication (9%), and construction. These four sectors comprise over three-quarters of the total number of active enterprises.

Average business density in Macedonia is 36 business entities per 1000 inhabitants. That means there are 32 SMEs per 1000 inhabitants. This statistic compared to South-East Europe region (SEE) is significantly higher, where this number is 23 per 1000 inhabitants. At the same time, Macedonian national average density is far below the EU 27 average, where it is 45 entities per 1000 inhabitants. SMEs are crucial for creation of new jobs, as it is estimated that these type of business are employing 80% of the total employment in the country. However, it is striking as more of fifty percent of the enterprises in the country are operating in only two regions, namely Pelagonija and Skopje regions. These two are regarded as intermediate rural regions.

Craft sector consist handicrafts, small scale manufacturing and service companies in construction and other sectors. Recently, the Law on Craftsmanship was modified and new legislative clauses were introduced that greatly simplified the conditions for start-ups in this sector. After the changes, minimum requirement for registration of crafts enterprise only diploma and work space/office are needed. New legislation included free tax period of three years after the establishment of a new crafts enterprise, followed by 10% flat personal income tax rate. These measures had significant effect on promotion this sector entry.

Until 2012, 1900 craft enterprises were registered (without considering those enterprises not registered in the country's Central Register, which are almost 30% of the total enterprises) and an estimated 10000 sole proprietors. Crafts are organized in regional Crafts Chambers. In Macedonia there are fourteen chambers of this kind and most active are the chambers in Skopje, Strumica, Gevgelija, Prilep, Bitola, Tetovo and Kumanovo. This is signaling that these are active only in urban areas and only limited number of crafts activity is recorded in the rural areas.

According to the SSO report (2007), 99.5% of rural economy is characterized as individual rural enterprises. Another report from 2010 shows that 27.1% of poor population live in rural areas,

whereas 43.7% live in urban areas. The rest of 9.2% live in the capital city of Skopje (SSO, 2012).

2.7. Labour market

According to the Labour Force Survey from 2017 and the results presented in Table 5, there are 167 935 persons over 15 years of age was. Out of the total number of working age population, 56.8% were actively looking for a job on the market, while 43.2% were inactive, i.e. not looking for a job (SSO, 2018).

Table 5: Labor force statistics, people aged over 15 years

	Working age population	Labor Force			Inactive population
		Total	Employed persons	Unemployed persons	
Total	1679935	954212	740648	213564	725723
Man	840798	582773	450261	132512	258025
Women	839138	371439	290387	81052	467698

Source: SSO, Labour Force Survey, 2018.

Moreover, as shown in Table 5 above, labour force category in 2017 consisted of 954212 persons. From the total number of labour force category, 77.6%, or 740648 were employed, whereas 22.4% or 213564 were unemployed. Most of the employed people, 66.2% are aged 25-49, whereas least people are employed in the age group of 65 years and over. Employment statistic from gender perspective is as following; there is 19.9% employment difference between men and women in the age group 25-49. This difference is smallest between men and women aged 65 years and over.

Labour force market observed from education level perspective is as following: 55.5% of the employed have at least 3 or 4 years secondary education. The statistics show that men are more educated than women, hence out of these 55.5%, 36.2% are men and 19.3% are women. According to SSO (2018), 24.0% of the employed persons had completed university level education, of which 11.6% men and 12.4% women. University level education is university level education, including Master's degree and Doctorate (Ph.D.).

In Macedonia, rural areas have higher unemployment rate than urban areas. However, it is important to mention that unemployment rate in rural areas decreased from 29.1% in 2013 to 12.8% in 2017. This was driven by the newly introduced governmental policies for employment and self-employment, but also as result of FDI's in the technological and industrial zones in the country.

Table 6: Employed by economic status and gender, urban and rural, 2017

Gender	Total		Economic status							
			Employee		Employer		Self-employed		Unpaid family worker	
Urban										
Total	408835	100.0%	353165	86.4%	2173	5.3%	29487	7.2%	4609	1.1%
Man	232754	56.9%	192656	47.1%	15828	3.9%	22722	5.6%	1548	0.4%
Women	176081	43.1%	160509	39.3%	5745	1.4%	6766	1.7%	3060	0.7%
Rural										
Total	331813	100.0%	211798	63.8%	11665	3.5%	65988	19.9%	42362	12.8%
Man	217507	65.6%	138671	41.8%	9941	3.0%	55227	16.6%	13669	4.1%
Women	114306	34.4%	73128	22.0%	1724	0.5%	10761	3.2%	28693	8.6%

Source: SSO, Labour Force Survey, 2018.

Macedonia faces important labor market challenges. Employment growth is lagging behind economic growth. Employment has recently increased, but until 2011, two out of three jobs were created in the informal sector, particularly in lower earning occupations in agriculture and retail trade. More specifically, 27% of the jobs created between 2007 and 2011 were in low-skill low productivity agriculture. The agriculture sector represents 10% of GDP in Macedonia, but it has experienced little growth in recent years. On the contrary, the agriculture sector contracted between 2008 and 2012, both in added value and employment, though the latest estimates for 2013 and 2014 show a recovery. The employment rate in Macedonia stood at only 42.7% in the fourth quarter of 2015, from both high inactivity and high unemployment. Overall unemployment remains high at 24.6%, particularly affecting women and youth. Given these labor market challenges, households, especially the poor and bottom 40%, rely heavily on public transfers, with labor income accounting for less than 50% of total household income for the poor and bottom 40%. The challenges for job creation in Macedonia are multiple, including constraints in terms of the business environment, skills, disincentives from the tax and social protection systems, barriers linked to geographic mobility, access to productive inputs, regulations, access to services such as childcare, and others (World Bank, 2016).

2.8. Education system

Literacy is traditionally meant as the ability to read and write. In Macedonia, 96% of the population is literate. However, the educational structure between people living in rural and urban areas differ significantly. Almost 14% (13.4%) of rural population aged 15 years and more has insufficient or complete lack of education. Almost 11% of rural population did not complete primary education and 2.6% are illiterate. Illiteracy is higher among women (4.5%) than among

men (1.3%). These values are alarming as the statistics show that there are more than three times as many adult illiterate women as there are illiterate men. Insufficient education is especially notable among the unemployed population. Almost 30% of the unemployed population (29%) are not qualified and only 16% of the unemployed population possess higher or university education, whereas the majority (55%) has secondary education. Young population (age 15-24) participates with 54% of the unemployed.

Macedonian government introduced package of measures to increase literacy level. For example, in 2008 government introduced mandatory secondary education introduced, followed by subsidized schooling costs, costs related to provision of free books and educational material for all pupils and free transportation of the pupils in the rural area. In addition to this, socially vulnerable families receive monthly state donation for schooling their children. Refurbishment and modernization of primary and secondary schools, and procurement of modernized IT equipment were part of the government measures for increasing literacy level in the country.

To bring higher education closer to the rural youth, the government introduced dispersed high education studies. Introduction of dispersed studies obliged every faculty to organize their classes outside Skopje (so called 'dispersed studies'). In addition to this, two new Universities were established in Stip, University "Goce Delcev" and in Ohrid - University "St. Apostol Pavle". The curricula of University "Goce Delcev"- Stip is focused on technical education – agriculture, construction, geology and mining, transport and logistics. University "St. Apostol Pavle" is focusing on ICT studies. Also, in the past years, numerous private colleges have been established mainly for social studies and IT. Moreover, as part of the measures for increasing the literacy is free student quota and special curricula (evening/weekend agenda) for economically active population. With this measure, opportunity is also given to population above 35 years to achieve higher education diploma.

However, despite formal secondary and university education, in Macedonia there is still few or no informal education centers (except the existing vocational training for crafts services), that would provide vocational training. According to the data of SSO, in 2017 the number of graduated students at higher vocational schools and faculties increased by 3.6% compared to 2016. More than 82% of the total number of graduates were full-time students, while 17.9% were part-time students. The share of graduated female students was 57.5%. Of the total number of graduated students, 38.6% have graduated on time, while 61.4% have graduated later than the official duration of studies. Smallholder farmers possess least education among agricultural producers. However, only little has been done from government's side in terms of investments into education and training of agriculture producers and workers.

2.9. University education in agriculture

In Macedonia, there are four higher education institutions that offer agriculture curricula; namely the Faculty of Agricultural Science and Food, the Faculty of Veterinary Health, the Faculty of Biotechnological Sciences and the Faculty of Forestry. These institutions are undertaking package of projects for improving their educational standards and programs in order to become more compatible with similar education institutions in the EU. These projects include increased cooperation with other educational institutions to strengthen their education programs, staff and

student exchanges, providing scholarships for students to continue their further education abroad, etc. Studies in Macedonian public universities are partially funded by the Ministry of Education and Science. Almost 60% of the total amount of EUR 4.4 million spent in 2005, comes from Ministry's own sources. In 2003, the higher education system was subject to reforms to modernize the curriculum and other educational activities. The faculties introduced a new organization and structure in their departments, studies, study groups and study programs, as well as a credit transfer system in accordance with the European credit transfer system. These changes should produce the necessary number of new specialized professionals, needed on individual farms, the small and medium size enterprises in the food industry, and for scientific research in the specialized institutions.

The Faculty for Agricultural Sciences and Food (FASF) - Skopje is a member of the largest university in Macedonia, namely University Ss. Cyril and Methodius. Established in 1947, FASF along with other two faculties was one of the founders of the University. Since FASF was established, it engaged in numerous reforms in order to follow the global transition trends transition agriculture development and educational systems. Moreover, FASF five years ago was among one of the first five members of the University in Skopje that introduced ECTS (European Credit Transfer System) based on the Bologna Declaration. With 137 employees, out of which 69 PhD holders, 14 M.Sc. holders, 9 B.Sc. holders and 15 laboratory technicians, FASF is the biggest leading educational and scientific research institution in the field of agriculture and food in the Republic of Macedonia. FASF commits to transfer knowledge and professional experience on broader population, namely through students, general public, farmers, NGOs, other organizations, companies, extension services, up to the decision makers.

The Faculty of biotechnological sciences – Bitola and University in Stip

In Bitola, the Faculty of biotechnical sciences is member of the University St. Kliment Ohridski. Founded in 1960/1961, this faculty provides both BSc and MSc Programmes in the field of management in biotechnology, farm production and processing animal products, making it the only high level institution in the biotechnology field in Macedonia. In 2007, in Stip, University "Goce Delcev" was established. Within this University was open new Faculty for Agriculture (starting from October 2007) with 4 departments (general department, Agro management, Processing of agriculture products and Integrated agricultural production).

2.10. Non-formal education in Agriculture

In order to follow contemporary trends in agriculture, rural development and environment protection, Macedonian Institute of Agriculture founded a separate unit to deal with agricultural education. This unit is called Foundation Agro-Centre for Education (FACE). Founded in 2006, FACE is non-profit organization and the scope of activities of this organization include:

New topics for agricultural curricula

The extent and speed of advancement in the computers and communications technology and biotechnology, require fast reaction to the changes. Food processing and food storage, as part of production process, have gained on importance both for the agricultural producers, but also to agricultural education. Agricultural education and training need to be adapted to the global

economy trends in the agricultural area and to introduce new subject curricula. Education subjects, such as crop protection and integrated pest management, rational use of fertilizers and soil and water conservation are crucial in era of increasing concern over environmental protection and the preservation of natural resources. For sustainable agricultural and rural development, students and future experts must possess necessary skills and knowledge to cope with these issues.

Link between education and research

With few exceptions, in Macedonia agricultural education and training institutions and research services are not properly linked, i.e these are separated. In general, agricultural research is organized in laboratories and research centers and majority of these are not having close collaboration with universities, although cases of collaboration between staff exist.

2.11. Land use and ownership

Due to its geographical location and topography, the country is characterized with continental and Mediterranean climate. However, most of the country has moderate continental climate, characterized with hot and dry summers and relatively cold and wet winters. Dry and hot periods dominate (summer – autumn), whereas cold periods are shorter (winter). The continental climate is characterized with cold winters and temperatures can drop to -15°C . Contrary, summers are hot with temperatures rising up to 40°C . The average quantity of precipitations varies from 500 mm in the eastern region to 1700 mm in the western highland regions (average quantity of precipitations per year is 733 mm). During October and November months, there is larger quantity of precipitations, and decreased rainfalls are characteristic of the period from March to May.

Arable land used for agricultural production is part of the sub-Mediterranean, continental – sub-Mediterranean and warm continental zone, characterized with altitude of 50 – 900 m above the sea level. Soil in Macedonia is very heterogeneous, namely over thirty soil types have been determined. Forming different soil types is due to the great diversity of the natural conditions, such as climate, relief and geological formations.

2.12. Agriculture land and area

Out of the total country territory, agriculture land covers more than 50% or 1261 thousand ha. Agriculture land consists of cultivated land, permanent pasture and meadow, land used for permanent crops and kitchen gardens. Forests cover for 44.3% out of the total territory, while water and other surfaces cover about 4% of the territory. In 2013, cultivated land constituted 40% or 509 thousand ha of total agricultural land. Most of the cultivated area or 81% is covered with arable land and gardens, meadows are covering 11 % from total cultivated land 3% are under orchards, 4% under vineyards (MAFWE, 2014).

The total land of 25713 km^2 is dominantly highland interrupted by grand valleys. Hills and mountains occupy 80% of the territory; plane land occupies 18%, and natural lakes 2% of the total land surface. There is a well-developed hydro network for irrigation of agricultural areas

that are surrounded with irrigation systems. The total agricultural land in Macedonia is around 560000 hectares (44% is arable land, and 56% are pastures). There is a possibility to irrigate 123864 ha of the arable land with the built detailed network of irrigation systems (MAFWE, 2014).

2.13. Lease of agriculture land in state ownership

The MAFWE as an authorized body, has intensively been distributing agricultural land of good quality which is in state ownership, that is granted under lease (for use during the period of several years) to the interested investors, including foreign entities with established branch offices in Macedonia.

Presently, numerous agricultural households in these regions have been using state owned agricultural land under lease, and they successfully deal with growing and production of quality agricultural crops. This experience represents an additional motivation for the Ministry of Agriculture Forestry and Water Economy, to continue with renting of available state owned agricultural land, and, in that manner, increasing the overall agricultural production in the Republic of Macedonia, having in mind that this is of significant importance for the state economy.

The Ministry has foreseen distribution of state-owned agricultural land by means of lease, without limiting the size of land parcels, for the following regions: Gevgelija, Kumanovo, Resen, Kriva Palanka, Kavadarci, Sveti Nikole, Radovish, Bitola, Veles and Prilep, for the total space of approximately 3280 ha.

3. Performance of the agricultural, forestry and food sectors in Macedonia

3.1. Agriculture employment and labor productivity

Agricultural sector, including forestry and fisheries accounts 18.7% in the total employment in 2013 which is more than two-thirds higher than the EU 27 average of 5.2%. Out of total 127186 people engaged in agriculture in 2013, 44% (55758) are unpaid family workers, 46% are self-employed and around 9% are regularly employed. Around 13% (16487) of the engaged labour force in agriculture are engaged as part-time or seasonal basis. Agriculture is an additional activity for 9518 family farmers. More than half of the total employed persons in agriculture are engaged in growing crops and perennial plantations and the rest are engaged in combined cultivation of crops and animals. Taking into account the amount of time actually worked, the regular agricultural labour force in Macedonia was estimated to be the equivalent of 118 000 people working full-time (in annual work units).⁴

Having only about 10% young people of the employed in agriculture (from 15-24 of age), low incomes and unfavorable working conditions in agriculture, as well as deteriorating living conditions in rural areas is discouraging young people to start a carrier in agriculture. Young people are more mobile and less emotionally related to the land and country-side and are engaging in other carriers. Also, there is a clear risk for a shortage of qualified labour in agriculture, especially for production of labour intensive products. The lack of seasonal labour particularly in the harvesting season and lack of shepherd's labour poses mainly comes from because of the low income seasonal labor get in Macedonia. This represents a serious threat to future development of the labour intensive agriculture sector, which needs emergent modernization. The agricultural labour force that Macedonia has no or very little knowledge in agriculture, and completely lacks of managerial and business skills. Most of the employed in agriculture are working on elementary positions with basic tasks for which higher qualifications and skilled competences are not required.

3.2. Agriculture holdings, farm structure and typology

According to the last Farm Structure Survey data (SSO, 2013), there are 178125 agricultural holdings in Macedonia. On average, one agricultural holding uses 1.80 ha of agricultural area and breeds 2.14 LSU. The total utilized agricultural area by agricultural holdings is 320738 ha, and of the total number of holdings, 60.8% used up to 1 ha of agricultural area. The share of arable land and gardens is 77.4% of the total utilized agricultural area. Agricultural holdings have a total of 381 361 LSU. The agricultural holdings have 252 936 head of cattle and 717 244 head of sheep (SSO, 2013).

⁴ [https://ec.europa.eu/eurostat/statistics-explained/index.php/Labour_market_and_Labour_force_survey_\(LFS\)_statistics](https://ec.europa.eu/eurostat/statistics-explained/index.php/Labour_market_and_Labour_force_survey_(LFS)_statistics)

During the period from 01.06.2015 to 31.05.2016, a total of 441829 persons contributed one or more days of labour at the individual agricultural holdings and were employed in business entities. On average, 2.5 persons are engaged per agricultural holding. Household members and employees at business entities worked a total of 242988 annual work units (AWU), while 1.36 AWU were worked on average per agricultural holding. One agricultural holding worked 0.76 AWU on average per hectare of utilized agricultural area, while 0.64 AWU were used per 1 LSU (SSO, 2016).

Figure 1: Indicators for the average agricultural holding, 2016.



Source: SSO, 2016.

3.3. Statistical indicators of agriculture in the Republic of Macedonia

- The share of agriculture in the gross domestic product of Macedonia is around 10%, an indication of the importance of the agricultural sector in the Macedonian economy;
- The export value of agricultural products has increased continuously in recent years, from around EUR 130 million in 2005 to EUR 199 million in 2015;
- Of the total cultivated area, arable land and gardens cover more than 415000 hectares, orchards around 16000 hectares, while vineyards occupy over 23000 hectares. Most of the arable land and gardens are used for cereals;

- There are a total of 253442 cattle, 195443 pigs and 733510 sheep. A total of 127663 dairy cows produce around 361 million liters of milk per year, or an average of about 2828 liters per dairy cow in a calendar year;
- More than 436800 household members, of whom 57% are men, work on individual farms. Over 94000 people are hired seasonally on individual agricultural holdings;
- Based on the total standard output, farms are categorized according to their economic potential in 14 economic size classes. Of the total number of classified agricultural holdings, 49.6% are in the first class – up to EUR 2000;
- The type of farming of an agricultural holding is determined by the relative contribution of the standard output of the different characteristics of the holding to the total standard output of the holding. Of the total number of farms, the majority (34.4%) specialize in field crops, while the fewest (2.1%) specialize in horticulture;
- Of the total agricultural output, crop production accounts for 69.5%, livestock production makes up 21.4%, while the rest belongs to services in agriculture.⁵

The individual agriculture holdings are characterized by mixed farming (livestock-crop production), the business entities in agriculture are specialized mainly in livestock breeding, cereals and industrial crops sectors, and therefore their concentration is higher in grain producing regions (Ovce Pole and Pelagonija). The high share of individual agriculture holdings with mixed production indicates to subsistence and semi-subsistent type of farming in the country. According to the classification by economic size of the agricultural holding (SSO, 2016), more than half or 58.2% of the agricultural holdings are classified in the first category - up to EUR 2000, 18.6% belong to the second class from EUR 2000 to EUR 4000, 13.3% in the third class- EUR 4000 to 8000 EUR and 6.3% have economic size from EUR 8000 to EUR 15000. Overall the agriculture sector can be regarded as unfavorable farm structure comprised of majority share of individual farming households with mixed production, extensive methods of production (especially in the grain sector), with low cash-flows and low competitiveness in terms of productivity. All of this impedes investment levels in advanced technologies and determines relatively low crop yields. Despite in increasing trends of farm size per land use, land fragmentation remains a serious structural problem for increasing agriculture productivity and thus competitiveness. Continuous division of logs due to inheritance further feeds the process of fragmentation of parcels as serious structural weakness. Considering that majority of agriculture holdings are below farm size of 0.5 ha (around 70% of total number of farms), there is evident ineffective use of agriculture land which affects the productivity by large (SSO, 2016).

3.4. Major agricultural products

Agriculture has traditionally been one of the most important sectors in the economy. The agriculture sector plays a key role in the successful implementation of structural reforms in the country, due to its social role in providing food and stable income for approximately 20% of the able-bodied population.

⁵ http://www.stat.gov.mk/MK_Zemjodelstvo2_en.aspx

Table 7 : Agricultural areas by category of use

Year	2016	2017	Indices
			2017/2016
Agricultural area	1267134	1266008	99.9
Cultivated land	516644	516870	100.0
Arable land and gardens	417456	416709	99.8
Orchards	16138	16546	102.5
Vineyards	23613	23703	100.4
Meadows	59437	59912	100.8
Pastures	749772	748413	99.8

Source: SSO, 2018.

The vast majority of cropland in the country is rain-fed, with an estimated area of irrigated cropland of less than 10%. Cereals are the most important crop group and they covered 37% of the total arable agricultural area. The predominant cereal is wheat, followed by barley and maize, with small areas of rye and rice. While field crops like wheat, barley and maize are grown extensively and occupy a large percentage of total cropland. However, their contribution by value is significantly less than the contribution made by grapes, tobacco and the combined value of various fruits and vegetables, which garner a higher price. The livestock production contributed 30.9% of the total value of national agricultural production (SSO, 2016).

3.5. Crop production

According to the SSO (2018), in 2017, in comparison with 2016, agricultural areas are reduced by 0.1%. In the arable area, the increase was noted in the orchards by 2.5%, in the vineyard by 0.4% and in the flesh by 0.8%. Decrease was observed in plow trees and grazing lands and pastures by 0.2%. In 2017, compared to 2016, production decreases in all crops and fruits listed in the statement. With 65.4%, cereals have the highest share in the total arable land and gardens. The share of industrial crops is 9.4%, fodder 13.4%, and vegetables and dry pulses 8.7%. Wheat has the highest share with 31.9%, followed by barley with 18.6%, maize 10.8%, alfalfa 8.4%, and tobacco 6.5% (SSO, 2013).

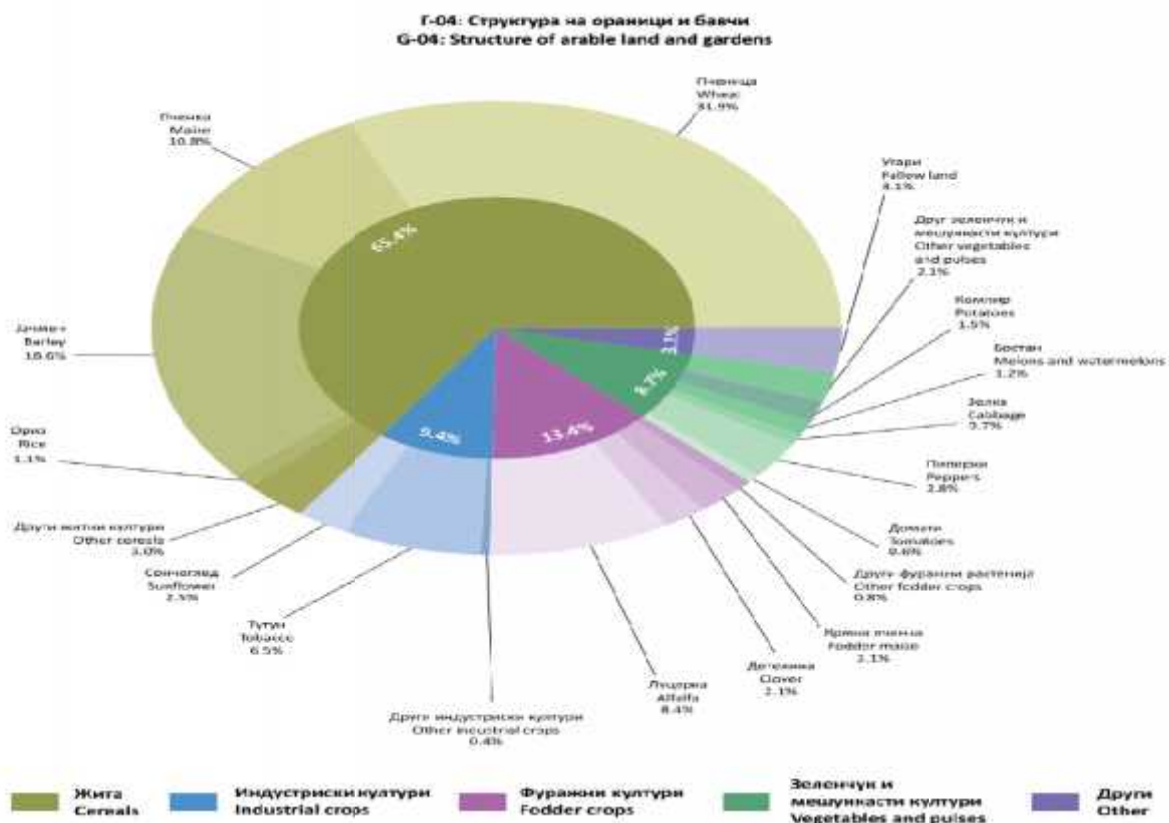
The pattern of crop production varies by size of the farm. The large agriculture holdings (above 50 ha) specialise in cereals (mainly wheat) and industrial crops. Small farmers are very important producers of fresh fruits and vegetables and grapes (i.e. cash crops). Significant part of the crop production comes from agricultural holdings with a mixed type of farming.

Cereal production resulted from harvest of total 168000 ha of arable land (40% of total arable land) and yielding on average 3.4 tonnes of cereals per hectare. Vegetable production is

performed mainly in the open field, in greenhouses and under plastic tunnels, with and without heating. About 80% of the vegetable production is concentrated in the South East region with Mediterranean climate. In the production of major oil-bearing crops (seeds and roots) cultivation of sunflower is the major oil-bearing crop produced in the country but rapidly decreasing. Since 2011, the sown area under sunflower decreased by half (from 5715 ha in 2011 to 2458 ha in 2013). Sunflower is cultivated mainly in the Pelagonija agricultural region (50-70%). There is insignificant production of oil bearing roots, which are mainly used as source of proteins for livestock feed (SSO, 2013).

Apple plantations have the highest share with 31.2% of total orchards. Berry plantations with 1.0% have the lowest share. The total area of orchards in 2016 in the Republic of Macedonia was 18899 ha, and it has increased compared with 2013. The total area of vineyards in 2016 in the Republic of Macedonia was 20612 ha, and it has decreased compared with 2013. The annual yield is also stable around 11 tonnes per ha on average. On the irrigated land parcels, the average yield is significantly higher ranging from 17-23 tonnes per ha. In the structure of the total production of grapes, table grapes accounts for 28% and the remaining 72% are wine grapes. Table grapes production has growing potential in terms of favourable natural pre – conditions (harvest starts one month earlier than the region), varieties (from early harvest to late harvest) and the growing market demand. To achieve the growing market potential for table grapes, special focus is needed not just in expanding the area under table grapes but also the choice of variety is crucial (e.g. seedless varieties).

Figure 2: Structure of arable land and gardens, 2016.



Source: SSO, 2016.

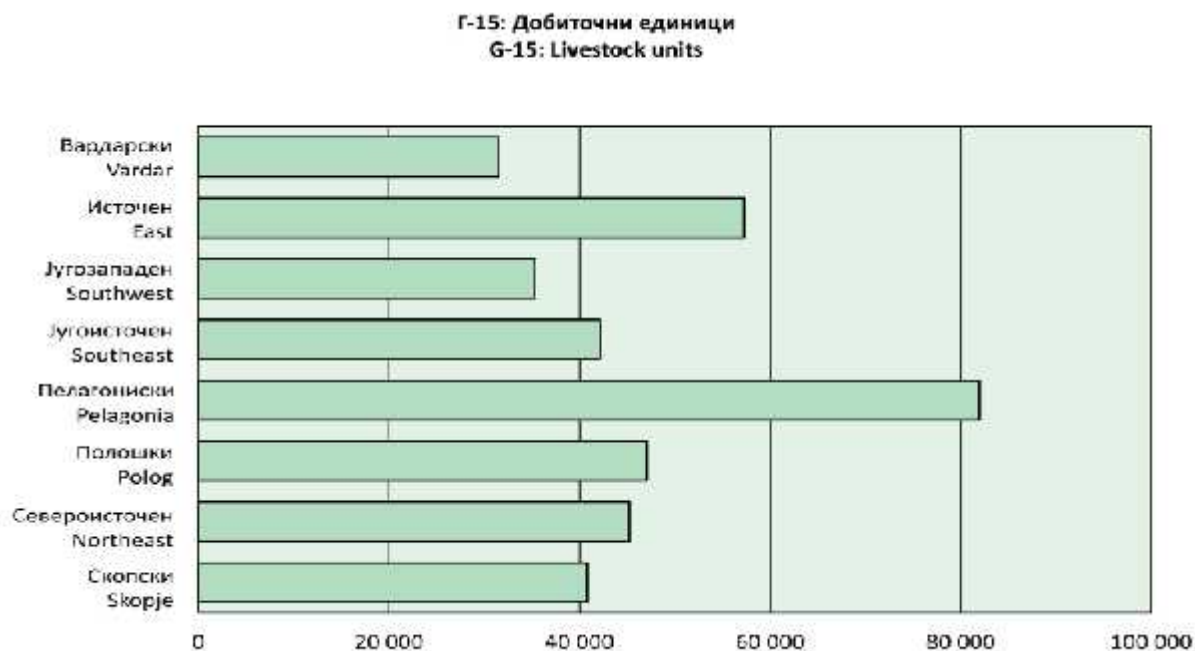
Almost 60% of vineyards (for wine production) are older than 15 years or are of variety which cannot be used for quality wine production. Not just the age structure is a problem for wine grape sector development, but the planted varieties as well. The growing export of the wine industry in terms of high quality bottled wines requires adjustment to the varietal structure of wine plantations to follow the market needs. Growing export of wine demands also new areas of vineyards for which potential exists on the fallow hilly land areas (SSO, 2016).

The country has unused potential for the production of energy crops as well as quantities of residues from agriculture production. The main crops currently produced that could be used for the production of bio-fuels are cereals, industrial crops, vegetables and perennials. Approximately 1.7 million tonnes annually remain as a biomass after the harvesting of plant production. Part of it is used for livestock breeding (straw, silage) and the remaining quantity is ploughed in. The regions providing the major quantity of energy crops and plant biomass are: Southwest and Pelagonija. The largest share of plant residues (around 80-85%) comes from cereals, vineyards and orchards. In the recent years great interest of fast-growing trees appears mainly from “newcomers” in the agriculture sector– especially on slope lands in the eastern parts of the country. Nevertheless, the sector is underutilised and significant improvement of actions needs to be stimulated by policy measures as to streamline and benefit the potential.

3.6. Livestock production

The total number of livestock units in 2016 is 381361 and on average, each agriculture holding that had livestock had just 2.14 LSU (which is the equivalent of just over two adult dairy cows). The individual agriculture holdings own less than 2 LSU in comparison with the business entities which own above 100 LSU. Pelagonia region has the highest number of livestock units, 81984 LSU, which is more than double compared to the Vardar region, where the number of livestock units is the lowest. The majority of the holdings that raise livestock have up to 1 livestock unit. In this class, 41323 holdings have 19688 livestock units. In the last class (over 50 livestock units), only 457 holdings are classified and they have 54625 livestock units. The majority of agricultural holdings engaged in livestock rearing are located in the Pelagonia region, and they have a 15.4% share in the total number of agricultural holdings with livestock, and also the biggest share of livestock units are in the Pelagonia Region (SSO, 2016).

Figure 3. Livestock units per region in Macedonia, 2016.



Source: SSO, 2016.

3.7. Organic production

The organic agriculture sector was firstly introduced in 1997. First certified organic products were several kinds of tea from indigenous herbs, prepared and produced by the largest pharmaceutical factory in Macedonia (Alkaloid).⁶ Since then, the number of certified organic operators was constantly increasing and the latest data shows that in 2014 there were 344 registered organic operators (SSO, 2016).

The organic production is regulated under the Law for organic production applied since 1 January 2010 and aligned with the corresponding EU Regulation No 834/2007⁷ and the Commission Regulation 889/2008.⁸ Regarding the control system of the organic production in the country, apart the two authorized certification bodies (Balkan Biosert⁹ and Pro Cert¹⁰), MAFWE authorized the third certification body (Agribiocert)¹¹ for control and certification in organic production. The control bodies conduct expert control and certification in line with the MKC EN 45011 (General requirements for bodies working with product certification systems). The confirmation that control and certification bodies work in accordance with this standard is provided by the Institute of Accreditation of the Republic of Macedonia (IARM)¹² as a result of the process of accreditation. IARM is a full member of the European co-operation for

⁶ <http://www.alkaloid.com.mk/>

⁷ <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32007R0834&from=EN>

⁸ <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32008R0889&from=EN>

⁹ <https://balkanbiocert.com/en/>

¹⁰ <https://www.procert.mk/indexen.html>

¹¹ <https://www.agribiocert.com/>

¹² <http://www.iarm.gov.mk/index.php?lang=en>

Accreditation, and in 2012 it signed the Mutual Recognition Agreement of Accreditation Certificates with the European cooperation for Accreditation.¹³

The agricultural land used for organic plant production amounted to 2359 ha in 2014. Production of organic cereals was predominant activity and was organized on 896 ha, followed by fodder crops and fruit production. The number of organic livestock production in 2014 showed 57896 heads in 2014. The predominant activity was sheep breeding which was 92% from total livestock production. The number of organic beehives in 2014 was 6285 (MAFWE, 2015).

According to MAFWE (2014), an average agriculture holding dealing in livestock organic production breeds 280 heads of sheep or 50 heads of cattle, or 1.5 ha for organic crop production. The largest share in organic crop production goes to grains, followed by forage, fruit, grapes and fresh vegetables, whose share in the total organic production is about 4-6% each and oleiferous and industrial crops whose share is 1% respectively. In livestock production, the leading sector is sheep breeding (95% of organic livestock production). The share of organic goat and cattle breeding is 2-3% each. The organic livestock production is impeded by lack or expensive organic feed. As the sheep breeding practises are mainly nomadic on “clean” mountainous pastures, this sector is much “easier” to be certified as organic.

The favourable geographical position of the country allows production of different organic products from the organic plant production, organic livestock production and organic apiculture. Each type of production is characterized with its own specifics. However, the most common feature is the business location of the organic operators which is in ecologically clean environment with no industry present. This characteristic eases the certification process which often results with increased production area. In the last few years the increased consumer awareness regarding the consumption of organic products can be noted as well as variety of organic products present on the shelves of the large chain markets, green markets and healthy food stores. This positively influenced and stimulated the local producers to increase their production and to improve the quality and diversity of their products.

3.8. Food Processing Industry

The food processing industry in Macedonia consists of 50 companies with a processing capacity of approximately 120000 tonnes of vegetables and fruits per year. From them 91% are process vegetables and 9% process fruits. The most significant raw materials are red peppers, industrial tomatoes, sour cherries, apples, and plums. Although the industry is export oriented, with over 80% of the production going to EU and neighboring markets, there is a traditionally low level of utilization of the production capacity. This mainly reflects the discontinuity in the supply of quality raw materials and steady contracts with suppliers, lack of skilled workers, and difficult access to financing. Food and beverage processing are significant industries in Macedonia, as well as fresh fruits and vegetables. Processed foods include both semi-finished products (including frozen, dried, and concentrate) and finished products (canned and preserved). Most of the food-processing facilities are in private hands (MAFWE, 2014).

¹³ <http://www.european-accreditation.org/the-mla>

A significant part of the food processing industry growth could be also attributed to the fast growth of the domestic demand and exports. The processed agricultural products accounted for 30.9% of total imports of agricultural and food products and 14.1% of total exports of agricultural and food products. The most important export products are lamb meat, waffles and biscuits and processed vegetables. From a total of 7918 active registered companies for processing in 2013, 445 were registered as food operators or processing of agricultural products and food of plant and animal origin and placing food on the market (MAFWE, 2014).

The largest share of the total number of food processing companies belongs to category of SMEs. The largest share in number of food operators are fruit and vegetables processors (23.3%), wine producers (18%) and milk and dairy products processors. Of the total number of approved operators for food from animal origin, total of 6 establishments are approved for export to the EU of which 4 slaughterhouse facilities for exporting lamb and two processing facilities for export milk or fresh milk in the EU (MAFWE, 2014).

Fruit and vegetable processing industry is of importance for the agro-complex and its development due to the following facts:

- Processing raw material (fruits and vegetables) originates mostly from domestic production;
- The industry is export-oriented (80% of total production) to EU and neighboring markets; and
- Employs significant part of the seasonal workers throughout the year.

The average annual wine production fluctuates between 90 and 100 million liters. The trend in wine production, however, points to a certain decrease in quantity terms, due to the fact that most of the wineries tend to focus on producing high quality bottled wines through strict selection of varieties, vineyard management and harvesting, transport and delivery practices. They also invest in sophisticated equipment for processing, finalization, bottling and marketing technologies and competitive domestic and foreign markets.

Over the last years, the number of dairy factories is constantly increasing, where most of them work with smaller scale production. Currently there are 78 milk processing facilities approved by FVA, while 50% of the total purchased milk is processed in 3 dairies and other 50% in small and medium sized facilities, not including the ones located in high-mountain regions of the country.

Annually around EUR 35 million have been allocated to support livestock production. But, this support does not give the desired result and imports of fresh or frozen meat still remains with over EUR 100 million trade deficits. Statistical data show that in past four years the domestic meat production is reduced by 20%. Annual needs in Macedonia for fresh meat and meat for processing amount nearly 11000 tonnes of pork meat, 20000 tonnes of beef meat and around 22000 tonnes of poultry. Around two thirds of these quantities are covered from import which is growing annually due to the growth in the meat processing industry in the last 4 years. Meat capacities in the country satisfy the needs of the domestic market for fresh meat. There are 39 companies in the meat processing industry and 19 slaughterhouses (1 for game animals slaughtering) (MAFWE, 2014).

By contrast, Macedonia is a net exporter of lamb meat. About 85% of lamb carcasses are exported to EU countries mainly in Greece and Italy, in the periods around Christmas and Easter. These markets require lambs with a weight of carcass from 7 to 8 kg as fresh chilled meat. Although Macedonian export to the EU is released from fees for imports, distinguished “Macedonian lamb” is currently under threat as a result of the introduction and interference of different breeds. Therefore, it becomes more difficult to produce uniform slaughtered lamb with the required qualities (MAFWE, 2014).

3.9. Foreign Trade in Agri-food Products

Agribusiness is one of Macedonia’s most promising sectors. In 2016, agribusiness (including agriculture, forestry, and fisheries) accounted for 7.7% of the total GDP and 16.6% of the total number of persons employed in Macedonia.

Exports of agriculture and food products in 2016 constituted 12.25% of Macedonia’s total exports. The top markets for agriculture and food products are the EU and Western Balkans, accounting for (approximately 82.3% of the total exports). The main export products from Macedonia are fresh and processed vegetables and fruits (34.8% of total agricultural exports), tobacco (24%), grains (13.5%), and beverages (12%). The main import products are meat (beef, poultry, and pork accounted for 20% of total agriculture imports), fruits and vegetables, grains, coffee, tea, and spices.

Food and beverage processing are significant industries in Macedonia, as well as fresh fruits and vegetables. Processed foods include both semi-finished products (including frozen, dried, and concentrate) and finished products (canned and preserved). Over 75% of the processed foods are exported, mostly to the EU and to neighboring countries. Most of the food-processing facilities are in private hands. The total agriculture budget (including financial support to agriculture development and subsidies to farmers) has increased from USD 49.3 million in 2007 to USD 176 million in 2017 (exchange rate USD 1 = 55 MKD), and accounted for around 4.58% of the national budget in 2017. The government has promoted agriculture as one of the most important sectors for the development of the economy in Macedonia and adopted and amended several agriculture related laws to comply with EU requirements (SSO, 2018).

As of January 1, 2009, in accordance with the Law on Veterinary Public Health and the Rule Book on sanitary and hygiene conditions for food production, every establishment that is involved in production and/or trade of food products has to implement HACCP standards in order to be able to operate

3.10. Advisory services

In the country, agricultural advisory services are primarily provided by public sector institutions and increasingly by the private sector, including farmers’ associations. The private sector includes different categories service providers. The most relevant, though still limited at country level, are the individual advisors or consulting firms (agricultural engineers, economists,

agronomists, soil specialists, plant protection specialists, veterinaries, etc.) that in some cases also avail of laboratories and professional equipment. Usually the frequency and distribution (number of advisors, range of available specific expertise) of delivered advice by this category is directly related to the level of economic and demographic development of the specific regions, being more concentrated where agriculture is prosperous and economically important in the region. Their target groups are progressive farmers, willing and able to pay for specialist services, and agro-processors. In these regions, advice is also provided by input suppliers (seeds and seedlings, fertilizers, agrochemicals) and machinery and equipment suppliers, as part of pre- and post- sale company policies.

The range and the quality of services provided by the existing farmer associations and producer associations are variable and determined by their internal human and organizational resources and to the availability of international donor projects and funds. Generally, these still offer a limited range of services, use insufficiently diversified methods, address limited target groups and have a partial effect in satisfying the advisory needs. The advisory system in the country is organised as pluralistic - public and private. The public advisory system is implemented by the National Extension Agency¹⁴ established in 2001 from the former State Bureau for instigation of agriculture. The transformation was facilitated by World Bank loan financed “Farmers Support” Project complemented by grant from the Dutch Government.

In the past experience of IPARD I implementation, the performance of the public and private advisory services has been pointed out as very weak or absent in providing quality support to potential recipients. Weak advisory services were being also identified as one of the main reasons for high rejection rate by the IPARD Agency¹⁵ and one of the factors for recommitment risks. Absence of proper information and communication, qualified staff and organizational structure of the advisory services as well as lack of on-going training and information exchange are identified as areas to be improved.

Recognizing these weaknesses in the advisory system, during 2013 the Government Economic Council has discussed strategic options for further reforms in this area. As a result, a draft Law on public advisory system was prepared by MAFWE with initial review in the second half of 2014 and final publication in mid 2018. The final legislation regulates the areas in which publicly funded advisory packages are to be provided to farmers as well as the role of the public and private institutions to deliver public advisory packages. The role of the agriculture NGO's is also recognised as provider of advisory services.¹⁶

3.11. Access to credit

The access to credit has been one of the main problems limiting the development and modernisation of agricultural holdings. Although the situation has been improving since 2007, access to credit resources for rural and agricultural activities is very limited since the financial institutions are quite reluctant to invest the area. The major lending risks identified are: ownership problems and seasonality of the production, rural enterprises are generally micro and

¹⁴ <http://agencija.gov.mk/>

¹⁵ http://ipardpa.gov.mk/Root/mak/default_mak.asp

¹⁶ <https://www.g-fras.org/es/world-wide-extension-study/europe/southern-europe/macedonia.html#textension-provider>

small-scale, with low managerial and administrative skills. Also the low interest of the financial institutions to finance agriculture and rural activities is due to a lack of knowledge of the characteristics and performance of the agricultural and rural businesses, lack of proper know-how and skills for appropriate analysis of the agricultural and rural businesses, for risk assessment and cost-effectiveness of the investments, and therefore lack of previous experience in approvals and disbursement of credits in this sector. Furthermore, the high administrative expenses especially connected to the processing of the small loan applications makes the individual farmers and rural businesses less attractive for the banks and saving houses. The economic crises have further impacted the increased risk adverse behaviour by the banks largely avoiding funding of agriculture and micro and SME investments. Due to the recession, banks have tightened their criteria for lending to businesses, which is likely to have undesirable consequences on companies' investments and economic growth. The agriculture and food industry are among the worst affected sectors, since they are considered as risk sectors by the banks. This risk averse behaviour by the financing sector had a significant influence on the performance of the IPARD II.

4. Environment and land management in Macedonia

4.1. Climate change impact on agriculture, needs for adaptation and mitigation measures

The most important factors that cause constraints in agricultural production are water deficit, aridity, and emergence of a period of drought, i.e. increase of regions with an arid climate. Climate change will have a negative impact in almost all important agricultural regions, but the largest changes are expected in central and south eastern parts of the country. Vulnerable sub-sectors are: crop production, soils, and animal production. The downside risks for the agricultural sector of Macedonia outweigh any potential benefits. Under the assumption that crops would be planted without irrigation, already in 2025 a yield decrease for vulnerable areas and crops as a result of climate change of several tens of percentages is expected, depending on crop type. Decrease of winter wheat will result in reduced food security, since it is the essential crop for food supply in the country. Decrease of grape production will affect not only farmers, but also the wine-producing industry that is in rapid development in the country. Decrease of alfalfa production will mean the decrease of livestock production and increased deficit in animal products (milk, meat, etc.) with a further negative impact on food security in the country.

For rain-fed wheat, the major growing areas in the continental and Mediterranean agro-ecological zones are projected to experience a moderate increase in yields of up to 10% for both 2025 and 2050. For rain-fed maize, moderate (0-10%) and severe yield declines (10-25%) are projected for the majority of Macedonia by 2025 and almost all of Macedonia is projected to experience severe maize yield declines of up to 25% by 2050, with some highly vulnerable areas projecting catastrophic yield declines of greater than 25%.¹⁷ As maize is a summer crop, these declining yield projections can also be used, to some extent, as a proxy indicator for other rain-fed summer crops, like vegetables. The negative impacts of climate change on agriculture in the country are increasing. Water shortage in the summer causes a significant lack of moisture for summer crops and annual crops. Less than 10% of agricultural land is irrigated, with the exception of the western parts of the country. With a considerable proportion of the rural population dependent on agriculture for their livelihood, rural communities are particularly vulnerable to risks posed by changes that may occur as a result of climate change.

Adaptation measures are needed for protection of natural disasters, environmental protection and sustainable resource management, as well as for adapting to climate change. These measures are more designed to reduce vulnerability to current climate change rather than protection from future extreme weather. Application of measures for adaptation to climate change shows increased yield and reduces the negative impacts of climate change.

¹⁷ <http://www.climateadaptation.eu/macedonia/agriculture-and-horticulture/>

4.2. Soil quality and erosion

Soil-related environmental problems are:

- 1) Soil pollution by fertilizers and pesticides (localized particularly in fruit – apple, and vegetable producing regions);
- 2) Loss of soil organic matter (due to mono-cropping, low organic fertilizer use);
- 3) Soil compaction of the upper soil layers due to the both dryness and intensive rainfalls.

Soil erosion is one of the most important environmental problems and it has increased in the last decade. The combination of natural vulnerability (sloping terrain, vulnerable soil structures and occurrence of intensive rains), inappropriate land use (destruction of natural flora, conversion of grasslands for cash crop cultivation, establishment of large fields involving the destruction of former shelterbelts, landscape elements and field margins) and farming practices (overgrazing, use of monocultures, limited application of organic materials, ploughing of steep slopes, lack of soil conservation tillage techniques, insufficient land use for winter cover crops) contribute to the acceleration of erosion processes. Currently an estimated 38% of the country experiences medium to severe erosion processes, with an annual total soil loss of about 17.1 million cubic meters.¹⁸ Soil erosion results in large amounts of sediment ending up in artificial and natural accumulations and water beds, leading to a reduction of storage or flow capacity of water leading damage of critical hydraulic infrastructure and to floods.

4.3. Renewable energy

The country is a signatory to the Energy Community Treaty¹⁹ according which it shall harmonize the national legislation in line with the existing EU legislation on energy, environment, competition and renewable energy sources. Republic of Macedonia ratified the UN Framework Convention on Climate Change in 1997 and ratified the Kyoto Protocol in 2004. The country signed the Statute of International Renewable Energy Agency²⁰ which included it among countries founders of this international organisation.

Hydropower is most exploited renewable source of energy in the country. According to terrain and climate conditions, the country has potential for utilization the running waters of rivers, by building dams and the formation of larger and smaller accumulations. The potential hydropower plants in Macedonia can cover 10% to 20% of total demand for electricity (EC, 2015). Biomass in the form of wood or coal is used almost exclusively in the domestic sector. The main sources of biomass are: forest residues (including imperfect commercial wood, dead wood etc.) and wood processing wastes, agricultural residues and food processing wastes, energy crops, animal waste and urban organic waste. Biomass is mainly used by households and fulfils 30 – 33% of total energy needs. Around 430000 households (76%) use biomass for heating purposes. Wood

¹⁸ http://www.moepp.gov.mk/?page_id=5740&lang=en

¹⁹ <https://ec.europa.eu/energy/en/topics/international-cooperation/energy-community>

²⁰ <http://www.irena.org/>

and wooden coal account for 80% of total biomass used for energy purposes.²¹ Macedonia has great potential for use of biogas from animal manure for energy purposes and production of biofuel from oil bearing industrial and vegetable crops.

Although the country has more than 250 sunny days in the year, the use of solar energy is limited to very few systems for heating water. Wind energy production is limited for regions in which there is evidence of wind with constant direction (to be recorded in three years of measurements of wind speed). Geographical and weather conditions in the country do not allow installation of large wind power plants in power system. Although great natural and climate opportunities exist, there is lack of knowledge and investments in use of renewable energy sources for agriculture production.

4.4. Use of pesticides and fertilizers

The use of pesticides in Macedonia in the past was huge so there are still residues left in the water by nitrates and phosphates, pesticides and organic manures caused by agricultural sources are reported in the country especially in the lake waters. Although untreated municipal and industrial wastewater discharge is the main cause of water pollution, diffuse pollution of ground and surface waters with nitrates and phosphates (due to excessive application of mineral fertilisers and animal manures, especially in highly erosion-prone soils) occurs in areas where there are many intensive farms.

4.5. Rural economy in Macedonia

Because of the location of the rural areas, the main occupation is agriculture. In 2012, in the predominantly rural regions, the share of agriculture was more than 50% than the national share of agriculture in GDP (13.5% vs. 9%) while the share of agriculture in intermediate regions was three times lower (2.8% vs. 9%). Still, the non-agricultural sectors (secondary and tertiary) generated more than 80% of GVA in rural areas (SSO, 2013). In the predominantly rural regions, 3.8% of the total employment was in the agriculture and food processing sectors. This indicator is even higher bearing in mind that the majority of rural population is engaged in the agricultural sector (mainly subsistence/family farming) either as a main source of income or as additional activity. Almost all agricultural holdings and the agricultural labour force are located in the rural regions as 76.4% of agriculture holdings are located in the predominantly rural regions. There are significant differences between predominantly rural and intermediate regions in terms of average size of agricultural holdings and labour force (SSO, 2013).

Employment in agriculture sector only serves as social mitigation-mitigate poverty and unemployment, especially in the circumstances of high unemployment rate outside the agriculture sector. The comparison between exclusively agricultural households, mixed households (engaged in agriculture on private properties, and where at least one member of the family is employed outside agriculture) and households without agricultural properties shows that mixed households produce highest incomes, then the agricultural households. The non-

²¹ <http://www.greenincubator.eu/index.php/en/green-business-guide/2015-09-25-10-03-58?showall=1>

agricultural rural households are the poorest ones. There is no formal evidence of farms diversifying into nonagricultural activities in rural areas. However, it is estimated that around 30% of the farmers or member of the farm household are employed either as self-employed, employment in manufacturing or in the public sector. The employment or self-employment outside agriculture is in trade, construction or services. Majority of rural women are employed in the textile sector.

A critical weakness in the rural economy is the job creation, high costs of starting up new businesses and of employing new workers. This reason is also found as crucial affecting the national labor market from functioning effectively to reduce unemployment from its historically high levels. High long-term unemployment found in rural areas is related to the poor qualification structure of the unemployed. The rural economy is largely dependent on the economic performance of the SMEs. The majority of the companies in rural areas operate in the construction or service sector. The service sector is concentrated in wholesale or retail trade and catering. The catering services in rural areas represented 15.4% of the total catering services. Around 4% of the total number of registered enterprises in the country is in the area of agriculture, hunting, forestry and fishery (3072) of which 24% are based in the rural municipalities (SSO, 2013).

5. Rural tourism potential in Macedonia

5.1. Legal framework for the development of rural tourism

From the analysis of the provisions of the Law on Tourism and the Law on Catering²² it can be concluded that a precise definition of the scope of the term rural tourism is needed, in accordance with the standards of the World Tourism Organization, as well as the expansion of the scope of tourism services offered in rural tourism. According to the Law on Tourism Article 51 services for rural, ethnic and ecotourism are provided by a physical person, which is not consistent with the concept of creating small businesses in rural tourism and stimulating the development of this branch. These shortcomings in the Law on Tourism generate an array of inconsistencies and ambiguities for service providers in rural tourism (Koteski, et al., 2017).

Simultaneously, standards for tourist accommodation services in rural tourism are regulated in the Law on Catering, which leads to the conclusion that there is no legal act that precisely regulates and defines the standards and terms covering rural tourism despite general compliance of national legislation with EU legislation. Also, there are no by-laws (regulations) that regulate the field of technical conditions, in particular the categorization according to the European Federation of Rural Tourism²³ and the standards for rural tourism. The existing regulations define the general classification and the minimum technical requirements of tourist facilities - renting houses that are categorized by getting an appropriate number of stars.

5.2. Institutional facilities for developing rural tourism

In Macedonia there are several institutions that are important for the development of tourism or rural tourism. At the state level we would emphasize the following: Ministry of Economy – Department of Tourism and Catering, Agency for Promotion and Support of Tourism, Ministry of Agriculture, Forestry and Water Management - Department of Rural Development. Within the Government there is a Committee on Tourism which is formed with the purpose of coordination and effective implementation of the part of the government program for the development of tourism. Pursuant to the legal regulations on territorial division, the Republic of Macedonia consists of eight regional planning regions.

All eight regions in the country have institutional Region centers within which the regional tourism development should be planned and implemented through designating strategies and action plans for development. At the level of local government units (municipalities) there are Departments of Local economic development with sectors and departments for tourism. The institutional capacity includes Associations of citizens and groups for tourism and catering at the Chambers of Commerce.²⁴ All listed institutions have an important role in tourism development, including rural tourism.

²² https://www.wto.org/english/thewto_e/acc_e/mkd_e/WTACCMKD15_LEG_12.pdf

²³ <https://www.eurogites.org/eurogites/>

²⁴ <http://www.chamber.mk/en/>

5.3. Human resources

Although by its nature rural tourism implies engagement of people from one family, this branch cannot experience growth without the involvement of professional staff to provide a quality product. Marketing activities, formation of a service package, establishment of pricing policies, following the trends and needs of potential guests, testing and continuous improvement of products – all these require highly specialized staff in the areas of marketing and finance. Currently, in the educational system of Macedonia there are no forms of training of informal education that provide training for individuals or groups interested in practicing activities related to rural tourism. Hence there is a need for knowledge of standards in hospitality, knowledge of languages (depending on the selected segment of guests), knowledge of the history and culture of the region and other knowledge and skills for which there are currently no training nor defined criteria (Koteski, et al., 2017).

5.4. Accommodation and catering facilities

According to the methodology for recording accommodation and catering facilities, there is no record of accommodation and catering facilities offering services in rural tourism as a separate category. The situation with the total accommodation capacity shows a tendency of growth throughout the Republic of Macedonia with the imbalance at the level of growth of respective regions. When separating the accommodation facilities in exclusively rural municipalities, estimates show that in 2009 in Macedonia only 3.7% of the total catering facilities with accommodation were in strictly rural areas and they have only 1.15% of the total number of beds in Macedonia (Koteski, et al., 2017).

The situation in catering facilities without accommodation is more optimistic in rural areas. The number of seats in the catering facilities in rural areas accounts for 15.4% of the total number of seats in the catering facilities in the country. Based on the latest data can be assumed that tourists who spent nights in some private accommodation, camps, and other uncategorized objects are actually tourists who belong to Rural Tourism in Macedonia.

5.5. Funding opportunities

For the development of rural tourism in Macedonia the instruments of the IPARD (2014-2020) are very important. With this instruments the National strategy for rural tourism 2012-2017, Ministry of Economy, Department of Tourism and the national budget provide financial support (co-finance) the investment in rural tourism, in particular:

- 1) For reconstruction of the agricultural economy facilities intended for rural tourism, together with recreational facilities;

- 2) For building catering facilities, outdoor accommodation (camping sites), recreational facilities; and
- 3) For modernization and renovation of old crafts.

The National Rural Development Program provides a measure of co-financing of local roads with a maximum length of 2 km which will contribute to linking rural settlements in order to develop all rural activities. A very important segment of the development of rural tourism in the country is certainly Government funding by subsidizing the tour operators and travel agencies for the stay of foreign guests in rural areas.

5.6. Promotion and development of SME in the rural areas

In most of the rural regions, manufacturing is represented mainly by small companies, serving local/regional markets. Almost all of the food processing industry (except for meat processing and slaughterhouses) is located in rural areas. In all regions the development of industry is constrained by the quality of road infrastructure and business related infrastructure and increasingly by the shortages of qualified labour.

Table 8. Rural Business Entities in Macedonia

Type of Region	Total Number	Number of business entities by number of persons employed					
		0	1 – 9	10 – 19	20 – 49	50 – 249	250 +
Predominantly rural regions	36163	1484	31764	1338	864	652	61
Intermediate regions	35127	2931	28835	1651	923	639	148
Total	71290	4145	60599	2989	1787	1291	209

Source: SSO, 2013.

There is an underdeveloped SME sector in rural areas (See Table 6). The business demography indicators (number of business entities per 1 000 inhabitants) indicates that SME density in predominantly rural regions is less than the national average (32 per 1000 inhabitants) while the SME density is relatively high in the intermediate regions (45 per 1000 inhabitants), reaching the EU 27 average of 45 per 1000 inhabitants. Agri-food SMEs in the rural areas work predominantly for the local (municipal/regional) market, except the fruit and vegetable processing and trade enterprises and wine processors which export their products. The entrepreneurship promotion schemes operated in rural areas to date, revealed that there is a lack of mature business ideas and entrepreneurial skills and knowledge. Business start-ups are constrained by low incomes/ low purchasing power of rural residents and the saturation of

sectors that require low start-up capital (small retail shops, restaurants, communal services). Currently the lack of start-up capital is a significant barrier for the development of viable businesses.

5.7. Crafts

The crafts sector is relatively small, diversified and spread all over the country. This sector has been identified with a great potential for development on a national level, important in creating income and jobs, especially in the rural areas that are more isolated and not so compelling for the other types of businesses. Still this sector has been stagnating in the last years and there is a tendency of extinction of some of the traditional craft making. In terms of employment in this sector, the analysis from the Strategy of Crafts Chamber 2012-2020 shows that majority or 61% from the craftsmen are employing one person only and 35% employ from one to five persons. In accordance with the legal framework the following activities are defined as craft activities:

- 1) Manufacturing and small scale production; Services;
- 2) Artistic craft; and
- 3) Home base handcraft.

Regarding the type of activity, the biggest share in the total craft activities goes to crafts for which no special education is required and crafts that require premises (15% respectively) followed by food and beverages production with 13%, electrics and machinery (12%), construction (10%), personal services (9%), textile and leather (7%) and minerals (5%). The remaining activities ranging between 1-3% share are wood manufacturing, paper manufacturing, plastic and rubber, health and personal care and handmade (artisanal) crafts.²⁵

According to the Craft Chamber, the major areas of home manufacture in the craft sector are as follows:

- Weaving (Eastern Part of the country, in villages around Delcevo, Berovo, Pehcevo, Kocani, Vinica, Western part of the country, in villages around Tetovo);
- Embroidery, knitting and sewing (Central area of the country, villages around Krusevo, Bitola, Resen);
- Pottery, (villages around Kicevo, Veles, Strumica);
- Woodwork, woodcarving and wood processing (Eastern Part of the country, in villages around Delcevo, Berovo, Pehcevo, Western part of the country, in villages around Tetovo and Gostivar);
- Blacksmiths (South of the country, villages around Strumica);
- Felt production (Eastern Part of the country, in villages around Delcevo, Berovo, Pehcevo, Kocani, Vinica, Probistip).

5.8. Provision of services in rural areas

The population in rural areas is significantly deprived in terms of population in urban areas in many respects. For those who live in rural areas, the problem of access to banking services face

²⁵ National Strategy for Crafts Development 2012-2020, Ministry of Economy

36 %, access to postal services 24% and access to cultural facilities 20%. Basic transportation services are not available or are difficult to access for 22% of the populations in rural areas.²⁶ The need to improve the road network in rural areas is highlighted as a high priority, both in lowland villages (51%) and in the mountain villages (54%).

Accessibility to primary schools is somewhat satisfactory for children from rural areas, in terms of secondary education; distance negatively affects access to education. The telephone network (fixed line and GSM) is covering the entire territory of the state, while the Internet is increasingly used. National and local television, including cable and satellite, and radio are available throughout the country. People living in rural areas are less satisfied with the quality of life than those living in urban areas, which have been a magnet for the migration of young people from the countryside, leaving behind a more vulnerable and poorer population in the villages. Therefore, there is a need for rural development policies to increase investment in infrastructure to make the villages once again attractive places for young people and entrepreneurs to live and work. Programmes to promote lifelong learning in rural areas, to establish industrial zones for small manufacturing and service industries, to develop rural cooperatives and social enterprises, and to promote networking of associations and community organisations to build rural social capital are needed to achieve these aims.

²⁶ European Foundation for the Improvement of Living and Working Conditions, "Quality of life in the enlargement countries: Third European survey on quality of life - Macedonia 2013"

6. Infrastructure provision in Macedonia

6.1. Social Infrastructure

There is lack of planned investments in infrastructure in the area of social protection in all municipalities. Municipalities generally invest in capital investments in facilities for preschool children, elementary and secondary schools. All rural municipalities have elementary schools, but lack of pre-school facilities i.e. day care for children and kindergartens. The provision of high schools is in the municipal headquarters and the pupils from villages depend on regular transport or lodging in the public internats if available. There are almost no investments for construction of retirement homes and centers for early child development.²⁷

6.2. Technical Infrastructure

The total length of road network in the country is 13393 km of which 1116 km are motorways, 3806 km are regional, and 9471 km are local roads. Rail transport is poorly developed and includes a network of 699 km of open line tracks, 227 km of tracks in stations and depots and 160 km of industrial tracks. Notwithstanding the ongoing government and municipal investments in road infrastructure (modernisation and expansion), more remains to be done, as the condition of the road network is still worse than that of neighbouring countries and EU averages (World Bank, 2014).

6.3. Cultural heritage and built environment in villages

The cultural heritage is located in the rural areas and has the biggest development potential considering the diversity and quality of cultural and historical treasures and archaeological sites in the country and the increasing interest in cultural tourism on the market. There are 15123 objects registered as immovable cultural heritage (2567 monuments from the Neolithic to Ottoman historical period archaeological sites 5 160, 4681 memorial monuments, 1286 objects of urban, rural and commercial architecture, 29 segments of urban and rural complexes, churches and 1156 monasteries, 61 medieval buildings, forts, bridges, towers, 112 mosques, 71 other objects originating from 15 to 19 century) and 500000 museum relics. Institutional responsibility for cultural heritage is under the Department for Protection of Cultural Heritage under the Ministry of Culture.

Currently, there are several rural settlements protected as monuments of culture and natural rarities: Village of Galichnik (from 1975), Rural area Kitchinica (from 2004), Rural area Gari (from 2003), Historical area Smilevo (from 2003), Rural Area Zeleznec (from 2004), Urban area of Village Konjsko (from 1979) and Village Gorno Vranovci (from 1981).

²⁷ Ministry of Labour and Social Affairs, "Analysis of the situation in the social care and social inclusion at local level 2010"

7. National support policy for agriculture and rural development in Macedonia

7.1. National Strategy Objectives for Agriculture and Rural Development

The National Strategy for Agriculture and Rural Development for the period 2014-2020 (NSARD 2014-2020) reflects the efforts and continuation plan of country's priorities for agriculture development and diversification of the rural areas. The main aim is to provide support to the agricultural sector to achieve sufficient level of competitiveness to cope with challenges of the open and changeable market and to boost the development and revitalization of the rural areas. The NSARD defines the following overall objectives for the period 2014-2020: **“Increasing of the international competitiveness of Macedonian agricultural production and agro-food industry, and securing sustainable development of rural areas”**.²⁸

Specifically, the increase of competitiveness will be achieved through the realization of the following priority areas:

- 1) Improving of technological and market infrastructure in order to increase the range of products with added value, productivity, quality and safety and achieving of the EU standards;
- 2) Strengthening the horizontal and vertical integration of the economic subjects in agro-food sector and development of market contractual relations in the agricultural value-chains that should enable better exchange of market information and planning of the production and purchase, as well as improving the marketing of agricultural products and promotion on foreign markets;
- 3) Providing access to production factors, agricultural land and its consolidation, access to capital and quality production inputs, and improvement of human potential in the sector; and
- 4) Improving of rural infrastructure for sustainability of rural communities and economical activities in rural areas.

Furthermore, the NSARD 2014-2020 outlines set of specific objectives and details the set of instruments to achieve the specific objectives as summarized below:

- **Restructuring and modernization of the agro-food sector**, thus promoting support in investments in perennials, support for procurement of animals of recognized and adapted breeds, increasing of the offer of certified seed and seedlings of domestic production, and initiation of domestic production of seedlings in horticulture; increased investment for modernization of primary agricultural operations and post-harvesting, modernization of production technologies in the processing sector: processing of fruit, vegetables, cereals and fodder production. Availability

²⁸ IPA Rural Development Programme, 2014-2020 final version as adopted by the Commission Implementing Decision on 13.02.2015, No. C (2015) 760 final

of capital, in terms of provision of favorable loans for investments and operating capital in agriculture and food processing via continuation of favorable rural credits and introduction of financial instruments adjusted to the support under IPARD is crucial for achieving sector modernizing investments. Consolidation of agriculture land parcels and increase of utilised agricultural land per agriculture holding is emphasized as crucial to be addressed in the forthcoming period as to overcome structural weaknesses in the sector impeding further development.

- **Integration and regulation of market chains** through supporting establishment and successful operation of agricultural cooperatives, additional support to producer groups and capable of implementing joint economic activities (both production and marketing) and provision of advisory and training support. Promotion and strengthening of the regulation for contract farming to strengthen the vertical integration is identified as crucial in the forthcoming period.

- **Improvement and protection of quality** through support for branding of trademarks of primary products and processed products manufactured from raw material of domestic origin and their promotion on the domestic market, support of national associations of producers for introducing of quality mark for indication of designation of origin, geographical indication, traditional specialty of agricultural products including the implementation of campaign on the benefits of protection of quality and further support of the organic agricultural production, and

- **Enhanced marketing and promotion of agriculture and processed products** on local and external markets, via national promotion of Macedonian export-oriented production – Macedonian wine, fresh and processed horticultural products on new alternative underrepresented markets based on harmonized marketing platform in partnership with national associations of producers; implementation of domestic marketing campaigns for national associations of producers for products with mark of quality for marking the designation of origin, geographical indication, traditional specialty. Support is envisaged for marketing infrastructure focusing on marketing logistic centers.

- **Food safety guarantee.** The food safety in the seven-year period (2014-2020) in particular will be achieved through interventions for healthcare of the animals, traceability and surveillance in placing the food on the market and appropriate reaction in times of crisis and emergency events which put at risk the health of the humans, animals and the environment.

- **Improving of the living conditions and economical activities in rural areas.** The development of rural areas through functioning of sustainable rural communities is one of the key priorities of the national policy for the development of agriculture and rural areas. The achievement of these goals depends on provision of improved living conditions and achieving economic activities in rural areas will be done through implementation of many related complementary activities and policies. Therefore, the focus of the interventions of the policies will be placed on the rehabilitation and construction of rural economic and transport infrastructure and investments in additional non-agricultural activities, improving the age structure of the population involved in economic activities and providing general social security of the rural population.

Additionally, special treatment will be given to rural areas in mountainous areas and regions with unfavorable conditions for agriculture production (LFA) or performing economic activities, as

well as the fully depopulated areas in order to re-launch the economic activities in these areas and valorise the natural resources.

In order to strengthen the participatory approach, the identification of the needs of local communities, the designation of proper measures into strategies for local development of the rural areas and their implementation, will be realized through the establishment of local action groups (LAG) from members of the local government, business and the NGO sector.

- **Innovations and knowledge transfer** through support for creation and implementation of innovations in agricultural production with accent on applied research in adaption of agriculture to climate changes, technology transfer and innovative solutions from foreign countries and their adaptation and new technologies in stockbreeding. Support is planned to be provided to agriculture holdings serving as demonstrative farms for applying adapted innovations and technologies and advance production practises. The focus in the forthcoming period shall be on the building of strong, functional and sustainable national advisory system and development of a system for informal education, training, retraining, prequalification and continuous lifelong learning for farmers, processors and other participants (craftsmen, managers of micro, small and medium enterprises, cooperatives) in the educational institutions.

- **Sustainable management of natural resources and mitigating the impact of climate change on agriculture** through support of agriculture holdings to adapt its production methods towards sustainable and conservation agriculture, introducing mandatory standards for good agriculture practise. In the upcoming period implementation of the Nitrate Directive will become mandatory to the agriculture producers. Organic production will be promoted with incentives and through increased marketing to boost the consumption.

7.2. Lesson learnt from IPARD I implementation

In the entire period of implementation of the Programme numerous bottlenecks were encountered resulting in a limited level of execution of funds available under the IPARD I. As part of its responsibilities, the Managing Authority prepared analysis of the reasons for non-realization of IPARD I, in which it presented the further open risks and gave suggestions for overcoming them and improving the utilization of the allocated funds. At the same time, this analysis aimed to inform the Government for the situation with implementation of the IPARD, the reasons for the appearance of risks in implementation and directions to overcome them. The analysis indicates two types of factors that cause loss of funds for implementation of the IPARD Programme as follows:

Internal Factors (in the system of the IPARD)

- 1) IPA Regulation provisions and subsequent agreements that affected on the degree of utilization (e.g. very demanding EU standards, slow accreditation process, lack of clear definitions regarding certain principles of sound financial management);

- 2) Insufficient administrative capacity of the IPARD structure to handle with realization of funds and in same time to provide an adequate level of control in specified deadlines and in particular the introduction (accreditation) of new measures; and
- 3) Capacity of the IPARD structure to inform and communicate the Programme (lack of professional assistance (advisory services) to support applicants in preparing projects, lack of capacity for communication and publicity in the IPARD Agency and Managing Authority and lack of funds to promote the possibilities are reducing the interest for the Programme).

External Factors (IPARD System surroundings)

- 1) Level of implementation of national legislation especially the one adjusted with EU legislation, particularly in the fields of environment and health and animal welfare;
- 2) Low quality level of registers and lack of electronic access;
- 3) Weak administrative capacity of the institutions related to the implementation of national legislation harmonized with EU in IPARD related field;
- 4) Absence of involvement of other institutions that can contribute to the delivery of appropriate information and support to potential beneficiaries as the Employment Agency, the Agency for Promotion of Entrepreneurship, Agency for Foreign Investments Promotion and Agency of Tourism; and
- 5) Low interest and engagement in civil associations and chambers to information and support to potential beneficiaries but also for communication and coordination with IPARD structure.

According to the analysis made and future risks, groups of identified problem areas are:

- Programming (including capacities for management with the Programme);
- Implementing (including capacities for implementation of the Programme) and activities for communication and publicity (including involvement of other institutions); and
- Regulatory (national legislation, Sectoral Agreement, registers and data bases).

Based on preliminary findings of the on-going evaluators in general the low absorption was caused by several factors such as administration system in terms of implementation procedures and in terms of implementation arrangements (eligibility criteria etc.) and procedures. However, positive results can be achieved if efforts are implemented by all actors involved in the implementation phases, including selection of projects at the IPARD Agency. Higher degree of pro-active cooperation would improve the overall performance of the Programme. Based on the on-going preliminary findings in particular it is identified that:

- 1) More potential applicants could be reached during the information phase;
- 2) More specific information could be delivered; and
- 3) Better support to applicants could be provided.

The preliminary summary of the on-going evaluation concluded that the implementation of the IPARD I Programme in Macedonia was contributing to a high degree of institutional capacity building. There has been an enormous improvement in the level of professional skills and expertise during the time since the Managing Authority and IPARD Agency was first being established in 2007. Still, a conjuncture of external and internal factors has prevented the Programme achieving the levels of effectiveness that have been achieved in some other IPARD

countries e.g. Turkey. Two key elements are constraining the success of the IPARD I programme and need to be addressed in the planning of the IPARD II:

- 1) The selection process is identified as the most crucial element of the Programme and its success. Many potential final beneficiaries (and also successful ones) consider the selection process is too strict, and the outcome is uncertain until the final reimbursement is awarded; and
- 2) In addition, synergic actions among stakeholders can be improved a lot. There is direct and indirect evidence that sometimes the involved institutions maintain a “bureaucratic approach”, instead, adopting the approval and reimbursement of the projects as a primary goal which could lead to a higher level of submitted applications and thus of contracted projects. There is no trace of routine self-assessment and evaluation of internal weaknesses of the involved institutions that is the first step towards a more efficient use of resources.

7.3. National strategy objectives for agriculture and rural development under IPA

The new IPA regulation²⁹ outlines a broader set of objectives, compared to the focus areas of the EU rural development policy and compared to the previous IPA 2007-2013. According to Article 1 of Regulation (EU) No 231/2014 "The Instrument for Pre-accession assistance for the period 2014-2020 (IPA II)³⁰ shall support the beneficiaries in adopting and implementing the political, institutional, legal, administrative, social and economic reforms required by those beneficiaries in order to comply with the Union's values and to progressively align to the Union's rules, standards, policies and practices, with a view to Union membership". IPA II assistance should address several policy areas, among which agriculture and rural development.

The specific objectives set out in Article 2 of Regulation (EU) No 231/2014 should be to the extent possible addressed by all policy areas. This means that "agriculture and rural development" policy area will have to contribute to the following specific objectives:

- 1) Support for political reforms;
- 2) Support for economic, social and territorial development, with a view to a smart, sustainable and inclusive growth;
- 3) Strengthening of the ability of the beneficiary countries at all levels to fulfil the obligations stemming from Union membership by supporting progressive alignment with, and adoption, implementation and enforcement of, the Union acquis, including preparation for management of Union Structural Funds, the Cohesion Fund and the European Agricultural Fund for Rural Development;
- 4) Strengthening regional integration and territorial cooperation involving the beneficiaries, Member States and, where appropriate, third countries within the scope of Regulation

²⁹ Regulation (EU) No 231/2014 of the European parliament and of the Council of 11 March 2014 establishing an Instrument for Pre-Accession Assistance (IPA II)

³⁰ <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2014:077:0011:0026:EN:PDF>

(EU) No 232/2014 of the European Parliament and of the Council.³¹ The objectives of IPA II assistance under rural development programmes in policy area 'agriculture and rural development' are further defined in Article 18(5) of the Framework Agreement as follows:

- a) In view of Union priorities for rural development, by means of developing human and physical capital, to increase the food-safety of the IPA II beneficiary and the ability of the agri-food sector to cope with competitive pressure as well as to progressively align the sector with Union standards, in particular those concerning hygiene and environment, while pursuing balanced territorial development of rural areas; and
- b) Channeling investment support through management and control systems which are compliant with good governance standards of a modern public administration and where the relevant country structures apply standards equivalent to those in similar organisations in the European Union Member States.

IPA rural development programmes continue to maintain close links to the EU rural development policy by financing selected types of actions as provided for under Regulation (EU) No 1305/2013 of the European Parliament and of the Council.³² The above-mentioned IPA II objectives largely coincide with the main strategic objectives and specific objectives according to NSARD 2014-2020, namely the objectives for enhancing farm viability and competitiveness of all types of agriculture and food-processing, agro-environmental objectives for restoring, preserving and enhancing ecosystems dependent on agriculture and forestry, improving socio-economic development in rural areas and human potential.

For the purpose of this Programme, it is considered that the priorities set at EU level and IPA II objectives are consistent with the NSARD 2014-2020. Even though the Programme will potentially be serving more than one objective under IPA II and its consistency with the NSARD 2014-2020, the objectives can be grouped into the following priority areas:

- 1) Enhancing farm viability and competitiveness of all types of agriculture and primary food-processing, while progressively aligning with the EU standards;
- 2) Restoring, preserving and enhancing ecosystems dependent on agriculture and forestry;
- 3) Promoting balanced territorial development in rural areas; and
- 4) Transfer of knowledge and strengthening public administration capacity in implementation of rural development programmes.

7.4. Identification of the needs and SWOT summary of overall strategy and sectors (Macedonia)

While there are evident positive trends in agriculture, forestry, food processing and rural areas achieved in the past period, still the development of agriculture and rural development are impeded by structural difficulties and inefficiencies as identified in the SWOT, which need further intervention in the forthcoming period. The SWOT analysis singled out a number of needs which have to be addressed by the Programme:

³¹ <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ%3AL%3A2014%3A077%3A0027%3A0043%3AEN%3APDF>

³² <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:347:0487:0548:EN:PDF>

Table 9. SWOT analysis of the agriculture and rural development sector in Macedonia

1. Agriculture, forestry and food industry
<p>Need 1.1: To improve farm labour productivity and efficiency of the agriculture production, as well as the post-harvesting and marketing of agriculture products, aiming at increased competitiveness via investments;</p> <p>Need 1.2: To improve the utilization of processing capacities in terms of efficiency and production technology improvements as well as marketing activities at the same time promoting innovations, and aiming at full alignment to the EU food safety standards;</p> <p>Need 1.3: To support the creation of the economic cooperation between agriculture producers and promote marketing linkages; shortening the market chain with promotion of contract farming and solid direct relations with processors, traders and exporters;</p> <p>Need 1.4: To establish strong linkages between education and research and extension for effective knowledge transfers; to improve co-ordination and integration of advisory services and strengthen their human capacity;</p> <p>Need 1.5: To improve the skills and qualifications of agriculture producers and workers and their farm management capabilities as to enable them to adapt the agriculture production toward market demands and climate changes;</p> <p>Need 1.6: To introduce sustainable and economically viable forest management practices for protection and utilization of forests and biomass thereof;</p> <p>Need 1.7: To strengthen the investment abilities of small holder farmers to undertake reconstruction, modernization and new investment and better provision of finances for capital investments.</p>
2. Environment
<p>Need 2.1: To involve agriculture producers to introduce and practice water and soil protection management practises and organic farming aiming to halt the decline in biodiversity, address the negative impacts of land abandonment and decreased activities in HNV areas;</p> <p>Need 2.2: To strengthen the advisory service to support farmers and forest owners/managers in implementing agri-environmental practises and forest management and ensure provision of training to farmers and forest owners/managers on agri-environmental practises;</p> <p>Need 2.3: To increase the use of energy crops and to promote use of renewable energy at farm level and at processing level as well as to increase the overall energy use from renewable resources at national level;</p> <p>Need 2.4: To improve the communal waste management and access to communal services of the rural population;</p> <p>Need 2.5: To improve forest management practises to prevent forest fire risks and degradation of forests and utilization of forest bio-mass as renewable.</p>
3. Rural Economy and Quality of Life
<p>Need 3.1: To support development of existing and new rural businesses for economic</p>

development and employment; to develop rural tourism potential;

Need 3.2: To develop physical infrastructure, upgrade village spaces and increased provision of services and rural accommodation, for tourism and business development in rural areas and improved living conditions in rural areas;

Need 3.3: To train municipal authorities in local development planning and project implementation to actively implement rural public infrastructure projects;

Need 3.4: To mobilize local organizations which represent the needs and interests of rural dwellers and rural businesses to actively participate in local development planning.

Source: MAFWE, 2015.

7.5. Enhancing competitiveness of the agricultural value chain

Actions to be implemented to enhance the viability and competitiveness of all types of agricultural and primary food-processing, while progressively aligning with the EU standards' aim at improving the level of modernisation and technology and innovation within primary, processing and forestry sectors in order to ensure that farms are adapting their practices to EU animal welfare and environmental requirements and food processors gradually align to EU food safety standards. These actions shall indirectly address the problems of farmer ageing and unfavourable farming structure.

The need to improve the agricultural technology, level of modernisation, infrastructure within the farm is to mitigate the labour intensiveness and achieve higher productivity and efficiency of agriculture production. The future of primary agriculture, today being labour intensive with lack of application of modern practises and technologies, belongs to using modern machinery, technology and varietal adaptation going hand in hand with changing market needs. Investments aiming to increase the bio fuel production, use of biomass, alternative and renewable sources of energy will be strongly encouraged due to the need to adapt to climate changes and decrease input costs. It is also expected that due to support available for alternative agriculture activities and primary processing at farm level, some of the semi-subsistence farmers will upgrade their farm income via diversifying and adding value to primary products.

Furthermore, national support will be provided for participation of farmers in food quality schemes that will result into improved quality, diversity of agricultural products as well as added value. The actions under this priority area indirectly address the problems of farmer ageing and unfavourable farm structure through promoting investment projects by young farmers and increased aid rates and promoting projects submitted by semi-subsistence farms. Improvement of farming structure is of vital importance aiming to increase the productivity as well as production quality, to minimise production costs and to ensure sufficient returns on the investments.

As regards processing industry, it is planned to give priority for modernisation of processing enterprises, as the level of modernisation in these processing units is still low. However, in order to promote innovations, support will be provided for implementation of innovative practices or new products. Implementation of food safety standards will be given priority for investments. In addition, support is required to strengthen the marketing of agricultural products both within

internal and international markets. In regards to the climate change, support for modernisation of agriculture holdings (such as investment in efficient irrigation systems, promotion of bio fuel, production and use of alternative and renewable energy sources, implementation of manure handling practices etc.) and also the support under the measures designed for the encouragement of rural infrastructure investment in waste management and sewerage systems in rural areas will address the cross cutting objective for climate change adaptation and mitigation.

7.6. Promoting sustainable rural development

The priority area for promoting balanced territorial development in rural areas will be reached through implementation of actions with the aim of increasing the employment possibilities and at the same time creating alternative income sources for rural population. In addition, attractiveness of rural areas is impossible without having improved the living conditions (physical rural infrastructure), security of life and private property. Furthermore, the abilities of rural population to get involved in alternative business and to make their rural environment more attractive to live should be strengthened and therefore investments into human potential are of outmost importance. Entrepreneurship in rural areas is hindered by the high level of risk related to operation on small markets, lack of capital and insufficient access to business development and advice services. Business companies in rural areas face additional territorial disadvantages related to the lower purchasing power of the local population and stagnating local rural economies.

The support for investments in new business start-ups and for development of established micro and small enterprises is an important tool for improving the competitiveness and job creation potential of rural economy. It will benefit rural areas by creating more and better quality jobs and will help to diversify the rural economy which is still highly dependent on agriculture. Actions for farm diversification and business development are formulated to address the need to minimise the dependence of rural population on income from agriculture, to create alternative jobs and to increase the level of income in rural areas. Overdependence of rural population today on agriculture is evident and therefore taking into consideration the most comparative advantages that rural areas possess today, the priorities will be given for the development of micro and small businesses for manufacturing and services, promoting rural tourism, development of crafts, which not only will create additional employment possibilities, but also at the same time will promote the national rural identity and culture and use of local available resources and natural potential.

The competitiveness of rural areas is constrained by inadequate quality and access to basic infrastructure and services for the economy and rural population. Thus actions for establishment and restoring road infrastructure, water supply and sewerage systems in rural areas will be given priority for investments. Other actions consider investments in heating plants, improvement of electricity supply in rural areas as well as provision of infrastructure for access to agriculture and forest area. The rural communities and dwellers express needs for renewal of the abandoned cultural and historical objects, children, youth and elderly centres, libraries, establishment of green areas within rural areas, local market infrastructure, pavements, village streets etc. in order to make the rural areas attractive for those already living there and aiming at attracting

newcomers to start developing their business in rural areas. The needs for development of transport infrastructure (motorway, regional roads, and railway), health services, education facilities and renewal and maintenance of cultural heritage will be supported under IPA policy areas for regional development (transport sector).

The actions under “Implementation of local development strategies – LEADER” approach aim at promoting local initiatives and partnership through involvement of local communities as well as representatives of business and local government. There is an obvious need to encourage and develop capacities of rural population to act together in order to develop and implement the integrated local development strategies through combination of the resources, knowledge and skills of representatives of public sector, economy and social sector, which form the basis of local action groups. The support granted through the “Implementation of local development strategies - LEADER approach” will be focused upon three main activities namely for capacity building of selected LAGs, for running the selected LAGs and implementation of small projects from "Start-up kit tool", implementing of local projects under a LDS, cooperation projects for inter territorial or transnational projects and acquiring skills and animating the territory. The funding under “Implementation of local development strategies - LEADER approach” measure might be extended to include additional finances for implementing larger projects according to LDS under other funds (national or IPA), when more experiences and lessons learned have been collected.

7.7. Transfer of knowledge and innovation in rural areas

None of the above - mentioned objectives, could be achieved without substantial investments into human capital. Therefore, actions foreseen for transfer of knowledge and innovation in agriculture, forestry and rural areas and strengthening public administration capacity in implementation of rural development programmes aim at strengthen human capital within rural areas and thereby addressing the problem of narrow scope and insufficient training, lack of information. Even though farmers and rural dwellers have a good access to the consultations of general nature in the area of traditional production methods, farm economy and accountancy, legal advice, there is a lack of specialised consultations and training in the field of improving production technology, productivity, agri-environmental farming and implementation of environmental and other requirements, community development and partnership, in the field of marketing and diversification of economic activities. Therefore, it is important in the future to ensure the provision of such type consultations to rural people.

Furthermore, there is a strong need for vocational training to be strengthened in order to raise the qualification of those engaged in agriculture and to ensure that farmers on the continuous basis are provided with the possibility to renew his/her knowledge as well to obtain new knowledge which is a prerequisite in order to adapt to ever changing economic and social environment. Thus, through implementation of the measures under this priority, it is expected that entrepreneurial skills of those engaged in agriculture, forestry as well as rural development will increase and will not only increase the competitiveness of agri-food and forestry sectors but will also result into creation of alternative income sources in rural areas. It is an important priority for the national strategy (NSARD 2014-2020) to ensure that resources are available for supporting the development of innovation and knowledge transfer, dissemination and, most importantly, practical implementation within agri-food and forestry sectors by ensuring the continuous dialogue between scientific society and agricultural and rural development actors.

8. General socio-economic context of the Republic of Moldova

8.1. Definition of rural areas in the Republic of Moldova

Definition and delimitation of the rural areas and rural localities, wide used for the purpose of the implementation of the national policies and of statistical evidence, it is based on the provision of the Law No 764 from 27.12.2001 on territorial administrative organization of the Republic of Moldova.

The law defines two main categories of localities: rural one, represented by villages and communes (formed of two or more villages) and cities (ordinary one and municipalities).

Village is defined as an administrative territorial unit which comprises the rural population united by the territory, geographical conditions, economic, social-cultural relations, traditions and customs. Two or more villages, depending on the economic, social-cultural, geographical and demographical conditions, can be united forming a single administrative territorial unit called commune. The commune is the administrative territorial unit which comprises the rural population united by the community of interests and customs.

City is the territorial administrative unit which is more developed than the village from the economic and social cultural point of view which comprises the urban population with corresponding economic, industrial and commercial structures whose population is employed mostly in industry, in the field of public services and in different fields of intellectual activity, in cultural and political life. Delimitation between rural localities and urban one it is ensured by defining and establishing criteria for the identification and registration of cities. Localities that are classified as cities are reflected in the Annex No 1 of the Law³³.

Moldova has 1,682 localities. Of these 1616 are villages incorporated in 982 communes and 66 cities, including 13 cities with municipality status³⁴. However, the definition of the urban area in the Moldovan context encompasses a number of small towns, which socio-economically very much resemble villages.

Main responsible government authority for the promotion and implementation of the policies in the field of rural area development is the Ministry of Agriculture, Regional Development and Environment. A national Strategy on agriculture and rural development for the period 2014-2020 was approved by the Government Decision No 409 from 04.06.2014. Agriculture and rural development fund was established by the Law 276 of 16.12.2016 on principles of subsidizing agricultural producers. Nevertheless, other Governmental authorities are also involved in implementing programs and support measures for the developing of agriculture and rural area.

³³ Law No 764 from 27.12.2001 on territorial administrative organization of the Republic of Moldova

³⁴ National Bureau of Statistic of Moldova: Administrative-territorial division of the Republic of Moldova, as of January 1, 2017; Law No 764 from 27.12.2001 on territorial administrative organization of the Republic of Moldova

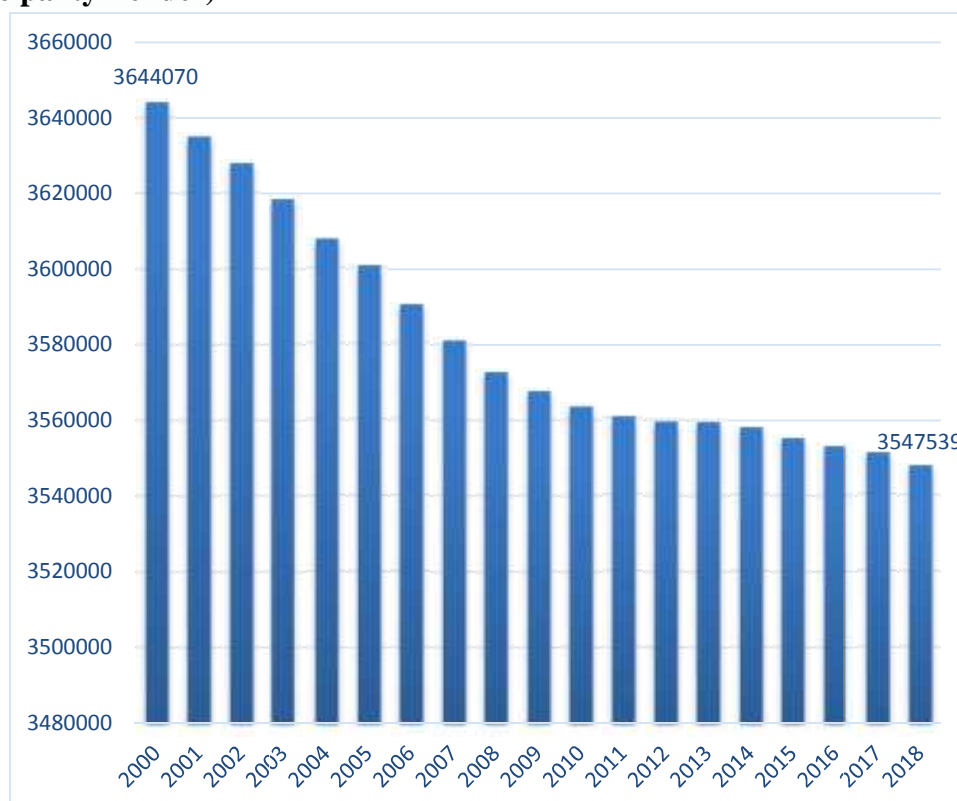
8.2. Demographic situation

The Republic of Moldova, like other countries in the region register a shift to an ageing society due to the lower fertility rate and gradual increase of life expectancy at birth, overlapped with intense age-specific migration of working age people to other countries, for both seasonal and long-term or even permanent work the registered migration of the population.

A negative trend of population growing it is registered starting with 1999. As reported by the NBS, on 1st of January 2018, the number of country's stable population amounted to 3547,5 thousand people, while the present population was 3330,0 thousand persons. In the same time, alternative sources estimates that the number of population is 2.9 million people.

More than half of stable population is rural. The **urbanization rate** it is registering a non-significant trend of growing from 41,2% in 2000 to 42,1% in 2018 (stable population), but register a decreasing trend, if to consider present population, from 42% in 2000 to 41,3 in 2018.

Figure 4: Evolution of the number of resident population of the Republic of Moldova (Information is presented without the data on districts from the left side of the river Nistru and municipality Bender)



Source: Elaborated by the authors based on data published on www.statistica.md

The **median age** of population in the Republic of Moldova was 38 years in 2017, compare to 35,1 in 2006. For the rural population the median age is 37,3%, being younger with 1,7 years compare with urban area population.

Table 10: Median age of the population

Year	Total	Urban	Rural
2007	35,5	35,3	35,5
2008	35,8	35,7	35,8
2009	36	36,1	36
2010	36,2	36,4	36,1
2011	36,5	36,8	36,2
2012	36,7	37,1	36,4
2013	37	37,5	36,6
2014	37,2	37,9	36,8
2015	37,5	38,3	37
2016	37,8	38,6	37,1
2017	38	39	37,3

Source: Elaborated by the authors based on data published on www.statistica.md

During the last period, the **share of persons aged 60 years and over** is registering a continuous increasing, at the beginning of 2018 being registered 629.6 thousands persons, representing 17,7% of the total resident population of the Republic of Moldova. About 60% of the total number of elderly people are women and 56,6% live in rural areas.

Life expectancy at birth have increased from 68,79 years in 2007 to 73,21 years in 2017. For women life expectancy is higher with 8 years compare with men. This discrepancy is determined by the higher rate of premature deaths in case of men. Due to the differentiated level of mortality, the average life expectancy of urban residents was higher than in rural areas by 4,35 years.

The **migration** studies that have been carried out reveal that the economic reasons remain to be the main push factor for Moldovans, especially the lack of local employment opportunities and low salaries offered in the country. The migration phenomenon in Moldovan context continues to be characterized more by the international emigration of the country's population and less by the immigration of persons from abroad.

Migration represent the key factor influencing demographic trends. On the thirist stage, the migration was determined by the long transformational recession. A combination of shocks with impact have determined an important labor emigration. In this regard could be mentioned such factors as impact of reforms in the field of agriculture, Russian financial crisis resulted in collapsing Moldovan currency and accumulation of budget arrears on wages and social payments, droughts and adjustment of energy prices etc.

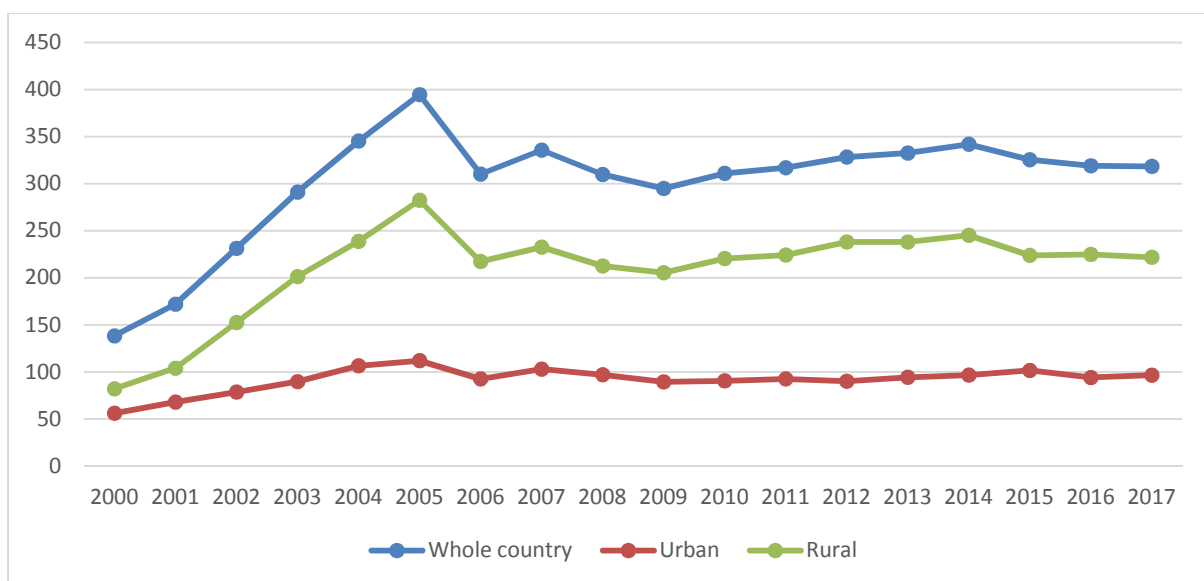
The migration began with the rural areas where the unreformed agricultural enterprises ceased to provide minimal revenues for subsistence, while alternative employment opportunities were slow

to emerge. Emigration from cities and small towns followed shortly after in early 2000s, as the half-hearted enterprises restructuring failed to bring the employed better working conditions and higher salaries. The Moldovan economy recovered its 1993 GDP level only by 2008. Between 2000 and 2016, the GDP growth rate averaged 4.5 percent yearly, way too slow to achieve income convergence even with the group of CIS countries, let alone the economically more successful countries in the Central and Eastern Europe (CEE)³⁵.

Three approaches are used to estimate international emigration from the Republic of Moldova, namely: authorized emigration, which involves deregistration from the place of residence and declaration of long-term emigration or emigration for good from the country, also known in the country as “permanent emigration”; labour migration, that is, leaving to work or to look for a job abroad, with the intention to return, also termed “temporary/circular migration”; exit from the country, which is registered at the border, including both authorized/permanent emigration and temporary/circular migration.

According to the official statistics, 318,1 thousands persons aged 15 years and over, working or looking for work abroad. Almost 70% of them were from rural area, and 66,4% were men.

Figure 5. Population aged 15 years and over, working or looking for work abroad



Elaborated by the authors based on data extracted from www.statistica.md

Annual flow of international authorized emigration, which is estimated based on the data provided by the State Agency of Public Service have is registering a downtrend. According to official data, 2507 persons have left the country to settle down permanently abroad (compare to 4714 emigrants in 2010)³⁶. Data on the annual flow of authorized emigrations reveals that

³⁵ A. Lupusor, A. Popa, V. Prohntichi, “Demography matters: How population dynamics impacts the economy of the Republic of Moldova? An Analytical Report on National Transfer Accounts for the Republic of Moldova”, Expert-Group, Chisinau 2017.

³⁶ It should be taken in to consideration that only part of emigrants that are leaving the country to settle down permanently abroad are registering this.

young persons are emigrating. The 20-40 years old group represent 39% of total number of authorized outflow in 2016.

According to the data of the Ministry of Foreign Affairs and European Integration, based on the data collected from the Diplomatic Missions and Consulates of the country, more than 800 thousands of Moldovan citizens were aboard at the end of 2015³⁷.

Migration has reshaped Moldova's workforce and the economy as a whole. Most of the working-age population lives in rural areas and the majority of emigrants are from rural areas. From 2000 to 2005, the number of emigrants nearly quadrupled. By 2008, an estimated 40 percent of Moldovans of working age were living and working abroad. Since 2010, Moldovans have continued to migrate abroad in search of more and better jobs; especially people in the 25–34 age-group, who are typically considered the engines of growth in a country. Were it not for out-migration, the working-age population in Moldova would have increased throughout the period. In essence, Moldova traded a demographic dividend for migrant remittances as the workforce was gradually exported. Whereas the economy could have started enjoying a significant demographic dividend, Moldova entered the millennium not with a booming labor force and employment, but with booming migration and remittances. Remittances, pre-crisis, were more than 30 percent of GDP and is registering an average of 23-24% in the period 2010-2015³⁸.

8.3 Administrative systems

Moldova is a unitary parliamentary representative democratic republic. The Constitution provides for a single-chamber Parliament consisting of 101 members, a President directly elected, but with limited attribution. The Prime Minister and the government are nominated by the President after consultation with the parliamentary majority. The nomination of the government requires the approval of Parliament.

The Republic of Moldova have accumulated an important experience based on the implemented administrative reforms:

- Thirst stage – 1991-1994 – the transition period or pre-constitutional period;
- Second stage – 1994-1998 – post-constitutional period;
- Third stage – 1998-2003 – decentralization period (of judete/counties);
- Fourth stage – 2003 – present – restoring of the quasi-Soviet model of territorial division of authority (rayons), while local autonomy was significantly reduced (The Law on Local Public Administration adopted on 18.03.2003).

In 1994 changes to the soviet system of administrative organization were made, but with no essential changes of territorial structures. The first autonomous territorial unit (Gagauzia) was created; it included three districts (dolay) which are still part of the internal division of the Gagauzian region. By 1998 the country's territory was divided into 38 raioane (districts), including five in the breakaway Transnistrian region.

³⁷ "Statistical compendium of the extended migration profile of the Republic of Moldova 2014–2016", Ministry of Internal Affairs, Chisinau 2017.

³⁸ „A Jobs Diagnostic for Moldova: 10 Key Facts”, World Bank, 2016

Based on the reform implemented starting with 1999, 30 districts on the right bank of the Nistru river were amalgamated into 10 jude e (counties), equivalent with NUTS III. The territorial reorganization in 1999 was accompanied by a significant administrative reorganisation, resulting in a new division of competences and resources, close to the Romanian model. Starting with 2003, based on another administrative reform, a quasi – Soviet model of territorial division of authority was restored, being re-established the division in raioane (districts), equivalent with NUTS IV (The Law on Local Public Administration adopted on 18.03.2003).

At the moment, public administration system of the Republic of Moldova it is based on two main criteria: territorial, with a corresponding hierarchical structure, and functional, with a corresponding functional structure. In this regard, the public administration system. In this regard, the entire public system it is organised as a mixt structure, hierarchal – functional. Based on territorial competencies, organizational structure of the system of the public authorities it is divided in two categories: of the central authorities (Government, ministries and other central public authorities), extending their competence on the entire territory, and of local public, extending their competence on certain territory or part of the country. Together with local councils, mayoralty, such category of authorities are decentralised public services of the central public authorities.

Local governance and the mechanism of its implementation, distribution of powers, budget process are determined by the Constitution and established legislative framework: Law on administrative-territorial organization, Electoral Code, Law on local public administration, Law on special legal status of Gagauzia, Law on Chisinau Municipality's status, Public service Law, Law on the budgetary system and the budgetary process (Budget Code), Law on local public finance, Law on public administration, etc.

Local government operates at two levels: the first level consists of public bodies with general or special powers created and functioning on the territory of a village or town/municipality with the purpose of promoting the interests of the local community and addressing local issues. The second level consists of public bodies with general or special powers created and functioning on the territory of rayons (districts), the Chisinau municipality and the special legal-status autonomous territorial units with the purpose of promoting the interests and resolving the problems of the population of the given territorial administrative unit.

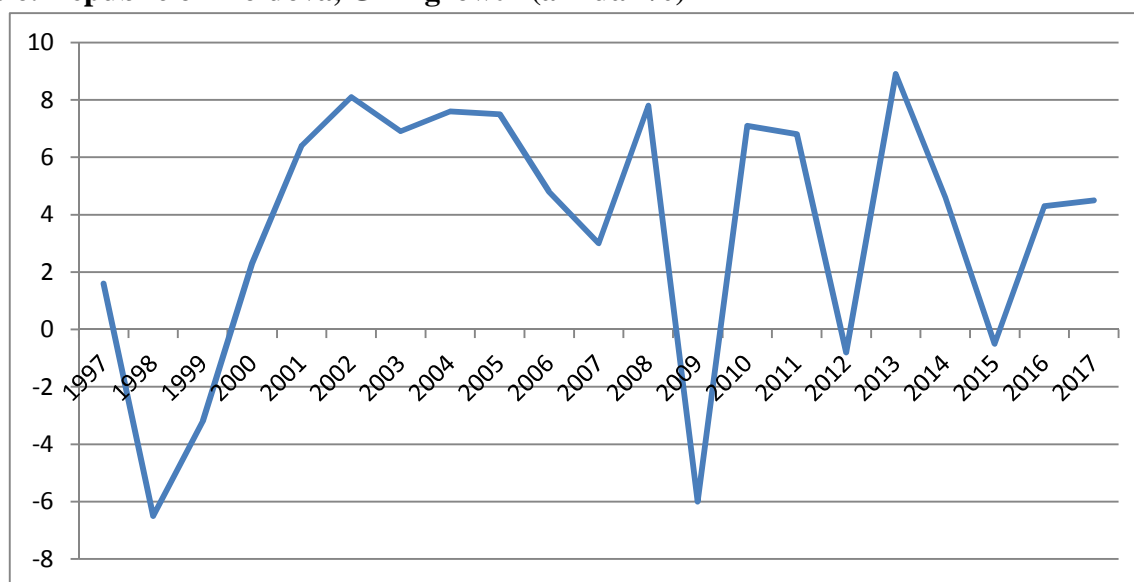
There are thirty five territorial units corresponding to the second level of local government authority, thirty two districts (rayons), two municipalities - Chisinau and Balti, one autonomous territorial unit (UTA Gagauzia), and one uncontrolled by the central government territorial unit (Transnistria). These units are divided into first-level territorial units – towns and communes/villages, which have no direct financial relations with the centre. They liaise with their respective second-level units regarding budgeting and other financial issues.

The implemented system of division of the country in districts (rayons) had no impact on social-economic development of the country, economic, geographical, cultural, historical, and other factors being ignored. Regional development of the country it is affected by economic concertation in two main cities – Chisinau and Balti.

8.4. Economic drivers, productivity and growth

Economic and financial system of the Republic of Moldova it is characterized by a high instability. GDP growth during has fluctuates between -6.5% and +8.9% during the last twenty years.

Figure 6. Republic of Moldova, GDP growth (annual %)



Source: elaborated by the authors based on data extracted from www.statistica.md

Registered significant deviation of GDP does not have a constant tendency but it is registering important reductions during the crises. According to IMF reports, the development trend of the country will remain insignificant and the country will remain the poorest country in the Europe during the next period.

Table 11. Forecasted evolution of the GDP,

	2017	2018	2019	2020	2021	2022	2023
GDP, current prices, Billions of U.S. dollars	9.6	11.4	12.7	13.1	13.9	14.6	15.2
GDP per capita, current prices, U.S. dollars per capita	2694.5	3226.7	3597.7	3710.0	3931.1	4137.3	4299.6

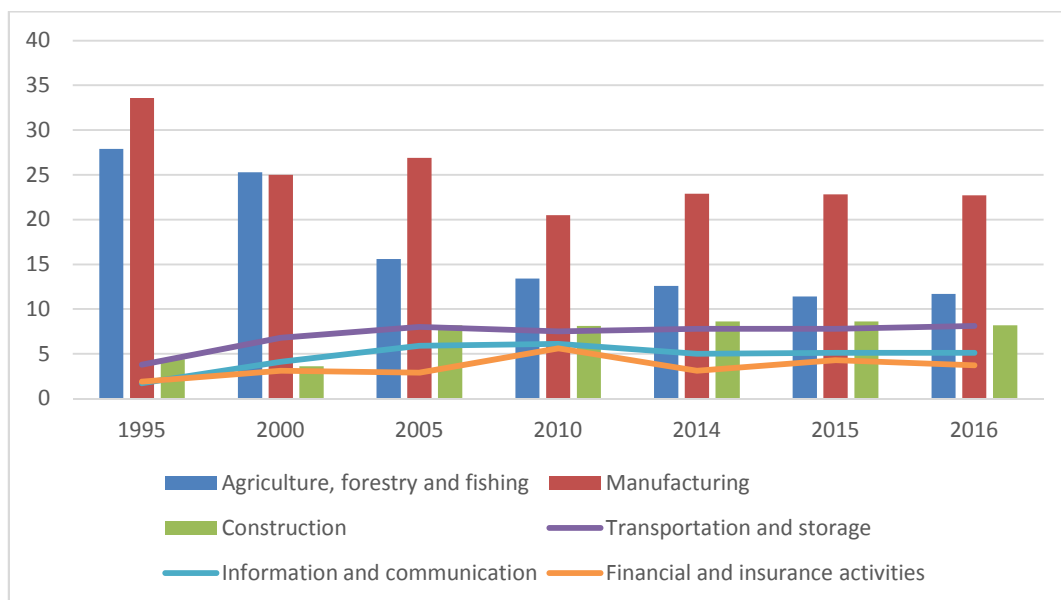
Source: http://www.imf.org/external/datamapper/NGDP_RPCH@WEO/MDA?year=2005

This is based on the fact the economy is driven by the consumption and fueled by remittances that account for a quarter of GDP.

The most important recessions of the national economy sectors were registered in industry (2009 and 2012), agriculture (2007, 2009 and 2012), constructions (2009), banking sector (2015). Increasing of the high added value production is a priority in order to achieve a sustainable economic growth.

Agriculture continue to remain an important sector in Moldova’s economy. Even if declining, it is accounting for 12,2% of GDP in the year 2017. Food Industry accounts for more than 30% of the manufacturing, and it is contributing to other sectors such as transport, trade, financial and insurance activity. Moldova is a net agri-food exporter country, whose agriculture generates almost 47% of country’s export revenues, and have a positive balance of 425,7 million USD in 2017. Relatively low level of growth of other sectors such as financial sector, transports, informatics and communication, constructions or manufacturing is not able to compensate the instable trend of growing of agricultural sector.

Figure 7. Contribution of economic activities in the formation of the Production Volume (%)



Sources: Elaborated by the authors based on the data of NBS, www.statistica.md

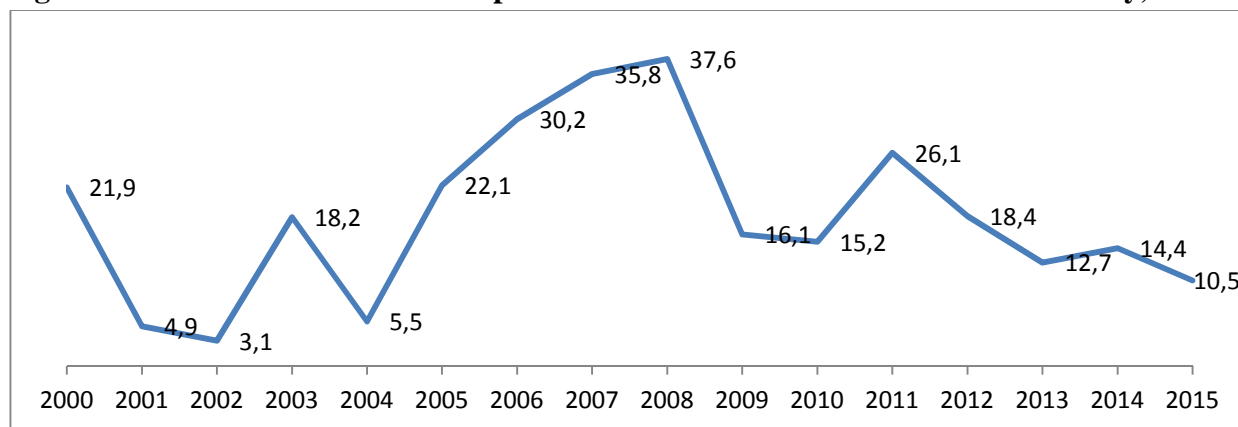
Structural imbalances contribute to the maintenance of the macroeconomic risks in case of Moldova. The growing rhythm of the financial sector has affected development of the real sector of the economy. Low GDP per capita it is a result of non-efficient structure and of country deindustrialization.

Economic growth contribute, as a rule, to the increase of the demand for the financial services and stimulates the development of the financial sector. Efficient financial services ensure a better distribution of the resources, contributing to the economic growth.

Structural imbalance between economies and investments represent another indicator to be consider for the evaluation of the economy of the country.

One year before the crisis registered in 2009 and economic recession registered in 2012, the increasing of current account deficit reported to the investments was registered. This indicator was -37,6 % in 2008 and -26,1% in 2015.

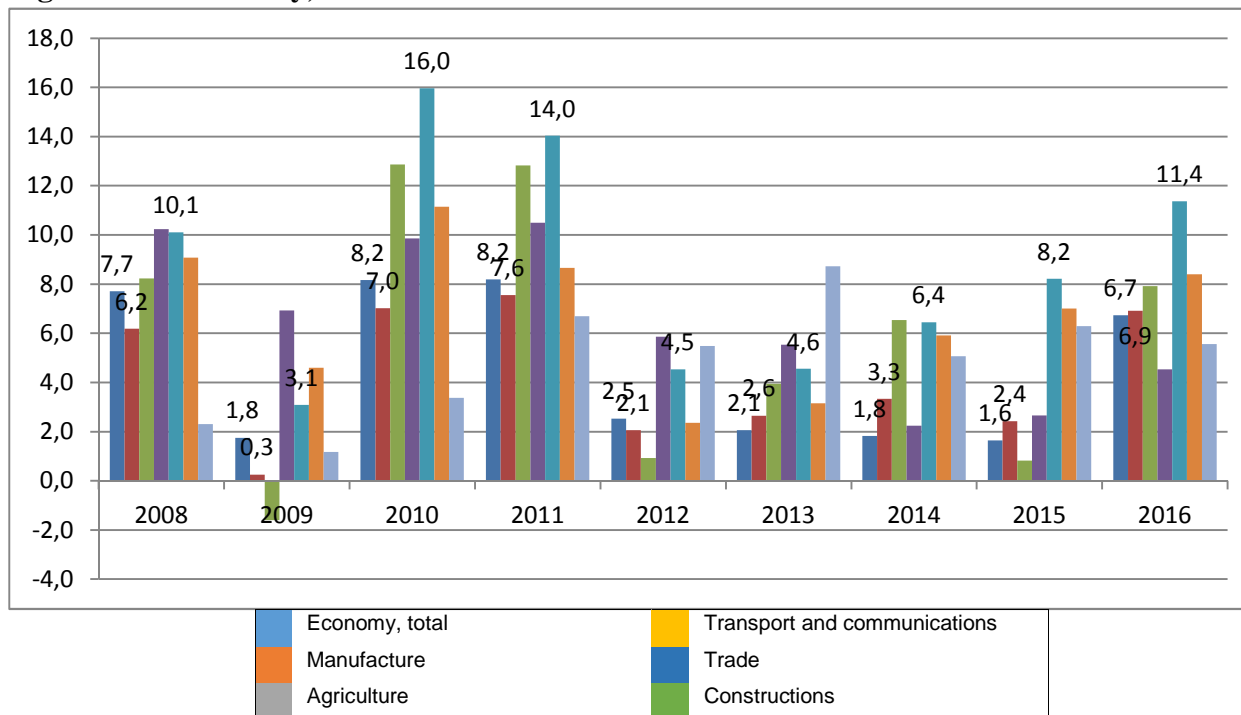
Figure 8. Current account deficit reported to the direct investments in the economy, %



Source: Adapted based on PERCIUN R., PETROVA T.,
 , Editura Academic LAP Lambert Academic Publishing, Germania, 119
 pagini, ISBN: 978-3-659-45754-8, 2014, 6.0 c.a.

The major part of the companies lacks the financial resources for the financing of the long term investments. According to the NBS, 52,3 thousands active enterprises were registered in 2016, of which 98,7% are small and medium size enterprises.

Figure 9. Profitability, %



Source: Elaborated by the authors based on the data of BNS. www.statistica.md

The profitability of the economy of the republic of Moldova and per sectors is affected by

oscillations. The profitability have accounted 6,7% in 2016, registering a significant increase compare to 2015. Nevertheless the basic contribution to the increase was ensured by the trade (11,4%).

Low profitability is affecting the investments in fixed assets. Interest rates are quite high for such sectors as agriculture and manufacture.

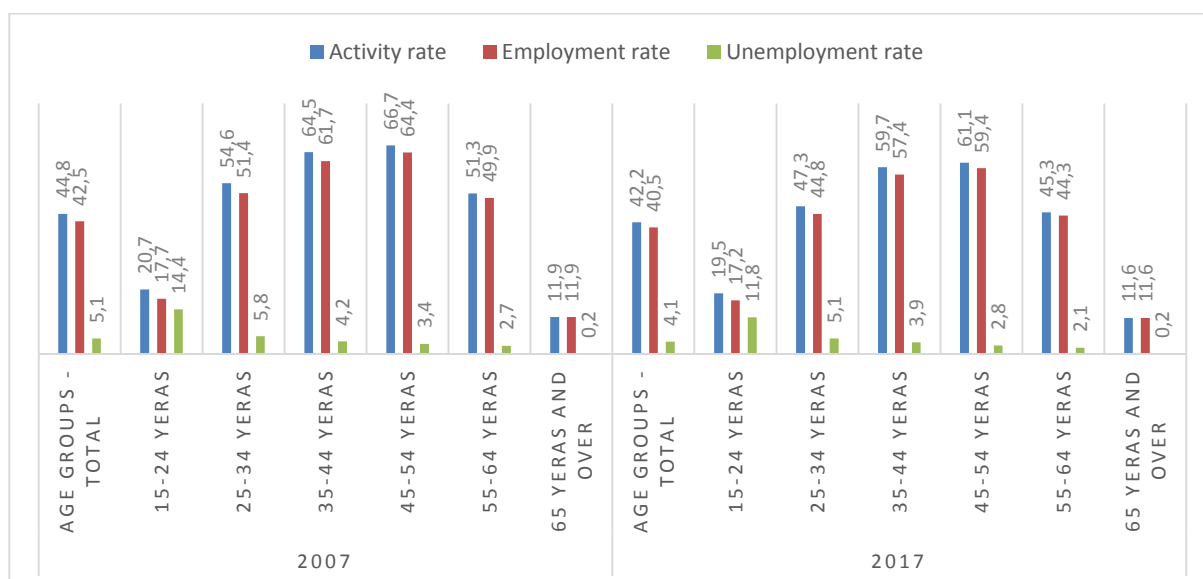
8.5. Labour market

According to the NBS, Moldova’s economic active persons was reported at 1291,1 thousands persons in 2017³⁹. Labor force data is updated yearly, averaging 1335,5 persons from 1996 to 2016. The data reached an all-time high of 1,686 thousand persons in 1996 and a record low of 1214,5 persons in 2012⁴⁰. The economic activity rate of population aged 15 years and over has registered 42,2% in 2017, being higher in case of men (45,3%), compare with women (39,4%).

In 2017, in the economic active population the share of men was 50,8%, compare with share of women (49,2%) and share of persons in rural area was 53,7% compare with 46,3% in urban area. Nevertheless, the activity rate was higher in urban area (44,5%) compare with rural area (40,9%). The activity rate for the persons with disabilities have register 19,7%.

During the last 10 years a decline in the main indicators that characterize the labor market was registered. Thus, in 2017, the total activity rate was 42,2%, the employment rate per total is 40,5% and the unemployment rate represents 4,1% compared to 2007, when these indicators were respectively: 44,8%, 42,5% and 5,1%.

Figure 10. Activity, employment and unemployment rates, %



Source: Elaborated by the authors based on the data published by NBS (www.statistica.md)

³⁹ www.statistica.md

⁴⁰ <https://www.ceicdata.com/en/moldova/labour-force-employment-and-unemployment-annual/md-labour-force>

Low unemployment rate registered in the Republic of Moldova it is caused by the fact that large part of the active population without a job does not apply to the local labor offices to register as unemployed.

Increase in the quality of the labor force it is registered. The number of persons with higher education constituted 532 thousand in 2017 constituted, which is 2,1 times higher compare to 2000. The number of persons having primary education or no education with about 65% in 2017 compare with 2000 and constituted 114.3 thousand people.

Table 12. Population of 15 and over, distribution according to the economic status, education and area, thousand persons

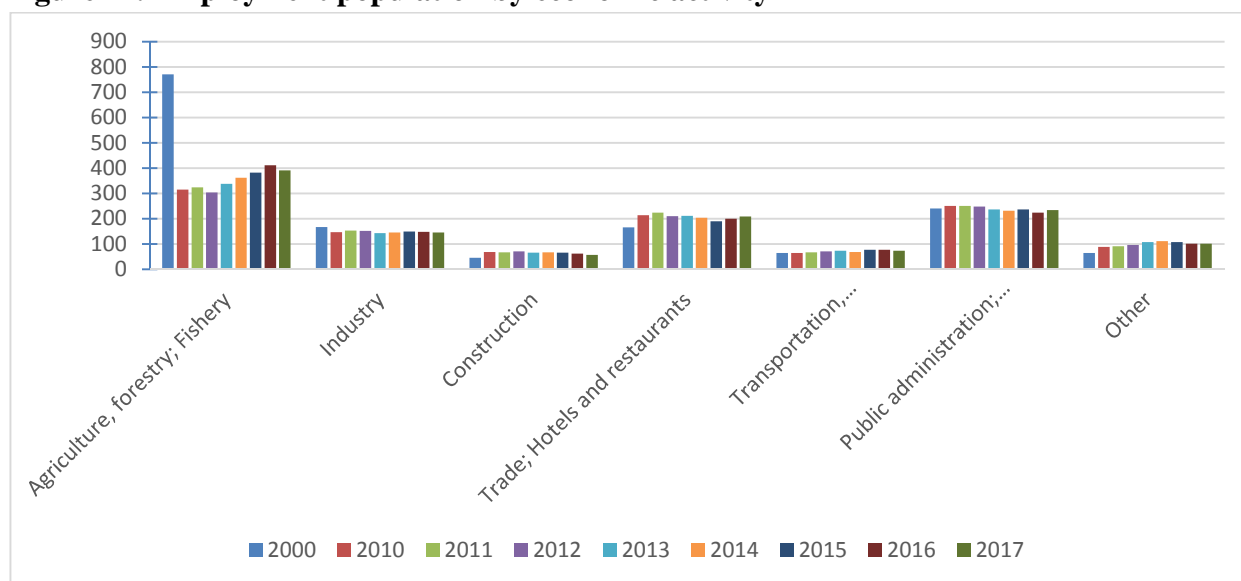
		2000			2017		
		Whole country	Urban	Rural	Whole country	Whole country	Whole country
Higher	Total	255,6	197	58,6	532	394,2	137,8
	Active	194,8	146,9	47,9	309	236,9	72,1
	..Employed	180,8	134,1	46,7	297,7	227,3	70,4
	..Unemployed	14	12,8	1,2	11,3	9,5	1,7
	Inactive	60,8	50,1	10,7	223	157,4	65,6
Secondary specialized	Total	336,6	215,6	121	365,6	199,7	165,9
	Active	239,6	148,4	91,2	165,9	88,3	77,6
	..Employed	216,8	128,6	88,2	159,8	83,9	75,9
	..Unemployed	22,8	19,8	3	6,1	4,4	1,7
	Inactive	97	67,2	29,8	199,7	111,4	88,3
Secondary professional	Total	589,5	283,8	305,7	596,1	238,2	358
	Active	435,3	199,9	235,4	289,8	116,5	173,2
	..Employed	391	164,8	226,2	276,1	109,3	166,9
	..Unemployed	44,3	35,1	9,2	13,6	7,3	6,4
	Inactive	154,2	84	70,3	306,4	121,7	184,7
Secondary school	Total	639,2	254,3	384,8	628,6	261,8	366,8
	Active	398,3	132,5	265,8	244,3	92,8	151,6
	..Employed	360,4	104,6	255,9	234,5	85,8	148,7
	..Unemployed	37,8	27,9	9,9	9,8	6,9	2,9
	Inactive	240,9	121,8	119,1	384,3	169,1	215,2
Gymnasium	Total	608,6	165,4	443,3	747,2	186,7	560,4

	Active	298,1	47	251,1	244,7	48,7	195,9
	..Employed	277,7	35,6	242,1	234,1	43,5	190,6
	..Unemployed	20,4	11,4	8,9	10,6	5,3	5,3
	Inactive	310,6	118,4	192,2	502,5	138	364,5
Primary education or no-education	Total	334,5	73	261,5	114,3	31,1	83,2
	Active	88,6	11,3	77,3	5,4	0,3	5,1
	..Employed	87,9	10,8	77,1	5,2	0,3	4,9
	..Unemployed	0,7	0,5	0,2	0,2	-	0,2
	Inactive	245,9	61,7	184,2	108,8	30,8	78,1

Source: NBS

Analysis of level of training influence on unemployment reveals that most affected persons are those with higher education – 11,7 thousand or 24,6% of total unemployed in 2014. However, unemployment of people with higher education is usually short-term (less than 3 months). Most unemployed with higher education belong to age group 25-34.

Figure 11. Employment population by economic activity



Source: Elaborated by the authors based on the data published by NBS

In 2017, in the agricultural sector 32,3% of employed people worked. In the period 2013-2016, this share has increased significantly, by 5 pp., especially due to the decrease of the share of employed population in the services sector, public administration, education and healthcare. Of these, 46% (or 14,9% of total active population) are persons involved in production of the agriculture products exclusively for own consumption.

The structure of the active population, according to the professional status reveals that the share of the employees accounted for 65.2% of the total. The vast majority of employees (91.1%) were employed for undefined term.

The rate of undeclared work 6.2%, decreasing compared to the previous year (7.1% in 2016). 14.9% of all employed in the economy worked in the informal sector, and 34.7% had an informal job.

7.0% of employees receive “envelope” wages: 5.8% receive all salary and 1,2% part of the salary. The highest rates of undeclared “envelope” wages are estimated in agriculture (42.0%), trade (19.3%) and industry (8.6%).

According to NBS data, 12.8% of employed persons would like to change their situation in the main job. The main reason was the unsatisfactory income level: more than a half (87%) would wish a higher per hour remuneration, while 13% would wish to work more hours for a higher income.

8.6. Education system

Moldova is one of the countries with higher literacy rate, estimated at 99,1%⁴¹. Educational structure between people living in rural and urban areas differ significantly. 45,3% of urban population have completed higher or secondary specialized education compare to 18,2% of rural population. While nonsignificant difference it is registered in case of secondary professional education (18,2% in urban area and 21,4% in rural area), the share of persons that have completed secondary education and gymnasium is almost double higher in rural area (44,6%) than in urban area (23,5%). Almost 5% of the rural population have completed primary education or have no education, while in urban area the same share of this category of population is 2,5%.

The difficult economic transition and demographic decline affect the situation in the education system. Education is considered as a determinant of quality of life and opportunities. The education sector in the country is transitioning from a centralized, traditional system to a student-centered one. Although the investments in education are important, competitiveness of the economy is still low.

The demographic decline due to falling birth rates, maintained high mortality and massive emigration of young population leads to continuous reduction of the population engaged in the educational process.

Moldova is in the list of countries with highest share of expenditure in education. In 2016, the share of the public expenditure on education in the GDP was 6,7%, registering a downward trend compare to previous periods (8,67 in the period 2010 - 2012)⁴².

The education system in Moldova consists of early education (preschool), primary, secondary and higher education. The preschool education is for children up to the age of seven years. The primary education is between grades one through four and typically involves children between

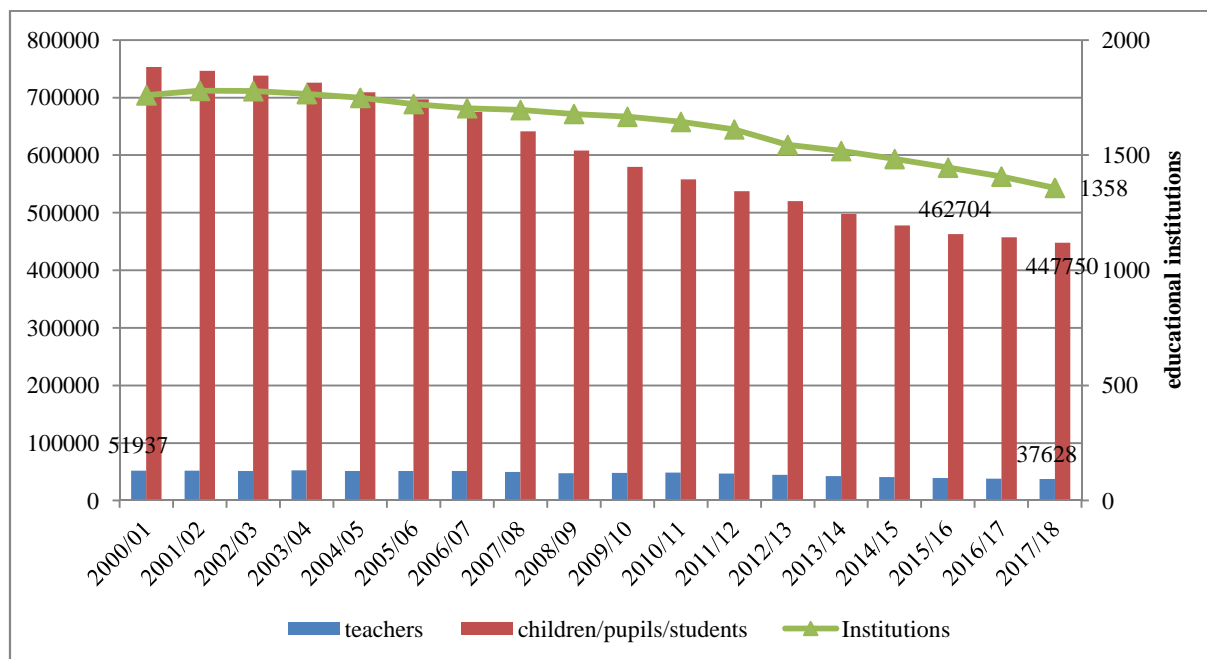
⁴¹ <https://data.worldbank.org/indicator/SE.ADT.LITR.ZS>

⁴² <https://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS?view=chart>

the ages of 8-12. The secondary education consists of two tracks: general and vocational. General secondary education from grades 5-9 is called the gymnasium, and grades 10-12 is called “lyceum”. The vocational track is covered by the secondary vocational schools and postsecondary vocational schools (colleges). Higher education consists university education.

In 2017, 1358 educational institutions were active in the Republic of Moldova, with a total number of 448 thousands children/pupils/students. Compared to the year 2000, the total number of educational institutions decreased by 23%. The number of teachers constituted 37628 persons and decreased by 27% compared to 2000.

Figure 12. The education system of Moldova



Source: Elaborated by the authors based on the data of NBS

In the year 2017/2018 1458 early education institutions were active, including 833 nursery schools, 529 kindergartens, 73 schools-kindergartens, 21 community centers and 2 nurseries. In 2017, the network of early education was revised, their number being correlated with the population in the 0-6 age group, 10 early education institutions ceased activity, all of them being rural. In the same time 5 new early education institutions were established, 5 of them in rural area. The key role in early education sector it is played by the public system (99,8% of all children).

There are still discrepancies in the extent of early education in urban and rural areas, of 13,3% higher for the children of 1-2 years and 35,9% higher for children of 3-6 years in case of urban area.

In the year 2017/18 primary and secondary general education was carried out in 1243 institutions, including 102 primary schools, 775 gymnasies, 352 high schools and 14 schools for children with intellectual or physical deficiencies. Compared to the year 2012/2013, the number of primary and secondary general education institutions decreased by 153 units.

Table 13. The dynamic of the number of schools and students

	2000/01			2012/13			2017/18		
	Whole country	Urban	Rural	Whole country	Urban	Rural	Whole country	Urban	Rural
Schools	1573	405	1168	1396	345	1051	1243	318	925
Students	631263	264245	367018	367251	159037	208214	335621	165689	169932
Average No students/school	401	652	314	263	461	198	270	521	184

Sources: Elaborated by the authors based on data of NBS.

Decreased of the number of children is the main factor that it is determining the education policies. On the one hand, reduction of the number of schools it is required in order ensure the efficiency of the public expenditures and to increase the quality of the education process, on the other hand, this should not affect the access to the education.

While the share of the graduates of the gymnasium cycle in the rural area was 59,3% of total, the share of graduates of liceal cycle was 80,7%, that is based also by the involvement of the pupils residents or original from the rural area.

Table 14. Educational institutions by Indicators, Types of institution, Years and Forms of ownership

		2000/01	2014/15	2017/18
		Total	Total	Total
Educational institutions	Secondary vocational schools	80	61	45
	Postsecondary vocational schools	60	45	41
	Higher educational institutions	47	31	29
Pedagogical staff	Secondary vocational schools	2330	2096	1840
	Postsecondary vocational schools	1941	2417	2361
	Higher educational institutions	5286	5372	4839

Students	Secondary vocational schools	22804	17508	16948
	Postsecondary vocational schools	19897	29810	29638
	Higher educational institutions	79082	89529	65543

Source: NBS.

Reduction of the number of vocational institutions and higher educational institutions it is caused by the reduction of the number of private institutions. Important decreasing of the number of students it is registres in case of higher educational institutions and secondary vocational ones. Increase of the number of students in case of postsecondary vocational schools (college) it is based on redirection of the students from the secondary schools and secondary vocational schools.

The implemented reform of the implementation of the Dual vocational education and training, with involvement of the interested private companies, it is aimed to increase the cost efficiency of the system and adjust it to the labour market requirments.

The higer education it is implemented in three cycles: bachelor, master and doctoral studies. The public higher education system of the Republic of Moldova is funded primarily from state budget allocations. The funding of private higher education institutions is carried out from the sources of founders or study fees. However, the higher education institutions can also benefit from other funding sources: revenues obtained from provision of educational services for a fee or research and technological transfer activities; revenues obtained from commercialisation of goods manufactured in the process of education or from the lease of goods (spaces, equipment, lands); grants, sponsorship and donations.

The state guarantees the funding of higher education for its entire duration, according to the admission plan for each specialty (state order), approved yearly by the Government. The total budget allocated for each specialty is calculated depending on the number of registered students and graduates by specialty.

The Government of Moldova identifies education as a national priority and recognizes the role of education in building a knowledge-based society. “Education: relevant for career” is one of the main developing priorities of the National Development Strategy „Moldova 2020”: SEVEN solutions for economic growth and poverty reduction (approved by Law nr. 166 of July 11th, 2012).

The national education sector is regulated by the Education Code, in force since 23 November 2014, which sets the legal framework of legal relations concerning planning, organisation, functioning and development of the education system in the Republic of Moldova.

Education Development Strategy for 2014-2020 “Education 2020” aporved by the GD No 944 of 14.11.2014 is the main policy document in the area of education. It sets the medium-term tasks and objectives for education development and defines the priority development, directions and orientations of the education system in the Republic of Moldova.

The country's sector plan, encompasses seven strategic objectives:

- To enhance life-long access to and participation in education and professional development;
- To ensure the relevance of studies for life, active citizenship and career success;
- To integrate efficiently information technologies in education;
- To develop, support and motivate academic staff so as to ensure quality education;
- To design and institutionalise an efficient quality evaluation, monitoring and assurance in education;
- To improve resource management in education;
- To ensure social cohesion so as to offer quality education.

8.7. Land use and ownership

The territory of Republic of Moldova can be divided into three agro-ecological zones:

- the North part of the country is a hilly zone with forests, step and meadow vegetation. It has the most fertile soil with a high water holding capacity,
- the Central part of the country is hilly and has deep valleys, less fertile soil, and is best for perennial crops like orchards and vineyards
- the Southern region has steppe to meadow terrain with both highly fertile and not as fertile types of soils. Due to higher temperatures and lower rainfall, this latter zone has only marginal production in the absence of irrigation.

According to the article 2 of the Land Code of the Republic of Moldova No. 828 from 25.12.1991, all lands, irrespective of their assignment and type of property on them, constitute land fund of the Republic of Moldova. Depending on its main zoning, the Land Fund comprises the following land categories: agricultural land; land within villages, cities, and municipalities; land for industrial, transportation, telecommunication, and other specific designations; land designated for environment and health protection, entertainment, land with historic and cultural value, land of suburban areas and green belts; the forestry fund land; the water fund land and the reserve fund land.⁴³

The land fund constituted 3384,7 thousands hectares in 2018. Structure of land fund has developed according to the specific of the environment, population number and economic functions.

⁴³ Land Code of the Republic of Moldova No. 828 from 25.12.1991

Table 15. Distribution of the land resources of the Republic of Moldova in 2018⁴⁴:

	<i>thousand hectares</i>									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<i>Lands – total</i>	3384,6	3384,6	3384,6	3384,6	3384,6	3384,6	3384,6	3384,6	3384,6	3384,7
<i>Lands for agricultural purpose</i>	1984,6	2007,6	2008,7	2008,9	2014,5	2024,2	2026,5	2028,3	2039,8	2041,6
<i>Lands that belong to localities</i>	311,4	311,6	312,1	312,2	312,8	313,1	314,8	314,3	313,6	314,0
<i>Surplus fund¹</i>	497,0	469,9	466,7	466,4	461,2	452,4	449,0	446,3	436,2	432,5
<i>Lands for industry, transport, communications and other special purposes</i>	58,5	58,7	58,9	58,9	59,6	59,4	58,7	58,8	58,9	59,3
<i>Lands of the forestry fund and for nature protection purposes</i>	447,1	450,0	450,9	450,6	450,4	450,4	450,5	451,7	451,0	451,9
<i>Lands of water funds</i>	86,0	86,8	87,3	87,6	86,1	85,1	85,1	85,2	85,1	85,4

Lands in the Republic of Moldova are in public and private property. Both citizens of the Republic of Moldova and foreign investors can be landholders with the right of land ownership. Nevertheless, foreign citizens and companies (not registered in Moldova) are not allowed to purchase agricultural land in Moldova.

Agricultural land cover Arable land and permanent crops cover 2,04 million ha and represent 60,3% of total country area. The zonal particularities of the soil are represented by three types of soil: chernozem (70% of total), brown and grey soils.

As other former Soviet republics, Moldova conducted a land reform which included the transfer of land from state to private ownership, followed by allocation of individual titles to land and property (or real estate), and finally, registration of those individual private rights. Based on the reform National Land Program, a dramatic increase in private land ownership, which rose from practically zero in 1989 to 87,7% in 2018 of all agricultural land, and more than one million citizens were entitled with ownership rights on land.

⁴⁴ GD No 559 from 20.06.2018 on approval of the land resources of the Republic of Moldova, as of 1st January 2018.

The progress with land privatization has not been fully matched by progress with individualization of agriculture, important part of the agriculture land being controlled by large scale corporate farms.

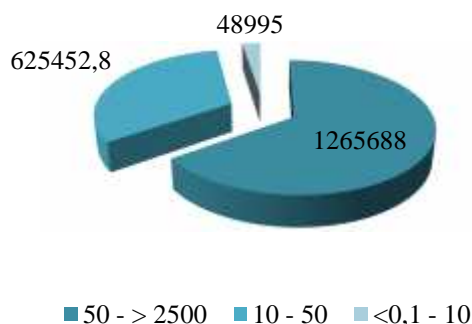
Excessive fragmentation of agricultural land underlies a number of problems for the development of agriculture and consolidation of the individualization of the agriculture. Land fragmentation includes two dimensions, the farm size on the one hand, and fragmentation of the small holdings into several (even smaller) parcels.

The division of land into small plots did not allow intensification of the agricultural production and highlighting of the scale effect in the use of agricultural technologies, supply of inputs, processing, transportation, storage and marketing of agricultural products.

Based on the data of GD No 559 from 20.06.2018 on approval of the land resources of the Republic of Moldova, as of 1st January 2018, 52.2% of the agricultural lands located in the field are cultivated by cooperate farms or farms that cultivate more than 50 ha or of land. Land purchasing and leasing are two main methods that have contributed to the land consolidation.

According to the art. 10 of the Law No 198 from 15.05.2003 on agriculture land leasing, only contracts signed for a period of at least five years are registered at the local offices of the Agency for land relations and cadastre of the Republic of Moldova⁴⁵. In this regard, it should be taken in to consideration that based on the data of the National Agricultural Census (2011)⁴⁶, about two third of the farms were cultivated by these categories of producers.

Figure 13. Agricultural used area in the Republic of Moldova, hectares



Source: General Agriculture Census in the Republic of Moldova, 2011

Moldovan agricultural sector is composed of two major sub-sectors: corporate sector comprising large companies and the individual sector that includes peasant farms and household land in private property. Small farms, especially subsistence and semi-subsistence farms generate a limited surplus of high value-added crops (fruits, nuts, grapes, vegetables, potatoes) that are mostly sold in open air agricultural markets. At the same time, large scale agricultural companies are specialized in the production of low value-added crops (such as cereals, oilseeds, sugar beet), and employ limited labor force due to the high level of mechanized agricultural operations. This specialization has been driven by a number of factors such as the relatively low production cost

⁴⁵ Law No 198 from 15.05.2003 on agriculture land leasing

⁴⁶

of these crops, the availability of agricultural machinery allowing the rapid cultivation on large areas, relatively simple and cheap post-harvest facilities, as well as assured markets for these commodities.

Table 16. Agricultural land use in the Republic of Moldova, thous. ha, 1990 – 2017

	1990	2004	2007	2010	2012	2013	2014	2015	2016	2017
Land area. total	3376	3384.6	3384.6	3384.6	3384.6	3384.6	3384.6	3384.6	3384.6	3384.6
Of which:										
agricultural land	2566.7	2528.3	2511.8	2501.1	2498.0	2497.8	2500.1	2499.7	2499.6	2499.8
Of which:										
arable land	1739.4	1854.4	1820.1	1816.7	1810.5	1814.1	1816.1	1817.4	1822.9	1827.3
land under permanent crops	470.6	298	301.8	301	298.7	295.3	295.3	291.7	288.9	288.8
Of which:										
orchards	234	134.8	131.5	132.5	134.5	135.1	135.8	134.5	132.5	133.5
vineyards	201	153	158.6	153.5	147.3	142.6	141.2	137.5	136.2	135.3
Pastures	351.3	374.1	361.9	352.1	350.3	348.9	348.0	346.4	345.0	342.8
Meadows	4.7	2.8	2.3	2.2	2.0	2.1	2.1	2.2	2.1	2.1

Source: National Bureau of Statistics data

9. Performance of the agricultural, forestry and food sectors in Moldova

9.1. Competitiveness of agriculture and food processing

The OECD's definition of competitiveness refers to a country's ability to sell goods (under free and fair conditions) in global markets "while simultaneously maintaining and expanding the real incomes of its people over the long term"⁴⁷. National competitiveness can be ensured through the export of products with high added value, and respectively contribute to the increase of the profits and of wages. Complementary to the price and revenue, qualitative parameters should be considered, allowing exported products to maintain their market even under the conditions of a strong national currency.

Agriculture is one of the key driving forces in shaping Moldovan landscape, nature and culture over centuries. Favorable climate and high quality soils historically have determined Moldova's agricultural specialization, particularly in the production of high value crops like fruits and vegetables.

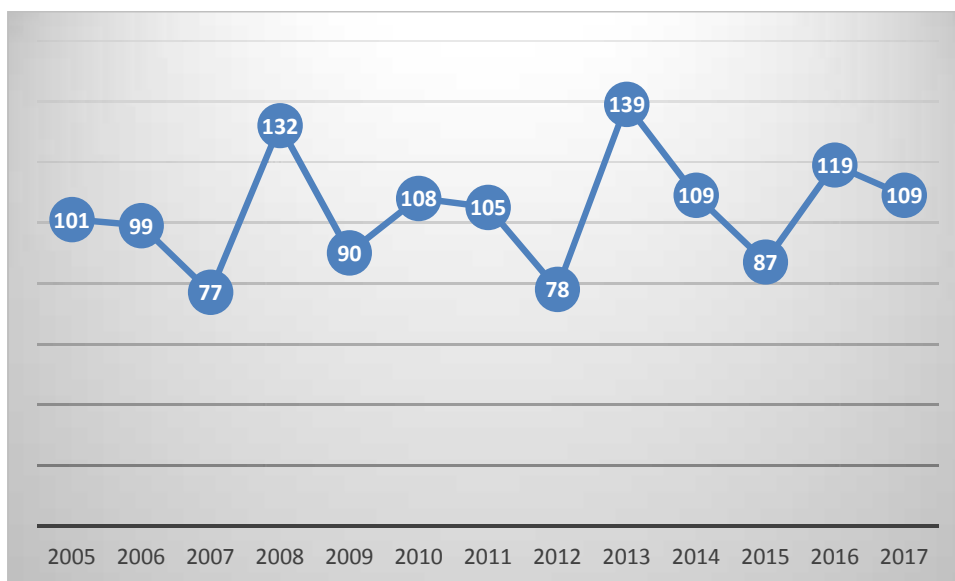
However, the status of the agricultural sector has changed dramatically over the last two decades along with the disruption of production and distribution networks. Land areas used for high value crops have been reduced by two times.

The shift in production has also been accompanied by significant reductions in land productivity. This situation is directly related to lack of investments, capital and credit availability to the agricultural sector, factors that have resulted in farmers applying low yield technologies and drastically reducing their use of agricultural inputs, especially such as fertilizer and other agricultural chemicals.

Recent trends of the gross agricultural production in Republic of Moldova are characterized by high fluctuations of the gross agricultural product, depending first of all to changing climate and weather conditions.

⁴⁷ Thomas Farole, José Guilherme Reis and Swarnim Wagle, Analyzing trade competitiveness: A diagnostics approach, The World Bank Poverty Reduction and Economic Management Network International Trade Department, 2010

Figure 14. Index of the Global Agricultural Product 2005-2017 (previous year=100)



Source: elaborated by authors based on data of NBS

Plant growing has the dominant position in the structure of agricultural production; its share in the total agricultural production is about two-thirds (72,2% in 2017). The share of animal production has declined in the 90s as a reaction to the appreciation of energy resources and liberalization of the market.

A poorly diversified structure of sown areas has been formed in Moldova in recent years. Cereals and industrial crops occupy about 90% of the arable land. The dominance of maize and sunflower in the structure of sown area is present almost throughout the country. Production of fodder crops on arable lands has decreased, which leads to the disruption of crop rotation patterns, deterioration of livestock forage, increasing the pressure on the lands to a level that leads to their degradation.

Table 17. Crop production in the Republic of Moldova, thous. tons, 2007 - 2017

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Cereals and leguminous cultures, total	902	3170	2177	2421	2498	1206	2681	2922	2206	2993	3355
- wheat	407	1286	737	744	795	495	1009	1102	922	1293	1251
- barley	115	353	261	208	194	118	219	221	179	256	249
- oat	1	4	1	3	3	2	4	3	2	3	4
- legumin	14	37	28	36	32	16	23	31	23	39	69

ous-grains											
- corn for grains	363	1479	1141	1420	1468	572	1419	1556	1077	1392	1773
- other cereals	2	10	8	10	6	3	8	10	4	10	10
Sugar beet	612	961	337	838	589	587	1009	1356	538	665	876
Sunflower	156	372	284	382	427	296	505	548	485	677	804
Soy	40	58	49	111	79	48	66	109	48	42	47
Tobacco	4	4	4	8	5	3	2	1	1	1	1
Rapeseed for grains	34	95	69	37	53	6	43	68	16	43	71
Potatoes	199	271	261	280	351	182	240	268	158	214	197
Vegetables - total	222	376	308	341	362	231	292	327	246	293	310
Field vegetables	216	369	297	331	351	226	285	316	235	281	297
...cabbage	27	61	33	36	35	23	29	29	17	24	24
...cucumbers	16	23	23	21	26	21	23	26	17	17	22
...tomatoes	47	84	84	57	83	49	51	57	54	55	62
...dry onion	25	49	41	56	58	37	51	59	38	58	54
...other vegetables	70	97	117	161	148	62	81	145	73	127	135
.....pumpkins	17	32	27	41	34	20	30	42	32	39	40
.....bell peppers	17	16	20	16	19	12	14	13	9	10	11
Melons and gourds	41	70	102	103	84	52	55	47	55	67	56
Forage roots	14	25	20	31	23	11	22	26	15	21	1
Maize for silage and green fodder	86	89	77	94	80	68	126	103	62	113	87

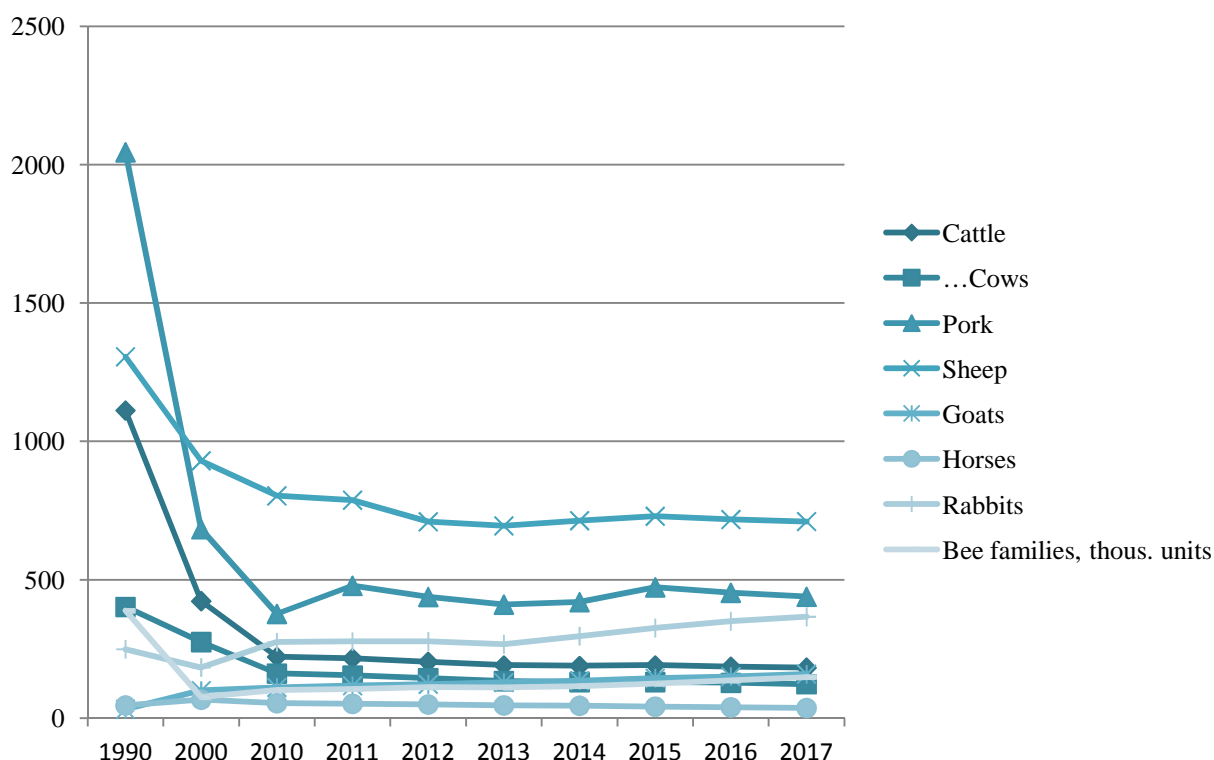
Source: National Bureau of Statistics database

Livestock sector suffered the greatest losses during the economic crisis of 90s. The vast majority of livestock has been moved during the privatization process from large collective farms to small

peasant farms, where the practiced extensive cultivation technology of livestock and poultry has led to a sharp decline in the production volumes. The recovery of livestock sector takes place with slower pace as compared to plant growing.

Thus, in terms of production, there can be observed a steady decrease during the period of 1990 - 2017. Pork, being the largest sub-sector in the livestock production, decreased in 2015 and amounted to 32.7% of the 1990 value. Cattle had the biggest gap compared to 1990, accounting for only 7% in 2017 compared to 1990. During 2010 – 2017 there is observed an increase of pork production – 77.8% thous. tons compared to 72.5 thous. tons in 2010 and poultry production – 106.1 thous. tons compared to 54.7 thous. tons regarding the same period.

Figure 15. The number of livestock at January 1st, 1990 – 2017, thousand heads



Source: National Bureau of Statistics database

Internal market consumption

At the national level Republic of Moldova is food secure. It produces its main food products, exports its surplus food, and imports what it needs to meet its food requirements. Food security indicators prove that in the Republic of Moldova the level of per capita food consumption have stabilized during the last years. However there are some evident changes in consumption patterns. Thus in the period of 2006-2016 the consumption of cereals and bread products has been steadily reduced by about 31%. Consumption of potatoes and vegetables has been reduce even more significantly with about 47% and 36% respectively. In the same time consumption of grapes increased almost twice, while consumption of meat increased with about 21%.

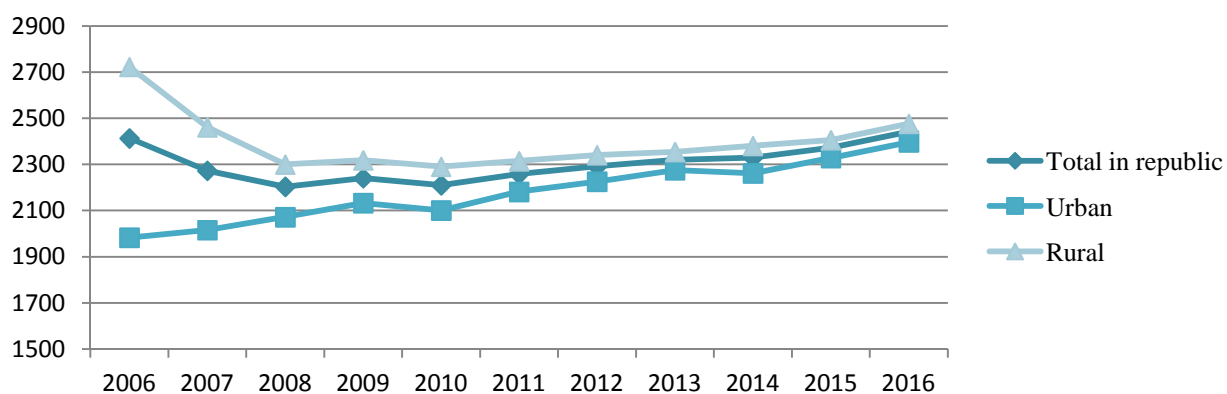
Table 18. Human consumption per capita and its variation 2016 vs. 2006, 2006-2016, kg, %

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2015 / 2016. %
Cereals	173.5	146.7	160	152	152.4	148.6	141.0	137.4	137.7	131.4	120.1	69.2
Potatoes	87.6	58.8	58.0	59.3	56.7	59.8	52.3	52.7	58.5	53.5	53.3	60.8
Vegetables	131.9	75.8	99.1	106.3	109.6	114.6	78.2	85.9	101.8	92.4	74.7	56.6
Fruits	35.8	24.1	36.7	30.5	34.3	34.6	34.3	35.1	56.7	56.6	65.9	184.1
Grapes	3.0	3.8	4.4	4.1	6.4	8.1	6.4	6.4	6.4	5.8	6.2	206.7
Meat	38.3	36.0	32.3	29.5	35.6	37.9	39.7	46.2	52.4	42.5	46.3	120.9
Eggs	167.5	177.1	141.1	161.7	184.9	189.6	155.7	165.0	169.3	159.5	103.5	61.8
Milk and milk products	177.3	175.4	155.0	168.9	175.3	170.2	170.8	166.0	158.4	159.2	90.5	51

Source: National Bureau of Statistics of the Republic of Moldova

Another aspect of the consumption patterns is reflected by the level of daily calorie intake that shows an increasing trend since 2008 till nowadays, after a decline during the period of 2006-2007. There are also some other interesting trends that show an approximation of daily calorie intakes in rural and urban areas.

Figure 16. Average calorie intake in the Republic of Moldova in rural and urban areas, calories / day / person, 2006-2016



Source: National Bureau of Statistics of the Republic of Moldova

The level of food self-sufficiency of the country is rather high, however in several years it decreases to a critical degree due to severe droughts. Thus, it can be mentioned that self-sufficiency rate has positive values for cereals, sunflower, fruits, grapes and eggs. On the other hand, it has lower values for potatoes, vegetables, meat and milk products.

Table 19. Self-sufficiency rate (%), 2006-2016

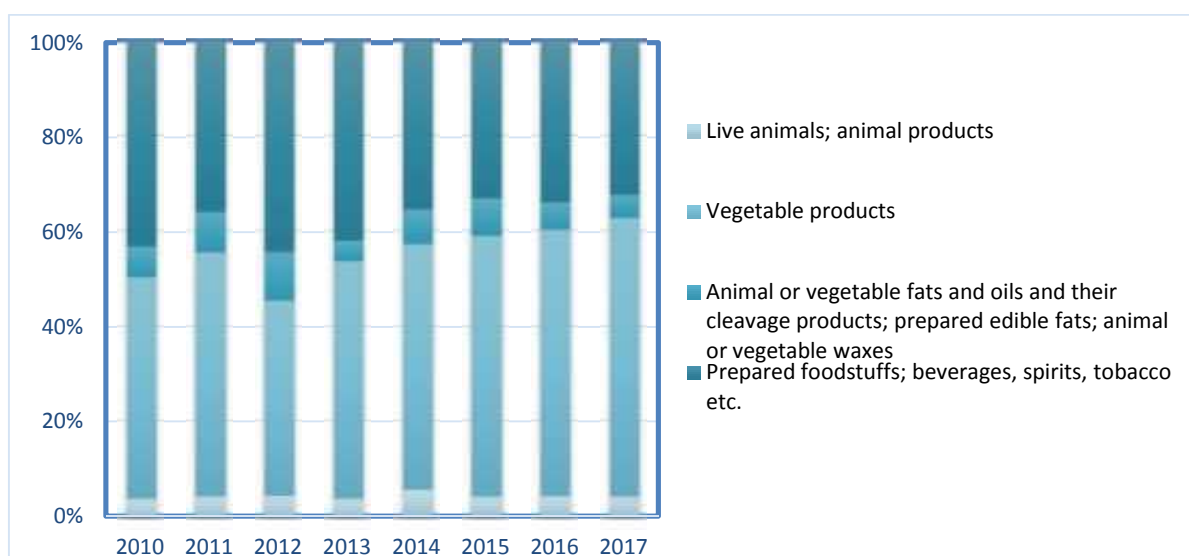
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Cereals	99.2	70.6	143.4	105.0	117.8	115.6	60.8	150.3	173.9	120.0	147.2
Sunflower	145.0	65.5	178.0	121.4	156.6	195.9	143.8	326.3	237.4	217.9	368.8
Potatoes	91.7	67.0	93.4	89.4	100.4	116.2	66.6	89.8	95.8	59.4	84.8
Vegetables	103.5	84.8	110.1	98.6	104.2	100.5	93.3	102.4	94.7	84.9	99.8
Fruits	195.8	227.0	222.2	213.9	207.7	237.7	245.2	264.2	205.0	196.2	205.6
Grapes	102.4	106.8	102.6	104.3	104.6	102.8	103.9	103.7	106.4	105.8	106
Meat	67.8	84.5	67.8	86.7	86.0	86.1	81.5	69.8	65.4	86.1	83.5
Eggs	112.7	101.6	100.0	100.3	98.8	95.4	102.2	98.0	98.8	102.9	103.5
Milk and milk products	97.5	95.0	97.1	95.0	94.1	92.0	84.7	86.8	90.3	89.6	90.5

Source: National Bureau of Statistics of the Republic of Moldova

Export potential of agri-food products

The agri-food trade balance of the Republic of Moldova is positive over the analyzed period determined by the increasing exports of plant production.

Figure 17. Structure of agri-food exports of the Republic of Moldova (%)

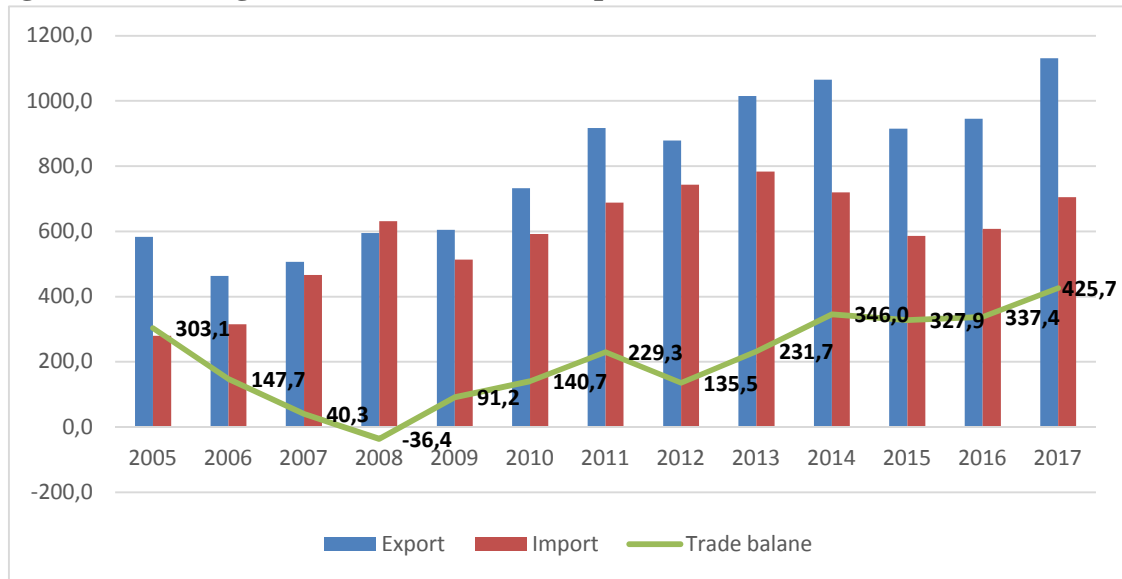


Source: UN Comtrade database

In particular, its share in total exports of agricultural production is almost 60%, in the last years, increasing by almost 2 times in monetary values compared to 2010.

The agri-food export structure is dominated by a few groups of products which reflect a rather primitive structure of the agri-food exports in which prevails wine production and raw material of plant origin such as nuts, grains and oil seeds. The most important export groups of products for Moldova agricultural sector are “Edible fruits and nuts”, “Alcoholic and non-alcoholic beverages”, “Cereals”, “Oil seeds” and “Vegetable oil”.

Figure 18. Total agricultural trade in the Republic of Moldova, 2005-2017, Mil. USD



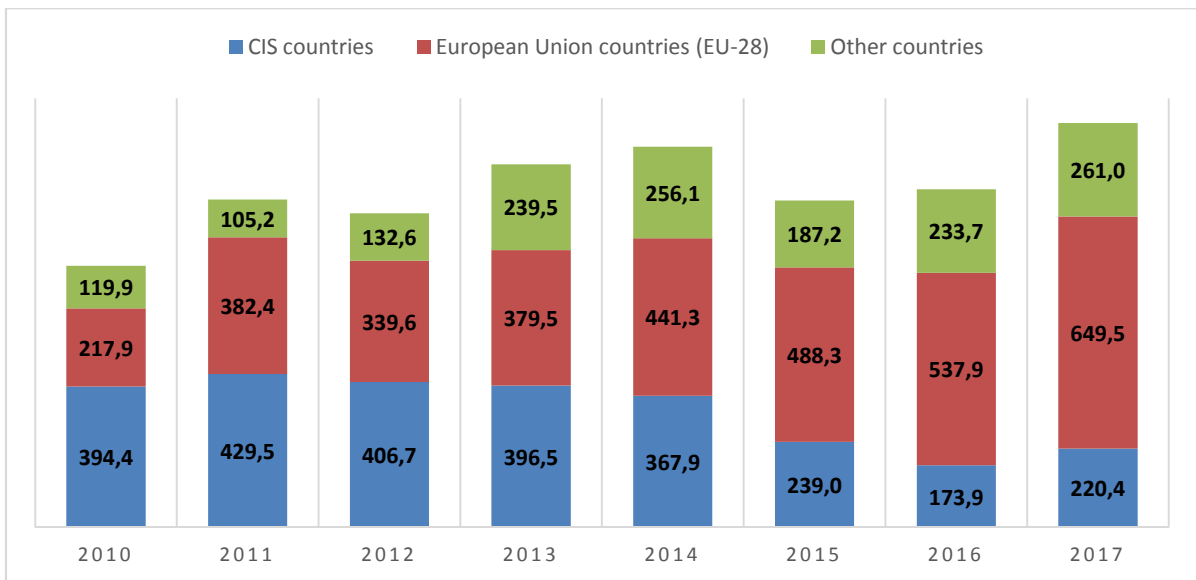
Source: elaborated by authors based on data of NBS

The average annual volume of agri-food exports for the period 2013-2017 amounted to about 1114 million US dollars. A record value of exports was registered in 2017 and amounted about 1131 million USD.

Moldova has signed free trade agreements with 43 countries, among them member states of the Commonwealth of Independent States (CIS), the Central European Free Trade Agreement (CEFTA), European Union (AA/DCFTA) and Turkey. Starting with 2001, Moldova is member of the World Trade Organization.

Despite of established trade regime, the exports to the CIS countries it is affected by the trade barriers to trade imposed by the Russian Federation. Exports to EU, even if registering important increase over the last 7 years, are problematic since Moldovan standards for majority of livestock products are not aligned with EU standards, and Moldova register limited success in EU high added value markets for its horticulture produces. But this situation could evolve in the proximate future if the next steps toward EU approximation will be undertaken by Moldovan Government. In the case of positive changes, some new markets could be opened for Moldovan exports.

Figure 19. Export by regions, 2010-2017, Mil. USD



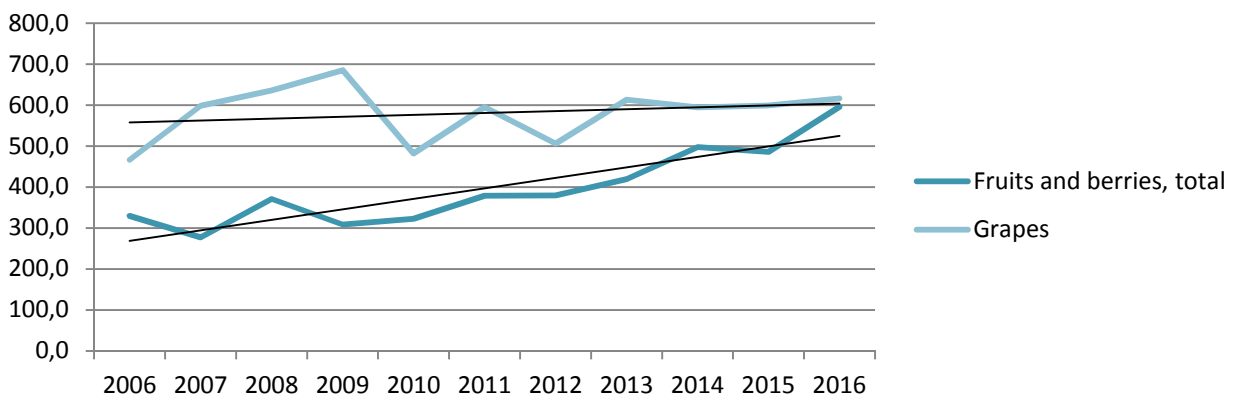
Source: elaborated by authors based on data of NBS

Export geography includes 112 countries in 2017, of which the top five account for cca. 45% of total agri-food exports. These are the Romania, Russian Federation, United Kingdom, Turkey, Italy. The geography of the Moldovan exports register a diversification tendency. The increase of the exports it is ensured mostly by identification and valuation of new markets.

Fruits, berries, grapes and vegetables production and export trends

A steady grow of the production of fruits and grapes it is registered, despite a modest increase in the total area. Thus, production of fruits and berries increased by 1.5 times and grapes-by 28%. To note, that table grapes doubled their production over a decade.

Figure 20. Production of fruits, berries and grapes in the Republic of Moldova (thou. tones), 2006-2016



Source: National Bureau of Statistics database

Also, a significant increase of production is registered by quinces (3 times), apricots (5.6 times), peaches (2.2 times) and berries (5 times).

Table 20. Moldova's grapes, fresh fruits, berries and nuts production volumes (thousand tons), 2006-2016

	Volume. thousand tones											2016 to 2006. %
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	
Total fruits and berries	329	277	371	308	322	378	380	419	497	486	596	181.2
Pomaceous. total	206.9	223.3	260.6	216.9	217.5	278.1	290.5	313.5	376.5	316.0	419	202.5
- Apple	203	218	255	210	208	269	282	307	370	308	412	203.0
- Pear	3.3	4.1	4.3	5.7	7.7	7.4	7.0	4.7	5.0	6.0	4.9	148.5
- Quince	0.8	1.0	1.2	1.6	1.9	1.9	1.7	1.6	1.5	2.3	2.4	300.0
Stone fruit. total	109.4	42.5	94.5	78.5	91.5	84.8	79.3	91.8	102.3	153.8	153	139.9
- Cherry	21.1	20.9	22.6	30.5	18.5	25.9	16.6	9.4	12.1	12.4	7.6	36.0
- Apricot	3.8	0.6	6.6	6.6	4.7	8.5	5.2	9.9	7.2	10.4	21.5	565.8
- Peach	9	7	9	10	15	15	8	17	10	25	20	222.2
- Plum	76	14	56	31	54	35	49	56	73	100	100	131.6
Nuts	11	10	14	10	12	14	9	13	13	11	14	127.3
Berries	2	1	2	3	2	2	1	1	5	5	10	500.0
Grapes	466	598	636	685	482	595	506	613	594	599	616	132.2
of which:												
Table Grapes	45	55	66	74	46	86	70	87	94	85	87	93.3

Source: National Bureau of Statistics database

Increasing of production determined a steady increase of exports. However, if the production increased by 3 times compared to 2006, exports recorded a growth by only 1.6 times. The difference is made up by the increasing of consumption on internal market, as the imports of fruits and grapes cannot be considered as significant.

Vegetables make an exception as their share on internal market tripled over a decade, due to a significant decrease of internal production. The total production of field vegetables in 2006 reached 475.2 thousand tones, whilst in 2016 the total output was 293.3 thousand tones. Reduction in area under vegetables because of lack of irrigation and high production costs, and decreasing average yield per ha is the cause shrinking vegetable production over the 10-year period.

Such fruits like: pears and quinces, cherries, apricots, peaches and plums, as well as walnuts and table grapes make up the above-mentioned growth of exports.

The export of fruits and nuts with EU countries starting with 2014 exceeded exports to CIS countries (with approx. 20%). This is due to the increase of walnuts exports, which are more oriented to EU countries.

Table 21. Moldova's Grapes, Fresh Fruit, Berries and Nuts Export Volumes (thousand tons), 2006-2016 (by different types of fruits)

	Volume of exports. thousand tones											2016 to 2006. %
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	
Total fruits and berries	132.7	139.5	122.3	220.6	239.1	273.5	238.1	294.7	224.2	215.5	253.4	190.9
Total fruits	108.1	89.3	94	176	199.3	228.8	188.6	241.6	156.8	146.8	184.3	170.5
<i>of which:</i>												
Pomaceous. total	87.2	78.5	78.5	151.7	163.9	196.1	148.4	194.9	117.7	98.8	131.8	151.1
- Apple	86.9	78.4	78.3	151.6	162.5	195.8	147.3	194.3	117.5	98.3	131.2	151.0
- Pear and Quince	0.3	0.1	0.2	0.1	1.4	0.3	1.1	0.6	0.2	0.5	0.6	200.0
Stone fruit. total	20.9	10.8	15.5	24.3	35.4	32.7	40.2	46.7	39.1	48	52.5	251.2
- Cherry	3.4	1.7	1.7	4.2	2.4	5.8	5.7	6.8	6.7	13.7	4.4	129.4
- Apricot	0.6	0.2	0.3	1.7	1.6	3.5	1.4	3.4	3.0	2.5	5.8	966.6
- Peach	6.4	3.6	1.8	7.7	12.4	9.0	10.5	8.0	5.2	10.7	6.0	93.7
- Plum	10.5	5.3	11.7	10.7	19.0	14.4	22.6	28.5	24.2	21.1	36.3	345.7
Walnut	9.4	9.8	8.1	11.0	9.8	9.6	15.9	13.2	14.3	15.0	15.8	168.1
Berries	0	0	0	1.2	3.3	2.1	2.4	2.4	2.7	8.3	1.9	
Grapes	15.2	40.4	20.2	32.4	26.7	33.0	31.2	37.5	50.4	45.4	51.4	338.2
<i>of which:</i>												
Table grapes	15.2	40.4	20.2	32.4	26.7	33.0	31.2	37.5	50.4	45.4	51.4	338.2

Source: UN Comtrade database

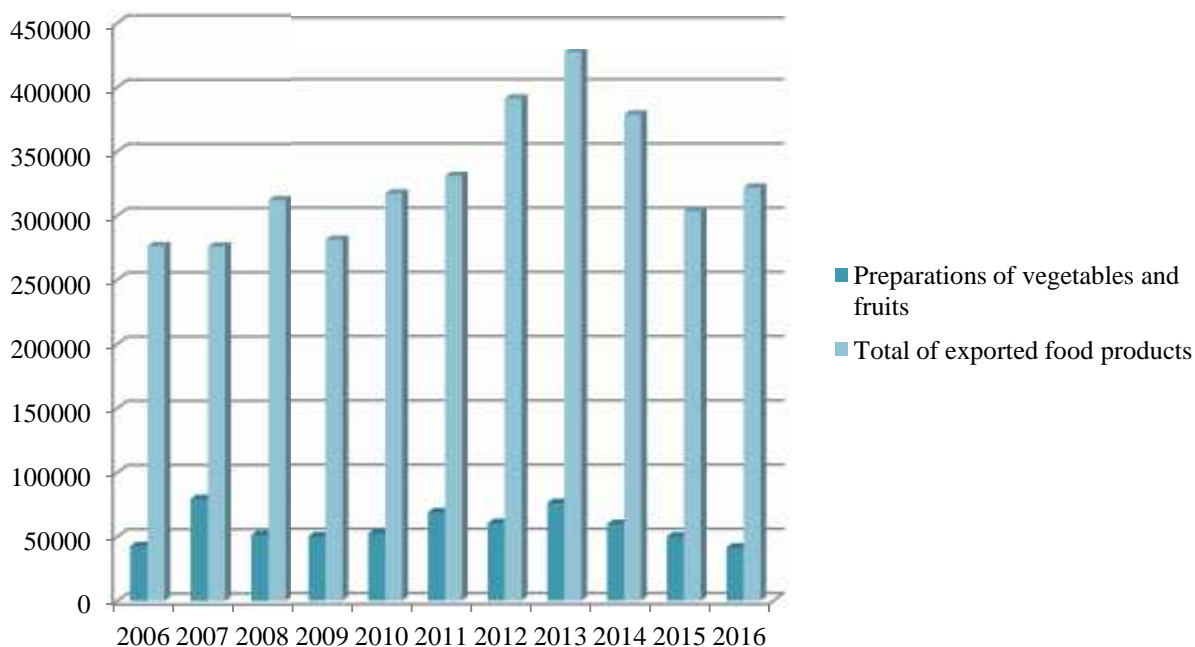
At the same time, in 2015 fruit exports (except nuts) recorded a decrease of 6% compared to 2014 because of the Russian Federation's embargo on the imports of horticultural products.

Canned agri-food products production and export trends

The share of agri-food processed products, although shrank over time, is the second by significance in the structure of the agri-food exports, trailing only plant production. However,

canned products are only a small part of processed agri-food products.⁴⁸ The value of exports of canned products didn't change too much over the last decade.

Figure 21. Total exports of agri-food processed and canned production, thou. USD, 2009-2016.



Source: UN Comtrade database

The maintaining of the value of exports of this category of agri-food processed products is determined by an increase of production of juices, while the production of canned and processed vegetables and fruits decreased over time substantially.

Table 22. Agri-food processed industry production, 2006-2016

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2016 to 2006. %
Fruits and vegetable juices. thou. litres	27721.2	47994.7	32196.2	23214.5	27115.0	29715.3	46055.2	49059.1	49074.9	37606.3	36728.6	132.5
Canned vegetables and fruits. thou. tones	44.4	22.7	41.9	26.5	29.9	26.3	24.3	25.1	30.4	11.9	14.6	32.9
Processed and canned fruits. thou. tones	17.3	16.5	17.8	3.7	8.0	6.8	4.7	10.7	7.6	7.5	7.6	43.9

⁴⁸ Alcoholic beverages, mainly wines have the most important share within the structure of this category of exports

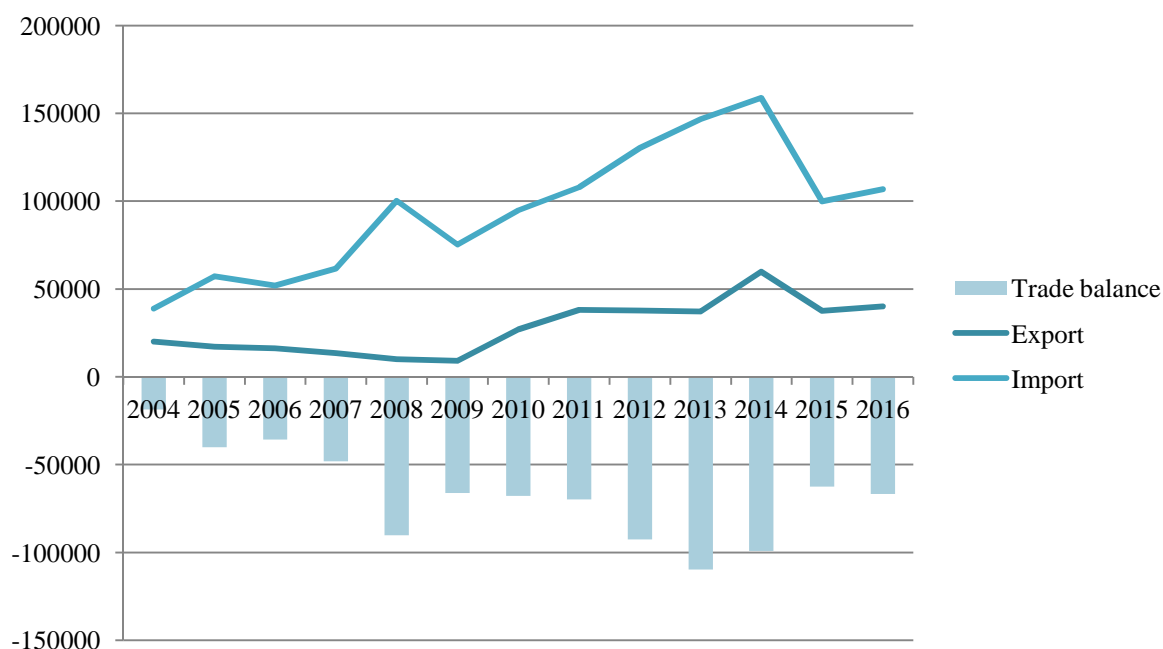
Source: National Bureau of Statistics database

Such development trends of the agri-food canning industry should be regarded as a stagnation, influencing negatively the agri-food trade balance, as imports of such products at least twice exceeds their exports.

Livestock production and export trends

The share of animal products in the structure of the agri-food exports is the smallest and almost insignificant compared to other products, while the trade balance of livestock products is continuously negative during the period of 2004-2016 because of the stagnation in livestock exports and steady increase of livestock imports.

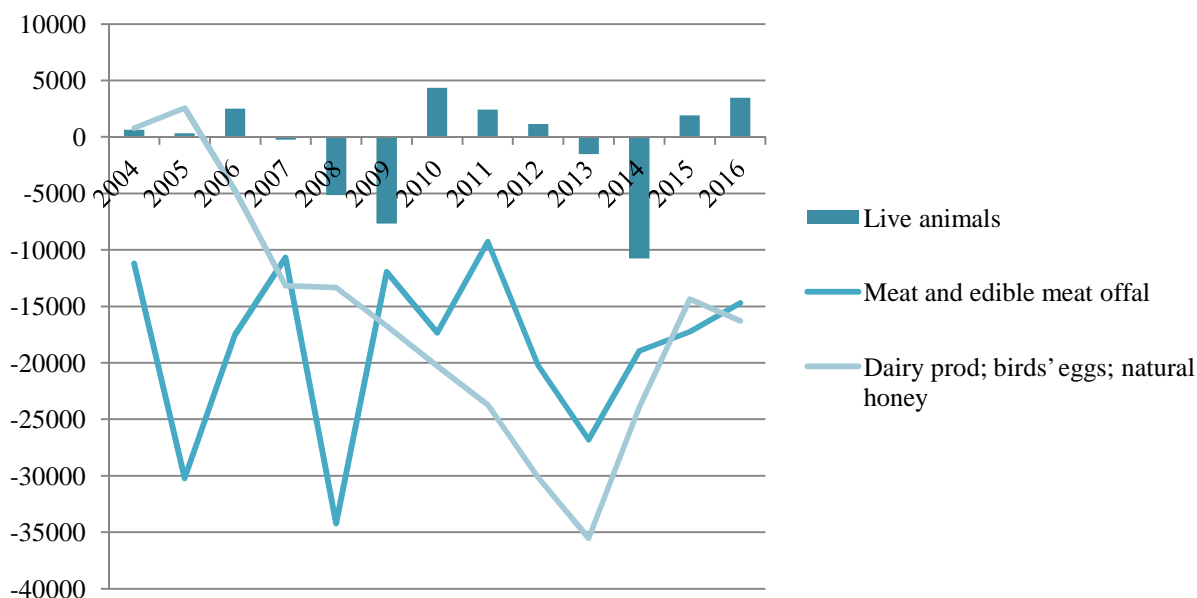
Figure 22. Exports, Imports and trade balance of livestock products (thou. USD), 2004-2016



Source: UN Comtrade database, 2017

Analysis of the trade balance at a 2 digit level shows that its negativity is determined by all categories of products: Republic of Moldova imports much more than exports all variety of animal products.

Figure 23. Trade balance of livestock products by categories (thou. USD), 2004-2016



Source: elaborated by author based on UN Comtrade data analysis

The export of live animals is unstable and is strongly linked with severe droughts that heat periodically our country. As a rule, in a drought year agricultural producers and especially the small-scale ones prefer to slaughter a large part of their animals than to face higher cost for buying the missing forage. The short-term effect of this process is increase of live animal imports and decrease of live animal exports in the next year. In several years such as 2006, 2010 and 2011 export of live animals exceeded the import. However, since 2012 the export/import ratio has a continuously decreasing trend.

The trade with “02 Meat and edible meat offal” shows some more stable trends. Exports are slowly but continuously growing, while imports decreased more than three times during the period 2005-2007 and since 2008 until 2016 were relatively stable.

The most negative trend is recorded to dairy products. Imports of these products are growing continuously since 2008 that influence the negative dynamic of the trade balance.

The trade balance depends not only by the relation between imports and exports, but also by the production and consumption capacities. The livestock production in the Republic of Moldova is quite sensitive especially to climate changes, mainly through the lack or shortage of fodder.

In 2016 there were produced 92,9 thousand tons of pork meat, or about 50 percent of total meat produced in the country. Comparing with 2005 when it was produced 51 thousand tons of pork this quantity increased with more than 80%.

Table 23. Moldova's livestock production, 2005-2016, (thousand tones, mil. pieces)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Beef and veal	26.0	25.0	25.3	17.6	18.4	16.9	16.1	15.8	13.8	13.7	14.0	15.6
Pork	51.0	61.0	75.1	44.7	53.8	72.5	81.4	82.2	77.8	82.3	91.6	92.9
Mutton and lamb	5.0	5.0	5.0	4.8	4.8	4.7	4.7	4.7	4.4	4.2	4.4	4.2
Poultry meat	37.0	41.0	42.4	39.5	46.0	54.7	55.2	51.7	57.3	62.2	62.7	69.9
Cow's milk	627.0	595.0	571.4	510.5	538.9	591.2	525.8	489.6	485.9	485.3	479.5	462.1
Eggs	762.0	765.0	704.3	562.6	640.3	718.5	705.2	621.9	623.7	645.0	628.8	661.7
Wool (tones)	2079.0	2170.0	2146.0	2021.0	1996.0	2067.0	2043.0	1843.0	1899.0	1947.0	1899.3	1711

Source: National Bureau of Statistics of the Republic of Moldova

The poultry branch is producing annually 50 thousand tons of meat and 670 millions of eggs, on average for the period of 2005-2016. This branch is an intensive one that includes more than 40 industrial enterprises, with a growing capacity of 1.2 million of hens and eight millions of chickens.

In 2016 the production of beef and veal in live weight was of 15.0 thousand tons comparing with 26 thousand meaning a decrease of about 44%. The share of beef and veal in total meat production was of about 13% on average per year during the period of 2005-2016. However, this share is constantly decreasing from 21.8% in 2005 to 8.6% in 2015.

Milk production is the most important sector of the livestock production. However, in 2016 this sector produced about 462 thousand tons of milk meaning a 24% decrease comparing with 627 thousand tons of milk produced in 2005.

9.2. Advisory services and knowledge transfer

In the last 15 years period considerable efforts to create a professional and effective rural extension service in Moldova have been made. At present a number of organizations and institutions provide a wide range of extension services.

Measures have included creation of the extension service network, ensuring a contribution in covering costs of the consultancy services provided to the producers that are applying for the subventions, elaborate a mandatory training program to be passed by the applicants for the subventions.

According to the Organization for Small and Medium Size Enterprises Development, of 175 registered companies and organizations, 90 are providing consulting services and trainings in the field of agriculture. Of them, 9 are authorized to provide consultancy and trainings to the agriculture producers that intend to apply for the subventions.

Among the most important one could mention the National Extension Service (ACSA), the National Federation of Agricultural Producers (AGROinform), the National Federation of Farmers (FNFM) and a large number of professional associations.

The Agricultural extension services network (ACSA) was created in 2002 with the World Bank support and so far has been financed from the state budget, the World Bank and the Swedish International Development Cooperation Agency. Since June 2013, the Government took over full financing of the network extension.

Rural extension network is managed from the head office, located in Chisinau, and consists of 35 regional offices, 75 regional consultants and 350 local consultants operating within municipalities. Network services are currently offered free of charge to farmers, while the institution itself is dependent on state funding.

Unfortunately, there are currently limited institutional connections between the components of knowledge in agriculture in Moldova and information system, for example, between institutions of agricultural research, extension and education / training.

These three components work independently involvement and collaboration is limited to involvement of researchers and professors as consultants in short-term projects of the extension service. In Moldova there is no a permanent platform for communication and cooperation, aimed at serving the common needs of the private sector. There are no mechanisms through which the extension service could influence the agricultural research agenda.

The research and innovation in agriculture is currently represented by eight scientific institutes, including the State Agrarian University of Moldova. Research institutes are subordinated to the Ministry of Education, Culture and Research and are funded, basically from the state budget. Taking into account the outdated research equipment, insufficient financial resources and aged staff existing research institutes are in a state of survival.

There is no clear and transparent procedure of selection for research topics that should be targeted to the real sector demands. Therefore it is important to create closer connections between research and development sector and the agri-food business needs. At present the research and innovation system in agriculture is not oriented towards the private sector and is relatively isolated, which makes it vulnerable.

9.3. Agriculture education

In the Republic of Moldova, the agricultural education system is represented by of the State Agricultural University of Moldova, 8 postsecondary vocational institutions (agricultural colleges) out of a total of 46, and about 20 secondary vocational institutions that concentrate on agricultural subjects out of a total of 70 vocational schools. With Japanese support, a National Training Centre in the Field of Mechanization was created in Chisinau. Its purpose is to train farmers and technicians in the maintenance and repair of the imported agricultural equipment, especially tractors.

Limited public funding for education is not enough for the development and consolidation of infrastructure, repair of buildings, modernization of equipment, and professional training. Many of the vocational education schools are very small and should be consolidated into a smaller number that can be better managed and equipped.

The resources available to State Agricultural University of Moldova are inadequate and put it in a difficult position of having to limit capital expenditures in order to be able to pay moderately attractive salaries. This will lead to longer term problems as the teaching equipment, buildings and dormitories deteriorate and the institution becomes less attractive in the eyes of potential students.

Secondary and postsecondary vocational institutions lost their attraction for the young teachers. All of the postsecondary vocational schools and Agricultural University have substantial landholdings, which they use *inter alia* for teaching purposes. These land-holdings are managed like farms and allow to generate extra-budgetary resources.

Most of these courses included in the curricula of the vocational institutions courses have not been updated for a long time and do not respond to the needs of the evolving labor market.

Image of vocational, college and university agricultural education in the Republic of Moldova is negative – it is reflected by the decreasing number of students. In the year 2017/2018, the share of the students in the field of agriculture, forestry, fisheries and veterinary was 2.6% in case of postsecondary vocational institutions (colleges), 1,7% in case of secondary vocational institutions. The share of students in the field of agricultural science and veterinary in higher education system was 2,2% in the year 2016/2017⁴⁹.

The mismatch between skills supplied by professional education system and requirements of the labour market is now seen as a fundamental problem. Many of the study profiles offered by agricultural professional institutions are no longer part of the market demand, while those institutes who are oriented towards market demand do not have adequate capacity to give graduates the skills and knowledge they need.

9.4. Access to credit

Access to finance is essential for daily operations of agricultural enterprises, and even more, when it is necessary to invest in agriculture. Agriculture as a business it is characterised by a relatively long period of elapsed time between planting and harvest, and investment recuperation, relatively low income limits, and high risks due to changeable weather conditions, market instability. Lending to agriculture is a risky activity for the financial institutions which tend to cover their additional risk with a higher margins.

Obtaining a bank loan to finance such long-term operations is difficult for several reasons. First, on the domestic market, the maximum tenor available is three years, and such tenors are usually available only to the best clients. Second, banks typically do not accept land and plantation as collateral, due to high perceived risks. Third, the agriculture sector is seen by banks as quite risky, and producers may be unable to provide the financial information necessary to support loan applications, given limited financial management and accounting skills.

Important part of agriculture production takes place at the household level (as seen in the small farm size) also creates difficulties in access to finance. Farm incomes and expenses are generally not ringfenced from household incomes and expenses, and retained earnings and savings are low. This often leads to reduced use of fertilizer, pesticides, and labor, and thus lower productivity⁵⁰.

⁴⁹ National Bureau of Statistics. Note: presented figures do not reflect the share of the students of agricultural education institutions in total.

⁵⁰ World Bank, 2015, Moldova. Special Topic: Public Support to Agriculture.

Deficiencies in internal financial management and financial literacy also lower the investment planning capacity of enterprises, which results in unviable loan applications. Rejection rate for business loans is significantly higher for applications coming from rural area compare to application from urban area. There are also constraints on the supply side that impede enterprises' access to finance. Competition remains limited, and the market segmented. Banks continue to rely on relationship lending methodologies, and largely cater to medium-sized and larger enterprises, while microfinance institutions and savings and credit associations focus on micro-and small enterprises in rural and peri-urban areas⁵¹.

448 professional participants in the non-banking financial market in the Republic of Moldova were registered in 2017: 167 microfinance organizations, two central associations and 279 of licensed SCAs and activities. Savings and Credit Associations are an important source for working capital loans for rural smallholders; major part of their loans are going to the agricultural sector. They are mostly dependent on external funds from national financial entities and international donors.

Subsidization of agriculture by the state is significant but ineffective in stimulating private investment. In 2015, the World Bank estimated that the government support for agriculture amounted to 2% of GDP, made up of tax relief (0.6 per cent of GDP) and direct spending (totalling 1.4% of GDP, equally divided between subsidies, services and donor programmes). This is higher than in many countries in Europe and Central Asia, including EU member states such as Bulgaria and Romania.¹² According to the World Bank, the level of support is close to the limit of what the current fiscal envelope can support. Agriculture is one of the least taxed sectors of the economy, but this low taxation regime is ineffective in addressing the challenges for scaling up productivity-enhancing investment in the sector⁵².

Despite of registered success in sector modernisation and development, the used instruments. Subsidies tend to facilitate access to credit are primarily benefiting wealthier farmers, who are already in better position to qualify for commercial credit⁵³.

Bank loans are the main financing option for agribusiness companies, in line with the overall patterns in Moldova. Despite of the contribution of the agriculture and food industry to the social and economic development of the country, agriculture accounts for only 7.3% of the total bank loan portfolio. In absolute terms, this is about 2.5 billion MDL, out of the total loan portfolio of 34.8 billion MDL in 2016. The existing financial gap in agriculture lending is not covered by other components of the financial sector. Agriculture lending makes up only 7.9% of the Micro-financing Organisations lending portfolio or about 300 million MDL, and 41.7% of Saving and Credit Organizations (almost 218 million MDL). Leasing doesn't seem to be an important financing alternative for agriculture companies. Total equipment leasing portfolio was only 88.5 million MDL in 2015 and this refers to all types of equipment, of which agriculture one is only a small portion⁵⁴.

⁵¹ World Bank, 2013, Republic of Moldova Enterprise Access to Finance

⁵² EBRD, 2017, Moldova Diagnostic: Assessing Progress and Challenges in Unlocking the Private Sector's Potential and Developing a Sustainable Market Economy.

⁵³ World Bank, 2015, Moldova public expenditure review: Agriculture

⁵⁴ Sustainable Development Account Moldova, 2017, Access to finance constraints analysis study and action plan

10. Environment and land management in Moldova

10.1 Risks of land abandonment and marginalisation

Evaluation of the actual situation and implementation of the measures and policies regarding abandoned, neglected or inactive land represent an issue in case of the Republic of Moldova, as none of these terms are defined in the national legislation. The term of “follow land” is used in the land code, and defined as a part of agricultural land, but no detailed criteria for the delimitation are established.

According to the General Agricultural Census (2011) the abandoned agricultural area was 246,9 thousands ha or about 11.3% of total agricultural land, of which 60,6 thousands ha, or 24.5%, belonging to agricultural holdings with juridical status and 186,3 thousands ha, or 75.5% to agricultural holdings without juridical status.

Abandoned land is considered where: i) the owner does not accept responsibility (or, for various reasons, cannot take responsibility) of working farmland for more than three years; ii) does not transmit the field (rights and obligations upon him) to a third party to be worked in agricultural use; iii) does not assume responsibility for the negative impact on land, environment, including damage to neighbouring land.

The uncultivated (abandoned) land means any area of arable land, pastures and meadows, agricultural permanent crops or other non-agricultural land from extravilan or intravilan, owners who do not sanitize the land⁵⁵.

In this regard, many lands classified under other categories in the land cadastre or in national statistic, other than sown area, could meet the criteria for the abandonment land, including land covered with permanent crops, vineyards in particular, pastures and meadows.

Agricultural lands are abandoned for various reasons: age of the owner, lack of financial resources, migration of rural population, etc. Considering negative impact of land abandon, such as increased soil vulnerability, providing high weeds and creating pest outbreaks and diseases of plants, increase production costs, reduction of the economic activity and of taxes accumulation, adoption of measures for defining, monitoring and combating land abandon, are required.

It is expected that a new Land code, that is drafted by the Ministry of Agriculture will include such measures. Nevertheless, considering the causes that are conducting to land abandon and the sensitiveness of protection of land ownership rights, adoption of such kind of measures represent an challenge for the national authorities.

⁵⁵ Leah, Tamara (2016) : Abandoned land: A barrier for sustainable development of agriculture of the Republic of Moldova, In: Agrarian Economy and Rural Development - Realities and Perspectives for Romania. 7th Edition of the International Symposium, The Research Institute for Agricultural Economy and Rural Development (ICEADR), Bucharest, pp. 85-90

10.2. Climate change impact on agriculture, needs for adaptation and mitigation

Moldova's climate is moderately continental, with some modification of conditions by the Black Sea. The summers are warm and long, with temperatures averaging between 20°C and 25°C, but can sometimes reach 40°C during heat waves. The winters are moderately cold and dry, with daytime January temperatures between -4°C and -7°C.

However the climate is highly variable, that often creates problems for agriculture sector such as droughts, floods, frosts and hail. The country has highly variable rainfall levels, and drought-like conditions are common.

Three agro-ecological zones divide the country horizontally by elevation, with varying temperature and precipitation. Most precipitation occurs as rain in the warmer months, particularly in June and July⁵⁶.

- Northern forest-steppe: Annual temperatures average 6.3°–9.7°C, and precipitation ranges from 550– 600 mm. This region experiences a drought (defined as sustained and extensive occurrence of below average precipitation levels), once every 10 years on average.
- Central forest zone: Annual temperatures range from 7.5°–10°C and precipitation ranges from 500–550 mm per year. This region experiences a drought once every six years on average.
- Southern steppe: Annual temperatures range from 8.3°–11.5°C and precipitation ranges from 450–550 mm per year, with a significant portion of winter precipitation falling as snow. This region experiences a drought once every three to four years on average.

According to existing climate change forecasts⁵⁷ on the whole, the Republic of Moldova will face warmer and wetter winters but hotter and drier summers and autumns. In the near term, temperatures are expected to increase by 1.7 to 2.0°C, and by the end of this century the increase may amount to 4.1–5.4°C on average.

Along with warming, a continuous annual fall in average precipitation is expected. The Republic of Moldova expects maximum warming in winter and in transition seasons (spring and autumn). Moderate increases in precipitation are expected in winter and spring, while summer and autumn precipitation trends are mainly negative (20-30 percent decrease by the 2080s).

Extreme weather events are likely to become more frequent in the future. The climate aridization process may accelerate considerably in the future. Currently, most of the Republic of Moldova's territory is characterized by a dry or sub-humid climate. Aridization, which leads to increased incidence of drought, is predicted to intensify noticeably as early as by the 2040's as compared with the period of 1961-1990. Aridity will be more pronounced during June to October during the plant vegetation period.

⁵⁶ USAID, 2017, Climate Change Risk Profile:Moldova

⁵⁷ National Climate Change Adaption Strategy, approved by the Government Decision No 1009 from 10.12.2014

Considering the important social and economic role played by the agriculture, important share of the rural population, the risks of the climate change for the agricultural sector are a particular immediate challenges.

Farmers in Moldova are not suitably adapted to current climate, and “adaptation deficit” being registered. Despite of the fact that climate change is expected to bring some advantages related with a longer growing season, most of the impacts on agriculture are predicted to be adverse.

The direct temperature and precipitation effect of future climate change on crops in Moldova will be to reduce most yields. Climate change is forecast to reduce yields of wheat, maize, alfalfa, grapes, vegetables, and pasture and increase the demand for irrigation.

Declining precipitation and increasing irrigation water demands mean that climate change could lead to increased competition for water resources, leaving a wide gap in unmet irrigation demands if no adaptation measures are implemented. Specific water modeling for each agro-ecological zone and river basin suggests that, even without climate change, increases in non-agricultural demand for water will cause shortages in the next several decades⁵⁸.

Changes in the frequency and intensity of extreme events (e.g., droughts, floods and heavy rains) have been identified as the greatest challenge that would face the agricultural industry as a result of climate change. Extreme events, difficult to both predict and prepare for, can devastate agricultural operations, as has been demonstrated several times in the past. Drought and extreme heat have also been shown to affect livestock operations. Model projections and observed trends suggest that warming would be greatest during the winter months. Although warmer winters would reduce cold stress, they would also increase the risk of damaging winter thaws and potentially reduce the amount of protective snow cover. Climate warming is also expected to increase the frequency of extremely hot days, which have been shown to directly damage agricultural crops. Future changes in moisture availability represent a key concern in the agricultural sector⁵⁹.

Implementation of the adaptation measures for the implementation of improvements to be undertaken immediately, to reduce vulnerability to the current climate change. Based on donors support, a set of strategies and approaches to adapt to a changing environment were experienced and demonstrate their potential to contribute to the increased yield and reduction of the negative impact of the climate change and extreme events.

10.3. Biodiversity

The territory of the Republic overlaps three biogeographic zones: Central-European zone (represented by the central plateau of Codrii, which stands for 54,13% of the territory); Euro-Asiatic zone (represented by the areas of forest steppe and steppe; 30,28% of the territory); and Mediterranean zone (fragments of xerophyte forest steppe in the southern part of the Republic; 15,59% of the territory).

⁵⁸ World Bank, 2013, Reducing the Vulnerability of Moldova’s Agricultural Systems to Climate Change

⁵⁹ National Climate Change Adaptation Strategy, approved by the Government Decision No 1009 from 10.12.2014

Five distinct landscapes are recognized within the two main natural zones: forest-steppe zone, and steppe zone:

A) Forest steppe zone. The forest steppe zone of northern and central Moldova includes different forests (e.g., oak, beech, etc.), steppe and riverine meadow biotopes within a landscape dominated by plains and plateaus. Three landscape regions are found in the forest-steppe zone:

A.1 Plateaus and forest-steppe: Plateaus of forest-steppe cover about 23,8% of the country, in the north-eastern part. The landscape is characterized by plateaus and hillocks dominated by oak (*Quercus*) forests, valleys with willow (*Salix*) and poplar (*Populus*), steppe and meadow formations.

A.2 Plateaus and plains with meadows of Balti steppe: They cover 20,6% of the country, in the north of Moldova. The landscapes are represented by natural territorial complexes of hillocks as well as by slopes from river valleys; the forest vegetation is represented by *Quercus* sp. formations with *Prunus cerasus*; the meadow vegetation is represented by steppe and river meadow communities (*Stipa*, *Festuca*, *Deschampsia*).

A.3 Plateaus with forests of Codrii: The plateau of Codrii forests is in central Moldova and covers over 15% of the Republic. The landscape is predominantly natural, with rounded mountain-tops and ancient landslides. Forest comprise mainly beech (*Fagus* sp.) and oak (*Quercus petraea*, *Quercus robur*), with herbaceous understory dominated by species typical of Central and East-Europe (*Aegopodium*, *Dactylus*, *Carex*).

B) Steppe zone: The steppe zone in southern and south-eastern Moldova is characterized by low precipitation (450 mm/yr), dry winds and occasional drought. The dominant species are grasses with typical Mediterranean representatives (*Stipa* sp., *Bothriocloa* sp. and *Festuca* sp.) although the native steppe historically included many *Artemisia* species. The steppe also contains forest elements such as oak (*Quercus pubescens* and *Q. robur*). The steppe zone is divided into two landscape regions:

B.1 Steppe plains of the lower Nistru river terraces: These plains cover 19% of the Republic's surface area. They are strongly impacted by human activities, but are still rich in species typical of steppe communities. The west steppe of the Nistru river also contains oak (*Quercus pubescens*) groves.

B.2 Fragmented plains of Bugeac steppe: The Bugeac steppe plains of south-west Moldova cover 20% of the Republic, and contain grass species adapted to xeric conditions, as well as different oak species: *Quercus pubescens*, *Q. robur*, *Q. petraea*. The main human impact on Moldovan landscape is through agriculture. Agricultural lands cover 75,6% of Moldova, of which 64,5% are intensively used. Lands with natural vegetation, mainly forests, lakes and rivers, cover about 15% of the territory.

10.4. High nature value farming

The HNV farming represents a relatively new phenomenon for the Moldovan agriculture. Nowadays, it is quite difficult to give an assessment to the Moldovan HNV farming, as very few

studies that have a tangent with it have been carried out. In terms on research on the HNV farming specifically, one study has been made by the NGO Biotica in 2006⁶⁰.

Thus, we can mention that Moldovan ecosystems, connected with hydrotechnical structures, are widespread in the country; many of them are the pond ones. Unfortunately geographical data necessary for criteria estimation and cosmic images are not available. At the same time, Moldova is not provided with the primary data collection systems as CORINE, FADN and the other, and likely will be not be provided in the foreseeable future. Significant difficulties appear either for assessment in current information conditions or for creation of such information systems. Lack of these systems, as well as poor data provided by the National Bureau of Statistics in the field, creates a difficulty in assessing the HNV in Moldova.

Nevertheless, according to the study from 2006 mentioned above, only 20,729 ha or 0.61% of the country area could be considered as the HNVF of steppe and meadow subtypes. About 5.56% of HNV farmlands are legislatively protected. Among 17 protected areas assessed, the state is recognized as very good in the single site only, as good – in 5 areas, satisfactory – in 6, bad – in 1 place, the critical one – in 4 reserves.

Area of 2095.5 ha are attributed to the biologically valuable forest belts, including 207.7 h (9.91%) of two systems included into the protected areas (PAs) fund as prominent examples of a protective afforestation in steppe conditions. The area of large ravine systems and slope territories that can be attributed to HNV farmlands, is estimated as 2,622 ha; 218 ha (8.3%) are registered in the PAs Fund.

Moldova is a country where true bogs are almost absent. Natural ecosystems with flora and fauna of bogs were spread mainly in flood-lands of main rivers that are practically completely transformed for arable farming. From 520 ha of 13 recourse preserves of especially value soil plots, included into Moldova's PA fund, only the four (348 ha) can be recognized as HNV farmlands. Mainly, they are privatized plots or those under State forest management. Humus content in some of these plots has decreased by 60%. Thus, the low protection is rather nominal. Among other HNVF subtypes old gardens that were found mainly before spreading of compacted planting schemes are in the country. They conserved in the most distant from village places being protected from a felling by rural population thanks to neighborhood with forests. Such places are very scanty in Moldova's conditions, small and very difficult for accounting. Thus, 1.88% of Moldova area can be recognized as HNV farmlands; 17.97% of these lands are in the Fund of PAs. When the total proportions of pasture (11.4%) and forest lands (11.7%) are comparable, namely the grazing lands are found on the second place by area, demonstrating extremely hard degradation of this category. Other HNVF groups carry a much less nominal load in biodiversity support. However, their relative weight increases, either due to especial significance in conserving the rarest and most vulnerable habitat types (e.g. bogs) in the country, or along with decrease of share of natural habitats in landscapes (forest belts).

Rural population had largely lost knowledge and skill of traditional farming during the soviet time. Appropriate knowledge for modern farm-keeping is deficient in great majority of farmers and actors who have such knowledge (individual farmers or more or less large landowners) are inclined more to the intensification of land use.

⁶⁰ http://www.biotica-moldova.org/library/HNVF%20BIG-ECO-Forum%20Vision_en.pdf.

10.5. Water access

Water resources of the Republic of Moldova are represented by the surface water (3621 rivers and 4261 natural and artificial lakes) and ground water - (4842 wells, water supplied with hydrostatic pressure) and 179574 wells and springs⁶¹.

The country can be divided into three main river basins, all of them part of the Black Sea basin: The Nistru (called Dniester in Ukraine) basin in the east covers about 57 percent of the country; the Danube basin in the west covers about 35 percent of the country, most important river being the Prut river; and the southern basin, between the Nistru and the Danube basins, several other rivers rise and flow across the border into Ukraine and then into the Black Sea (8% of the territory).

Republic of Moldova is a country with insufficient water resources. The estimated available fresh water per inhabitant represent 500 m³/year. Recommended level, defined at international level is 1700 m³/inhabitant/year. A volume of fresh renewable water lower than 1000 m³/inhabitant/year can be a barrier for the economic development and can affect the health and living standards of the population⁶².

Water resources in the Republic of Moldova are sensitive to climate change, both from the point of view of quantity and quality. According to estimations, the surface water resources that are available could go down by 15-20 percent by 2020⁶³.

In Moldova, the majority of small localities haven't the centralized water supply systems. Approximately 40% of the population (rural area) is supplied with water from underground layers. From the total national administered groundwater volume only 50% can be used for drinking purposes without prior treatment.

The change of composition and physical and chemical properties of groundwater are caused by human activity. The spectrum of natural and artificial pollutants is broad (nitrogen compounds, pesticides, selenium, sulphates, etc.), the mineralization and total hardness values of groundwater is exceeding with 2-5 and more times sanitary-hygienic norms and provokes nitrate pollution⁶⁴.

The small amount of precipitation is the main factor contributing to insufficient natural moisture. The amplitude of the negative impact that droughts could have on Moldovan agriculture was shown in 2000, 2003, 2007 and 2012. The only solution for offsetting insufficient rainfall is artificial land irrigation, but this solution it is not universally applicable in the country. The most widespread irrigation systems in Moldova are irrigation channels, sprinkler and drip irrigation. These systems are used for field crops, vegetables, orchards and vineyards.

Drip irrigation has introduced the concept of modern agriculture combining fertilization with irrigation, using water for irrigation to distribute the fertilizer. Although regarded as the most efficient system for orchards and vegetable plantations, drip irrigation is not widespread in

⁶¹ State Ecologic Inspectorate, 2017, annual report

⁶² Water supply and sanitation Strategy, approved by Government Decision No. 199 from 20.03.2014.

⁶³ FAO, AQUASTAT, http://www.fao.org/nr/water/aquastat/countries_regions/MDA/

⁶⁴ Maria Sanduta, Anatol Tarita, etc. "The water springs - sources for water supply and irrigation in the Nistru river basin", Chemistry Journal of Moldova. General, Industrial and Ecological Chemistry. 2013, 8(2), 42-50

Moldova. In Soviet times, there were about 100 centralized irrigation systems, which were used to irrigate 310,000 hectares of land (including 110,000 hectares on the left bank of the Dniester River and 200,000 hectares on the right).

Dniester and Prut rivers were used as water sources for these irrigation networks in the past. However these systems were inefficient, very intensive in terms of energy consumption and were designed to meet the needs of large collective farms only. According to recent assessments, some parts of the former irrigation network (50,000-55,000 ha) cannot be restored because of the high costs of pumping water and their remote.

The total land area in Moldova, which in cost-effective way can be restored for irrigation, is about 145,000 hectares. Meanwhile, about 400 natural lakes and ponds can be used for irrigation purposes, but only to a limited scale due to poor water quality. These sources can provide water to irrigate about 36,000 ha. A higher degree of mineralization along with a higher water deficit is observed in the southern part of the country, and affect the extension of the irrigation or of the cost efficiency in this region. Using of the ground water for the irrigation it is prohibited in Moldova.

10.6. Soil quality and erosion

The most important natural resource for the country's economy is the soil. The chernozem types account for about 2/3 of the approximate 10 soil types found in the country. These soil types are some of the most fertile soils, but they are also among the most receptive, and thus vulnerable to certain risk phenomena (rain showers, droughts, etc.), as well as to the technogenic impact.

In Moldova, during the recent years a poorly diversified structure of sown areas was formed. Cereals and industrial crops occupy about 90% of the acreage. The dominance of corn and sunflower in the structure of seeded lands is present in almost all areas of the country, despite the fact that the soil and climatic conditions in many areas are unsuitable for cultivation of these crops. There is minimized the production of fodder crops on arable lands, which leads to the disruption of crop rotation patterns, deterioration of livestock forage, increasing the pressure on the lands to a level that leads to their degradation.

The main anthropogenic causes for the degradation and thus reduction of the soil's fertility, which amplify the consequences of the natural risks, are the following: excessively high share of cultivated lands (65% of total country area) and insufficient activities to combat the natural and technogenic erosion of the soils. At the same time, the way the soil is used and managed influences to a great extent the vulnerability of the hydrographical network of the micro-ecosystems, which are part of the agroecosystems, as well as the risk level towards different pests of the agricultural crops.

Restrictive factors of the productive capacity of the soil in Moldova determine important damage to the economic development of the country, considering the level of their extension.

Table 24. The main restrictive factors of the productive capacity of soils in Moldova

Restrictive factors	Affected area, thousands ha
Soil erosion	839.7
- Water erosion	81.0
- Landslides	1037
Humus loss, soils with low (less than 3%) and very low (less than 2%) humus content	785
Soil with low and very low content of mobile phosphorus	2183
Soil compaction	308.6
Periodic waterlogging	12.8
Soil degradation as result of irrigation (salinization, compaction etc.)	25
Landtake and sealing	20.9

Source: Ciolacu Tatiana, “Status of “Black soils” in the Republic of Moldova”, the International Symposium on Black Soil , Harbin, China on 10 - 12 September 2018

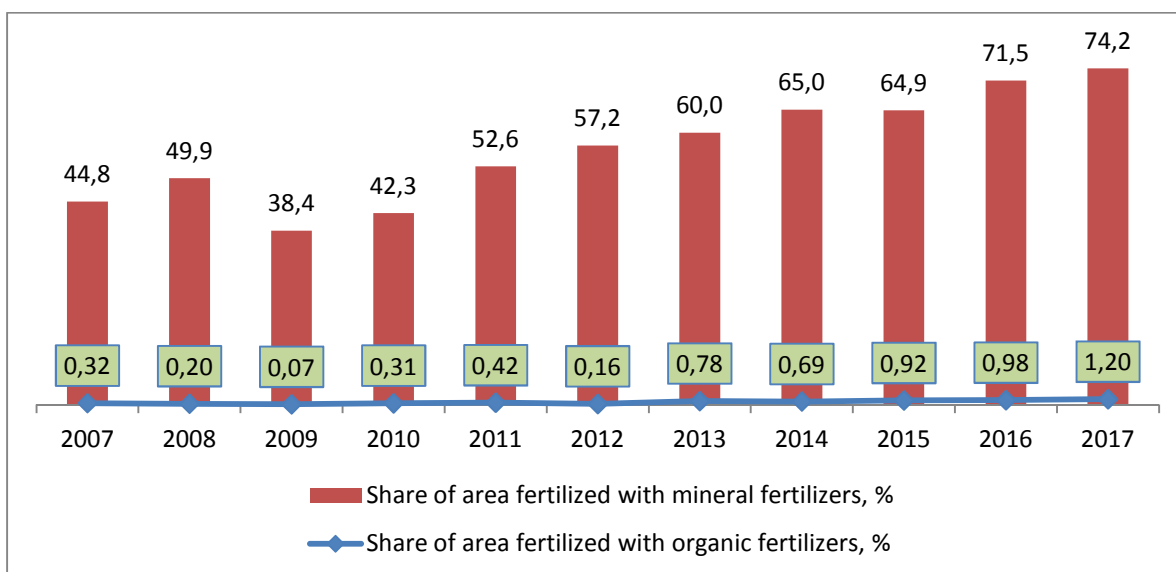
10.7. Use of pesticides and fertilisers

Moldova’s agricultural production is entirely dependent on imported agro-chemicals, that together with seeds and fuel import dependence has an impact on the competitiveness of its agri-food products. This dependency makes Moldovan agriculture subject to international price volatility.

While the excessive use of pesticides and fertilizers during the soviet time was huge and caused significant pollution issues, reduction of use of fertilizers in the post-soviet period have led to a profound negative balance of humus and bio-elements in soils and their biological degradation.

Even if some efforts to increase the increase of usage of organic fertilizers, their share still remain restrictive, being related with the decrease registered in the livestock sector. In 2017, the share of area fertilized with chemical fertilizers constituted 74% while for organic fertilizers was 1,2%.

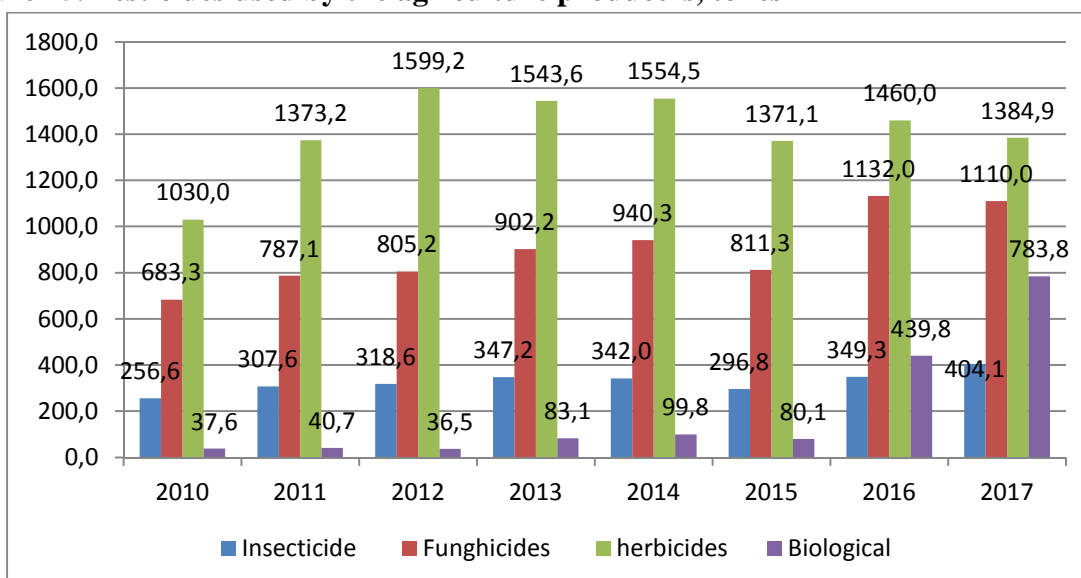
Figure 24: Share of area fertilized with organic and chemical fertilizers



Source: Elaborated by the authors based on data published by NBS

The quantity of pesticides used during the period 2010-2017 average level of pesticide quantity used varies between 2041.9 and 4080.9 tonnes.

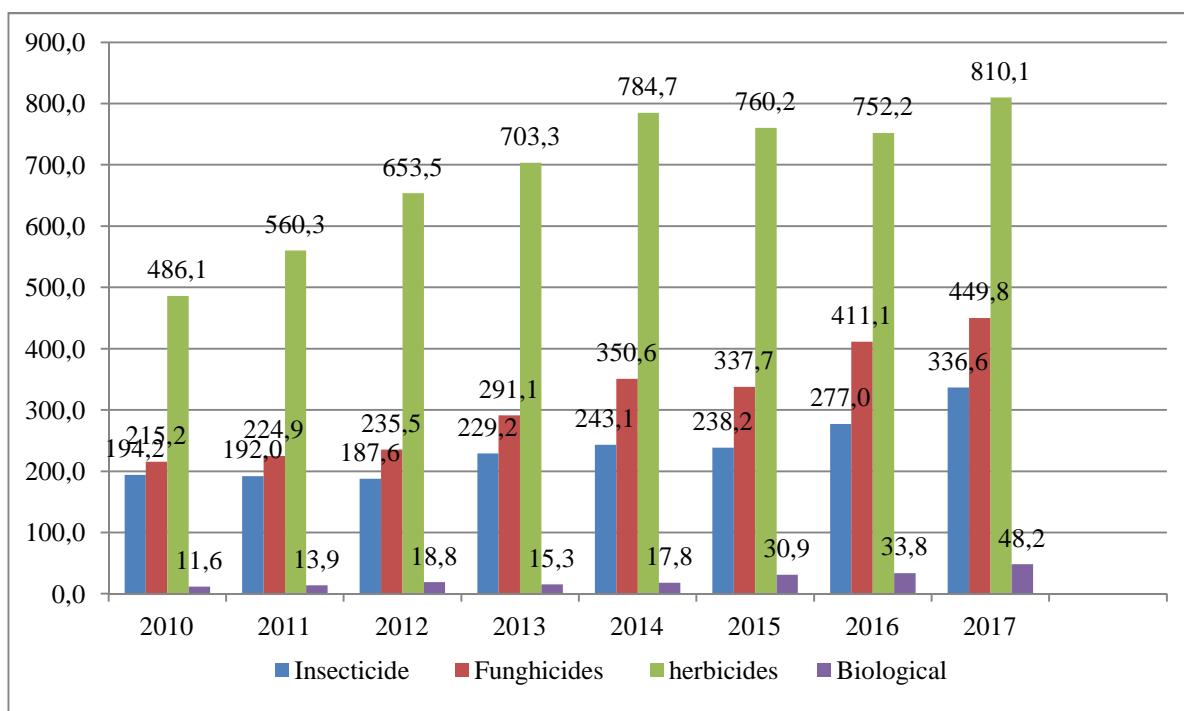
Figure 25. Pesticides used by the agriculture producers, tonnes



Source: Elaborated by the authors based on data published by the NBS

In 2017, the herbicide-treated area has the largest share in the area treated with plant protection products (810.1 thousand ha), followed by the areas treated with fungicide (449.8 thousand ha) and areas treated with insecticide (336.6 thousand ha). A relatively constant trend of a slight increase in the use of plant protection products it is registered.

Figure 26. Protected area, thousands ha



Source: Elaborated by the authors based on data published by the NBS

10.8. Renewable energy

Moldova lacks energy resources, and depends on imports of fuels and electricity. Only about 5% of its energy demand is met by domestic sources whereas around 30% of Moldova's import budget is spent on energy. In general around 60% of the primary energy consumption is produced by gas. Moldova's energy independence rate is very low (10%).

In 2013 government of Moldova adopted the new Energy Strategy of Moldova by 2030 (08.02.2013 Official Monitor of Moldova, no.27-309). It changed the five objectives from the first energy strategy in 2007 to the following three main objectives:

- security of energy supply;
- creation of competitive markets and its regional and European integration;
- environmental sustainability and combating climate change.

Moreover Energy Efficiency and development of Renewable Energy were declared as high priorities of the Government of Moldova. The energy strategy lies within the responsibilities of the Energy Efficiency Agency.

The annual quantity of pollutant gas emissions in Chisinau reaches approximately 100.000 tons, accounting for 115-120 kg of harmful substances per resident. As Moldova wants to decrease its GHG emissions by 2030 by up to 67% (reference year 1990) renewable energy sources are of major interest, which is also highlighted in the Moldovan Energy Strategy 2030 by increasing the

share of renewables in the country's final energy consumption up to 20% by 2020. Wind and biogas are the main renewable sources for electricity and should cover 10% of energy consumption by 2020 and 15% by 2030.

A major barrier in the development of renewable energy sources, including solar energy, was the old law on renewable energy which did not allow the construction of power sources with a capacity lower than 10 kW. In addition the calculation methodology for tariffs was not very clear as the tariff for the produced electricity was calculated separately for each producer. The new Law promoting renewable energy have that entered in to force was intended to enter into force on 25.03.2017 have the main objective to exclude these barriers.

In the Republic of Moldova only some areas benefit of favourable winds to build **wind energy** systems. Nevertheless, Moldova built 4 modern wind installations with a total capacity of 2.33 MW for commercial use. In 2017 the Energy Efficiency Agency financed the development of a Wind Atlas of the Republic Moldova, which officially was launched on 22 March 2017. According to the data shown by Energy Efficiency Agency (2016) the total electricity produced by wind installation is estimated to amount to 9,1 TWh. This is close to the wind potential estimation of 11 TWh per year of the Renewable Development Initiative of the European Bank for Reconstruction.

In spite of the absence of own traditional energy resources and as a consequence of the vital necessity of using alternative energy sources in Moldova, **solar energy** is being used at a low level. Currently 2,3 MW of PV panels are installed for commercial use, half of which was financed in the frame of the MoSEFF project by EBRD. Also a PV station with a capacity of 1,2 MW is under construction and a tender for another 40 MW PV station was placed.

Currently a **biomass** boom can be registered in Moldova with the main sources of biomass to be used for energy purposes in the Republic of Moldova of the forestry, agriculture, livestock sector, food industry and the residential sector. Currently, in the Republic of Moldova biomass is used mainly for heating and cooking. The Forestry State Agency 'Moldsilva' provides about 300-400 thousand m³ of fuel wood per year. Potential as an alternative biomass source has straw, mainly wheat straw, and agricultural waste.

At the moment Moldova has only two **hydro power** plants (HPP), one on the Prut River and the other on the Nistru River, which are the two largest rivers in Moldova.

11. Rural economy in Moldova

11.1. Rural tourism potential

In the last decades, tourism development in the Republic of Moldova has improved in terms of tourist flows, both as a diversification of tourism demand and tourism products.

According to the Index Results—The Travel & Tourism Competitiveness Index Rankings 2017, the Republic of Moldova is located on 117 position, registering a decreasing with 6 positions compare with 2015⁶⁵

Rural areas from the Republic of Moldova provide the possibility for the development of rural tourism, gastronomic tourism with ethnic local products and ecotourism. Some rural areas have also potential for the development of cultural and heritage tourism as well as culture-specialized tourist products (festivals, fairs, village celebrations, etc.).

The natural potential and cultural-historical heritage of rural areas of the Republic of Moldova provides tourists with opportunities to feel free contact with the environment, to admire the landscape area, to become familiar with the cultural and historical heritage of the area, to know the life in the visited locality, to participate in cooking, visiting artisan workshops, which expresses the ethnic specific of the community, the opportunity to participate in the process of making souvenirs and ability to procure, to engage in specific economic activity of that community, to participate at works in the vineyard, orchard, garden, field or farm.

Moldova as a rural tourism destination area has a rich natural potential such as the varied configuration of landscape, geography represented by spectacular scenery, without excessive temperatures, water, flora and fauna.

Protected natural areas nowadays constitute 1.42% of our country's territory, as defined in the following categories: Rural tourism is also influenced considerably by the anthropogenic potential which includes cultural-historical, technical-economic and social-demographic elements of the country. Moldovan village is a symbol of the people who keep the language, folklore thesaurus presented over 880 folk music and dance formations, traditions, customs and cuisine, crafts etc. In rural communities have been preserved visible remains from the Geto-Dacian times and Roman fortifications. From the cultural and historical heritage belong the Museum complex Orheiul Vechi, Lapusna, Rascov, remains of the medieval town Tighina, Bender and Soroca fortresses. Important cultural and historical objects of the village are monasteries and churches.

A major touristic interest is presented based on the wine making traditions and the complexes for the production and storage of wine and farmhouses, craftsmanship which are practically in all districts.

The number of foreign tourist arrivals in the country through travel agencies and tour operators is a slight annual increase, which means that Moldova is attractive for holidays and recreation for

⁶⁵ <https://www.weforum.org/reports/the-travel-tourism-competitiveness-report-2017>

foreign tourist. In the same time, the internal tourism is registering a growing trend. The capacity of the establishments and activity indicators of collective touristic reception with functions of accommodations is reflecting the existing trend.

Table 25: Existing capacity and touristic activity of establishments of collective touristic reception with functions of accommodation, 2010/2017

		2010	2017	2010	2017		
Number of establishments	Total	250	268	229893	337207	Total	Number of accommodated tourists, number
	Hotels and motels	75	106	93911	182434	Hotels and motels	
	Tourist and agrotourist pensions	13	28	13290	20922	Tourist and agrotourist pensions	
	Health-care structures	6	8	26769	30879	Health-care structures	
	Recreation camps and other recreation structures	72	62	18386	44996	Recreation camps and other recreation structures	
Number of rooms	Total	8417	8211	1412166	1514970	Total	Number of tourist overnight stays, number
	Hotels and motels	2069	2766	193856	345006	Hotels and motels	
	Tourist and agrotourist pensions	342	409	43583	36034	Tourist and agrotourist pensions	
	Health-care structures	1006	1092	391305	440003	Health-care structures	
	Recreation camps and other recreation structures	2093	1491	45433	152125	Recreation camps and other recreation structures	
Number of places	Total	28370	25991	32.7	34.9	Total	Indices of net use of touristic accommodation capacity in function, percentage
	Hotels and motels	3610	5148	16.4	23.1	Hotels and motels	
	Tourist and agrotourist pensions	743	867	18.9	13.5	Tourist and agrotourist pensions	
	Health-care structures	1842	2136	60.8	67.2	Health-care structures	
	Recreation camps and other recreation structures	5165	3902	6.2	20.2	Recreation camps and other recreation structures	

Source: NBS

11.2. Promotion and development of SME in the rural areas

According to the NBS, there were around 53,6 thousands of SMEs in 2017 and have account for 98,6% of total number of enterprises and employed 323.3 thousands persons or 61,2% of total employees of the corporate sector. The turnover of the SMEs have constituted 137.5 millions MDL representing 45% of the total turnover per economy.

3.8 thousands SMEs enterprises have activated in the field of agriculture and food industry and 4.5 thousands SMEs in the field of manufacturing industry. These enterprises have accounted for 27% of the total number of employees.

A polarisation of the distribution of SMEs, that it is according with general economic trends it is register. According to the data of the National Bureau of Statistics, in 2017 in Chisinau (the capital city) there were 34.4 thousand SMEs or 64,2% of their overall number in the country. The same trend is also demonstrated by the SMEs annual turnover indicator equal in Chisinau to 87,4 million MDL, or 63,6% of the overall sales revenues in the country on the whole.

In a consumption-oriented economy, trade still dominates and drives the SME sector. About half of the SMEs activates and of turnover is generated in the area of retail and wholesale trade.

Among the industries with higher potential to grow in Moldova, agriculture, food and beverages, services and light industry, are the sectors that can contribute to the development of the SMEs in the rural area.

Multiple entrepreneurship promotion schemes are implemented in the rural areas, both donor financed and based on the public allocations coordinated by the Ministry of Agriculture, Regional Development and Environment and Ministry of Economy and Infrastructure through the Organization for SMEs Development.

Agriculture is maintaining its capacities to be a platform for the establishment or developing of existing business. In addition to the programs to support the agriculture development, more than half of the support ensured through the programs managed by the Organization for SMEs Development were directed to the business established or extended in the field of agriculture.

11.3. Crafts

Complementary to the cultural and historical importance, development of the craft sector it based on the acknowledge of the potential of the crafts sector in creating jobs and income and rural economy, and is role in promotion of the tourism and nation food and wine.

Craft sector in case of Republic of Moldova it is mainly based on the folk or traditional artisans, but it is registering an important developing in providing on to the market goods such as musical instruments, jewelleryes, clothes, wood and still works, art works etc.

Major part of persons work themselves. A small part within a small organisations, or in close collaboration with a network or associated practitioners. The craft sector it is ensuring its contribution to the social fabric, local economy and community regeneration. Craft have an

important social role providing additional resources of revenue and of activity for social vulnerable groups.

Moldova has a very rich cultural heritage, reflected in the finest art through ceramics, textile and various handicraft. Traditional crafts include a wide range of activities, including ceramics, embroidery, lacemaking, weaving from vegetal fibres, musical instruments, wood carving, artistic metal working, artistic leather working, artistic stone working, weaving, egg painting, knitting.

11.4. Provision of services in rural areas and access to the infrastructure

The development of rural areas in the Republic of Moldova was neglected since decades and due to budgetary constraints, local authorities could only address pressing and urgent needs of their localities.

The development of local infrastructure in rural areas, including access to water and sewage, road infrastructure, of leisure and culture services, the renewal of villages and activities aimed at the restoration and upgrading of the cultural and natural heritage of villages and rural landscapes is an essential element of any effort to realise the growth potential and to promote the sustainability of rural areas. Development of services and infrastructure contribute to social inclusion and reversing trends of social and economic decline and depopulation of rural areas.

Poverty and low income of the rural population reduce the chances to access quality services. Unequal access of the population to quality services is described by high differences of infrastructure development (medical assistance, drinking water and sewage, etc.), as well as high differences at the level of service costs (electric energy and natural gas). The poorest population spends on average up to 15% of available income to have drinking water and minimum sewage, for which the costs are too high. Bad quality of rural roads and limited transportation influence negatively the accessibility of rural population to primary medical services. At the same time, a lack of investments in hospital infrastructure indicates certain inequalities for the residents of different regions to receive timely primary medical assistance⁶⁶.

The income of rural population was by 1.37 times lower than the income of urban one in 2016. The analysis of the consumption expenditures shows also the differences in consumption between urban and rural areas. During the period 2012-2016 the level of consumption per capita increased 1.30 MDL in urban area (from 1954.3 MDL in 2012 to 2545 MDL in 2016) and 1.34 MDL in rural area (from 1335.5 MDL in 2012 to 1789.3 MDL in 2016). However, the level of consumption per capita in urban area is still 1.42 times higher than in rural one. The discrepancies in consumption means less opportunities for population from rural areas comparative to urban ones to access qualitative food and educational, health and social services⁶⁷.

⁶⁶ UNDP, 2017, The 2016 National Human Development Report “Inequalities and sustainable human development in Moldova“

⁶⁷ Ludmila Malcoci, Victor Mocanu, “Stratificarea și inegalitatea economică : evidențe empirice”, ECONOMY and SOCIOLOGY No. 1 / 2018 ISSN: 1857-4130

The comparative analysis of the average monthly expenditures per capita in Moldovan urban and rural areas shows that in rural areas the quality of life is even worse than in urban ones. In 2016, the average monthly consumption expenditures of population from rural areas for food, clothing and footwear, health was higher than in urban areas, meanwhile the consumption expenditures for education, entertainments, hotels and restaurants, communication were lower.

According to NBS research “The access of the population to medical services”⁶⁸ the share of population that benefit of medical services during the last 4 weeks was 25,6% in case of urban area inhabitants and 23,5% for rural population, and during a year was 63,1 for urban and 54,3% for rural area.

The share of the persons without medical insurance was almost double in rural area population (31,2%) compare with urban area (15,8%). If to consider that an important part of the population benefit of free medical insurance granted by the state to certain categories of population (50,7% in rural area), the share of persons without medical insurance it is higher in case of persons of working ages. 58,6% of the rural population that do not poses a medical insurance were own account workers in the field of agriculture.

Integral access of the population to infrastructure is considered as a factor that affects the non-agricultural occupation in rural environment. Bad quality infrastructure at local level imposes certain development constraints of business sectors. All these reduce the chances to create new jobs at the local level and lead to the increase of internal mobility flows from the communities without a developed infrastructure to those with a developed infrastructure, with primary services, such as social services.

Access to infrastructure is the main factor deciding about the differences in quality of life of urban and rural population. During the last period the Government has made significant investments in extending of the gas and aqueduct network around the country. Rural population also, considering new technologies available have invested in facilities. Nevertheless, main dwelling facilities remain to be inaccessible for important part of the rural population.

⁶⁸ NBS, 2017, The access of the population to health services

Table 26. Households equipment by Dwelling facilities

	2006		2017	
	Urban	Rural	Urban	Rural
Electric lighting	99.9	99.4	99.9	100
Aqueduct, central system	83.4	12	91	50.5
Hot water	61.1	7.8	80.4	34
Hot water, central system	29.8	0.3	24.4	-
Hot water, own system	31.3	7.5	56	34
Central heating	45.5	0.7	41.3	0.1
Own heating system	28.4	5.6	30	5.2
Another type of heating system	25.5	93.7	28.5	94.7
Gas facilities	79.2	19.9	84.9	36.9
Water closet within the dwelling	71.7	3.5	80.6	16.6
Sewerage	84.3	12.5	92.2	48.8
Sewerage, central system	71.2	2.7	74.4	3.6
Sewerage, own system	13.1	9.8	17.8	45.3
Bathroom or shower	75.7	9.6	85.3	36.4
Telephone	89.6	62.7	87.5	83.1

Source: NBS

When talking about the dwellings' equipping with electrical appliances, it may be noted that urban households are better equipped than the rural ones. Thus, if in urban area, on average, there are 112 TV sets per 100 households, then in rural area – 105 TV sets per 100 households. About 99 out of 100 urban households and 95 out of 100 rural households have refrigerators and freezers. On average, in rural area there are more bicycles per 100 households (12), compared to urban area (8). However, the urban households have more computers (72 out of 100 households), whereas in rural area only 43 out of 100 households are equipped with computers.

Roads are also in bad shape. In its Strategy for land transport infrastructure for 2008 - 2017, the Government together with the World Bank assessed that only 7% of the road network could be considered to be in a good or satisfactory condition, while the remaining 93% was in a bad or very bad technical state. The state of local roads was found even worse with only some 2% of assessed roads considered in a reasonably good technical state. Although nearly every village in Moldova is accessible through asphalt roads, the bad condition of local and village roads causes damage to vehicles, as well as to the transported products (fruits, vegetables, milk, etc.). This obviously increases transportation costs, but also adversely affects production quality, quantity and sales prices throughout the supply chain.

11.5. Cultural heritage and built environment in villages

In the late 19th - early 20th century, Moldova is marked by the first attempts to investigate the cultural heritage monuments for restoration and valorification. With the establishment of the Societatea Arheologica Bisericeasca (Church Archaeological Society) in the early 20th century and adoption of the law for preservation and restoration of historical monuments in Moldova (1919), this period was focused on the protection, preservation and restoration of cultural heritage, as well as on research of historical monuments from the country.

A useful measure on that time was to take pictures for the first time of all historical monuments from the country. But over a decade, due to violent history of World War I and II, our country lost most significant and important architectural monuments; and after the independence of Moldova (1991), state policy was determined according to EU legislation on the protection, conservation and valorification of the historic-architectural heritage. A significant contribution to the inspection and protection of monuments of cultural interest is being made by the Agency for Inspection and Restoration of Monuments from Moldova, which maintains a strict evidence of buildings number of both national and local significance, publishing a series of studies and researches in this area. However, nowadays there is attested a poor cultural management in this area, both locally as well as nationally, confirmed by the growing number of destroyed monuments, unreasonable or nonconforming use of monetary destination.

Moreover, a constraint in the restoration of architectural monuments is the sectorial strategy that gives priority to other objectives, in detriment to Protection and enhancement of the national heritage. In this context, the research on cultural tourism in Moldova is pretty new; the statistical calculation methodology is rather limited, or even not considered by various cultural institutions at certain events. Also, studies related to the economic impact on cultural tourism are insignificant or there are not at all. Although it has a small area, Moldova as a tourist destination has a great potential with unusual diversity of landscape reservations or scenery and unique geological monuments of European and world value. The primary forms of Moldova's tourism, as innovative element of heritage valorification are: rural, wine, cultural, health and beauty tourism.

11.6. Identification of the needs and SWOT summary of overall strategy and sectors (Moldova)

Strong	Weak
<ul style="list-style-type: none"> - Moldova has a large share of both dairy and meat products in the agricultural processing industry; - The processing industry is well positioned geographically, linguistically and traditionally in the CIS markets and is also well-placed to export to the Middle East. Therefore, improving food safety practices can lead to the opening up of EU markets; - Substantial foreign investment has been allocated to the livestock and processing sectors, which are still possible, provided that the production part is expanded and made more efficient; - The processing industry is spread throughout the Republic of Moldova and in most cases the enterprises are located close enough to the producers of animals; - Internal mobility of rural labor; - Knowledge of two languages (Romanian and Russian), by the inhabitants of rural areas. 	<ul style="list-style-type: none"> - Milk processing plants operate below their capacity because processors can not obtain enough milk for processing; - Processing enterprises, especially small and medium-sized enterprises, are faced with technological, logistical, financial and marketing constraints, which considerably limit their potential; - There is a need for more skilled workforce in the processing sector; - There are requirements to improve the safety and quality of food, especially in the milk and meat processing sector; - There are insufficient public research, innovations, and communication initiatives to serve the processing sector; - Communication / data processing / processing capabilities at some processing plants are extremely inadequate; - Low employment rate in rural areas and massive migration; - Small wages in rural areas; - Poor quality physical infrastructure in rural areas; - Large number of young rural residents without studies; - Lack of a formal rural development strategy
Opportunities	Risks
<ul style="list-style-type: none"> - There are excellent opportunities for the animal product processing sector, especially dairy products, for the continued development of domestic export activities and the consolidation of high-value zootechnical activities; - There are opportunities for the processing sector to strengthen its role and increase its importance in conducting and coordinating value chain initiatives with other stakeholders, both upstream and downstream; - There are opportunities to diversify 	<ul style="list-style-type: none"> - If the Republic of Moldova fails to comply with the necessary food safety standards and other standards, the animal product processing sector will face difficulties in accessing international markets, thus creating the danger of postponing EU membership; and due to the existence of these deficiencies; - Moldovan processed products have to compete with processed products from other countries, both on domestic and foreign markets. Many processed food products are imported into the Republic

<p>processed products and markets, as well as to increase access to high-value markets;</p> <ul style="list-style-type: none"> - Creating jobs in rural areas by launching businesses with foreign capital (producers, services, etc.) - Raising wages in rural areas due to economic development; - Use of remittances for investment purposes; - Enhance agrotourism; - The emergence of young agricultural entrepreneurs. 	<p>of Moldova, and there is the risk that in some cases, domestic processors may not compete with these growing imports;</p> <ul style="list-style-type: none"> - In order to achieve global economic benefits, in the coming years the major priority of this subsector will be the increase in milk production and the expansion of beef production. For the processing sub-sector, the priority will be to upgrade factories to increase efficiency and comply with EU food safety requirements; - Reduce employment opportunities in agriculture; - Depopulation of villages due to migration and aging of the population; - Increasing disparities between urban and rural incomes; - Increasing poverty and social exclusion in rural areas; - Reducing pensions due to budgetary constraints.
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12. National support policy for agriculture and rural development in Moldova

The main actor in the field of agricultural and rural development policies is the Ministry of Agriculture, Regional Development and Environment. Furthermore, the other central public authorities responsible for economic, labour, social protection, develop policies which affect the agricultural sector and rural households.

Government, in elaboration and implementation of its policies is guided by the *National Development Strategy "Moldova 2020"*, the main objective of which is the acceleration of the economic growth and reduction of poverty in the Republic of Moldova. The Strategy is establishing eight main development priorities, one of them being agriculture and rural development.

In the field of agriculture and rural development, the priorities of the NDS "Moldova 2020" encompass 3 aspects: increasing the competitiveness, ensuring the sustainable management of natural resources in agriculture and improvement of living standards in rural areas.

The main sectoral document that ensures the implementation of the NDS is the National Agriculture and Rural Development Strategy 2014- 2020 approved by the Government Decision 409 from 04.06.2014. The concept of the sectoral strategy is identical with the chapter of NDS dedicated to agriculture and rural development, a synergy between both documents being ensured.

The structure and design of the National Strategy for Agricultural and Rural Development for the period 2014-2020 reflect the Moldova aspiration for a closer alignment with the EU policy framework and markets. The strategy rests on three pillars: (i) enhancing sector competitiveness through structural transformation and agri-food market modernization; (ii) ensuring the sustainable management of natural resources in agriculture; and (iii) improving the quality of life in rural areas. While better food security is not an objective per se, it remains a concern that transpires throughout the document. Measures such as investments in farm modernization, promotion of water saving technologies and climate resilient farm practices, as well large scale investments into the rehabilitation of the irrigation sector can be generally seen as conducive to better food security outcomes.

Table 27: General and specific objectives of the NSARD

1.	Increase competitiveness of the agri-food sector through modernization and market integration.
1.1	Modernization of agri-food chain in order to meet EU requirements on food safety and quality.
1.2	Facilitate access to capital, inputs and output markets for farmers.
1.3	Reform education, scientific research and rural extension services in the agri-food sector, and creation of integrated agriculture information system.

2.	Ensure sustainable management of natural resources in agriculture.
2.1	Support sustainable agricultural land and water management practices.
2.2	Support environmentally friendly production technologies, organic production and products ensuring biodiversity.
2.3	Support to adaptation and mitigation of climate challenges effects on agricultural production.
3	Improve standards of living in rural areas.
3.1	Enhance investment in physical infrastructure and rural services.
3.2	Increase employment and income opportunities in rural areas in the non-agri-food sector
3.3	Stimulate local community involvement in rural development.

The Action Plan for the implementation of the National Strategy for Agricultural and Rural Development for the years 2014-2020, approved by Government Decision 742 of 10/21/2015 provide a range of activities, implementation of which will have a direct impact over the development of the horticultural sector.

Establishment and activity of pilot local action groups, based on the principles of the EU program “LEADER” it is included as one of the Action Plan as an activity aimed to stimulate the local community involvement in rural development. Twenty local action groups are expected to be established till the end of 2020 and at least thirty projects implemented with their involvement.

Anyway, the Government haven’t assumed some action in this regard. All the indicators established are based on the outputs planned in the framework of the EU Project Support to Agriculture and Rural Development through promotion of confidence building measures.

At the same time, many other policy documents have direct relevance for the development of the agricultural and rural sectors, including the follows:

- Strategy for the Development of Rural Extension Services for the period 2012-2022, approved by the Government Decision no. 486 from 5 July 2012, which foresees a rapid transition to a modern model of organization of rural extension services that generate high added value, based on knowledge and innovation and are oriented towards continuous improvement of the quality of life in rural area.
- The Food Safety Strategy for 2018-2022, approved by the Government Decision no 1150 form 20.12.2017, aims at achieving a high level of food safety and consumer protection and implementation of the provision of the Association Agreement between Republic of Moldova and EU. An integrated approach covering all sectors and stages of the food chain have to be implemented: from feed production and animal and plant health to raising standards for primary production and food processing, as well as storage, transport and marketing of food. Development of the “e-ANSA” which will ensure an operative and secure exchange of data between authorities in electronic format, a unique platform for rapid and effective emergency action is planet to be set up. Also, the achievement of goals will favour exports of food and live animals from Moldova to the EU and CIS countries.

- Small and Medium Enterprises' Sector Development Strategy for the years 2012–2020, approved by the Government Decision no. 685 from 13 September 2012, sets the development of the SMEs in the regions as a priority area.
- Strategy for Domestic Trade Development in the Republic of Moldova for the years 2014-2020, approved by the Government Decision no. 948 from 25 November 2013, with the main goal of “providing the consumers with competitive goods and services through creation of an efficient 45 trade system throughout the country”, and one of its strategic objectives refers to “enhancing of trade infrastructure in the regions, particularly in rural areas”.
- Energetic Strategy of the Republic of Moldova up to the year 2030, approved by the Government Decision no.102 from 5 February 2013, has as a main objective of ensuring the energetic security of the country based on the implementation of regional programs that refer to the development of modern platforms for generation of power from renewable sources and improvement of the energetic efficiency throughout the country.
- Transport and Logistics Development Strategy for the years 2013-2022, approved by the Government Decision no. 827 from 28 October 2013, with specific objectives including insuring access to national roads from local rural roads in all localities of the country, ensuring the repair and maintenance of over 6 thousand km of local roads by 2022.
- Information society development Strategy “Digital Moldova 2020”, approved by the Government Decision no. 857 from 31 October 2013, with the aim to “develop the info-communicational infrastructure and improve the access to it for all”, including development of internet access infrastructure in all localities of the country and provide services at affordable prices.
- Tourism development Strategy “Tourism 2020” approved by the Government Decision 338 from 19.05.2014, recognize the key role and importance of the rural tourism in achieving sector development objectives, and provide integrated solutions of development.

Implementation of the strategic policy documents are carried out by the central administrative authorities that develop and implement policies oriented towards agricultural and rural development, in accordance with their area of competence and their tools and mechanisms needed to carry out the respective exercise: MARDE, which develops and promotes policies for the development of the agrifood sector and rural areas, AIPA, (subsidiary of MARDE), which manages financial resources to support agricultural producers and authorizes payments, ANSA (directly subordinated to the Government) implements policies in the spheres of food safety, veterinary sector, animal husbandry, crop protection and crop quarantine, seed control, quality of primary products and animal feed; Ministry of Economy and Infrastructure that develops and implements policies focused on enhancing the competitiveness of small and medium enterprises, rural diversification, diversification of exports and expanding the markets for local products, and other authorities, in accordance to their respective competences.

Domestic support to agriculture, since 2011, includes only the measures provided by the “green box” such as: general services, stocks for food security, payments to ease the effects of natural disasters, support for structural changes in the agricultural sector through the partial coverage of investment in technical upgrading.

The Republic of Moldova has undergone some important steps in improving the budget composition in order to align it with government priorities for the sector. Among the main categories of budgetary expenditures in agriculture are related to physical infrastructure and

business development for the sector modernization, and to key services, the significant allocations being for food safety and agricultural education, with smaller shares for research, extension services, and irrigation. These are followed by viticulture and wine development in support of high-value markets and risk mitigation and anti-hail programs to help make agriculture more resilient to weather risks.

A National Fund for Agriculture and Rural area development was established by the Law No 276 from 16.12.2016. The objective of the Fund is to subsidise the activities related to the implementation of the objectives and support measures reflected in the National Strategy for Agriculture and Rural Development. The Fund is formed from annual budget allocations (not less than 2% of total approved revenue of the state budget), and other sources, including from funds ensured through the European Union programs.

Based on the main priorities established by the Agriculture and Rural Development Strategy, the Law establish sub-measures, to be supported based on the budgetary allocations. The procedures for the allocation of the resources from the National Fund for Agriculture and Rural Area Development is approved by the GD No 455 from 21.06.2017.

The financial agreement on ensuring sector reform support was signed on 23.03.2015 and ratified by the Parliament of the Republic of Moldova by the Law No 177 from 22.10.2015. For the implementation of the financing Program “ENPARD Moldova -Support to Agriculture and Rural Development” the European Commission has allocated a maximum contribution of 64 million Euros, of which 53 million as budget support and 11 million as complementary support. The specific objectives of the Sector Reform Contract are to: 1) improve the financial capability of the Government to achieve agricultural and rural development policy objectives; 2) promote agricultural and rural development policies and reforms; 3) improve service delivery in the agricultural and rural sector; 4) improve governance in agricultural and rural development; 5) address the basic needs of the population; 6) sustainable management of natural resources, including water and biodiversity and 7) foster cooperation with regions and territorial administrative units with a special status. The allocated funds under the budget support are used by the Government for supplementation of the budgetary allocations for the National Fund for Agriculture and Rural Development. The transfer of funds to State Budget are conditioned by the achieved results from the policy matrix, and are planned in three tranches to be transferred in the second quarter of the 2016 – 2018 years.

Other financial sources for support measures related to the implementation of the National Strategy of Agricultural and Rural Development for 2014-2020 include programs implemented with donors contribution, in particular IFAD, World Bank and EBRD, USAID etc.

13. Preparation and implementation of local development strategies – LEADER⁶⁹ (lesson learnt from Macedonia)

13.1. Experience in local development strategies

Almost every municipality in the country has adopted its own strategy document by which is determined and managed local development such as the Strategic Plan for Sustainable Development, Strategic development plan or Strategies for local economic development (SLED). The largest number of municipalities have already prepared and adopted SLED. Additionally, municipalities (within its legal obligations) have formed Department/Unit for Local Economic Development (LED). Trainings were provided to the core staff on local development planning and project preparations in the earlier 2000's. Among other, these organizational units are responsible for the preparation and implementation of development strategies. Usually SLED are made with involvement of representatives from various sectors and representatives of local stakeholders through participative planning methods. Preparation processes of local development strategies was partly supported by various donor projects. Needs have been identified based on assessment of the local situation, infrastructure, economic development, from the perspective of the environment or quality of life and measures were defined through a strategic plan - including vision, strategy and development goals, as well as a brief overview of the programs and projects to be implemented through the budget and other funds of the municipality. Local strategies, including SLED were and remain basic municipal strategic documents for defining and management of local development.

13.2. LEADER like initiatives

The country has not implemented LEADER measure under the pre-accession programme (IPARD I) and has no experience in implementation of LEADER type measures. In order to promote LEADER approach and to build capacity for the implementation of LEADER measures, MAFWE initiated or supported several projects that employ LEADER methodology. Since 2005 the establishment of LEADER type LAGs has been also supported by projects funded by bilateral aid. Support for preparation of Local Development Strategies (LDS) was provided to municipal administration. Several donor organizations such as USAID and UNDP supported municipalities in developing and implementing their LDS, as to support the country's decentralisation process.

By introducing “bottom-up” approaches for development and participation of local inhabitants and locally established private businesses, they contribute to the strengthening of local capacities and approaches for development planning. The focus of these efforts was not purely aimed at rural development but rural development actions were introduced depending on the rurality of the territories concerned. USAID supported total of 32 urban and rural communities. In 20 rural

⁶⁹ IPA Rural Development Programme, 2014-2020 final version as adopted by the Commission Implementing Decision on 13.02.2015, No. C (2015) 760 final

municipalities they supported preparation of LDS focusing on infrastructure, local economy, agriculture, tourism and human resources and introduction of so-called Municipal Planning Board with 20 to 100 members from Public-Private Partnerships (PPPs).

The establishment of the Programme for Regional Economic Development in four (East, South-East, South-West and Polog Region) of eight regions were made through a participatory approach involving all stakeholders. Also 70 pilot projects were supported (in nature very similar projects within the LEADER approach), which resulted in the creation of new jobs, better tourist offer and cleaner environment.⁷⁰

Macedonian program to support the Agricultural advisory services (MAASP, Phase II, funded by SIDA - Swedish International Development Agency) is the first programme in Macedonia practically supporting the implementation of initiatives such as LEADER in the previous five pilot municipalities (established in 2007).⁷¹ First, members were identified of LAG similar to LEADER called Local group for rural development (LGRD). The LGRD were organized on the principles of PPPs including a local organizer engaged by MAASP. All LGRD members were trained about LEADER approach and issues related to rural development, strategic planning using participatory methodologies and bottom-up approaches and were introduced to the program concept. Since 2009, under this project 5 LEADER type local action groups were established but on municipal level, covering less than 2% of the rural population. Additional 11 more municipalities were selected bordering the first 5 pilot municipalities, thus forming together five micro regions. In according to the developed strategies, LGRD were supported to implement small projects with funds of about EUR 1000 to EUR 3000. Supported actions were concerning mostly seminars and local events (e.g. slow food fair, honey fair, handicrafts fair etc.).⁷²

13.3. LEADER in the national strategic and programme documents

During 2012, a unit responsible for LEADER coordination was created under Department for IPARD management and a LEADER country strategic approach was prepared. By-laws for recognition of LAG's and preparation of LDS were adopted in the beginning of 2013. The strategic policy framework for the implementation of the LEADER Approach is stated again within the NARDS 2014-2020, with an emphasis on the improvement of the living and business conditions in the rural areas. In order to restart the economic activities, special focus is given to the development of policies for mountainous rural areas and areas with unfavourable conditions for production, as well as to the fully depopulated areas. This strategic goal is planned to be achieved by enhancing the participatory approach for identification of the needs of local communities. This would contribute in designing appropriate measures as part of local development strategies that will be implemented by establishing LAGs consisting of members of the local self-government, businesses and NGOs. One of the very important issues for ensuring sustainability of the economic activities in the rural areas, aside from the agricultural activities,

⁷⁰ http://www.rdc.mk/southeastregion/images/JugoIstocenRegion_razvojnaPrograma%202015_2019-EN.pdf

⁷¹ https://www.sida.se/contentassets/e528f6fc8e7d4a059ca6eea6cab2a21c/macedonia_872.pdf

⁷² https://ec.europa.eu/agriculture/sites/agriculture/files/enlargement/countries/fyrom/ipard_en.pdf

are the non-agricultural activities. In this direction, the activities of the rural population aimed at diversification of their economic activities will be supported.

The National Rural Development Programme NRDP⁷³ is another document that describes the support measures for implementation of the LEADER Approach. It refers to Articles 87, 88 and 89 from the Law on Agriculture and Rural Development⁷⁴. These measures are aimed to support realization of the LDS that must satisfy the criteria from the above mentioned articles. The LAGs are main beneficiaries of the measures.

The IPARD II objectives largely coincide with the main strategic objectives and specific objectives according to NARDS 2014-2020. The IPARD II Programme foresees the introduction of the LEADER Approach as a new measure within the 2014–2020 programming period. The new LEADER measure within the IPARD is based on the need for mobilizing local stakeholders which represent the needs and interests of rural dwellers and rural businesses to actively participate in local development planning.

As part of the IPARD II, the LEADER measure fiche is one of the key documents that can inform and guide the process of consultations for the development of the LEADER measure. The fiche describes the rationale, objectives, and LEADER requirements under IPARD, the selection of LAGs, eligibility and selection criteria, as well as the measures that will be available for supporting LEADER.

13.4. Institutional and Legal Settings

According to the IPARD II program, the introduction of the measure “Implementation of Local Development Strategies-LEADER Approach” was planned for 2016, but in reality, implementation is expected to begin in 2019. Even though significant progress has been made in developing the necessary regulatory framework, the MAFWE still needs to finalize the EU accreditation process in order to make the LEADER measure operational. Local development initiatives based on LEADER’s bottom-up approach, which focused on mobilizing rural communities, were mainly implemented through the Rural Development Network of the Republic of Macedonia (RDN of RM)⁷⁵ and through the USAID Small Business Expansion Project (SBEP) so far. These initiatives were aimed at building and strengthening the social and human capital in rural areas through consultations, education, training and piloting local rural economic development projects.

Between 2014 and 2015, the majority of these groups were formalized into 16 LAGs that are not part of the MAFWE’s LEADER programme since it has not started yet, but are registered as civil society organizations under the Law on Associations and Foundations.⁷⁶ The LAGs collectively cover 73% of the entire rural territory of Macedonia across 61 municipalities. A great amount of support was provided in developing the LAG capacities during the past six years, but each is at a different stage of “maturity” due to the differences in the baseline capacity of the LAG members in each region. However, the average organizational and project cycle

⁷³ Official gazette of RM nr.7.20.01.2017

⁷⁴ Official gazette of RM nr.49 12.04.2010

⁷⁵ <http://ruralnet.mk/>

⁷⁶ <https://www.legislationline.org/documents/id/21540>

management capacity of the LAGs remains low. None of the 16 LAGs are currently capable to independently implement LDS and to develop procedures for administering implementation of local rural development projects without coaching and financing from outside sources.

The initial policy framework for implementation of the LEADER programme in Macedonia is founded within the Law on Agriculture and Rural Development, (Articles 87, 88 and 89). The Law states the basic legal forms for establishment of the local action groups and refers to the main key features of the EU LEADER (e.g. area-based approach, public private partnership). The law defines the LAG formation by: co-operation and association of one or more rural communities that are neighbouring by their cadaster borders.

In 2012, a working group responsible for developing the draft rulebook for: the detailed conditions for registration in the records of the LAG, the registration procedure, the required documentation and the manner of keeping records, was established by MAFWE.⁷⁷ The second rulebook was related to the content and methodology for preparation of strategies for local development of rural areas and the manner of their approval.⁷⁸ Furthermore, the contents of the rulebooks were analysed and adjusted with the EU regulations relevant for LEADER (and CLLD) – (EU) 1305/2013, (EU) 1303/2013.⁷⁹ The Rulebook presents a comprehensive coverage of most aspects of the local development strategy as listed in the relevant EU regulations. The evaluation criteria include most aspects of an LDS evaluation. Overall, this legal basis provides a good foundation for the development of LEADER in Macedonia.

In 2015, new Guidelines for LAG formation, LDS preparation and implementation were prepared to support the potential LAGs as part of the EU project Introduction of New IPARD measures (LEADER and Advisory Services). Subsequent institutional actions included introduction of a LEADER measure into the NRDP. However, this has never been activated as a measure. With regards to the division of responsibilities and relations among different ministries, the Law on Agriculture and Rural Development defines the local self-government units (municipalities) as institutions playing a significant role in the implementation of the rural development policy. Therefore, the creation of synergy by establishing good co-operation between them and other relevant actors from the civil society and the business sector would be one of the most important mechanisms for successful implementation of the LEADER programme. The legal basis for co-operation between the MAFWE and the municipalities is contained within the laws regulating the functions and authorities of these institutions, primarily the Law on Agriculture and Rural Development, the Law on Local Self-government⁸⁰ and the Law on Balanced Regional Development⁸¹. Furthermore, in the Macedonian legal system there is a complete adjustment of the objectives of Agricultural and Rural Development Policy of the MAFWE with the objectives and the policy of local development of the municipalities on the one side and the EU Strategy for Rural Development on the other. The Law on Local Self-government regulates the co-operation between municipalities and the Government and the co-operation among the municipalities. The above Law says that in the performance of their competencies, the municipalities may form mutual administrative bodies. For the purpose of

⁷⁷ Official gazette of RM no.40/13 14.03.2013

⁷⁸ Official gazette of RM no.40/13 14.03.2013

⁷⁹ <https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX:32014R0808>

⁸⁰ Official gazette of RM no.5 24.01.2002

⁸¹ Official gazette of RM no.63 15.05.2007

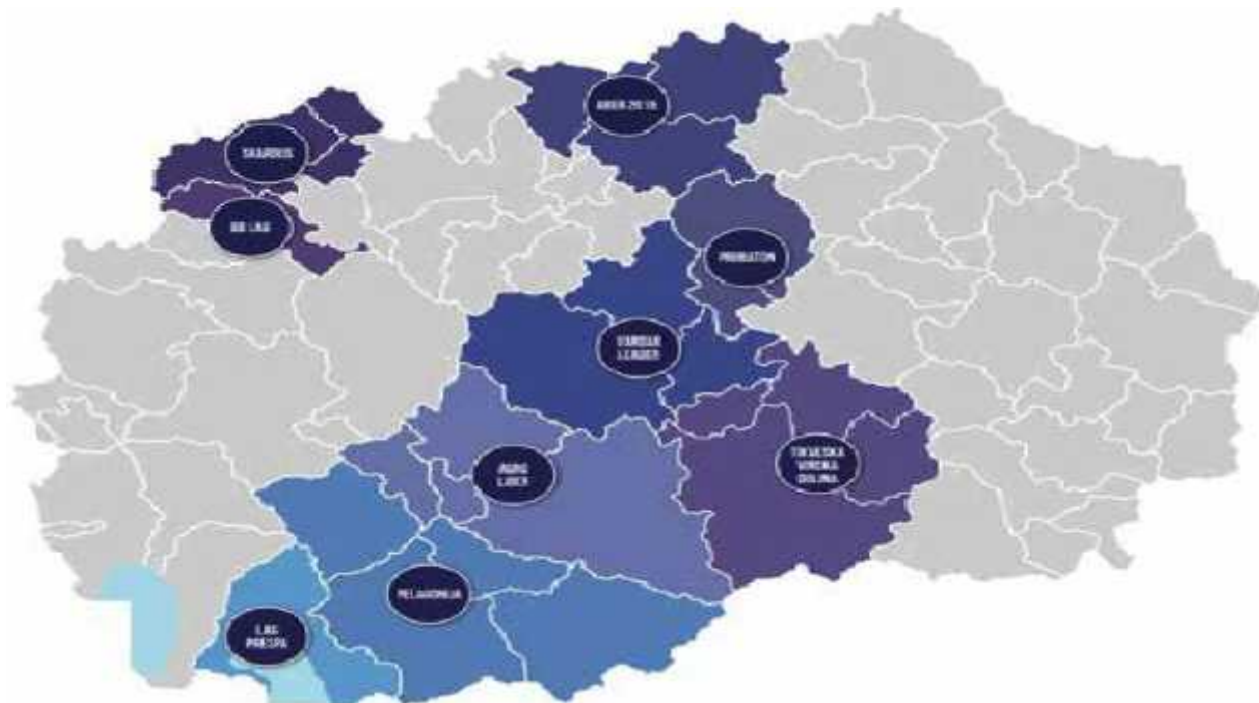
accomplishing common interests and performing common tasks they may join funds and establish shared public agencies.

13.5. Successful stories of implementation LEADER Programme at local level – LAGs in Macedonia

In 2012, MAFWE announced that the LEADER measure was to be made operational from 2014 and funded by the IPARD programme for the period 2014-2020. Adequate regulatory and policy framework was put into place under the National Programme for Financial Support of Rural Development and initial financing for pre-LAGs and implementation of Local Development Strategies (LDS) has been allocated since 2014.⁸² For legal and statistical purposes, the country is divided into 8 planning regions.

Since reorganization in 2013, the main units of local government have been 80 municipalities, of which 10 form parts of the capital Skopje. Municipalities vary in size of population between 3000 and 105000.⁸³ They have powers to raise local taxes and to support development in their areas. There is no general pattern of local self-governments at village level, but village councils can be created on the initiative of local people. Between 2014 and 2016, 10 pre-LAGs were established in the four regions and finally become 12 by 2018, collectively covering 50% of the rural territory of Macedonia across 29 Municipalities.

Figure 27. Map of LAGs in Macedonia, 2018.



Source: The Association for Innovations in Rural Economies, 2018.⁸⁴

⁸² http://www.ipardpa.gov.mk/Root/mak/docs/Zakonodavstvo/IPARD%20II%20Programme_ENG.pdf

⁸³ http://www.stat.gov.mk/OblastOpsto_en.aspx?id=1

⁸⁴ <https://aire-mk.squarespace.com/>

Four municipalities in the South-East of the country: Strumica, Vasilevo, Bosilovo and Novo Selo, have set up a LAG (Belasica-Ograzden)⁸⁵, and are currently working with other stakeholders in the area. There is good cooperation between the four municipalities and other stakeholders, and the group is actively supported by the Rural Development Network and the Centre for Development of the South-East Planning Region⁸⁶, which is based in Strumica. The group is in process of producing a local development strategy. Three workshops have so far been held with local stakeholders to discuss the strategic document for setting up the LAG and to raise awareness among a wider group of local actors. A number of local NGOs are involved, which includes women and young people.

This South-East region has been losing young people through outmigration. It includes areas of intensive agriculture, but much of the cultivated land is divided into small plots, thus making the farms non-viable. Production has been focused on a limited range of crops, such as peppers, cabbage and tomatoes: these are now at risk because of climate change and loss of traditional markets, so crop diversification is needed. A recent climate change project showed the need for applied research, and for training of farmers in order to diversify crops and keep up with new developments. There is a need also to improve the quality and packaging of products: this might be linked to an application for PDO status. Benefits could come from cooperation between the farmers and with other enterprises in the region, such as food processors and tourism firms. There is a need for investment in infrastructure, such as electricity, water supply and roads.

13.6.National Rural Network

MAFWE has supported establishment of civil association - Network for Rural Development of the Republic of Macedonia (RDN was established in 2010)⁸⁷ as part of the activities under the Swedish International Development Agency (SIDA) funded program for support of Agricultural advisory services MAASP. Establishment a network for rural development in Macedonia is a clear and constructive idea, based on the LEADER principles and on the solid basis of people and knowledge, which are created by implementing activities using the LEADER methodology. RDN in their programme continues to support municipalities in the process of developing sub strategies for rural development and continues its mission of capacity building skills and knowledge of the actors from rural areas to enable them to implement their goals, and development programs. At the international level RDN is a member of the European LEADER Association for Rural development - ELARD located in Brussels.

13.7.Funding

To date, the current LAG and LDS strategies have been symbolically funded by the RDN of Macedonia and the USAID Office in Macedonia. In some cases, this has been supplemented by

⁸⁵ <http://www.lag-belasicaograzden.mk/>

⁸⁶ <http://www.rdc.mk/southeastregion/index.php/en/>

⁸⁷ www.ruralnet.mk

funding from targeted municipalities, who have provided local office space and supporting facilities for the LAGs. The funding has predominantly been used to cover the costs of training and facilitation of local groups and the costs associated with the analysis of the local area needs and the development of LDS. In addition, in some areas, examples of small pilot projects have been funded (approx. EUR 3000-5000) to demonstrate the effectiveness of community-based initiatives. Even though more work needs to be done to strengthen the sustainability of the LAGs, the small-scale projects supported by RDN of RM and USAID that were implemented through the LAGs, successfully demonstrate the effectiveness of such community-based, bottom-up initiatives. In some cases, this has been supplemented by providing in-kind support from LAG constituent municipalities, who have supplied local office space and supporting facilities for the LAGs. The total funding provided through USAID's and the RDN of Macedonia since 2012 is estimated at USD 500000. This support has encouraged greater involvement of stakeholders in these regions and has raised expectations for future funding possibilities for larger priority projects to be funded through the national LEADER measure. The policy measures on supporting activities related to LEADER are prepared by the MAFWE. However, no funding has yet been made available through MAFWE to support LEADER due to the delay of the EU accreditation process.

13.8.Fragility among rural communities, services and infrastructure

Many rural communities in the country appear to be caught in a vicious cycle, which may be expressed as weak or narrowly based economies; lack of job opportunities; high levels of unemployment; outmigration of young people; falling population; non-viability of rural services; reduced quality of life; further outmigration. For example, Kruševo municipality reported 34% unemployment (SSO, 2018), and the continuing out-migration of young people (including many with high levels of education) because of lack of jobs. In the village of Logovardi (Bitola municipality), the village school now has only five or six new pupils each year, compared with 30 or 40 in the 1990s. Many villages lack essential services: for example, the village of Timjanik (Negotino municipality) has no kindergarten to serve the population of 500 households, which makes it difficult for young mothers to seek work. The infrastructure of roads, water supply, sewerage and electricity is also seriously inadequate in many areas. These weaknesses have damaging knock-on effect upon farms and rural enterprises. One exception from this bleak situation is that most rural areas have good broadband services, to a greater extent than is found in many other rural areas in Europe. This is an important asset for future development of rural enterprises.

In many parts of the EU, local concern about the lack of services has led to direct initiative by village communities. A striking example from Rezanovce Village in the Municipality of Kumanovo proves that this kind of initiative can be taken in Macedonia. The people of this village, led by the voluntary village council, built an elementary school, using their own funds, the only village in the country to do so. The school, with 80 pupils, is now managed by the municipality. The teachers, who come from the town of Kumanovo, are financed by the Ministry

of Education. Parents take part in school activities, and there is a parents' council with nine members. Teaching is into Macedonian and Albanian languages, and the school is involved in many multi-ethnic projects. The school provides a room for a mobile doctor, who comes once a week because there is no clinic in the village. There is no cultural center, but the local community can use the school for whatever purposes they need. The school has become a social center for the village, and is trusted and valued by the local population.

13.9. The potential for cooperation in farming and in the food chain

There is clearly scope for further enterprises of the kind described above, and for more widespread patterns of cooperation among producers and within food chains. Some of the difficulties experienced by small farmers can be addressed by cooperation between them, and by the creation of effective links within the 'food chain' of producers, processors and distributors. The government is supporting such cooperation and links, particularly in those industries which contribute to the country's exports of food products.

Villa Dihovo Guesthouse⁸⁸, in Dihovo Village (Bitola Municipality) is a successful 6-year-old family business, run by an individualistic entrepreneur (also a teacher) as "a home away from home". It comprises a 4-room guesthouse and back-packer accommodation, with home-grown, home-cooked, pick-your-own organic food and drink, and outdoor activities in the adjoining national park. Additional accommodation is sourced in the village when needed. The facilities are self-built, rustic and constantly being improved and extended. The owner seeks to 'think as the visitor does, welcome everyone with a smile and make things clear, simple and practical'. The system is based on no set prices, rules or timetables. He has not sought public subsidies or grants, and never will do so. He attracts visitors from all over the world. The guesthouse is a member of the Slow Food movement, which supports local producers and organics; and has worked with other local producers to sell good food to visitors.

13.10. The role of municipalities bringing together rural stakeholders

Municipalities have the powers to take initiative in local development, can raise local taxes for this purpose and can call upon government funds. Municipality of Kruševo is located in a mountainous part of the South-West region and has a population of 9600, of which 40% is rural. The Municipal Council is striving to redeem the serious weakness of the local economy, shown by 34% unemployment, continuing out-migration of young and educated people, 70% reduction in traditional sheep production, lack of business development apart from textiles, and a high proportion of one-person businesses. The council perceives that local people are risk-averse, with a non-entrepreneurial, post-communist mentality, unwilling to work in partnership with others and with a propensity to drop out of projects after the planning stage, leaving

⁸⁸ <http://villadihovo.com/>

implementation to the public sector. The tourism association, having been active for 2 years during a cross-border project, has lapsed, and tourist numbers are low.

To tackle these issues, the Municipality has developed a strategy focused on tourism, the creation of a zone for light industry, attracting foreign investors, business start-up training and support, and improvement of services and infrastructure (roads and water supply) in the surrounding 18 villages. Tourism is seen as the main growth area, because of the fine mountain landscapes and cultural assets. The area offers skiing, hiking, paragliding, health spa, conference facilities and cultural heritage. 560 guest beds are registered by the municipality, plus many private villas. In the last decade, EUR 2.5 million has been invested in tourist facilities: this includes EUR 1.5 million from the government towards skiing facilities, plus funding from USAID, UNDP, World Bank, EU cross-border programmes, and former residents. MAFWE thought that IPARD funding would be well suited to Kruševo, but the Municipality declined it as too complex to use.

13.11. LAGs' projects with impact on the rural society

1. Marking of a short recreational cycling trail near Veles

The Vardar LEADER LAG⁸⁹, aimed to build upon previous activities related to cycling in the region and to scout out a short, 20 km cycling trail near Lake Veles. This trail is of interest to recreational cyclists from the region as a one-day, weekend activity. This trail integrated together two different wineries which agreed to offer wine tasting packages for cyclists visiting them as part of an organized tour. The LAG also received funds to promote the trail based on a detailed marketing plan. The first visitors to the trail came late summer of 2017.

2. Mapping and marking of a wine and cycling trail in the Vardar Region

The Vardar LEADER LAG is located the Vardar region that is the heart of Macedonia's wine land. Peppered with vineyards small and large, as well as a decent network of back-country, low frequency roads, it offers the perfect opportunity for the development of cycling and wine tourism, and bringing together partners from multiple sectors to work towards a common goal of increased visibility and sustainable economic growth in the region. Vardar LEADER LAG worked to develop infrastructure and provide accessible information for domestic and foreign visitors to the region. Working jointly with the Tikveska Vinska Dolina LAG⁹⁰, Vardar LEADER LAG scouted out potential locations for a wine and cycling tour, the first of its' kind in the country. It contacted wineries, collected information on places of interest, and scouted out potential trails for a two-day tour intended primarily for recreational riders. After choosing a final trail, the LAG provided a gpx. file of the trail, market and cleared it of debris.

Obtained results:

- One 20 km and one 80 km cycling trail mapped and marked with info-boards and signposts;

⁸⁹ <https://www.facebook.com/pg/LAG.Vardar.Leader/about/>

⁹⁰ <http://tikveswinestory.com/>

- Funds allocated to promote the trails to cyclists and other visitors from Skopje, Veles and the region; and
- Networked with relevant parties (wineries, hotels, hostels, local institutions) to create the best possible route for the trail.

3. *Organization of an agricultural fair “Traktorijada”*

The LAG PeLAGonija⁹¹ is located in the Pelagonia Region that is the center of Macedonia’s agricultural sector. To support commercial activity and networking between farmers and providers of equipment, seedlings and services, the PeLAGonia LAG supported the organization of an agricultural fair “Traktorijada”. The fair is bringing together distributors and sellers of agricultural mechanization, seedling materials, financial services and others to exhibit and promote their goods to visitors. The PeLAGonija LAG supported the organization of the event through contacts with potential exhibitors, communicating with the Municipality of Mogila regarding the site and programme of the fair and the purchase of goods and services necessary for the smooth running of the fair.

Obtained results:

- Over 20 exhibitors from the agricultural sector, including equipment sellers, financial service providers, protection and fertilizer distributors; and
- Over 300 farmers from the region and beyond visited the fair.

4. *Setting-up greenhouse and seedling production*

Farmers in the Pelagonia Region often have difficulty sourcing quality seeds and seedlings for crops and often end up with sub-par, underperforming crops because of issues in the supply chain and because they buy these seeds and seedlings from agricultural pharmacies which don’t always guarantee their quality. In 2016, with support from the USAID and Swiss Government, the PeLAGonia LAG set up a 330 m² greenhouse in Kukurecani Village, by purchasing heaters, a diesel aggregator and water pump. The greenhouse now produces a variety of quality seedlings, including tomato, broccoli, cabbage, potato. These seedlings are used by the members of the agricultural cooperative, which is a member of the PeLAGonia LAG.

Obtained results:

- Access to quality seedlings grown in monitored conditions supports generating more stable yields and incomes for the members of the cooperative, as well as be the first step in the process of certifying the seedlings for commercial sale to farmers in the region. The higher quality crops are also helping in the supply of local population with more and better agricultural products.
- In addition, once commercial sales begun, the cooperative allocated 5% of the profit from the sales to support the PeLAGonia LAG, as well as open up the greenhouse for educational visits by farmers and students. The LAG also hold promotional events in the

⁹¹ <https://www.facebook.com/LAG-Pelagonija-LAG-1880937372134247/>

4 municipalities which promote the results of the Project, thereby increasing the visibility of both the LEADER approach and the PeLAGonia LAG itself.

5. Solar dryer purchase and usage training

The LAG Skardus⁹² is established between the municipalities of Jegunovce and Tearce, that are home to a number of agricultural producers. Most of the producers in the region typically sell their products as inputs for the food industry or as goods for direct consumption on the open market. Oftentimes, producers are unwilling or unable to sell all of their produce, because of low prices, or seasonal market misbalances. These unsold products can perish quickly and end up as expenses for the producers. The Skardus LAG recognized that the issue could be mitigated by finding a way to conserve the products and decided that their best option is to dry them. With financing from USAID and the Swiss Government, the LAG purchased a solar dryer for the use of its members and of farmers in the region. The solar dryer is efficient, requires minimum use of electricity, and can be used throughout most of the year in the Macedonia. It is beneficial because it conserves and adds value to the products at the same time, allowing them to be sold at a later date and at a higher price, which saves money and helps to increase the incomes of farmers in the region. The LAG also trained its members and interested farmers in the use of the dryer, to allow them to operate it better. To ensure that the use of the dryer is sustainable and that the LAG can continue providing the service to the local population, it charges a nominal fee to cover operating expenses and amortization for the dryer.

Obtained results:

- Solar dryer with 80 kg per day capacity purchase;
- Trained interested local farmers and LAG members on usage;
- Set up pricing model to ensure sustainable use of dryer; and
- Began working on the development of products and on tracking down buyers.

⁹² <https://lagskardus.mk/>

14. Conclusion

The MAFWE needs to consider and recognize the nature of the activities implemented by donors and the RDN of RM up to now as a public good, and should build on current and future actions for full-fledged implementation of the LEADER Approach, providing efficient continuation of support for the successful implementation of the LDS. There is a need to strengthen the capacities of all existing and potential LAGs through a process of consulting, training, coaching and implementation of small-scale projects deriving from the LDS. There is a genuine necessity to create a critical mass of local human capital capable to implement a successful LEADER programme in Macedonia. This is crucial in order to enable LAG partnerships and LDS to emerge and evolve from the bottom-up, with true equality between the public and private sectors. It will advance the LAG involvement and citizens' inclusion in all aspects of local governance, as well as promote co-operation and partnerships between different sectors and stakeholders in rural areas, based on the LEADER principles.

Due to the low average baseline capacity of the LAGs, at least two more years of coaching and funding of small-scale projects are required before they can develop the necessary organizational and project cycle management capacity required for fully independent operations. It is expected that the National and EU funding for LEADER will not become available before the beginning of 2019, creating a two-year funding gap that the LAGs cannot independently overcome with their current capacity. The slow-down or discontinuation of activities started since 2007 would put an end to the current momentum and discourage all stakeholders from getting involved in LEADER again, making it highly unlikely to mobilize enough local support to revitalize the LEADER adoption process. If the LAGs are left to their own devices and with insufficient funding to bridge the two or more-year funding gap, they will likely disband. This would represent a considerable waste of the resources invested into the LEADER adoption process up to this point. The newly formed LAG partnerships are only at the beginning stage of a process meant to fully respond to the needs and interests of the diverse rural stakeholders based on the implementation of LDS. The slow pace of this process and the repeated postponement of the start of the LEADER measure as part of the government's rural development policy threaten to jeopardize all the work done so far to rally the support of the stakeholders in rural areas. It might damage the already established LAGs which are still very new and fragile public-private partnerships (formalized as NGOs). The LAGs are still nascent organizations with underdeveloped organizational and project cycle management capacities and, as such, are having difficulties operating independently of donor funding and support.

Most grants are usually administered by regional or national organisations, but under LEADER grant schemes, the funds are put into the hands of local action groups (LAGs) for them to disburse to projects that can help address local problems and opportunities.

15. Recommendations

Recommendations for institutional set-up improvements

The formal approval of the LEADER measure by the MAFWE must be accelerated and allow further actions in the process of finalization of the accreditation package. There is an evident development of the LDS at the regional level in 10 LAGs supported by the donor projects. This process must continue based on the very encouraging results creating a critical mass of local human capacities as a good basis for implementation of a quality LEADER programme in Macedonia.

Recommendations for policy improvements

Local development policies should be implemented with more coordination between the relevant institutions and with a bottom-up decision-making process. In addition, better connection and coordination of diverse rural actors, both in vertical terms (government bodies at different levels - national, regional and local) and in horizontal terms (entrepreneurs, professional associations, farmers, etc.) are needed.

Recommendation for empowering local stakeholders

Prior to the process of launching of the EU LEADER as a future IPARD measure, it is necessary to strengthen the organizational capacities of local stakeholders from the public, civil and private sectors in order to provide effective means of local social inclusion within the LAGs, and to be well prepared for the implementation of the LEADER Approach within the IPARD Programming period 2014–2020. The capacity building process should include design and delivery of training for the local stakeholders in:

- 1) Understanding the key steps and technical procedures for applying the LEADER Approach on a local level;
- 2) Strengthening the capacities of the LAG managers to coordinate the implementation of the LDS;
- 3) Developing transparent procedures among the main actors (creating synergy, systems for communication and decision making);
- 4) Designing and implementing outreach campaigns that will increase the local awareness and rally support for the LEADER Approach, thereby attracting new members to the LAGs;
- 5) Preparing technical advisory materials (guides and brochures) for the LAGs; and
- 6) Provide ongoing coaching support to the LAG management on administrative and programming operations, and support the establishment of financial and administrative mechanisms for LAG operations.

The objective would be to provide technical assistance to the existing LAGs for the realization of projects derived from the LDS in order to build up their project cycle management capacity and demonstrate the effectiveness of community-based initiatives, thereby helping the LAGs to attract new members and funding. The support can consist of coaching the LAGs on how to

implement the LDS and administer local rural economic development projects, and on how to work with the local beneficiaries and the community in an open, inclusive and transparent manner. This can be achieved by bringing together local actors to help develop project ideas based on their LDS priorities and by facilitating communication which will enable local actors to discuss the needs of their community on a strategically sound basis. It is important that different “visions” of the future and economic development strategy for each micro-region covered by the LAGs are publicly discussed so that a high degree of inclusiveness and consensus can be achieved.

Recommendation for tourism as a factor for rural development through LAGs

Tourism is singled out as one of the priority areas for intervention in Macedonia and Moldova, because of the connection with the development and its role and contribution that it will have in the economic development of the municipality. In establishing tourism as a priority area, the existing conditions and values and connection to other areas and sectors of life were taken into consideration. To achieve sustainable rural tourism by providing quality products and services implementation of two specific objectives is required:

- 1) Development of standards for sustainable tourism - this goal would be realized through the establishment of conditions for development of sustainable rural tourism and reinforcement of the local capacities for the needs of rural tourism;
- 2) Identification and promotion of authentic values of given regions of Macedonia and Moldova for tourism development, which can be realized by raising awareness on the global changes in tourism and strengthening LAGs capacities and the capacities of the local population for the introduction of organized tourism performance;
- 3) Introduction and promotion of tourist offer and products of rural, alternative and cultural tourism;
- 4) Preparation and publication of promotional tourist materials for rural municipalities and LAGs

Recommendation for agriculture as a factor for rural development of Macedonia and Moldova

Agriculture is one of the priority areas for intervention in Macedonia and Moldova, completely and comprehensively as a necessity in the economic development and capacity utilization and the involvement of citizens and the development of the municipality. Agriculture in the function of local economic development provides a complete encircling of the LEADER approach as an official approach for rural development by strengthening the capacity of the group (LAG) for rural development for implementation and generating activities for sustainable regional rural development. Needs to be realized:

- 1) Establishment of LAGs or strong support for the existing ones which will work smoothly on sustainable regional rural development which will enable further implementation of the CLLD approach and EU standards;
- 2) Initiative to create a LAGs’ network on national level and regional strategy for rural development that will implement the LEADER approach in the region;
- 3) Improving conditions for agricultural development (Increase the quality and quantity of agricultural product);

- 4) Development and support of livestock and early growing vegetables (Increase livestock and preservation of indigenous species and breeds and traditional varieties of vegetables); and
- 5) Education of farmers for standardization of products and their classification (Strengthening the capacity of farmers and farmer associations and the use of available financial resources in the field of rural development).

Recommendation for rural economy as a factor for rural development in Macedonia and Moldova

The economic development is a priority and urgent area for intervention in rural areas of Macedonia and Moldova. Providing perspective, job opportunities and life is essential. The new Rural Development Strategy 2014-2020 is based on factors related to the field. As a strategic goal of the economy as a priority is the reduction of the unemployment by improving the production conditions of people in the rural regions through:

- 1) Creating conditions for investment in the economy in the rural areas and municipalities (Establishment of a positive climate for investment in the rural economy);
- 2) Improving conditions for the development of existing economic entities (Supporting existing economic entities operating in the rural economy, especially circular or green economy); and
- 3) Strengthening of human resource through education of local people to open new production facilities which will achieve the reduction of unemployment (Information on all possible uses of human resources and conditions in the community, use of available financial resources in the field of rural economy and developing entrepreneurship and partnership among locals and LAGs).

Analysis of culture as a factor for rural development in Macedonia and Moldova

Culture has essential role for in Macedonia and Moldova, for the past and the future of the country and it can be the engine of economic and social development of the rural communities in its integration and management strengthening activities in this area whose comprehensiveness is included in other strategic objectives. Therefore, it is priority area that must be built following strategic goal: maximum commitment for protection, conservation and restoration and presentation of archaeological and cultural treasures as the official common value of the nation through:

- 1) Forming LAGs for rural development that will have a special responsibility in promoting cultural values in its activities (mapping and protection of cultural and historical heritage. Availability, stress, awareness and visibility of all archaeological values);
- 2) Complete determination, marking, highlighting and promoting cultural events in the areas covered by the LAGs, international cooperation and exchange, amalgamation with other values in harmony with established guidelines (Determining and establishing the availability, stress, awareness and visibility of all archaeological values, international cooperation and research); and
- 3) Renovation of existing and construction of new cultural centres, sports fields which will enhance cultural/entertaining life (improvement of cultural life in rural areas).

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