STUDY

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The EU farming employment: current challenges and future prospects

Annex B: Case studies

Agriculture and Rural Development

Policy Department for Structural and Cohesion Policies
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The EU farming employment: current challenges and future prospects

Annex B: Case studies

Abstract

This study outlines the current trends and patterns of farming employment in the EU and discusses possible development paths for the European agricultural labour force.

In particular, this study investigates the drivers of and structural changes within agricultural labour markets at regional, national and EU level, building on a range of quantitative and qualitative analysis methods.

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1. SOUTH-WEST OLTENIA (ROMANIA)

Country	Romania
Region (NUTS 2)	South-West Oltenia (RO41)
Cluster	1

1.1. Contextual information on the agricultural labour market

1.1.1. Territorial characterisation of the region

The South West Oltenia Region (RO41) is located in the South, South-West of Romania covering more than 12.25% of the area of Romania (29,211.69 km^2). The South West region falls between the following natural boundaries: to the South of the Danube River, to the East Olt River (the third largest in Romania), to the North and West Carpathian Mountains. In the south, the Danube River is the natural border with Bulgaria, the area having a potential for the development of cross-border projects and strategies. The lowest form of relief is 30 m from the sea level, located in southern Oltenia. The altitude rises to the northern boundary of the Gorj County at 2,519 m. The region's relief is very diversified, comprising the Danube plain area, the rivers of Olt and Jiu, plains, plateau, sub-mountainous areas and the mountainous area. The climate of Romania is temperate continental with important regional variations from the plains to the mountains (in plain areas, positive temperature is registered approximately 8 months per year compared to 4 months at the level of high mountain areas). The South West Oltenia region is influenced by the Mediterranean climate standards, more than the temperate-continental systems, which affect neighbouring regions, which also highlights much higher temperatures than in other regions. The largest area of the South West Oltenia region is destined for agriculture in the South, and the forests and mountains prevail in the north. The counties of the region are rich in minerals and natural resources (especially coal and wood for combustion and for Woody products). Currently in the region there are industrial exploits of anthracite, lignite, brown charcoal, iron, bauxite, salt, manganese. Oil and natural gas deposits are usually found in the piedmont regions of the area. Soil quality is influenced by the non-compliant management of industrial and household waste, by negative influences on the chemical composition of the soil. Climate change in recent years, the increasing frequency of dry periods and severe drought, with extreme maximum temperatures, have led to the emergence and expansion of high (12%) and medium (35%) risk areas of desertification. South West Region Oltenia is the region with the largest number of municipalities after the North East and South Muntenia regions. The 408 municipalities in the region comprise 2,070 villages. From these villages, 121 are villages belonging to certain cities (40 cities in the entire region), which in most cases have an economic profile different from the rest of the villages. The South West region is predominantly rural (OECD methodology) with a population density of 76.2 inhabitants/km^2 and a rural population share of 51.91%. In 2012, the rural population of the region accounted 1,156,185 people from the total of 9,637,820 people as rural population at national level. The region is composed of 5 counties, Dolj, Gorj, Mehedinti, Olt and Valcea, at the level of NUTS3.

1.1.2. Background data on the agricultural sector and farming employment in the CS region

Economic breakdown by Sector

The gross value added in the RO41 region has relatively high oscillations regarding the primary sector when expressed in absolute values, moving from € 651.34 million in 2007 to € 1,048.82 million in 2008, about 50% of amplitude to the lowest level. The levels recorded in primary sector do not follow a clear path onward or downward, however the relative expression (primary out of total) indicates a clear decreasing trend from 9% in pre-accession period (2005) to 5% for 2016. The annual values are near to the period average (€ 777.27 million) indicating that the relative reduction is not due to sector performance itself but to the influence of the other two sectors. The oscillation amplitude is higher for the absolute values of both secondary sector (€ 3,702.92 million lowest in 2005 and € 6,866.38 million highest values in 2008) and tertiary sector (€ 3,429.85 million lowest in 2005 and € 8,272.04 million highest in 2016) where the relative values are moving along a slightly wider range of values (41-55% in secondary sector and 44-54% in tertiary sector).

Table 1.1: Gross value added at basic prices for RO41 region in € million [nama_10r_3gva]

Sectors/TIME	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Primary	736.20	810.34	651.34	1,048.82	893.23	711.81	934.04	702.62	840.35	769.92	748.57	751.58
Secondary	3,702.92	4,569.15	6,118.62	6,866.38	5,760.13	6,305.33	6,370.83	6,132.36	6,058.73	5,652.61	6,095.38	6,335.78
Tertiary	3,429.85	4,596.28	6,376.28	6,496.77	5,985.85	4,666.78	4,201.51	5,609.15	6,144.97	6,649.82	7,699.10	8,272.04

Table 1.2: Gross value added (shares) at basic prices in [EUROSTAT, nama_10r_3gva]

Sectors/TIME	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Primary	9%	8%	5%	7%	7%	6%	8%	6%	6%	6%	5%	5%
Secondary	47%	46%	47%	48%	46%	54%	55%	49%	46%	43%	42%	41%
Tertiary	44%	46%	49%	45%	47%	40%	37%	45%	47%	51%	53%	54%

The employment in the RO41 region expressed in absolute values has a clear downward evolution for the primary and secondary sector while the tertiary sector records small variations around a relatively steady level. The relative expression of shares distribution across the sectors indicate a clearer recovery for the secondary sector and an upward evolution for the tertiary sector. The evolution over the analysed period for total labour indicates an important loss of labour of 322.9 thousand persons, that represents 1/4 of the 2005 value or 1/3 of the 2016 level!

Table 1.3: Employment (thousand persons) in RO41 region [EUROSTAT nama_10r_3empers]

Sectors/TIME	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Primary	499	469	469.3	446.5	499.6	503.8	509	460.2	425.8	424.8	345	301.8
Secondary	427.7	430.4	416.4	399.2	356.1	330.9	332.5	283.1	270.9	280.9	293.1	306.9
Tertiary	333.5	347.0	352.8	362.0	355.9	362.9	365.1	315.3	326.4	347.4	302.9	328.6

Table 1.4: Employment (shares) in RO41 region [EUROSTAT nama_10r_3empers]

Sectors/TIME	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Primary	40%	38%	38%	37%	41%	42%	42%	43%	42%	40%	37%	32%
Secondary	34%	35%	34%	33%	29%	28%	28%	27%	26%	27%	31%	33%
Tertiary	26%	28%	28%	30%	29%	30%	30%	30%	32%	33%	32%	35%

Agricultural gross value added

The Agricultural Gross Added Value per inhabitant is biased by two factors: the important decrease in population (320,421 persons less in 2016 compared to 2005) reflected above in the decrease of labour

and the reporting unit for GVA as million €. These two factors make the evolution analysis less relevant for the purpose of the current Case Study.

Table 1.5: Gross value added at basic prices for RO41 region in € million [nama_10r_3gva] and population on 1 January by age, sex and NUTS 2 region [EUROSTAT demo_r_d2jan]

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Agriculture GVA	736.20	810.34	651.34	1,048.82	893.23	711.81	934.04	702.62	840.35	769.92	748.57	751.58
Population (Pers.)	2,313,903	2,301,833	2,285,733	2,270,776	2,257,752	2,246,033	2,232,814	2,067,357	2,048,702	2,033,360	2,015,766	1,993,482

Agricultural labour force

The employment in agriculture indicates a very high share of active population involved in farming activities (33.5% in 2017). The share of female sole holders working on farm is higher than 50% (53.5%) while in terms share of family labour almost entire volume of persons involved is represented by females (99.4%). This second share underlines the family character of (small) farms where the partner/wife is either the farm head either helps completing the work in the farm. The non-family labour force is extremely rare when addressing women as the share indicates 0.6% females, however this tiny share represents 1/5 or 19.9% for this category when expressed in AWUs. The family labour force (sole holders + family members) accounts for 2/3 of the total while the rest of 1/3 is covered by members of sole holders' family working on the farm. In terms of AWUs the family labour force (sole holders + family members) cover for 98.4% of total relatively evenly distributed between the sole holders (53.4%) and family members (45.0%). The women cover for 1/3 of the sole holders AWUs (32.8%) while they fill 69.4% as family members and 1/5 as family labour force (49.5%).

Table 1.6: Employment by economic activity in 2017 (CAP ACI C13)

Total	1000 persons	853.3			
Agriculture	1000 persons	285.5	**Food Industry**	1000 persons	12.1
	% of total	**33.5**		**% of total**	**1.4**
Forestry	1000 persons	5.0	**Tourism**	1000 persons	10.2
	% of total	**0.6**		**% of total**	**1.2**

Table 1.7: Regular farm labour force, in persons, in 2013 (CAP ACI C22)

Regular Farm labour force, in persons and females share, 2013				
Total	**Total**	**1,038,650**	**Total Persons**	**1,038,650**
	Females	512,76	Females	
Sole holders working on the farm	Total	555,17	% of total	49.4
	Females	200,19	% of regular labour force	53.5
Members of sole holders' family working on the farm	Total	477,42	% of sole holders	36.1
	Females	311,54	% of regular labour force	46.0
Family labour force (sole holders + family members)	Total	1,032,590	% of family members	65.3
	Females	511,73	% of regular labour force	99.4
Non-family labour force	Total	6,06	% of family labour force	49.6
	Females	1,03	% of regular labour force	0.6
Regular Farm labour force, in AWUs and females share, 2013				
Total	Total	241,59	Total AWU	241,59
	Females	118,53	% of total	49.1
Sole holders working on the farm	Total	128,91	% of regular labour force	53.4
	Females	42,32	% of sole holders	32.8
Members of sole holders' family working on the farm	Total	108,76	% of regular labour force	45.0
	Females	75,44	% of family members	69.4

Regular Farm labour force, in persons and females share, 2013				
Total	**Total**	**1,038,650**	**Total Persons**	**1,038,650**
	Females	512,76	Females	
Family labour force	Total	237,67	% of regular labour force	98.4
	Females	117,75	% of family labour force	49.5
Non-family labour force	Total	3,91	% of regular labour force	780
	Females	780	% of non-family labour force	19.9
Temporary Farm labour force, in AWUs, Total		10,05	AWU	10,05

The age structure of the farm managers reflects further a highly unbalanced distribution by age groups with less than 5% (3.01%) under 35 years of age, little over 1/4 (28.83%) for the category between 35-54 years of age while the large majority (68.08%) account for the category of 55 years of age and more as data indicates in 2016. This distribution in not a new development being even more pronounced for earlier time periods during the transition to the market economy, land restitution in agriculture and the pre-accession period.

Table 1.8: Age structure of farm managers in RO41, in 2016 (CAP ACI C23)

Farm managers by age groups 2016	**Total Farm Managers**	Number	539,550
	Less than 35 years	Number	16,250
		% of total managers	3.01
	Between 35 and 54 years	Number	155,570
		% of total managers	28.83
	55 years and over	Number	367,330
		% of total managers	68.08
Ratio Young/elderly managers 2016	**Less than 35 years/55 years and over**	Number of young managers by 100 elderly managers	4,423,815

According to the Farm Structure Survey Romania from 2010 the shares of women as head of the agricultural holding has a better distribution along the different age groups/categories. Over 20% (21%) of female farm heads (farms without legal status) have less than 45 years of age, 30% have 45-64 years of age and 46% have 65 years of age and above.

Table 1.9: Head of agricultural holding without legal status (number), total and women, by age groups [Farm Structure Survey, Romania, 2010]

Age Group	15 – 24	25 – 34	35 – 44	< 45	45 – 54	55 – 64	45-64	65 and above	Total
	4,685	31,087	82,155	117,927	91,805	133,279	225,084	230,957	573,968
Female	1,223	6,588	16,839	24,650	23,922	44,301	68,223	105,190	198,063
Female	26%	21%	20%	21%	26%	33%	30%	46%	35%

The decrease of labour force for all categories is less visible for the sole holders working on farms (about 50,000 persons) that most likely were not females as their share increases from 31% in 2005 to 36% in 2013. The labour force as members of sole holders' family drops by 139,180 persons (22.57%) and the family labour force drops by 190,260 persons (15.55%) over the analysed period. The female share as family labour force does not oscillates significantly representing 65% of the sole holders' family and 50% of the family labour force. The females represent less than 20% of the regular non-family labour force and 1/2 (49%) of the regular labour force. The family labour force is covered for 50% of the AWUs by women and almost 3/4 as the members of sole holders' family (70%).

Table 1.10: Labour force: number of persons by sex of workers in RO41 region [EUROSTAT ef_olfreg]

RO41	2005	2007	2010	2013
Sole holders working on the farm	606,250	578,840	573,970	555,170

RO41	2005	2007	2010	2013
Females	190,940	188,280	198,930	200,190
Females %	31%	33%	35%	36%
Labour force-members of sole holders' family	616,600	414,420	518,140	477,420
Females	413,340	294,600	328,340	311,540
Females %	67%	71%	63%	65%
Family labour force	1,222,850	993,260	1,092,110	1,032,590
Females	604,280	482,870	527,270	511,730
Females %	49%	49%	48%	50%
Regular non-family labour force	6,040	4,990	7,180	6,060
Females	1,320	1,140	1,380	1,030
Females %	22%	23%	19%	17%
Regular Labour Force	1,228,890	998,250	1,099,290	1,038,650
Females	605,600	484,020	528,650	512,760
Females %	49%	48%	48%	49%

Table 1.11: Labour force: farm work (AWU) by sex of workers in RO41 region [EUROSTAT ef_olfreg]

RO41	2005	2007	2010	2013
Sole Holders	173,330	174,510	112,360	128,910
Females	50,850	52,080	35,440	42,320
Females	29%	30%	32%	33%
Members of sole holders' family	175,430	151,240	98,440	108,760
Females	123,580	107,910	71,560	75,440
Females	70%	71%	73%	69%
Family labour force	348,750	325,760	210,810	237,670
Females	174,430	159,990	106,990	117,750
Females	50%	49%	51%	50%
Regular non-family labour force	3,730	3,000	4,900	3,910
Females	820	800	1,010	780
Females	22%	27%	21%	20%
Regular labour force	352,490	328,760	215,700	241,590
Females	175,240	160,780	108,000	118,530
Females	50%	49%	50%	49%
Non-family labour force working on non-regular basis	20,600	18,760	11,300	10,050
Total: Labour force directly employed by the holding	373,080	347,520	227,000	251,630
Labour force not directly employed by the holding	1,950	2,770	1,330	1,070

Main Types of agricultural products

The agricultural/arable land of the region is mainly cropped with cereals for grain production, industrial crops, vegetables and horticultural products, vine and for a smaller amount with protein crops (growing four times over the analysed period). The area of cereals is slightly decreasing over the analysed period while the production volume (total) is increasing based on modernisation of agriculture (machinery, seeds, fertilisers) while the production volume is still highly fluctuant and heavily dependent on weather.

Table 1.12: Area (cultivation/responsibly/production) (1000 ha) – Crop production in national humidity by NUTS 2 regions [EUROSTAT apro_cpnhr]

CROPS/TIME	Cereals for the production of grain (including seed)	Dry pulses and protein crops for the production of grain	Potatoes (including seed Potatoes)	Sugar beet (excluding seed)	Tobacco	Total
2005	966.30	4.90	16.60	0.78	1.47	990.05
2006	863.12	5.31	16.80	1.60	0.35	887.18
2007	801.49	3.55	7.90	0.26	0.42	813.62
2008	812.09	5.05	18.10	0.00	0.38	835.62
2009	824.76	5.11	18.90	0.00	0.00	848.77
2010	747.77	4.67	:	0.00	0.02	752.46
2011	791.65	5.08	:	0.00	0.13	796.86
2012	789.01	5.40	:	0.01	0.16	794.58
2013	819.15	5.95	:	0.00	0.14	825.24
2014	817.07	5.37	:	0.05	0.14	822.63
2015	807.71	6.10	:	0.00	0.13	813.94
2016	854.40	7.24	:	0.00	0.31	861.95
2017	816.33	20.32	:	0.00	0.25	836.90

Table 1.13: Responsibly production (1000 T) Crop production in national humidity in RO41 region [EUROSTAT apro_cpnhr]

CROPS/TIME	Cereals for the production of grain (including seed)	Dry pulses and protein crops for the production of grain	Potatoes (including seed Potatoes)	Sugar beet (excluding seed)	Tobacco
2005	3,228.81	3.20	187.50	24.18	1.34
2006	2,449.92	3.50	192.20	32.39	0.39
2007	668.81	1.40	90.80	2.69	0.22
2008	2,365.74	4.50	203.80	0.00	0.68
2009	2,593.18	5.60	276.80	0.00	0.00
2010	2,347.64	:	:	0.00	0.03
2011	2,836.78	:	:	0.00	0.20
2012	1,482.69	:	:	0.10	0.07
2013	2,777.51	:	:	0.00	0.13
2014	2,907.79	:	:	0.44	0.14
2015	2,524.01	:	:	0.00	0.12
2016	2,858.90	:	:	0.00	0.71
2017	4,330.57	:	:	0.00	0.18

The agricultural production of the region expressed in € million indicates further the dominance of the cereals for grain and seed production, followed by vegetables and horticultural products, industrial crops, forage and wine, and to a much lesser extent the animal productions where pigs lead the segment overpassing all other animal productions.

Table 1.14: Production value in in RO41 region, € million [EUROSTAT agr_r_accts]

Prod. Value	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Cereals (including seeds)	323.62	250.41	140.52	540.19	357.79	358.06	635.07	321.63	590.87	503.5	427.42	448.7
Industrial Crops	29.62	30.87	13.99	64.4	43.5	88.08	101.71	73.03	101.83	102.51	106.64	156.08
Raw Tobacco	1.16	0.4	0.2	0.66	0	0.02	0.22	0.09	0.15	0.13	0.12	0.74
Sugar beet	0.57	0.82	0.07	0	0	0	0	0	0	0.02	0	0
Forage Plants	120.14	140.2	131.16	212.74	149.63	173.7	179.44	125.57	153.22	117	105.87	109.52
Vegetables and horticultural products	230.53	310.69	269.52	331.52	251.76	362.85	327.27	333.83	274.99	291.25	296.44	264.47
Wine	26.37	42.59	50.6	57.18	41.08	24.16	36.71	38.85	58.35	37	34.98	34.24
Cattle	48.03	42.79	51.28	40.52	43.36	17.64	20.48	24.87	26.37	24.67	28.01	27.47
Pigs	135.1	148.39	122.39	135.77	103.2	90.3	79.02	78.11	90.34	86.61	73.8	70.86
Sheep and goats	9.7	9.15	16.59	13.54	16.84	12.43	15.99	15.33	16.4	20.16	16.56	13.91
Poultry	34.14	38.27	39.47	33.78	30.38	22.9	20.02	21.69	34.15	34.87	43.25	28.85

Agricultural training of the farm manager population

The education level of the labour in agriculture of the region highlights one of the major problems related to present and future developments of employment, particularly in a dual speed agriculture where the small agricultural households and farms are still very present and socially important. From the farm managers 97.31% have only practical experience while 2.3% have only basic training, the full agricultural training being far less than 1% (0.3%). These shares are relatively worse in the case of the category less than 35 years of age, 97.6% only practical experience, 1.66% only basic training and an invisible improvement for full agricultural training at 0.66%. Among the age categories/groups unsurprisingly the best shares are recoded for the 35-54 years of age, with 91.23% for practical experience only, 5.27% for basic training and 0.28% for full agricultural training. Although not much better than other categories the differences are explained by the earlier education and training programmes from 1990-2000 period when professional and vocational schools and programmes were available for agriculture and related professions. Analysing earlier periods for the education level of the farm heads and agricultural managers (2010 vs. 2016) indicates a worsening situation in which the very unfavourable distribution of shares is decreasing further most likely as result of absence of programmes and training initiatives in professional/vocational training for agriculture.

Table 1.15: Agricultural training of farm managers in RO41, in 2016 (CAP ACI C24)

Total Farm Managers	Total	Number	539,550
	Practical Experience only	Number	525,090
		% of total	97.31
	Basic Training	Number	12,440
		% of total	2.30
	Full Agricultural Training	Number	1620
		% of total	0.30
Less than 35 years	**Total**	**Number**	**16,250**
	Practical Experience only	Number	15,860
		% of total	97.6
	Basic Training	Number	270
		% of total	1.66
	Full Agricultural Training	Number	110
		% of total	0.67

Between 35 and 54 years	**Total**	**Number**	**164,240**
	Practical Experience only	Number	149,850
		% of total	91.23
	Basic Training	Number	5,270
		% of total	3.20
	Full Agricultural Training	Number	460
		% of total	0.28
55 years and over	**Total**	**Number**	**367,330**
	Practical Experience only	Number	359,370
		% of total	97.83
	Basic Training	Number	6,900
		% of total	1.87
	Full Agricultural Training	Number	1060
		% of total	0.28

Table 1.16: Level of education of farm heads in RO41, in 2010 [Farm Structure Survey, Romania, 2010]

Training/Age	< 35	35-54	> 55
Only Practical Farm Experience	97.67	96.36	97.85
Basic Agricultural Training	1.64	3.34	1.87
Full Agricultural Training	0.69	0.3	0.29

Agricultural factor and entrepreneurial income and gross fixed capital formation

The agricultural factor income per AWU real terms in RO41 does not improve consistently and records serious variations that can be explained by the annual fluctuations in production as result of weather dependency and absence of consistent irrigations for the region's main crops: cereals, industrial crops and vegetables.

Table 1.17: Agricultural factor income per AWU real terms in RO41 (CAP ACI C25)

2009	2010	2011	2012	2013	2014	2015
1,995.0	2,744.8	3,749.2	2,625.5	2,597.7	2,729.6	2,645.0
Indicator A/Index 2010 = 100						
72.7	100.0	136.6	95.7	94.6	99.4	96.4

The same inconsistency and variations are observed regarding the agricultural entrepreneurial income per family work unit, in RO41. Disregarding the value for 2011 the other data indicates an improvement compared to the beginning of the period and a relative stable evolution around the value of € 2,700/AWU.

Table 1.18: Agricultural entrepreneurial income per family work unit, in RO41, in €/AWU (CAP ACI C26)

2009	2010	2011	2012	2013	2014	2015
1,545.63	1,892,693	3,978,306	2,733,978	2,604,171	2,810,237	2,690,311

The gross fixed capital formation in agriculture, the share of GVA in agriculture and the total GVA from agriculture, forestry and fishery present the same hiccups and annual variations like in the case of the previously analysed indicators.

Table 1.19: Gross fixed capital formation in agriculture in RO41 (CAP ACI C28)

2010	2011	2012	2013	2014	2015	2016
€ million (in current prices)						

2010	2011	2012	2013	2014	2015	2016
74.54	119.6	119.1	142.51	138.54	123.17	n.a.
% of GVA in agriculture						
9.577407	12.48851	16.93253	16.85272	17.99361	16.45492	n.a.
GVA in agriculture, forestry and fishing, € million (in current prices)						
778.29	957.68	703.38	845.62	769.94	748.53	n.a.

Labour costs

Labour costs in Romania including agriculture are composed of the wages plus taxes: Social Insurance (25%), Social Health Insurance (10%), income tax (10%) all on employee side and Work Insurance Contribution (2.25%), Social Insurance (0.74%) and Social Health Insurance (0.3%) on employer side leading to a total of 41.06% from total brut wage transferred to the state.

Data on pluriactivity and on/off farm diversification

The number of farms with other gainful activity has increased over the analysed period in the case of sole holders from 18,260 farms in 2005 to 84,230 farms in 2013. This increase in number was accompanied by an enlargement of UAA with 1,109,310 ha and an output of 1,811,371,910 SO.

Table 1.20: Other Gainful Activities (OGA) of the farm of sole holder: number of farms, agricultural area, standard output (SO) and Livestock (LSU) by economic size of farm (SO in €) [Ef_ogaecs]

	2005	2007	2010	2013
Total number of holdings	18,260	17,700	67,750	84,230
Utilised agricultural area	4,804,680	4,786,740	5,938,090	5,913,990
LSU of the holdings with livestock	622,560	641,730	950,370	955,410
Standard output (SO) in €	1,892,655,500	1,905,290,130	3,139,167,300	3,704,027,410

In the case of other gainful activities directly related to the holding the number of farms has decreased over the same time period (2005-2013) by 626,490 units and 850,850 ha UAA while the Standard Output has increased by € 1,471,659,110. In the case of women, the decrease was less important by 40,990 units, a drop of 456,030 ha and an increase of € 13,107,280 as Standard Output. The share of women in holdings with other gainful activity reached 33% of holdings and only 14% of UAA or 15% of SO unbalancing the general distribution of genders for the agricultural sector in the region.

Table 1.21: Other gainful activities directly related to the holding: number of farms, agricultural area, standard output (SO) and Livestock (LSU) by age and sex of Holder [EUROSTAT ef_ogadsexage]

	2005	2007	2010	2013
Total Number of holdings	4,256,150	3,931,350	3,859,040	3,629,660
UAA	13,906,700	13,753,050	13,306,130	13,055,850
LSU of the holdings with livestock	6,602,750	6,041,720	5,444,180	4,975,310
Standard Output (€)	10,517,919,530	10,119,956,280	10,420,314,210	11,989,578,640
Holdings with OGA	942,090	617,690	42,750	101,870
Females				
Total Number of holdings	1,241,350	1,172,910	1,248,330	1,200,360
UAA	2,285,870	2,282,790	1,831,280	1,829,840
LSU of the holdings with livestock	1,024,220	881,600	769,330	713,650
Standard Output (€)	1,798,051,160	1,700,748,660	1,565,400,980	1,811,158,440
Holdings with OGA	254,850	129,720	6,910	21,440

	2005	2007	2010	2013
Females				
Total Number of holdings	29%	30%	32%	33%
UAA	16%	17%	14%	14%
LSU of the holdings with livestock	16%	15%	14%	14%
Standard Output (€)	17%	17%	15%	15%
Holdings with OGA	27%	21%	16%	21%

Specificities of the regional agricultural labour market

Migrant/Seasonal workers

no data available

Foreign Labour per agricultural sub-sector

n.d.a. for Romania

CAP funding data and other institutional frameworks

Pillar I Payments

The payments from the Pillar I of CAP in Romania have constantly increased over the period 2007-2015 from € 749,126,908 to € 2,088,057,161. Almost 10% of the total amount for 2015 was paid in the RO41 region in a total amount of € 190,737,104. The total amount paid for different support schemes and direct payments over the entire analysed period amounts € 13,442,219,383 fairly exceeding the amounts spent in rural development by Pillar II of the CAP.

Table 1.22: National level Pillar I payments and claims 2007-2015 [Payments and Interventions Agency for Agriculture, Romania, APIA 2015]

Year	Amount paid (€]	Claims No.
2007	749,126,908	1,241,934
2008	1,057,324,142	1,130,404
2009	1,182,866,854	1,122,046
2010	1,404,305,740	1,093,167
2011	1,523,890,364	1,088,809
2012	1,716,175,762	1,079,899
2013	1,808,696,364	1,048,728
2014	1,911,776,088	1,027,874
2015	**2,088,057,161**	944,076
EN 41 2015	**190,737,104**	**142,760**
2016		901,268
Total	13,442,219,383	10,678,205

Pillar II funding (split by focus area and measure)

The first NRDP 2007-2013 and the currently implementing NRDP 2014-2020 complement consistently the development of the RO41 region. As the implementation figures highlight the needs and the expectations of the rural actors as formulated in projects were at least double compared to the programme allocations and possibilities for 2007-2013. The concluded payments amounted € 8,457,435,930 in 2016 for the first NRDP and the current ongoing implementation of the second NRDP currently reach € 3,864,820,290 from the total allocation of € 9,441,583,798.

Table 1.23: Pillar II NRDPs allocations, submitted, selected, contracted and implemented projects

PNDR	PNDR Public allocation 2014-2020	Value of submitted projects (€)	Value of selected Projects (€)	Value of contracted Projects (€)	Concluded Payments (€)
2014-2020	9,441,583,798	9,456,481,199	5,012,600,366	4,327,490,360	3,864,820,290
2007-2013	9,184,828,792	18,533,168,276	7,610,446,693	5,707,979,271	8,457,435,930

Source: NRDP 2007-2013, NRDP 2014-2020, Monitoring and Implementation Reports.

The RO41 regional implementation of NRDP 2007-2013 (concluded in 2016) indicates a high interest for the measures of Axis 1 dealing with modernisation, investments, and increase of competitiveness where € 320,054,824, or 49.62% of total at region's level. The Axis 3 of the programme granted € 288,012,043 in the region for projects of diversification of the rural economy, tourism activities and improvement of the rural infrastructure, or 44.65% of total at region's level.

Table 1.24: RO41 regional implementation of NRDP 2007-2013 (concluded in 2016)

NRDP 2007-2013 measures	Amounts payed in € 1,000	NRDP 2007-2013 measures	Amounts payed in € 1,000
112	65,924,000	221	42,381
121	52,911,850	312	39,052,532
122	43,631	313	18,247,555
123	39,873,258	322	230,711,956
125	99,234,090	41	36,713,963
141	61,305,000	431	162,307
142	762,995	Total RO41	**644,985,518**

Source: NRDP 2007-2013, Monitoring and Implementation Reports.

National and regional support schemes

There are no regional support schemes however several limited national product/production linked support irrelevant as volumes and impact on producers, market and trade was available during 208-2019.

1.1.3. Recent trends and patterns in the Case Study region, determinants of future employment evolution

The trends and patterns of the Case Study region indicate three main directions that generate the determinants of the future employment evolution: the (property) structure of the agricultural holdings, the age of the farmers and employees in agriculture and the education level of the labour.

The structure of holdings as structural issue has been highlighted along the transition, pre-accession and integration periods and originates in the process of land restitution after the 1990. The repossession procedures lasted too long and generated a fragmented property in an overpopulated agriculture with numerous small agricultural holdings and farms. The structural issue was addressed by both NRDPs and although a successful intervention by the respective measures the scale was far too low to induce a consistent change and restructuring process. As described in detail bellow in the prevalent changes the large number of small and very small properties and farms transform this segment in a social safe net instead of allowing the consolidation of medium size farms, particularly for young incoming farmers.

The age of active agricultural labour is dramatically unbalanced and dominated by elderly persons concerned by their future exit. Since no agriculture early retirement schemes were used (although initially planned within NRDP 2007-2013 then dropped) and the pension system in (almost) entirely

public, the oldest age category/group extends the activity beyond the retirement age (65 for men and 62 for women, in Romania) as the only decent income generation option. The shares have only minorly changed over the past three decades proving a large reservoir of people still in activity.

The education level of agricultural active labour of all categories can be considered as generally dominated by practical experience only. This low level of professional knowledge and competencies was driven by the elimination of professional/vocational education and training in the EU pre-accession period aiming to increase the number of graduates with tertiary education. The fact that the intermediate age category has a better professional level is due to the impact/effect of the time period when these institutions were still active (two decades ago and more).

The corporate agriculture has invested massively in modernisation from all types of financial sources from private (loans and credits included) to EFARD support. The new machinery and equipment require qualified labour and superior knowledge in exploitation that are difficult or impossible to find on the training/education market. The only inputs supplying this type of needs are coming relatively punctual from different projects financed primarily from EFARD and eventually to a lesser extent from EFRD and ESF.

Determinants:

- Entrapped labour.
- Age.
- Education.
- Modernisation.
- Climate change.

The entrapped labour interacts with the structural change of the farms/households/properties preventing further consolidation of commercial farming while feeding on the rural resilience of small farming. Equally, interacts with the education market holding on middle-aged labour that could further educate/specialise and qualify for an external agricultural job outside the (own) farm and demotivating youngsters that might enter/continue in the sector. Interacts with the modernisation of farms/production limiting the supply of potentially qualified labour.

The age of agricultural labour as determinant interacts strongly (as mentioned) with the structure of holdings and education market, influencing the education market and the modernisation. Furthermore, it might have an impact on the climate change impact as knowledge and acknowledgment of the phenomena by elderly generation of agricultural labour is limited or none.

The education market practically affects all other determinants genuinely by currently not supplying any of them while it might have both outputs and outcomes of high importance on medium and long term.

The modernisation counts on labour that is not ready to provide for the needs and requirements while generally reducing the labour as presently consumed, with lots of handling operations and manual processes.

The climate change accelerates soil degradation processes particularly in the Southern part of the region where sandy soils needed to be fixed and demobilised long before other changes occurred in the region. Decades ago, special research was systematically conducted near the Danube Plain, part of this region, to stabilise the sands and return them to the agricultural production. The research diminished over the past three decades and the threat of sand is extending. Combined with the water management, the soil management (particularly in areas concentrated on vegetables and horticultural products) under the threat of the climate change could lead to reduction of areas fit for agriculture

affecting all types of holdings, reducing by elimination the corporate farms in the affected area and even the small farms and agricultural households thus inducing a labour and social pressure.

1.1.4. Prevalent challenges in the CS region

Demographic/population decrease of the region is affected by the demographic trends and migration: local (rural-urban), national (towards other regions, mainly West and Bucharest) and international (towards other EU countries). The low shares of youngsters and middle-aged labour in the region's agriculture are a result of the first two factors combined with a challenging demotivation to follow a career in the agricultural sector. This combination relates also to the absence of agricultural education sector building further on the demotivation of the youngsters and even middle-aged farmers. The current trend is most likely to continue its decreasing trend in the future on short and medium term at the same pace considering the present determinants and their level and influence.

Lack of agricultural professionals and absence of agricultural education sector. The two challenges link to a certain extent to the previous challenge (demography) and particularly to the complementing and connecting demotivation element yet the institutional absence and the lack of initiative at national/regional/local level from the side of the state will only lead to deepening the generated problem. The absence of the (agricultural education) sector and the lack of any other type of initiative to answer the demand is recorded for the past two decades and the institutional surroundings indicate no improvement other than local isolated initiatives. Although the ESF national programme (Human Capital Operational Programme) supports such interventions it still does not represent the answer and particularly the scale required by the challenge. The absence of the agricultural education sector will further lead to the lack of agricultural professionals and the challenge has high odds to accentuate over time since even a systemic intervention takes time to output results and reach a relevant volume of outputs in order to generate outcomes at the level of the challenge.

"Social" vs commercial agriculture. The central structural issue of the regions' agriculture remains the two-speed agriculture with a consistently high volume of small farms and agricultural households parallel to the large corporate agriculture. The recent evolution from 2010 onwards record an increasing number of small and very small farms and agricultural holdings while their share in UAA remains relevant. This structural issue of "social" agriculture facing growing and corporate agriculture has an important social dimension that linked to the rural resilience mainly based on subsistence agriculture will continue to last over medium and long term. To link with the previous challenge, this is an important reservoir of agricultural labour not requiring motivation and being trapped as family labour in the small farms and households. The evolution has high odds to continue steady as the "social" side has a relatively good resistance to land pressure accumulated over the past three decades.

Absence of a functional land cadastre. The region did not have a historic cadastre to rebuild from such as the regions from Transylvania or Banat and no consistent efforts were spent until present to build and consolidate one. This situation leads to extremely long delays in recording the new properties and owners generating confusion and at most, moderation on the land market.

1.1.5. Institutional frameworks governing the regional agricultural labour market

Name of the institutional framework	Short description (AIM and target guidance)	Governance level (EU, national, regional, local)
CRFIR 4 Sud-Vest Oltenia (Regional Centre for Financing the Investments, South-West Oltenia)	National Rural Development Programme, Regional Structure; monitoring, control, contracting and processing payments for NRDP at regional level; coordinates county level offices	National/regional
APIA (Agency for Payments and Interventions in Agriculture)	National Rural Development Programme, National Structure; monitoring, control, processing payment claims and payments	National

Name of the institutional framework	Short description (AIM and target guidance)	Governance level (EU, national, regional, local)
	for NRDP for direct payments and subsidies, handling the Common Market Organisation; coordinates county level offices	
ADRSV Oltenia (Regional Development Agency Sout-West Oltenia)	Regional Operational Programme Intermediate Body at regional level (RO41); manages the implementation of ROP at regional level with regional indicators, allocations and selected measures from the National Programme	Regional
OIR POCU SVO (Regional Intermediate Body for Operational Program Human Capital South-West Oltenia)	Operational Program Human Capital Intermediate Body for RO41 Region; manages the implementation of OPHC based on National Programme indicators, allocations and measures	Regional

- EU Social Pillar
- Europe 2020 Strategy on Growth and Jobs (smart, sustainable and inclusive growth)
- Marrakech Declaration on migration

All three orientations and strategies from above are integrated at national level in the post-programming stages, the region RO41 dealing with the nationally drawn frame. No particular aspect at regional level can be underlined in the light of the above initiatives and strategies. The region is apparently of no high interest for incoming international migrants that use the neighbouring regions including the transit. There is a national strategy to manage the migrants' inflows agreed at EU level and transposed nationally in the light of Marrakech Declaration on migration that might include redistribution even in the region.

1.2. Regional thematic focus

Farm structure as structural issue. Using the two Farm Structure Surveys from 2010 and 2016 we can depict the current trends for these two above mentioned categories as presented in the tables below.

The captured evolution beyond Romania's accession to the EU shows that the very small farms (less than 1 ha) are growing in number from 42% to 48%, almost half of the total agricultural holdings in the region, while this represents only 5-6% of the acreage, while the medium to large farms (including those above 100 ha) represent only 1% of the total number of farms in the region and cover 41% of the respective acreage. Extending to 5 ha limit for the small farms we reach the impossible 91% of units in 2010 growing to 94% of holdings in 2016. This extended class represent 38% of the area in 2010 growing to 44% in 2016 while the medium to large farms are decreasing for their respective area, from 44% to 41%.

Table 1.25: Structure of agricultural holdings in RO41 by number of units, area and shares, 2010, 2016

ha	<1 ha	1-5 ha	5-20 ha	20-100+ ha	TOTAL
Holdings area FSS 2010	95,702.05	675,145.49	344,575.28	892,907.08	2,008,329.90
Shares of total	5%	34%	17%	44%	
Holdings area FSS 2016	91,086.33	561,564.46	222,456.26	604,823.63	1,479,930.68
Shares of total	6%	38%	15%	41%	

Table 1.26: Farm Structure Survey Romania 2010, 2016

no.	<1 ha	1-5 ha	5-20 ha	20-100 ha	TOTAL
Holdings no. FSS 2010	243,564.00	283,859.00	45,204.00	3,933.00	576,560.00
Shares of total	42%	49%	8%	1%	
Holdings no. ASA 2016	254,224.00	241,658.00	29,939.00	3,040.00	528,861.00
FSS 2016	48%	46%	6%	1%	

Farm Structure Survey Romania 2010, 2016

This farm structure keeps trapped a large volume of labour as family members of self-employment for the sole holders preventing their professional development. The stability of this situation is maintained by the influence of first three determinants: (structurally) entrapped labour, age and education. The relation between the determinants tends to feed mutually as the age structure fits with the education level and the farm structure. Dealing with each determinant separately might not be the most efficient way to cope with the challenges they raise while the most appropriate way could encompass and weight their influence in all sector's strategic approach exercises.

The interview with the representative of the National Federation of Local Action Groups with regard to the RO41 Region highlighted as main challenges the following:

- Self-employment for the youngster setting-up in agriculture for the first time. The potential increase of the public support (as NRDP measure) at a higher level than in present (or recent past, NRDP 2007-2013) will lead to further self-employment and reduction of available agricultural jobs. Further support for self-employment is needed not only for maintain the jobs also for preserving the traditions, customs and cultural heritage.
- Corporate farms require specialised labour leading to the challenge of reinstating the agricultural schools and training programmes.

The interview with the farmers' representative from one LAG in Gorj County indicated as main challenge:

- More support for family farms in respect to the preservation of local specificities, culture, identity and quality products. Also, potential growth in number of family farms is desirable in his view.

Both respondents link to the entrapped labour and farm structure issue in different ways and while the first sees the self-employment of young farmers as an exit from both situations the second concentrates in preserving the "social" side of the agriculture (more present in his surroundings). The first respondent also covers the ***age*** and ***education*** determinants as linked to the ***modernisation*** determinant and indicates the developments in answering/solving the challenges as a must.

While the farmers fear that any change to the institutional framework will lead to further delays as it happened for the initial structural and institutional setup for NRDP concluding that the framework is relatively good and should not be changed soon, the first respondent estimates as necessary adjustments focussed to modernisation of production in all aspects leading to support granted for education and training to supply for the focus area (linking back to one of the determinants).

The farm-level responses to the challenges is indicated by the first respondent as: "*Unfortunately, today there is no coordinated response to those challenges. There is a lack of long-term vision in the majority of farms, either small, family farms or big commercial farms. For the small farms their strength is related to authenticity and preservation of heritage and the weaknesses are related to the lack of financial meanings for surviving. The big farms are dependable on specialized workers, which are fewer and fewer. They also are more in danger from climate changes. As the strengths, the financial capacity to keep the businesses in line for longer periods of time*."

The second respondent (farmer representative) defends the family farms by insisting that in the competition with the corporate farms, the first ones have the advantage of copping easier with the market adjustments and survive by the quality of the products. An identified strength points towards the consumer preference for fresh farm products over the industrial agriculture products.

The farmers' representative indicates as policy recommendations an initiative for family farming while the Federation representative desires a supportive policy for rural youngsters answering both the job

creation and the prevention of migration from rural areas. Such an initiative was promoted by the government back in 2016 as (possibly) due the government change no sound results were recorded.

Policy recommendations to improve the functioning of the regional agricultural labour market and improve the efficiency of employment strategies:

- ***Creation of a Rural Jobs Register*** to help employers see the jobs history and recommendations from previous employers; generates confidence and improves the quality of labour generally.
- ***Setting-up a Rural Youth Support Measure as part of NRDPs financed in part my EAFRD and ESF***. Present youth support relates to young farmers first setup in agriculture (support for investments) and a transversal advantage in scoring higher points for the age criteria in several measures.
- ***Re-establishment of Agricultural Schools/Stimulation of Agriculture Education Market***. State/public based as a service to society or introduced as incentive for private operators of training/education.
- ***National/Regional Adult Education/Training Programmes***; offering an alternative to the middle-aged farmers to complete their professional education and range of competencies, including professional re-orientation.

2. PODLASKIE (POLAND)

Country	Poland
Region (NUTS 2)	Podlaskie (PL34)
Cluster	2

2.1. Contextual information on the agricultural labour market

2.1.1. Territorial characterisation of the region

Podlaskie Voivodeship[1] is a NUTS 2 region (PL34) located in Eastern Poland, at the border to Belarus. It is characterized by flat lands with a large percentage of rural and green areas. It is famous for having Bialowieza Forest, one of the oldest unspoiled European forests, located within its territory. Its biggest city is Bialystok, with nearly 300,000 residents. Podlaskie is regarded as one of the least polluted Polish regions with high quality of the environment; nevertheless climate change poses significant challenges for maintaining this status.

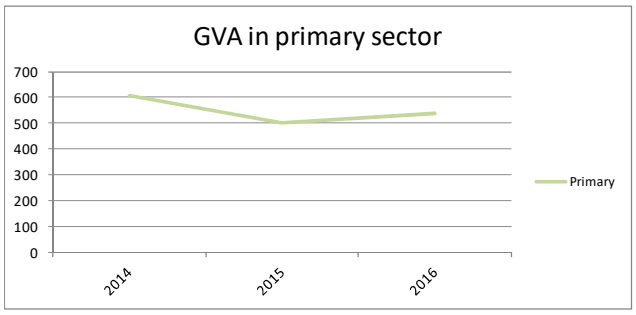
2.1.2. Background data on the agricultural sector and farming employment in the CS region

Economic breakdown by sector

Primary sector

The Gross value added of the region's primary sector lies between €500 million and €600 million.

Figure 2.1: Regional GVA of the primary sector in € million at basic prices



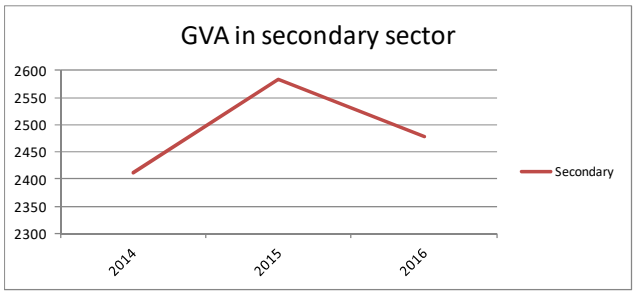
Source: Eurostat, gross value added at basic prices by NUTS 3 regions [nama_10r_3gva].

Secondary sector

The Gross value added of the region's secondary sector lies around €2,500 million, circa 5 times the value added of the primary sector.

[1] Voivodeship (*pl. Województwo*) is a Polish name for a regional administrative unit.

Figure 2.2: Regional GVA of the secondary sector in € million at basic prices

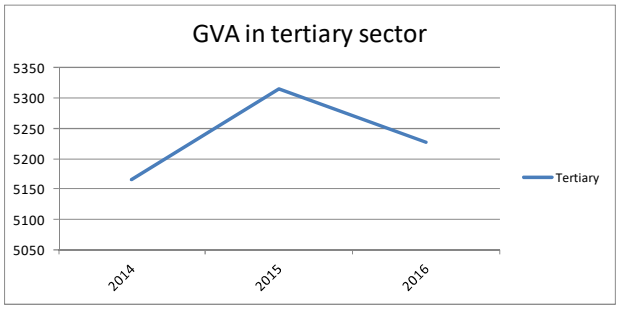


Source: Eurostat, gross value added at basic prices by NUTS 3 regions [nama_10r_3gva].

Tertiary sector

The Gross value added of the region's tertiary sector lies around € 5,250 million.

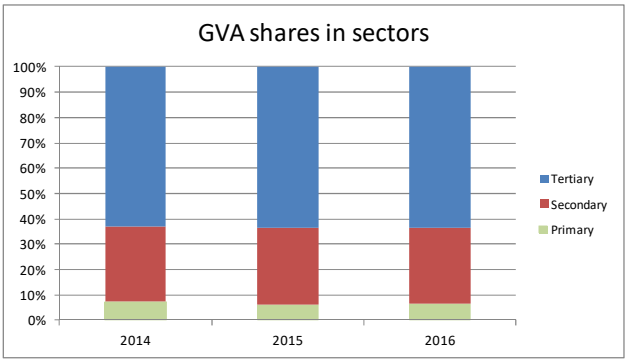
Figure 2.3: Regional GVA of the tertiary sector in € million at basic prices



Source: Eurostat, gross value added at basic prices by NUTS 3 regions [nama_10r_3gva].

The tertiary sector is the largest contributor to the regional GVA (62-65%), followed by the secondary sector (30%) and the primary sector (5-8%).

Figure 2.4: Breakdown of the regional GVA by economic sector

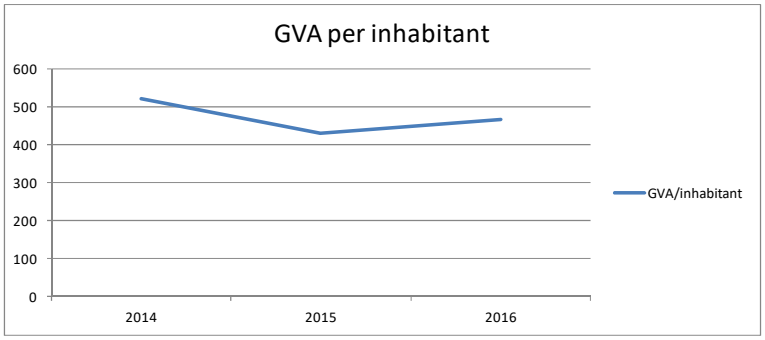


Source: Eurostat, gross value added at basic prices by NUTS 3 regions [nama_10r_3gva].

Agricultural gross value added

The regional GVA of the primary sector per inhabitant was close to €500 in 2016.

Figure 2.5: GVA of the primary sector in € per inhabitant



Source: Eurostat; Population on 1 January by age group, sex and NUTS 2 region [demo_r_pjangroup] and gross value added at basic prices by NUTS 3 regions [nama_10r_3gva].

Agricultural labour force

By age range

In 2016, 9,840 farms were managed by farm managers below 35 years old (12%), 8,900 by farm managers aged 35-39 years old (11%), 56,100 by farm managers aged 40-64 years old (69%) and 6,720 by farm managers aged 65 years old and over (8%)[2].

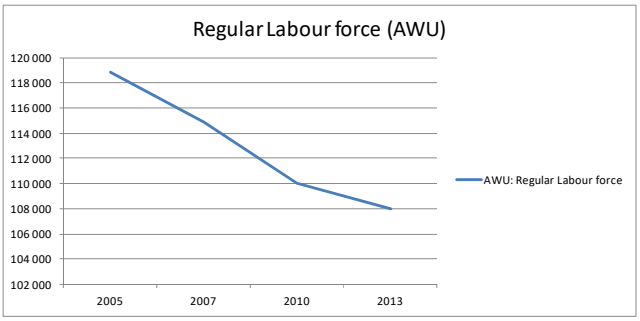
By gender

In 2016, 16,310 farms (20%) were managed by women and 65,240 farms (80%) were managed by men in the region[3].

Split of regular family workers, regular non-family workers and temporary workers

The region's regular labour force of the agricultural sector has been steadily decreasing, down to 108,000 AWU in 2013.

Figure 2.6: Agricultural regular labour force in AWU

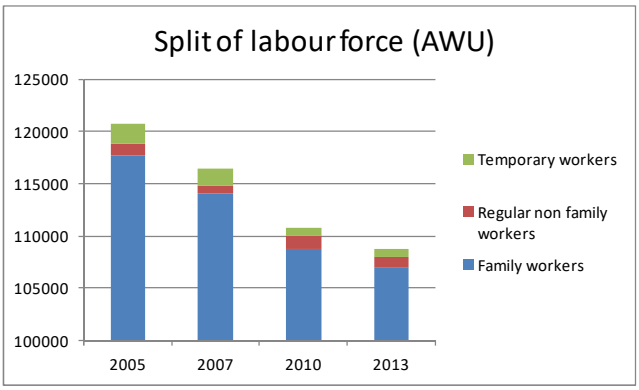


Source: Eurostat, Labour force: number of persons and farm work (AWU) by sex of workers and NUTS 2 regions [ef_olfreg].

Family workers still represent the vast majority (98% in 2013) of a shrinking farming labour force (as measured in AWU).

[2] Source: Eurostat, dataset [ef_m_farmang]
[3] Source: Eurostat, dataset [ef_m_farmang]

Figure 2.7: Breakdown of total agricultural labour force in AWU

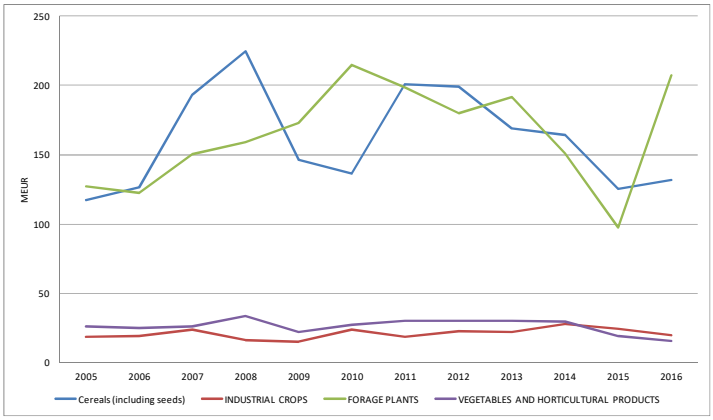


Source: Eurostat, Labour force: number of persons and farm work (AWU) by sex of workers and NUTS 2 regions [ef_olfreg].

Main types of agricultural products

Cereals and forage plants have the highest production value, though with high fluctuations. Industrial crops and vegetables and horticultural products have both a production value at basic price varying between €15 million and €30 million.

Figure 2.8: Production value at basic price (in € million) of main agricultural products

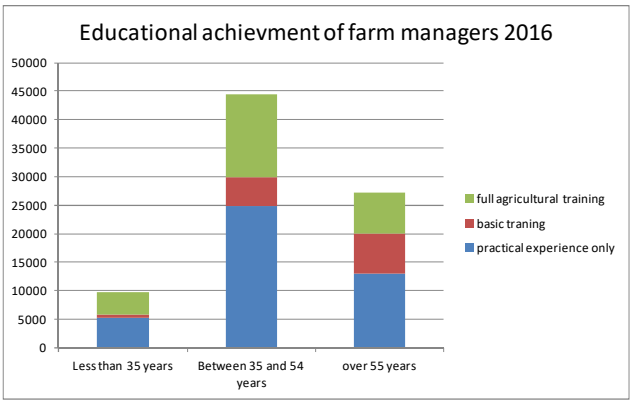


Source: Economic accounts for agriculture by NUTS 2 regions (until 2012) [agr_r_accts_h] und Economic accounts for agriculture by NUTS 2 regions [agr_r_accts], bis 2010 = agr_r_accts_h, ab 2011 = [agr_r_accts].

Agricultural training of the farm manager population

The proportion of farm managers with practical experience only is fairly similar across age categories (around 50-55%). The proportion of farm managers with full agricultural training is highest among farm managers aged 35 years old and under.

Figure 2.9: Agricultural training of farm managers in 2016

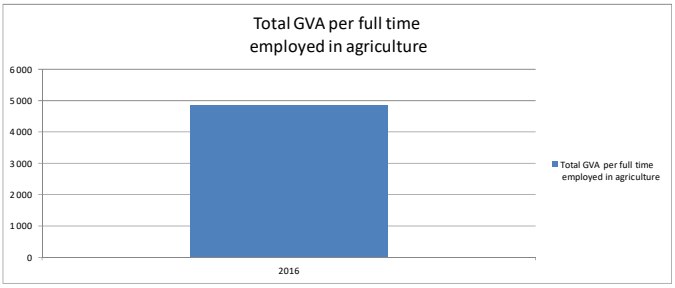


Source: Common context indicators for rural development programs (2014-2020), C.24 – Agricultural training of farm managers.

Agricultural labour productivity and gross fixed capital formation

The GVA of the primary sector per person employed full time in the primary sector was close to €5,000 in 2016.

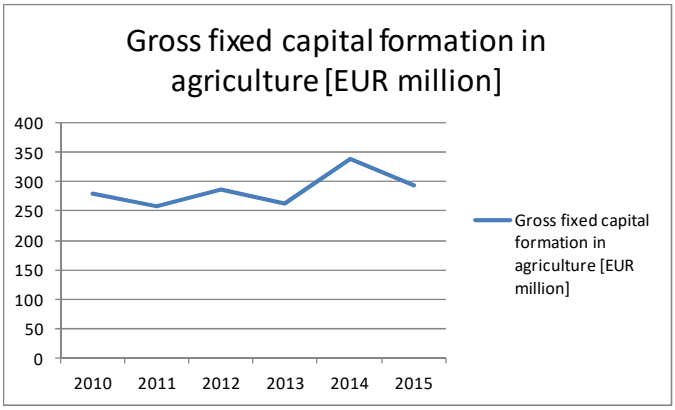
Figure 2.10: GVA of the primary sector in €/person employed full time in the primary sector



Source: Eurostat, gross value added at basic prices by NUTS 3 regions [nama_10r_3gva] and Employment (thousand persons) by NUTS 3 regions [nama_10r_3empers].

Gross fixed capital formation in agriculture has fluctuated around a slightly upward trend between 2010 and 2015, amounting to around €300 million in 2015.

Figure 2.11: Gross fixed capital formation in agriculture (in € million, in current prices)



Source: Common context indicators for rural development programs (2014-2020), CCI 28 – Gross fixed capital formation in agriculture.

2.1.3. Recent trends and patterns in the CS region, determinants of future employment evolution

National and EU policy

The agricultural policy in the region is strongly dependant on the EU and the national policy. The decision on the allocation of most significant financial resources (most importantly the RDP) is made to a large extent at the national level. In fact, as one of the dangers in regards to the socio-economic development, strategic documents list an insufficient influence of the region on the regional agricultural policy. The Cohesion Policy aims at reducing development gaps between European regions, however, despite this goal as the document emphasises, economic polarization tendencies, which threaten marginalisation of the region, persist. This problem is especially evident in case of economically less-developed regions such as Podlaskie which find it more difficult to adjust to the changing world. With an increased focus on knowledge economy and knowledge society, regions such as Podlaskie struggle to find support for making use of their specific strengths (such as agricultural potential and environmental quality) while instead being forced to conform to centrally favoured development trends.

Changing lifestyles and preferences

The ever-increasing environmental awareness leads the society to adopt healthier diets which has an impact on the demand for agricultural foods and products. This especially affects organic agriculture which has been becoming more and more popular in recent years. Podlaskie Voivodeship recognizes its favourable conditions for development of organic agriculture due to relatively unpolluted environment (indeed, in 2018, the voivodeship has had second highest number of beneficiaries supported in organic agriculture via the RDP (The Agency for Restructuring and Modernisation of Agriculture, 2019). Taking the opportunity from the growing interest in organic products by specializing in organic agriculture can result in maintaining interest in agricultural employment.

At the same time, it should be recognized that changing lifestyles and preferences may also mean less interest in agriculture and more interest in more productive occupations, knowledge economy. This means that less people (especially young people) are interested in agricultural employment.

Quality of life in rural areas

The above determinant is linked with the fact that Podlaskie is a Voivodeship where the model of family farms is still present and generally favoured. Despite this, rural areas are affected by poor transport network what further contributes to problems in provision of services of general interest (SGIs). This unfavourable situation is reflected in continuously decreasing number of residents of the voivodeship in recent years[4].

Interviewees emphasised that emerging awareness about the value of traditional professions and trends relating to closeness to nature also result, or can result in, increased regional identification and perception of regional and family values. This can determinate more interest in remaining in home places; however, in order to use this potential, living in rural areas has to become more attractive. In order to make use of this situation and foster employment in farming, quality of life in rural areas of the region must be increased. This requires a holistic approach to social and economic as well as

[4] Statistical Office in Bialystok.

environmental development which cannot be decoupled from development of rural areas or employment in agriculture.

Favourable environment for employment in farming

Agricultural activities, and agricultural employment, require a holistic approach to rural development that also ensures using agricultural potential. Farmers should be supported in making choices regarding expanding their activities, or shifting their focus. Expansion of activities is dependent on strengthening regional value chains. Especially promising is provision of capacity-building and resources for local food processing which is as close as possible to the place of production of agricultural goods. Furthermore, supporting agriculture involves supporting of services and products for farmers and agricultural activities. This was explicitly emphasised by one of interviewees as a means for supporting more innovative and efficient farming as well as, on the other hand, entrepreneurship and diversification of regional economy. Specialisation in services for agricultural activities in Podlaskie allows to explore synergies between entrepreneurship, industry, innovation and farming&agriculture.

2.1.4. Prevalent challenges in the CS region

Dominance of agriculture

Sharing general features of Eastern Polish regions, Podlaskie is characterized by dominance of agriculture and weak presence of industry and services. While the regional focus on agriculture cannot in itself be deemed as a disadvantage, it is a challenge because the regional economy is based on agriculture to the extent that it is very unbalanced with respect to industry and services. The Regional Operational Programme recognizes low added value and low productivity from dominance of agriculture as well as links it with economic laggardness and low level of innovation and entrepreneurship in the region. The forecasts prepared for the strategy development showed an insufficient development of other economic sectors to balance the regional economy.

Economic laggardness

Dominance of agriculture contributes to economic laggardness. The authors of the regional development strategy claim that Podlaskie belongs to one of the poorest EU NUTS2 regions and it is also one among worst-performing Polish regions in terms of socio-economic indicators. Total GVA is well below Polish average, except for the agricultural GVA. This is further characterized by the Voivodeship having one of the lowest brutto salaries compared to other Voivodeships as well as relatively high unemployment rate (8,1% in January 2019[5]). The regional OP suggests that the negative situation of the regional labour market is due to the dominance of agricultural jobs, as suggested above (persons employed in agriculture in Podlaskie amount to 30% of total employed persons, a figure which goes beyond the Polish average of 12% and EU's 5%[6]). Its focus on agriculture and lack of diversified economy leads to low incomes, increasing unemployment and lack of attractiveness of the region (Zarząd Województwa Podlaskiego, 2018)

Quality of life

Economic laggardness decreases attractiveness of the region and is an obstacle to exploiting its agricultural potential. As a relatively poor and inaccessible region (by road and rail), Podlaskie can suffer from being perceived as unattractive. Indeed many young people decide to leave rural areas and

[5] Statistics Poland.
[6] Regional Operational Programme for Podlaskie.

relocate to cities both within and beyond the voivodeship. Thus, one of the challenges is to increase overall attractiveness and quality of life in Podlaskie's rural areas which includes better accessibility, improvement of SGIs for both young and elderly population as well as also ensure employment opportunities for those who are not interested in agricultural work. In order to support profitable employment in farming, an integrated approach to overall quality of living in rural areas is needed.

Demographic change

Like many European regions, also Podlaskie is affected by changing structure of the society which is caused by the ageing of the population. In addition to this, demographic structure of the region is influenced by both out-migration of its residents which include qualified workforce (brain drain) but also a number of incoming migrants due to its proximity to eastern neighbours of the EU. This situation results in a brain drain as well as influx of unqualified work force which is a considerable challenge for transition to more innovative economy and more attractive approach to agriculture.

Localisation and threat of marginalisation

The region is located along the Eastern EU border with Belarus which, according to the authors of the Regional Development Strategy, is a factor that contributes negatively to the economic development. While the cooperation within the EU highly benefits more central regions, an important issue for Podlaskie is development of EU's Eastern Partnership with region's neighbours. Nevertheless, strategic regional documents point out several problems resulting from a national policy which is incompatible with regional interest and priorities that may result in a threat of marginalisation of the region. These include unfavourable transport policy that does not help increase accessibility of the region and lack of interest in using the potential of the Podlaskie's border region.

Incompatibility between education and labour market

The region produces a number of qualified workers who are incapable of finding working place, which further contributes to brain drain. On the other hand, many agricultural workers are unable to find employment in the Voivodeship which is an interesting phenomenon given its agricultural specialisation. The incompatibility between specialisations of education institutions and regional labour market is highlighted in strategic documents.

Environmental and climate threats

Podlaskie is characterised not only by a high agricultural potential but also important natural heritage. Bialowieza Forest, which is one of last remaining parts of primeval European forest, as well as other protected areas including many NATURA 2000 sites are located within the voivodeship territory. In fact, the region is characterized by one of the highest shares of NATURA 2000 and one of the highest shares of protected areas among Polish Voivodeships. At the same time, indicators also show a relatively good environmental conditions and low pollution compared to rest of the country. Nevertheless, environmental threats persist and actions must be undertaken in order to protect the natural heritage and biodiversity in the area as well as sustainably use natural resources which include agricultural land.

2.1.5. Institutional frameworks governing the regional agricultural labour market

Name of the institutional framework	Short description (aim and target beneficiaries)	Governance level (EU, national, regional, local)
ERDF OP Digital Poland	Farming actors are considered as a potential beneficiary in Priority Axis II: E-administration and Open Government, supported projects include digitalisation of labour market and setting up businesses as means of facilitating access to them.	EU-national
ESP OP Knowledge Education Development	Fostering cooperation between agricultural advisory centres, LAGS and social economy centres	EU-national
ERDF Regional OP Podlaskie	Direct measures concern mostly support of persons leaving employment in farming, however, measures which could be understood as indirectly supporting employment in farming include increasing innovativeness and productiveness and development of agricultural activities, although these are not strongly emphasised.	EU-regional
RIS3 Podlaskie	Measures indirectly supporting employment in farming include increasing innovativeness and productiveness and development of agricultural activities, agri-food sector.	EU-regional
Regional Development Strategy Podlaskie	Somewhat in alignment with the regional OP and the RIS3, the development strategy adds focus on development with consideration of the agricultural strength of the region, increasing agricultural exports and innovation in the agricultural and agri-food sector. These measures can impact employment in farming.	regional
Strategy for Sustainable Development of Rural Areas, Agriculture and Fishing 2030	Explicit support to employment in agriculture-related, pluriactivity and non-agricultural jobs.	national

EU Social Pillar

The regional Operational Programme refers to the EU Pillar of Social Rights by emphasising the role of participative approach and social dialogue in implementation of the strategy. It also refers to it with regards to Priority Axis focusing on Services of General Interest. The region has been implementing the strategy keeping in mind these principles.

Europe 2020 Strategy on Growth and Jobs (smart, sustainable and inclusive growth)

The performance of Podlaskie in regards to some of the Europe2020 indicators has been fluctuating. For example, the percentage of employment of persons 20-64 has been generally rising, except for three years where a negative trend could be observed. Still, the highest value (70,6% in 2017) lies below the EU target of 75%. Worse performance can be observed in regards to Gross domestic expenditure on R&D where there has been a mixed development and the highest value (0,60%) is well below EU target of 3%. On the other hand, positive development can be observed in case of Share of renewable energy in gross final energy consumption where the highest value is 29,9% in 2015 , compared to the EU target of 20% (despite a decrease to 20% in 2017). The relative indicator of people at risk of poverty has been fluctuating as well; the lowest value is 17% (in 2016) with a highest value 24,2 (in 2011), (compared to EU2020 indicator People at risk of poverty or social exclusion, EU-28 which has been fluctuating between 23,5 and 24,6 between 2008 and 2017)[7].

Marrakech declaration on migration

Given its proximity to Eastern EU border, Podlaskie has been receiving some migrants. The numbers, however, are not particularly significant given that Podlaskie is not perceived as an attractive region. The issue of migration, thus, does not have a high priority.

[7] Data from Annex 4 of the Regional Development Strategy for Podlaskie Voivodeship and Europe 2020 indicators.

2.2. Regional thematic focus

Introduction

The trends and challenges described above justify the selection of the thematic focus of the case study. Podlaskie is characterized by dominance of agriculture in the regional economy, low entrepreneurship and innovativeness which contribute to economic laggardness, ageing society and brain drain. These phenomena all contribute to decreasing attractiveness of the region, which translates to lower interest in employment in farming.

In order to counteract negative impacts of these developments, regional authorities focus on diversification of economy, and increasing activities of innovative enterprises but also increasing innovativeness of traditional sectors. These actions, which are supported both under the regional OP as well as the regional development strategy, most prominently include measures supporting persons who wish to undertake non-agricultural jobs: professional activization and mobility of persons leaving agriculture as well as undertaking self-employment and setting up businesses. Better coordination between education providing qualified workforce as well as labour market is also addressed.

From this perspective, considering region's priority for diversifying economy by strengthening the importance of industry and services, generational renewal in agriculture seems to be a topic which is not directly of priority for Podlaskie. Nevertheless, the region is also aware of its strong agricultural character and potential stemming from it. With its strong agricultural history and specialisation, as well as the recognition in the regional development strategy of the importance of CAP for Podlaskie, the region also perceives the opportunity of unlocking its agricultural potential. Generational renewal in agriculture can be supported through the fact that Podlaskie residents favour working in family based agricultural businesses. Attractiveness of employment in agriculture can be strengthened through increasing quality of life and promoting agriculture-related values and identification as well as ownership of these values. This can be explored through branding of local products and culture, organic agriculture, as well as ecotourism which includes agritourism.

Agritourism, which is a form of connecting agricultural and touristic activities, is a solution that can help diversify economy as well as contribute to maintaining employment and generational renewal in agriculture. Agritouristic operators are usually farm owners who use their farms to accommodate tourists attracted by the natural and cultural heritage of the area. As such. agritourism also offers the potential for local agricultural and food products.

This approach, already recognized and pursued by regional authorities, can contribute to counteracting the economic laggardness of the region (although, it may not be sufficient in order to achieve it) as well as it supports reviving its agricultural specialisation. Nevertheless, it needs to be highlighted that the issue of employment in farming cannot be addressed in separation from the overall socio-economic development which also includes the need to balance the local economy.

Strategies and measures

There are regional and national documents which outline the support to agricultural activities relevant to farming employment. Nevertheless, there is no clear strategy regarding employment in farming. Information can only be derived from strategic documents and interviews.

Strategies and respective measures are at the regional and national levels these are generally outlined in the table below:

Table 2.1: Overview of main measures relevant to farming employment outlined in strategic documents

Programme	Measures
Regional level	
ERDF Regional Operational Programme Podlaskie	Supporting technical innovations in agriculture and the agri-food sector, export of processed foods, Supporting development of organic agriculture, food processing and eco-innovations, Supporting professional activation and vocational conversion of persons leaving agricultural employment
RIS3 Podlaskie	
Regional Development strategy	
National level	
Rural Development Programme	RDP measures aim at: knowledge transfer, quality systems, mitigation of consequences of natural hazards, support of farming activities and businesses, revitalisation of rural areas, reforestation, creation of networks of producers, climate action, organic agriculture, support of areas with natural limitations, cooperation and LEADER. More specifically, these also include: Various measures supporting restructuring productivity and effectiveness of agricultural businesses Measures supporting restructuring of small farms Bonuses for young farmers who expand or open farms (Young Farmer project) Supporting of agriculture-related activities and pluractivity, diversification of income sources Support of non-agricultural investments, such as entrepreneurships Supporting quality of life in rural areas, adjusting employment and job market to demographic changes, counteracting brain-drain Supporting training and professional activization
Strategy for Sustainable Development of Rural Areas, Agriculture and Fishing 2030	

Source: listed documents.

The most significant source of financing that indirectly supports farming employment is the RDP. Nevertheless, the RDP is centrally governed and national, rather than regional. Thus, the alignment of measures with specific regional needs is not guaranteed. As outlined in the table above, in direct relation to employment, in Podlaskie main relevant measures include:

- Young Farmer project (Measure 6.1 of the RDP) is a project where persons under 40 receive bonuses for opening agricultural activity or activity for preparing agricultural products for sale. Until the end of year 2018, there were as many as 988 beneficiaries of the project in Podlaskie Voivodeship, which is a fourth highest number among all voivodeships
- Assistance in opening non-agricultural business activities in rural areas (Measure 6.2 of the RDP) applies to those farmers who have sold or otherwise disposed of their agricultural land, stopped agricultural activity and opened a non-agricultural business. Until the end of 2018, there were 62 beneficiaries of this measure, a value which is not particularly outstanding in the context of other Voivodeships (8th place among 16 voivodeships).
- Assistance for opening activities that support development of small farms (Measure 6.3 of the RDP)is given to farmers who aim to undertake changes to modernise or restructurize small farms that will contribute to its growth or change of agricultural specialisation. Until the end of 2018 Podlaskie has had 495 beneficiaries of this measure, which is a 7th place out of 16 voivodeships. (The Agency for Restructuring and Modernisation of Agriculture, 2019).
- Assistance for supporting non-agricultural businesses providing agricultural services (Measure 6.4 of the RDP) aims at supporting entrepreneurship activity which produces services supporting agriculture. Targeted are businesses which offer innovative services and products for farmers (however, in itself are non-agricultural activities), such as provision of specialised agricultural equipment

While the RDP is the main source of funds supporting agriculture and farmers it is to a large extent governed by a national institution, Agency for Restructuring and Modernisation of Agriculture. Thus, the alignment of RDP funds and regional needs and priorities is not necessarily a given. At the regional level, Marshal's Office is responsible for regional policies and their implementation. There is also

Voivodeship Office which has administrative competences as a regional representative of the national government, however much smaller influence on regional policy.

Expected impacts

The regional (or national) strategies and operational programmes do not particularly prioritize strengthening employment in agriculture but rather focus on productive employment and overall socio-economic development. Actions support both closing unproductive farms and shifting to businesses, as well as supporting further expansion of agricultural activities. Small and unproductive farms (mostly self-employed and family businesses) are encouraged to close and undertake entrepreneurial activities instead (see RDP measure 6.2). Their land is often sold to another farmer looking for expanding their activity.

The Young Farmer project is deemed as relatively popular; however newcomers to agriculture are unlikely to qualify for this form of assistance. In reality, the beneficiaries are children of farmers who inherit land from their parents and use the project to expand their activities, thereby making family farms larger and possibly more productive. This measure certainly contributes to generational renewal in agriculture and supports family-based agriculture.

The impact of these measures is difficult to foresee given that it is unclear on what basis decisions are taken with regards to closing farms or investing in them. Moreover, the governance of the funds as well as different regional bodies (Marshals Office and Voivodeships Office) is substantially fragmented and the alignment between, to a large extent nationally, governed RDP and regional development strategies is not optimal.

In general, agricultural employment is perceived as unattractive: difficult and underpaid. Farm employees (not farm owners) are usually persons who do not have many alternatives. From the perspective of some interviewees, the problem of unattractive employment in agriculture is fueled by ineffective management and distribution of funds which should contribute to better situation of employees. The phenomenon of deviousness and trickery of beneficiaries is not rare. One interviewer pointed out that many farm owners who apply for funding which is conditioned by creating working places with the purpose of allocating some part of the sum to the employees, use the funds for other purposes. In reality, thus, such funds often do not support employees but are retained by employers. These problems add to the decreasing interest in agricultural work in Podlaskie due to low quality of life and slow socio-economic development.

Pluractivity and diversification of income sources is in Podlaskie an effective strategy in encouraging remaining in agriculture. Agritourism is perceived as especially plausible option in the region, given its environmental and recreational attractiveness. Despite this, there are no specific measures or substantial funds to support this from authorities. This form of income diversification is supported through advisory services and networks working on a voluntary/non-profit basis.

Strengths and weaknesses of this approach

All in all, it is uncertain whether the measures are sufficiently tailored to exploiting region's potential for strengthening identity and ownership of agricultural activities through family ties to farms, environmental attractiveness and agricultural tradition in the region. Interviewees from regional administration emphasise that encouraging persons to undertake agricultural professions, next to the obvious need for improving quality of life and socio-economic conditions, requires strengthening their local/regional identity. The fragmentation of the governance in regards to policies and funds adds complexity to effective address of the particular problems and exploiting these strengths and opportunities in the region. Regional authorities have less financial means at their disposal and can

operate to a large extent with soft tools. Funding stems from nationally governed RDP and given the current governance set up, it is questionable whether there is sufficient exchange and coordination between administrative bodies at different levels in order to provide tailored investments.

The approach to employment in agriculture of both regional and national authorities is linked with a focus on more productive activities. This refers to a dilemma between investing into farms or encouraging transition to entrepreneurship in case of low productivity. There are strengths and weaknesses of both approaches: On the one hand, it should be emphasised that many RDP measures such as investments into modernisation, eco-innovations as well as specialisations including organic agriculture can help increase productivity of farms, contribute to their possible expansion and thereby their capacity to create work places. At the same time, measure 6.4, is important in fostering a favourable environment for agricultural development, as well as supporting entrepreneurship.

On the other hand, funds can be used to support more productive activities in industry or services by encouraging farms to close in case of low productiveness. While in short-term this may contribute to decreasing employment in agriculture, it may also contribute to counteracting economic laggardness of the region which is linked to strengthening its socio-economic attractiveness.

Agritourism offers important potentials especially in Podlaskie given its natural value. Nevertheless, it is unclear whether this potential is being fully exploited through regional strategies and funds.

Recommendations

Given the findings of the case study, following recommendations can be made with respect to farming employment in Podlaskie:

- authorities have to consider what is the appropriate approach to employment in farming and specify goals and measures with respect to generational renewal; this includes an approach to weighing in the difficult dilemma between supporting low productive farms to strengthen their position (e.g., by modernising their farms or facilitating agricultural specialisations) or supporting farmers to re-specialize and shift to another type of activity (business, industry, or even food processing);
- in order to encourage employment in farming, the attractiveness of such employment should be increased. This can be achieved through:
- a holistic approach to socio-economic development: increasing the quality of life in rural areas can contribute to exploiting the potentials stemming from the favoured family-based farming and the regional identity of its residents by encouraging them to remain in rural areas and commit to agricultural activities;
- as well as through strengthening of agricultural activities through introduction of innovative, modern solutions and smart specialisations: one should exploit the potential of new healthy lifestyle trends and focus on healthy and organic diet as well as closeness to nature which can be a profitable field of specialisation of the regional agriculture (such as organic farming, agritourism) that can potentially lead to expansion and creation of new working places;
- regarding the institutional framework and governance, the management of funds and policies between national and regional, as well as within the regional level, should be optimised; currently a significant fragmentation between different bodies can be identified;
- moreover, frameworks for allocation of financial resources (such as RDP) should be better aligned with regional needs in order fully exploit regional strengths and opportunities.

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Interviewed and consulted persons

- Polski Zwiazek Zawodowy Rolnikow (Polish Farmers Trade Union in Podlaskie)
- Podlaski Ośrodek Doradztwa Rolniczego w Szepietowie (Advisory centre for farmers)
- Podlaski Urzad Wojewodzki w Bialymstoku (Voivodeship regional administration), Department for Agriculture and Environment
- Urzad Marszalkowski, Department of Agriculture and Fisheries (Marshal Office)
- Urzad Marszalkowski, Department of Regional Development (Marshal Office)

3. CAMPANIA (ITALY)

Country	Italy
Region (NUTS 2)	Campania (ITF3)
Cluster	3

3.1. Contextual information on the agricultural labour market

3.1.1. Territorial characterisation of the region

Campania is located in the southwestern part of Italy, bordering on the Tyrrhenian Sea to the west, Lazio to the north, Molise to the northeast, Apulia to the east and Basilicata to the south. With a population of 5,786 million people (data from ISTAT "Bilancio demografico e popolazione residente per mese", 2019), that is 10% of total Italian population, is the third most populous region, after Lazio and Lombardy, with a population density of 423 inhabitants/km^2, quite higher than the national average of 200 inhabitants/km^2. In terms of surface, the Campania region covers 13,671 km^2, representing 5% of the Italian soil. Hills cover more than 50%, followed by mountains (35%) and, finally, lowlands (15%) (data from ISTAT "Superfici delle unità amministrative. Dati comunali e provinciali", 2019). The latter, due to their high fertility for the volcanic nature of the soil, and located near the coastal line, host the major agricultural production and count 24 products with a European quality certification (i.e., 15 PDOs and 9 PGIs) (data from MIPAAFT "Portale DOP-IGP", 2019). The coastal line is of above 500 km of length, and 13% of the territory is located on the Tyrrhenian Sea, including its islands (Capri, Ischia, Procida, Vivara and Nisida), which cover just 0.5% of total regional surface. With regards to its climate conditions, one could differentiate between two distinct climatic zones: a mostly mild climate, on the coast, especially embracing Naples, Caserta, and Salerno; and the harsher zone, located in the inner territory, where the mountainous part of the region (ISTAT, 2018).

3.1.2. Background data on the agricultural sector and farming employment in the CS region

Economic breakdown by sector

Table 3.1: Economic breakdown by sector, GVA, 2000-2016

€ million	2000	2002	2004	2006	2008	2010	2012	2014	2016
Italy GVA									
Total	1,110,198	1,214,273	1,307,734	1,387,174	1,473,045	1,443,247	1,448,021	1,457,859	1,517,531
Primary	31,630	31,818	33,963	30,037	30,471	28,417	31,698	31,477	31,803
Secondiary	301,380	323,520	339,681	362,811	384,944	351,787	345,667	340,868	363,639
Tertiary	777,188	858,936	934,090	994,327	1,057,630	1,063,043	1,070,656	1,085,514	1,122,089
% Primary on Total	2.8%	2.6%	2.6%	2.2%	2.1%	2.0%	2.2%	2.2%	2.1%
% Secondary on Total	27.1%	26.6%	26.0%	26.2%	26.1%	24.4%	23.9%	23.4%	24.0%
% Tertiary on Total	70.0%	70.7%	71.4%	71.7%	71.8%	73.7%	73.9%	74.5%	73.9%
Campania GVA									
Total	73,719	81,597	86,144	91,090	95,249	91,235	90,420	89,839	93,436
Primary	2,276	2,496	2,575	2,355	2,317	2,335	2,564	2,307	2,211
Secondiary	15,605	17,120	17,089	18,338	19,509	16,318	15,318	15,040	16,945
Tertiary	55,838	61,982	66,480	70,397	73,424	72,583	72,538	72,492	74,280
% Primary on Regional GVA	3.1%	3.1%	3.0%	2.6%	2.4%	2.6%	2.8%	2.6%	2.4%

€ million	2000	2002	2004	2006	2008	2010	2012	2014	2016
% Secondary on Regional GVA	21.2%	21.0%	19.8%	20.1%	20.5%	17.9%	16.9%	16.7%	18.1%
% Tertiary on Regional GVA	75.7%	76.0%	77.2%	77.3%	77.1%	79.6%	80.2%	80.7%	79.5%
% Primary on Primary IT	7.2%	7.8%	7.6%	7.8%	7.6%	8.2%	8.1%	7.3%	7.0%
% Secondary on Secondary IT	5.2%	5.3%	5.0%	5.1%	5.1%	4.6%	4.4%	4.4%	4.7%
% Tertiary on Tertiary IT	7.2%	7.2%	7.1%	7.1%	6.9%	6.8%	6.8%	6.7%	6.6%

Source: Authors' elaboration on Eurostat data "Gross value added at basic prices by NUTS 3 regions [nama_10r_3gva]", 2019.

Table 3.2: Economic breakdown by sector, Employed persons, 2000-2016

1,000 (Employed)	2000	2002	2004	2006	2008	2010	2012	2014	2016
Italy Employees									
Total	23,021	23,867	24,365	24,984	25,349	24,766	24,765	24,339	24,826
Primary	1,065	1,047	1,015	1,017	963	960	919	891	920
Secondiary	6,390	6,554	6,644	6,778	6,822	6,382	6,148	5,757	5,742
Tertiary	15,567	16,266	16,706	17,189	17,564	17,424	17,698	17,692	18,163
% Primary on Total	4.6%	4.4%	4.2%	4.1%	3.8%	3.9%	3.7%	3.7%	3.7%
% Secondary on Total	27.8%	27.5%	27.3%	27.1%	26.9%	25.8%	24.8%	23.7%	23.1%
% Tertiary on Total	67.6%	68.2%	68.6%	68.8%	69.3%	70.4%	71.5%	72.7%	73.2%
Campania Employees									
Total	1,945	2,053	2,065	2,046	1,992	1,884	1,841	1,809	1,858
Primary	120	114	102	98	95	88	78	78	78
Secondiary	438	473	463	467	452	399	372	342	359
Tertiary	1,387	1,466	1,500	1,481	1,445	1,397	1,390	1,389	1,421
% Primary on Regional GVA	6.1%	5.6%	4.9%	4.8%	4.8%	4.7%	4.2%	4.3%	4.2%
% Secondary on Regional GVA	22.5%	23.1%	22.4%	22.8%	22.7%	21.2%	20.2%	18.9%	19.3%
% Tertiary on Regional GVA	71.3%	71.4%	72.6%	72.4%	72.5%	74.2%	75.5%	76.8%	76.5%
% Primary on Primary IT	11.2%	10.9%	10.0%	9.6%	9.8%	9.2%	8.5%	8.8%	8.5%
% Secondary on Secondary IT	6.9%	7.2%	7.0%	6.9%	6.6%	6.2%	6.1%	5.9%	6.2%
% Tertiary on Tertiary IT	8.9%	9.0%	9.0%	8.6%	8.2%	8.0%	7.9%	7.8%	7.8%

Source: Authors' elaboration on Eurostat data "Employment (thousand persons) by NUTS 3 regions [nama_10r_3empers]", 2019.

Agricultural gross value added

Table 3.3: Agricultural Value Added per inhabitant and per sub-sector, 2000-2017

	2000	2002	2004	2006	2008	2010	2012	2014	2016	2017
Italy (€ million)										
Agriculture GVA/ Inhabitants (€/Inhabitants)	**555.7**	**558.3**	**590.7**	**517.3**	**519.5**	**480.1**	**533.7**	**517.9**	**524.2**	**n.a.**
Agricultural GVA	**31,630.3**	**31,817.7**	**33,962.9**	**30,036.8**	**30,471.4**	**28,416.7**	**31,697.9**	**31,476.7**	**31,802.6**	**n.a.**
Cereals (Including Seeds)	4,750.5	5,025.1	5,524.5	3,381.9	4,962.8	3,608.4	4,728.6	4,563.5	4,034.0	3,498.5
Industrial Crops	1,512.4	1,197.5	1,162.0	783.7	714.9	724.4	629.3	819.8	786.1	830.7
Forage Plants	1,882.4	2,036.0	1,690.7	1,573.5	1,808.6	1,737.3	1,643.3	1,593.3	1,382.5	1,422.7
Vegetables And Horticultural Products	7,478.5	7,829.4	8,281.1	8,669.1	8,655.9	8,358.8	8,608.0	8,513.6	8,438.3	9,168.8
Potatoes (Including Seeds)	425.6	564.3	615.3	600.0	636.6	608.6	615.0	599.7	677.3	644.7
Fruits	4,370.6	4,608.7	5,144.3	4,651.9	5,067.9	4,839.2	4,661.8	4,457.5	4,667.2	4,371.7
Wine	5,204.8	5,059.0	6,053.9	4,699.3	5,243.0	4,942.7	5,825.1	6,766.8	7,877.2	7,169.2
Olive Oil	2,007.7	2,175.9	2,798.6	2,156.8	1,888.9	1,425.8	1,538.4	1,075.0	1,262.4	1,867.4
Other Crop Products	414.8	449.6	502.5	420.2	540.5	454.1	447.9	449.5	433.8	374.4
Crop Output	28,047.3	28,945.4	31,772.9	26,936.4	29,519.0	26,699.2	28,697.4	28,838.8	29,558.9	29,348.1
Animals	8,598.1	8,785.2	8,918.1	8,676.5	9,314.2	8,841.5	10,337.4	9,941.2	9,421.2	10,020.6

	2000	2002	2004	2006	2008	2010	2012	2014	2016	2017
Animal Products	5,052.2	5,188.4	5,259.7	5,273.8	6,063.6	5,516.1	6,500.7	6,504.5	5,684.7	6,168.8
Animal Output	13,650.3	13,973.5	14,177.8	13,950.3	15,377.8	14,357.6	16,838.1	16,445.7	15,105.9	16,189.4
Campania (€ million)										
Agriculture GVA/ Inhabitants (€/Inhabitants)	**398.0**	**437.9**	**450.2**	**410.2**	**402.9**	**405.4**	**444.8**	**393.0**	**377.9**	**n.a.**
Agricultural GVA	**2,275.9**	**2,495.9**	**2,575.3**	**2,354.9**	**2,316.8**	**2,334.6**	**2,564.3**	**2,307.0**	**2,211.2**	**n.a.**
Cereals (Including Seeds)	118.8	132.6	118.1	75.6	110.2	70.3	121.1	88.2	96.0	88.6
Industrial Crops	176.7	194.8	177.6	124.9	111.1	115.9	70.7	62.7	56.5	58.9
Forage Plants	111.9	129.8	101.5	101.2	116.9	114.8	121.3	107.1	73.6	78.6
Vegetables And Horticultural Products	923.9	1,087.7	1,100.1	1,113.3	1,050.3	1,186.4	1,298.4	1,243.4	1,069.5	1,189.0
Potatoes (Including Seeds)	93.9	104.8	126.1	101.9	108.0	103.7	113.8	99.0	122.3	112.7
Fruits	390.4	421.2	418.5	383.1	416.4	384.5	376.7	326.3	429.5	325.4
Wine	130.0	123.8	138.7	112.6	116.1	106.2	153.9	99.4	108.0	124.9
Olive Oil	141.3	170.8	147.8	108.5	137.5	110.1	133.0	45.6	34.9	154.6
Other Crop Products	19.1	23.1	22.9	19.9	26.1	20.4	21.8	18.4	19.3	18.6
Crop Output	2,106.0	2,388.6	2,351.3	2,140.9	2,192.6	2,212.3	2,410.6	2,090.2	2,009.6	2,151.2
Animals	373.2	381.2	387.0	379.0	396.8	377.1	431.8	406.6	379.5	400.4
Animal Products	224.7	226.1	233.7	235.7	269.3	248.6	299.8	297.2	247.7	267.9
Animal Output	597.9	607.3	620.7	614.7	666.1	625.7	731.7	703.8	627.2	668.3

Source: Authors' elaboration on Eurostat data "Gross value added at basic prices by NUTS 3 regions [nama_10r_3gva]", "Population change – Demographic balance and crude rates at regional level (NUTS 3) [demo_r_gind3]", and "Economic accounts for agriculture by NUTS 2 regions [agr_r_accts]", 2019.

Agricultural labour force

Table 3.4: Agricultural labour force by age ranges, absolute figure and shares, 2008-2018

1,000 (Employed)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Italy											
Total	844.6	826.7	839.5	820.2	821.4	787.9	797.2	828.2	868.6	855.3	858.7
From 15 to 24 years	40	36.2	35.2	38.1	36.9	34.5	31.8	35.7	42.3	39.8	36
From 25 to 64 years	760.5	748.1	763.1	743.1	741.6	709.3	722.1	750.1	783.3	771.3	774.8
From 65 to 74 years	44.1	42.4	41.2	39	42.9	44.1	43.3	42.4	43	44.2	47.9
% 15-24	4.7%	4.4%	4.2%	4.6%	4.5%	4.4%	4.0%	4.3%	4.9%	4.7%	4.2%
% 25-64	90.0%	90.5%	90.9%	90.6%	90.3%	90.0%	90.6%	90.6%	90.2%	90.2%	90.2%
% 65-74	5.2%	5.1%	4.9%	4.8%	5.2%	5.6%	5.4%	5.1%	5.0%	5.2%	5.6%
Campania											
Total	72.4	63.9	62.9	60.5	62.9	62.9	64.8	67.8	67.6	68	69.8
From 15 to 24 years	3.3	2.5	n.a.	1.9	3.8	n.a.	n.a.	1.6	1.6	2.5	1.6
From 25 to 64 years	67.6	60.5	62.9	57.1	57.4	62.9	64.8	64.6	64	63.9	65.4
From 65 to 74 years	1.5	0.9	n.a.	1.5	1.7	n.a.	n.a.	1.6	2	1.6	2.8
% 15-24	4.6%	3.9%	n.a.	3.1%	6.0%	n.a.	n.a.	2.4%	2.4%	3.7%	2.3%
% 25-64	93.4%	94.7%	100.0%	94.4%	91.3%	100.0%	100.0%	95.3%	94.7%	94.0%	93.7%
% 65-74	2.1%	1.4%	n.a.	2.5%	2.7%	n.a.	n.a.	2.4%	3.0%	2.4%	4.0%

Source: Authors' elaboration on Eurostat data "Employment by age, economic activity and NUTS 2 regions (NACE Rev. 2) – 1,000 [lfst_r_lfe2en2]", 2019.

Table 3.5: Agricultural labour force (employed people) by gender and family/non-family workers, absolute figure and shares, 2008-2018

Nr					Shares (on regular labour force)			
Employees	2005	2007	2010	2013	2005	2007	2010	2013
Italy								
Family labour force	**3,127,460**	**3,056,540**	**3,229,560**	**1,992,690**	**95%**	**96%**	**95%**	**93%**
Male	1,862,750	1,824,750	1,825,720	1,159,780	57%	57%	54%	54%
Female	1,264,700	1,231,790	1,403,830	832,910	39%	39%	41%	39%
Regular non family labour force	**151,970**	**117,610**	**163,150**	**146,370**	**5%**	**4%**	**5%**	**7%**
Male	117,490	93,550	118,560	112,430	4%	3%	3%	5%
Female	34,480	24,060	44,590	33,940	1%	1%	1%	2%
Regular Labour force	**3,279,420**	**3,174,150**	**3,392,700**	**2,139,060**	**100%**	**100%**	**100%**	**100%**
Male	1,980,240	1,918,310	1,944,280	1,272,210	60%	60%	57%	59%
Female	1,299,180	1,255,850	1,448,420	866,840	40%	40%	43%	41%
Campania								
Family labour force	**329,920**	**306,740**	**264,970**	**147,710**	**98%**	**99%**	**95%**	**94%**
Male	178,520	163,580	144,070	82,320	53%	53%	52%	52%
Female	151,390	143,160	120,910	65,390	45%	46%	43%	42%
Regular non family labour force	**5,710**	**4,210**	**14,700**	**9,320**	**2%**	**1%**	**5%**	**6%**
Male	2,940	2,940	7,530	5,700	1%	1%	3%	4%
Female	2,770	1,280	7,180	3,620	1%	0%	3%	2%
Regular Labour force	**335,630**	**310,950**	**279,670**	**157,030**	**100%**	**100%**	**100%**	**100%**
Male	181,460	166,510	151,590	88,020	54%	54%	54%	56%
Female	154,170	144,440	128,080	69,010	46%	46%	46%	44%

Source: Authors' elaboration on Eurostat "Labour force: number of persons and farm work (AWU) by sex of workers and NUTS 2 regions [ef_olfreg]", 2019.

Table 3.6: Agricultural labour force (AWU) by gender, family/non-family, and temporary workers, absolute figures and shares, 2008-2018

Nr					Shares (on labour force directly employed)			
AWU	2005	2007	2010	2013	2005	2007	2010	2013
Italy								
Family labour force	**1,126,420**	**1,091,460**	**758,370**	**617,150**	**82%**	**84%**	**80%**	**76%**
Male	742,730	718,040	569,260	460,280	54%	55%	60%	56%
Female	383,690	373,410	284,810	206,350	28%	29%	30%	25%
Regular non family labour force	**105,470**	**77,980**	**84,140**	**79,090**	**8%**	**6%**	**9%**	**10%**
Male	85,450	64,190	66,250	65,470	6%	5%	7%	8%
Female	20,020	13,780	18,450	14,740	1%	1%	2%	2%
Regular Labour force	**1,231,890**	**1,169,430**	**842,520**	**696,240**	**90%**	**90%**	**88%**	**85%**
Male	828,180	782,240	635,510	525,750	60%	60%	67%	64%
Female	403,710	387,200	303,270	221,090	29%	30%	32%	27%
Non-family labour force working on non-regular basis	**142,370**	**132,750**	**111,280**	**120,670**	**10%**	**10%**	**12%**	**15%**
Total – Labour force directly employed by the holding	**1,374,260**	**1,302,180**	**953,790**	**816,920**	**100%**	**100%**	**100%**	**100%**
Campania								
Family labour force	**110,960**	**95,990**	**61,810**	**46,640**	**83%**	**86%**	**78%**	**70%**
Male	63,800	53,440	40,610	30,840	48%	48%	51%	46%
Female	47,160	42,550	26,910	18,310	35%	38%	34%	27%

Nr					Shares (on labour force directly employed)			
AWU	2005	2007	2010	2013	2005	2007	2010	2013
Regular non family labour force	**2,770**	**2,380**	**5,520**	**4,690**	**2%**	**2%**	**7%**	**7%**
Male	1,810	1,860	3,330	3,200	1%	2%	4%	5%
Female	960	520	1,850	1,420	1%	0%	2%	2%
Regular Labour force	**113,730**	**98,360**	**67,330**	**51,330**	**86%**	**88%**	**85%**	**77%**
Male	65,620	55,300	43,940	34,040	49%	50%	56%	51%
Female	48,120	43,070	28,760	19,730	36%	39%	36%	30%
Non-family labour force working on non-regular basis	**19,220**	**13,040**	**11,700**	**15,390**	**14%**	**12%**	**15%**	**23%**
Total – Labour force directly employed by the holding	**132,950**	**111,400**	**79,040**	**66,720**	**100%**	**100%**	**100%**	**100%**

Source: Authors' elaboration on Eurostat "Labour force: number of persons and farm work (AWU) by sex of workers and NUTS 2 regions [ef_olfreg]", 2019.

Main types of agricultural products

Table 3.7: Types of agricultural products by production value at basic prices, Campania (€ 1,000), 2000-2018

Products	2000	2004	2008	2012	2016	2017	2018
Cereals	**126,197.5**	**125,628.5**	**116,682.6**	**128,634.9**	**101,582.4**	**93,528.8**	**105,505.4**
Durum wheat	53,640.1	55,804.8	63,360.4	62,974.4	53,194.1	50,267.5	55,519.1
Potatoes	**103,222.7**	**138,567.4**	**118,672.2**	**125,058.5**	**134,398.7**	**123,837.6**	**105,426.4**
Vegetables and Horticultural Products	**750,961.9**	**666,742.8**	**613,757.4**	**758,458.4**	**651,666.5**	**711,432.7**	**676,348.4**
Fresh beans	68,880.9	67,438.5	90,033.0	95,274.9	79,857.5	94,286.7	81,951.3
Lettuce	62,332.7	106,384.8	93,307.2	162,510.6	118,389.7	160,091.2	149,343.5
Eggplants	36,857.5	41,914.7	40,664.5	48,151.9	43,416.4	39,964.3	45,655.0
Peppers	42,728.0	58,854.8	49,646.7	53,424.7	39,541.4	38,037.2	43,493.3
Tomatoes	168,116.5	198,712.0	156,348.7	170,870.4	135,938.7	136,373.4	128,728.1
Plants and flowers	**202,887.0**	**197,587.9**	**223,704.8**	**192,585.6**	**146,673.7**	**148,073.1**	**144,978.1**
Industrial Crops	**171,197.7**	**172,240.0**	**101,824.0**	**60,096.1**	**51,664.0**	**53,935.4**	**53,783.2**
Tobacco	167,732.3	169,893.4	101,180.2	59,617.2	51,423.2	53,659.7	53,498.4
Forage Plants	**111,889.9**	**101,527.1**	**116,882.0**	**121,258.6**	**73,630.2**	**78,414.9**	**100,947.5**
Wine	**100,905.8**	**105,774.8**	**87,737.1**	**122,370.4**	**97,051.2**	**94,507.7**	**119,877.7**
Olive Oil	**137,475.1**	**143,256.4**	**131,863.0**	**128,625.8**	**33,969.7**	**163,866.1**	**95,014.3**
Fruits	**818,632.6**	**883,633.5**	**858,975.5**	**836,476.4**	**944,344.7**	**750,514.2**	**767,599.1**
Fresh Fruits	378,102.2	416,540.9	416,761.6	374,201.1	443,381.5	324,476.8	333,966.6
Peaches	120,525.0	109,600.5	121,449.0	99,441.2	123,679.7	76,803.9	69,736.2
Hazelnuts	43,280.6	80,029.1	52,024.3	71,174.0	119,551.5	91,558.5	79,121.6
Strawberries	89,619.7	96,755.3	91,722.5	122,845.0	115,778.0	122,100.5	118,812.3
Animal Products	**615,297.2**	**639,180.2**	**686,796.2**	**755,360.8**	**647,427.9**	**688,625.7**	**680,973.8**
Meat	383,409.5	398,191.7	408,980.8	445,169.7	391,443.3	412,719.5	400,828.6
Bovine Meat	196,265.0	197,594.6	192,053.9	206,104.2	168,383.7	176,439.9	175,105.1
Poultry meat	66,543.9	67,941.7	79,344.2	93,012.5	83,419.7	89,798.7	87,663.0
Milk	172,302.9	182,129.1	209,779.4	215,009.2	181,442.7	191,469.2	189,060.0
Eggs	58,701.0	57,720.8	67,018.2	93,454.2	72,750.1	81,689.5	87,895.5
Total	**3,068,144.2**	**3,391,448.1**	**3,286,326.8**	**3,633,303.9**	**3,169,740.6**	**3,301,779.8**	**3,289,537.1**

Source: Authors' elaboration on ISTAT "Conti della branca agricoltura, silvicoltura e pesca", 2019.

Table 3.8: Types of agricultural products by units, Campania, 2006-2018

Production (100 Kg and 100 Lt)	2006	2010	2014	2018
Cereals	**4,579,340**	**3,807,734**	**3,542,066**	**4,314,519**
Durum wheat	1,892,097	1,428,154	1,259,430	1,869,168
Potatoes	**3,436,833**	**2,866,689**	**2,380,850**	**2,241,955**
Vegetables and Horticultural Products	**20,683,935**	**18,946,603**	**19,622,006**	**17,959,760**
Fresh beans	644,594	644,557	568,898	517,723
Lettuce	1,089,613	1,131,279	995,820	803,120
Eggplants	860,895	898,093	837,550	804,400
Peppers	732,012	597,184	524,050	458,845
Tomatoes	4,703,490	3,687,890	4,069,690	3,815,360
Plants and flowers	**n.a.**	**n.a.**	**n.a.**	**n.a.**
Industrial Crops	**433,702**	**344,436**	**188,565**	**4,370**
Tobacco	427,027	336,994	182,955	n.a.
Forage Plants	**53,350**	**53,583**	**53,923**	**36,557**
Wine	**2,019,598**	**1,868,607**	**1,182,538**	**1,375,580**
Olive Oil	**303,726**	**396,058**	**126,144**	**137,844**
Fruits	**12,699,411**	**12,727,928**	**9,952,637**	**10,463,714**
Peaches	2,997,715	3,094,478	2,494,848	2,412,924
Hazelnuts	546,094	361,039	238,901	395,336
Strawberries	520,676	600,644	533,465	408,590
Animal Products	**n.a.**	**n.a.**	**n.a.**	**n.a.**
Total Slaugthered Bovine Animals	182,961	164,852	81,902	n.a.
Total Slaugthered Poultry	5,685,645	6,759,671	16,587,706	n.a.
Total Collected Milk (100 kg)	3,771,166	3,856,568	4,200,449	n.a.
Eggs	n.a.	n.a.	n.a.	n.a.

Source: Authors' elaboration on ISTAT "Coltivazioni", 2019.

Educational achievement of the region's population and agricultural training of the farm managers population

Table 3.9: Agricultural training of the farm managers population by age group, 2016

2016	Total farm managers							Less than 35 years						
	Total	Practical experience only		Basic training		Full agricultural training		Total	Practical experience only		Basic training		Full agricultural training	
	Nr.	Nr.	%	Nr.	%	Nr.	%	Nr.	Nr.	%	Nr.	%	Nr.	%
Italy	1,145,710.0	27,450.0	2.4	1,048,150.0	91.5	69,480.0	6.1	46,510.0	60.0	0.1	35,910.0	77.2	10,560.0	22.7
Campania	86,590.0	1,800.0	2.1	81,610.0	94.2	3,150.0	3.6	4,560.0	50.0	1.1	4,100.0	89.9	410.0	9.0
	Between 35 and 54 years							55 years and over						
Italy	354,960.0	640.0	0.2	318,380.0	89.7	35,740.0	10.1	744,240.0	26,770.0	3.6	693,860.0	93.2	23,180.0	3.1
Campania	28,660.0	190.0	0.7	26,750.0	93.3	1,710.0	6.0	53,380.0	1,560.0	2.9	50,770.0	95.1	1,020.0	1.9

Source: Authors' elaboration on Eurostat CAP Indicators, "C.24 – Agricultural training of farm managers", 2018.

Table 3.10: Educational achievement of the region's population (>15 y.o., Thousands), 2004-2018

ISCED 2011	2004	2008	2012	2016	2018
Italy					
1	2,323.6	1,658.9	1,281.0	953.2	868.5
2	8,229.6	7,970.2	7,747.3	7,663.8	7,516.5
3 – 5	10,422.4	11,000.5	11,662.7	11,958.7	11,879.1
6 – 8	3,331.2	4,125.1	4,565.9	5,194.2	5,706.4
Total	**24,306.8**	**24,754.7**	**25,257.0**	**25,769.9**	**25,970.4**
Shares					
1	9.6%	6.7%	5.1%	3.7%	3.3%
2	33.9%	32.2%	30.7%	29.7%	28.9%
3 – 5	42.9%	44.4%	46.2%	46.4%	45.7%
6 – 8	13.7%	16.7%	18.1%	20.2%	22.0%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Campania					
1	281.1	188.0	136.1	125.9	127.4
2	730.5	671.2	646.7	667.7	682.0
3 – 5	796.2	751.6	830.5	866.4	880.1
6 – 8	275.2	300.1	351.1	394.8	400.4
Total	**2,083.0**	**1,910.8**	**1,964.4**	**2,054.9**	**2,089.9**
Shares					
1	13.5%	9.8%	6.9%	6.1%	6.1%
2	35.1%	35.1%	32.9%	32.5%	32.6%
3 – 5	38.2%	39.3%	42.3%	42.2%	42.1%
6 – 8	13.2%	15.7%	17.9%	19.2%	19.2%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Authors' elaboration on ISTAT "Forze di lavoro", 2019.

Agricultural labour productivity, agricultural factor and entrepreneurial income, gross fixed capital formation and farming wages

Table 3.11: Agricultural labour productivity, 2005-2013

Labour Productivity (€/Regular AWU)[a]	2005	2007	2010	2013
Italy	27,569.75	25,684.99	33,411.19	45,527.26
Campania	22,643.98	23,941.64	34,171.99	49,957.14

[a]The labour productivity has been calculated as the Agricultural GVA divided by the AWU corresponding to regular work force.
Source: Authors' elaboration on Eurostat "Labour force: number of persons and farm work (AWU) by sex of workers and NUTS 2 regions [ef_olfreg]" and "Gross value added at basic prices by NUTS 3 regions [nama_10r_3gva]".

Table 3.12: Agricultural Factor Income, 2002-2018

(€/AWU)	2002	2004	2006	2008	2010	2012	2014	2016	2018
Italy	19,717.2	20,064.8	16,618.3	16,748.6	14,827.3	18,823.0	20,215.3	19,463.9	20,307.2
Campania	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Source: Authors' elaboration on Eurostat "Economic accounts for agriculture – values at real prices [aact_eaa04], "Agricultural labour input statistics: absolute figures (1,000 annual work units) [aact_ali01]", 2019.

Table 3.13: Agricultural Enterpreneural Income, 2002-2018

(€/FAWU)	2002	2004	2006	2008	2010	2012	2014	2016	2018
Italy	17,526.8	17,922.3	12,892.5	13,040.6	9,879.2	15,169.0	17,315.0	16,437.2	17,409.9
Campania	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Source: Authors' elaboration on Eurostat "Economic accounts for agriculture – values at real prices [aact_eaa04]" and "Agricultural labour input statistics: absolute figures (1,000 annual work units) [aact_ali01]", 2019.

Table 3.14: Agricultural gross fixed capital formation (GFCF) in current prices, 2010-2015

GFCF (€ million)	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Italy	9,979.4	9,771.5	10,412.8	10,527.0	11,132.8	12,040.2	13,218.7	12,546.8	11,892.7	10,173.9	10,806.5	12,036.6	11,193.6	9,225.2	8,891.7	9,144.5	9,092.8
Campania	729.5	779.6	728.8	870.1	914.5	977.7	1,086.0	1,042.9	740.5	678.6	708.7	642.5	482.6	429.2	438.5	408.6	340.7

Source: Authors' elaboration on Eurostat "Gross fixed capital formation by NUTS 2 regions [nama_10r_2gfcf]", 2019.

Table 3.15: Agricultural Wages (€), 2004-2017

	Italy					Campania				
Year	AWU	Hours Worked	Wages	€/hrs	€/AWU	AWU	Hours Worked	Wages	€/hrs	€/AWU
2004	0.25	521.1	3,971.0	7.6	15,884.0	0.30	642.1	3,750.0	5.8	12,500.0
2005	0.24	512.3	3,812.0	7.4	15,883.3	0.32	685.4	4,051.0	5.9	12,659.4
2006	0.23	495.3	3,809.0	7.7	16,560.9	0.32	672.7	3,962.0	5.9	12,381.3
2007	0.28	612.9	4,471.0	7.3	15,967.9	0.32	678.3	3,924.0	5.8	12,262.5
2008	0.31	560.8	4,694.0	8.4	15,141.9	0.36	652.4	3,871.0	5.9	10,752.8
2009	0.35	631.8	5,344.0	8.5	15,268.6	0.39	701.1	4,935.0	7.0	12,653.8
2010	0.32	577.2	4,920.0	8.5	15,375.0	0.39	703.0	4,707.0	6.7	12,069.2
2011	0.32	572.5	5,041.0	8.8	15,753.1	0.31	557.7	4,097.0	7.3	13,216.1
2012	0.32	582.9	5,236.0	9.0	16,362.5	0.35	632.1	4,295.0	6.8	12,271.4
2013	0.32	574.7	5,150.0	9.0	16,093.8	0.34	615.4	4,375.0	7.1	12,867.6
2014	0.33	735.4	6,850.0	9.3	20,757.6	0.34	758.2	4,908.0	6.5	14,435.3
2015	0.32	693.3	6,565.0	9.5	20,515.6	0.32	699.6	4,644.0	6.6	14,512.5
2016	0.28	609.3	5,676.0	9.3	20,271.4	0.42	826.4	5,276.0	6.4	12,561.9
2017	0.28	618.4	5,721.0	9.3	20,432.1	0.32	692.9	4,471.0	6.5	13,971.9

Source: Authors' elaboration on FADN Public Database (Measure SE020, SE021, SE370, 2019), 2019.

Data on pluriactivity and on/off farm diversification

Table 3.16: Data on pluriactivity, 2014-2017

	Italy				Campania			
	2014	2015	2016	2017	2014	2015	2016	2017
Total OGA output (SE700)	4,664	5,224	4,678	4,207	1,208	1,543	1,207	1,077
Total output (SE131)	73,904	69,976	69,321	68,589	51,609	46,387	52,808	49,138
% OGA output/Total output	6.3%	7.5%	6.7%	6.1%	2.3%	3.3%	2.3%	2.2%

Source: Authors' elaboration on FADN public database (measures SE700, SE131), 2019.

Table 3.17: On farm work intensity, 2013 and 2016

	2013			2016		
Italy	**Nr. Workers**	**Days Worked**	**Intensity (Days worked/ Employees)**	**Nr. Workers**	**Days Worked**	**Intensity (Days worked/ Employees)**
Total	**3,559,081**	**252,787,673**	**71**	**3,139,654**	**282,978,079**	**90**
Family Work	2,550,931	195,732,365	77	1,813,709	203,426,052	112
Non-family Regular Work	1,008,150	57,055,308	57	1,325,945	79,552,027	60
Temporarly employed	86,171	9,552,009	111	159,890	18,501,129	116
Fixed-term workers	68,962	14,042,076	204	71,842	15,369,959	214
Non-family Non-Regular Work	713,816	29,101,815	41	989,538	41,608,884	42
Campania						
Total	**309,570**	**19,649,863**	**63**	**431,594**	**19,901,887**	**46**
Family Work	214,725	14,384,088	67	148,775	15,479,324	104
Non-family Regular Work	94,845	5,265,775	56	282,819	4,422,563	16
Temporarly employed	78,101	3,745,865	48	260,657	2,230,064	9
Fixed-term workers	2,049	380,083	185	1,991	415,239	209
Non-family Non-Regular Work	8,132	823,542	101	14,642	1,742,541	119

Source: Authors' elaboration on ISTAT "Struttura delle aziende agricole: Persone e giornate di lavoro per tipo di manodopera", 2019.

Table 3.18: On farm work intensity, full-time and part-time workers, 2008 and 2016

1,000 (Employed)		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Italy	Full-time	763.0	754.1	756.7	742.7	728.1	692.0	696.4	724.0	764.9	752.7	755.5
	Part-time	91.1	83.7	92.4	89.2	105.3	107.2	115.3	118.9	119.1	118.6	116.9
	Total	854.1	837.7	849.1	831.9	833.4	799.2	811.7	842.8	884.0	871.2	872.4
South	Full-time	386.4	372.3	369.7	376.1	368.2	348.0	335.7	350.3	370.4	369.1	381.7
	Part-time	34.5	28.3	34.6	40.0	46.1	47.7	49.0	55.3	57.5	52.6	52.4
	Total	420.9	400.5	404.2	416.0	414.3	395.7	384.7	405.7	427.9	421.7	434.1
Shares												
Italy	Full-time	89.3%	90.0%	89.1%	89.3%	87.4%	86.6%	85.8%	85.9%	86.5%	86.4%	86.6%
	Part-time	10.7%	10.0%	10.9%	10.7%	12.6%	13.4%	14.2%	14.1%	13.5%	13.6%	13.4%
South												
	Full-time	91.8%	92.9%	91.4%	90.4%	88.9%	88.0%	87.3%	86.4%	86.6%	87.5%	87.9%
	Part-time	8.2%	7.1%	8.6%	9.6%	11.1%	12.0%	12.7%	13.6%	13.4%	12.5%	12.1%

Source: Authors' elaboration on ISTAT "Occupati (migliaia): Ateco 2007 – posizione professionale, tempo pieno/parziale", 2019.

Specificities of the regional agricultural labour market

Table 3.19: Foreign Workers in Italy, 2008 and 2016

1,000 (Employed)		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Italian	Italy	803,086	770,533	772,795	741,189	731,351	697,861	696,494	710,086	737,076	724,102	716,25
	South	403,182	375,822	371,874	378,513	373,088	355,526	339,455	350,862	370,962	362,334	365,324
Foreign	Italy	51,039	67,206	76,291	90,725	102,028	101,293	115,254	132,754	146,924	147,122	156,118
	South	17,744	24,717	32,369	37,51	41,212	40,176	45,245	54,813	56,916	59,391	68,797
Total	Italy	854,124	837,739	849,085	831,913	833,379	799,154	811,748	842,84	884	871,223	872,368
	South	420,927	400,539	404,243	416,024	414,3	395,701	384,7	405,674	427,877	421,725	434,121
Shares on Total Workers												
Foreign	Italy	6.0%	8.0%	9.0%	10.9%	12.2%	12.7%	14.2%	15.8%	16.6%	16.9%	17.9%

1,000 (Employed)		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
	South	4.2%	6.2%	8.0%	9.0%	9.9%	10.2%	11.8%	13.5%	13.3%	14.1%	15.8%
	South on Italy	2.1%	3.0%	3.8%	4.5%	4.9%	5.0%	5.6%	6.5%	6.4%	6.8%	7.9%

Source: Authors' elaboration on ISTAT "Occupati (migliaia): Ateco 2007 – posizione professionale , cittadinanza".

3.1.3. Recent trends and patterns in the CS region, determinants of future employment evolution

This section is draw upon data from two main sources, Eurostat and ISTAT, and all tables to which the text refers to can be found in the chapter 3.1.2. The Campania region, looking at the period 2000-2016, witnessed an increase in its total gross value added (GVA, see Table 3.1) of about 27%, however below the Italian average rise of 37%. The tertiary sector represents four-fifth of the regional GVA, with a slightly increasing of its weight in the last years, above the national average. The primary sector's importance for the regional value added has decreased in the entire period of -3% in absolute value, and -23% in percentage terms on the total GVA. Indeed, both the tertiary and secondary sectors featured a positive trend in regards to their GVA of 33% and 9%, respectively. However, the weight of the agricultural sector on the regional economy is yet higher than the national average. Furthermore, the contribution of Campania's agricultural GVA on Italian agriculture is remarkable and quite stable for the analysed period.

Looking at the labour force employed for each of the three macro-sectors, Table 3.2 illustrates a decrease in the number of overall employees in Campania of about 4%, whereas an increase of about 8% took place when considering Italy. Concerning the agricultural sector, the regional labour force has experienced a decline of -35% in 16 years, a far higher figure than that featured by Italy, -14%. Accordingly, the weight of regional employees in agriculture on the overall regional economy decreased from 6% to 4% in 2016; likewise, its importance with respect to the total employed people in the national agricultural sector has decreased too, from 11 to 8.5% in 2016.

Looking at Table 3.2, the agricultural GVA per regional inhabitants has decreased by 5% in the 2000-2016 period, in line with the national trend (i.e., -6%). In absolute terms, the GVA per inhabitant in Campania shows a far lower level than that represented at the Italian level, being 40% smaller. However, this also depends on the high population density of the region as mentioned above in Section 1. Regarding the different agricultural sub-sectors in economic terms, some have decreased (increased) at a faster (slower) pace than the national average: "industrial crops", quite exclusively tobacco, shrinks about 67% (-45% for Italy), and "fruits" -17% (no decrease at national level), whereas "potatoes" increases of 20% (+50% for Italy). On the other hand, "vegetables and horticulture" and "olive oil" increase both more than their national counterparts, by 29% (23% for Italy) and 9% (a contraction of -7% for Italy), respectively. Concerning the regional agricultural economy, fruits and vegetables & horticulture sub-sectors alone represent near 70% of the total agricultural GVA, followed by animal products with 11%, and potatoes by 6%. Such importance is reflected also at the national level, where potatoes represent 18% of the overall national sub-sector GVA, followed by vegetable with 13%, olive oil with 8%, and fruits and industrial crops with 7% each.

Table 3.4 describes the labour-force employed in agriculture by age-ranges at both regional and national levels. Confronting the two figures, Campania shows lower employment levels in the agricultural sector regarding young people (i.e., 15-24 y.o.), approximately half of the Italian average for the year 2018. The same trends appear when looking at elderly people: despite an increase in the region in the last year, the level of old people (i.e., 65 – 74 y.o.) employed in the agricultural sector is lower than the Italian average. In Table 3.5, more details are provided regarding the agricultural labour-force, especially with respect to the gender and the type of worker (family/non-family). At both national and regional levels, the importance of family-work in the number of employees is highly significant,

however declining within the 2005-2013 analysed period, with Campania region experiencing a higher drop in relative terms. With regards to gender, the role of females, albeit a sharp increase in number in 2010 at both levels, it drops again in 2013, reaching a lower level than in 2005. When looking at the Annual Working Unit (AWU) (Table 3.6), one could also discern per type of work (full-time/part-time). Again, the importance of family labour is decreasing while the non-family subgroup is raising, in Campania at a faster pace than at the national level. Within the latter, part-time workers are highly demanded, as the non-regular basis workers increase shows. For Campania, such increase is huge and higher than the Italian levels.

As briefly outlined in Table 3.3, the main agricultural productions in Campania, in economic terms, are represented by vegetables & horticulture, fruits, and animal products. Their importance is highlighted also when looking at the production value as in Table 3.7. In particular, considering the last year measured, tomatoes, fresh beans, and lettuce gather together 50% of the vegetable's sub-group production value; peaches (9%), strawberries (15%), and hazelnut (10%), are the main fresh fruits cultivated in Campania; the production of meat impacts for 60% of total animal production value, with bovine (26%) and poultry (13%) as the main produce, whereas milk production' share reaches 28%, and eggs 13%. Regarding the main trends in production (see Table 3.8), there is a clear decrease in agricultural production overall, with vegetables losing 13% (especially peppers and lettuce), fruits 18%, olive oil 55%, and wine 32%. However, the regional agricultural sector experienced an increase of 7% in value for the period analysed, with wine and animal products featuring the most remarkable increases (i.e., 19% and 11%, respectively), with the latter category driven by the tremendous positive trend of eggs (50%) and poultry meat (32%). On the other hand, vegetables and fruits both witnessed some losses, -10% and -6%, respectively, albeit some of their specific produces featured an opposite positive trend: lettuce increased by 140%, and tomatoes dropped by 23%; hazelnuts and strawberries cushioned the negative path of peaches (-42%) with an increase of 83% and 33%, respectively.

Table 3.9 and Table 3.10 illustrate the agricultural training level of farm managers and the educational achievements of the population at both the national and regional level. Concerning the former, the share of agricultural managers with full agricultural training in Campania is fairly lower than that at the national level, highlighting a gap in training that seems most significant for youngest (i.e., less than 35 y.o.) and middle-aged managers (i.e., between 35 and 54 y.o.). Referring to the level of educational attainment for the period 2000-2018, Campania sees an overall increase in the level of education, but less than what featured at the national level. Indeed, the increase in the upper category of educational level (i.e., 6-8, +45%) is fairly less than the national average (+71%), and, consequently, the regional average educational attainment level is lower than the Italian average.

Agricultural labour productivity for both Campania and Italy is presented in Table 3.11. Looking at both trends, they witnessed a significant increase for the period 2005 -2013, that is 65% and 120% for Italy and Campania, respectively, with the regional labour productivity growth doubling that at national level. Such result may point to an increase in productivity per agricultural worker, due to mechanisation for example, but also to the reduction of agricultural labour-force, especially at the regional level, together with the added value of some new productions (e.g., ready-to-eat lettuce, PDOs and PGIs). This may also raise some questions about the underreported work in the agricultural sector, as such an increase in labour productivity may be biased by unreported irregular workers. While no data is available at the regional level, the trend concerning the agricultural factor income (Table 3.12), and that of entrepreneurial income (Table 3.13), describe a similar situation as that of agricultural labour productivity, with Italy experiencing an increase of about 18% (for the period 2005-2018), and of 27% (for the period 2005-2018), respectively. Both indicators point to an improved capacity of remuneration of both owned (e.g., family labour) and rented (e.g., wages) factors of productions. Table 3.14 describes

the investments made in fixed assets, which can be linked to the competitiveness of the agricultural sector in the future. While at both levels there is a clear downward pattern, that of Campania (-44%) results in being more than double than that of Italy (-17%). Table 3.15 depicts the regional and national wage situation, describing both per hours and per AWU wages at both levels. Interestingly, the Campania's wage (in both hours and AWU terms) results in being 30% lower than Italian average. Regarding the trends, they both increased for the period 2004-2017, with Italy featuring a 21% and 29% for hourly and per AWU wage, respectively; on the other hand, as expected, Campania performs worse, with hourly and per AWU wages increasing by 10% and 12%, respectively. It is important to note, however, how those latter figures refer to an average sample of farms (i.e., the FADN).

According to Geopa-Copa (2014), Italian permanent employees in the agricultural sector received an average of € 13.7 gross per hour worked in 2012. However, they receive a net pay of € 8.1 per hour. The difference, that is equal to around 70% of the net pay, is additional staffing costs. These refer to the sum of remuneration for time off work, special payments, the employer's social security contributions, expenses related to taking part in the company pension scheme and of training and further training and miscellaneous costs such as severance pay and participation in company structures.

With regards to pluriactivity, Table 3.16 illustrates the weight of other activities (OGA) on the total agricultural output at both national and regional levels, for the period 2014-2017. They both show a steady trend, while the incidence of the OGA in Campania is roughly one-third of that of Italy. According to CREA (2018), activity diversification within the regional agricultural sector is mainly driven by renewable energy production (i.e., 4% of the total Italian production, especially from eolic power), agritourism activity (i.e., 648 units in 2016, 3% of total Italian agritourism units, mainly focused on catering and accommodation), and educational farms (i.e., 283 in 2018, an increase of 35% with respect to the previous year).

The number of days per worker has been selected as the indicator for work intensity (Table 3.17). Considering the number of total working days/year as 270 (that is the number used by the Italian welfare to calculate the social contributions for the agricultural worker), the prevalence is that of part-time workers. Looking at the total average in Italy, in 2013 an agricultural employee worked 71 days on the total available of 270, that is 26%, rising to 33% (i.e., 90 days) in 2016. The work intensity of all workers' category increased in Italy for the analysed period. On the contrary, Campania shows the opposite trend, with a decrease in work intensity, as total average, of about -27% between 2013 and 2016. On the other hand, the intensity of family work increased, almost doubling the level of 2013, together with fixed-terms workers work and seasonal (non-regular) workers. Interestingly, the intensity of non-family regular workers and temporary-employed workers tremendously decrease, pointing to a more precarious agricultural job market in Campania. However, while the number of people working as family employees decreased, that of non-family workers tremendously rose, especially concerning the category of non-regular workers. Looking at more general statistics (Table 3.18), part-time workers in the agricultural sector increased both nationally and in particular in the South of Italy, where Campania is located. Table 3.19 shows an increasing weight of foreign workers in the agricultural sector, both at national and in the southern regions, doubling and almost tripling in 10 years, respectively. It is worth noting how the weight of foreign immigrant workers of southern regions almost quadruple on the total national volume.

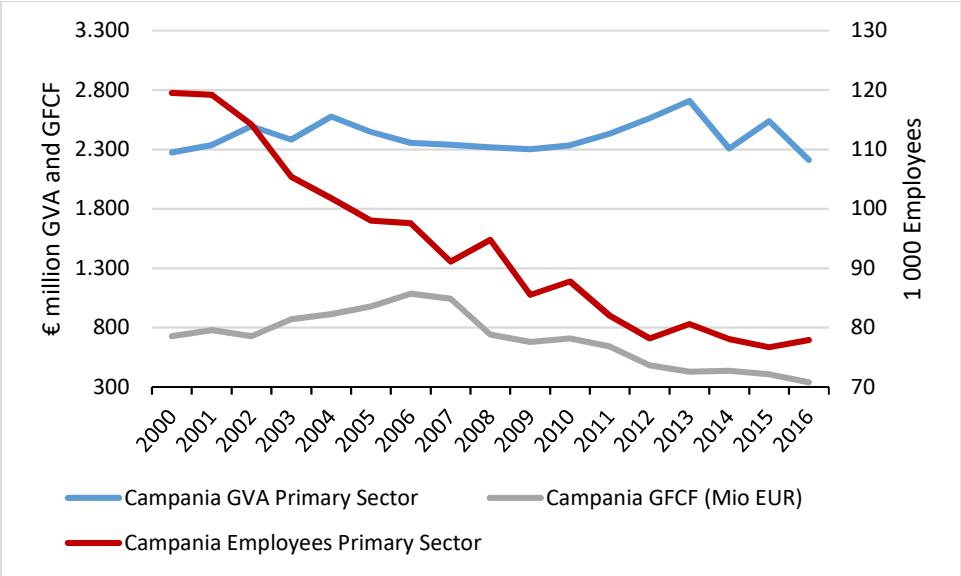
According to CREA (2019), 15% of total agricultural workers are from Eastern Europe, followed by Northern Africans (5%), Southern Europe (5%), Southern Asia (5%) and Western Africans (3%). More in details, in 2017 Romanian agricultural workers were representing 10% of total agricultural employees, followed by Moroccans (3%), Indians (3%), and Albanians (3%).

Main determinants of employment evolution

Regarding the case study region of Campania, some clear trends regarding the labour agricultural market emerged in the analysis presented above.

Firstly, there is a clear loss of competitiveness of the primary sector, as described by both the slight decrease in GVA and the far more severe decline of investments in fixed assets. At the same time, the sector experienced a tremendous drop with respect to the labour force employed, especially when compared to the national average (see Figure 3.1). Furthermore, the labour agricultural force is characterised by a low share of young people, suggesting a difficult generational renewal process.

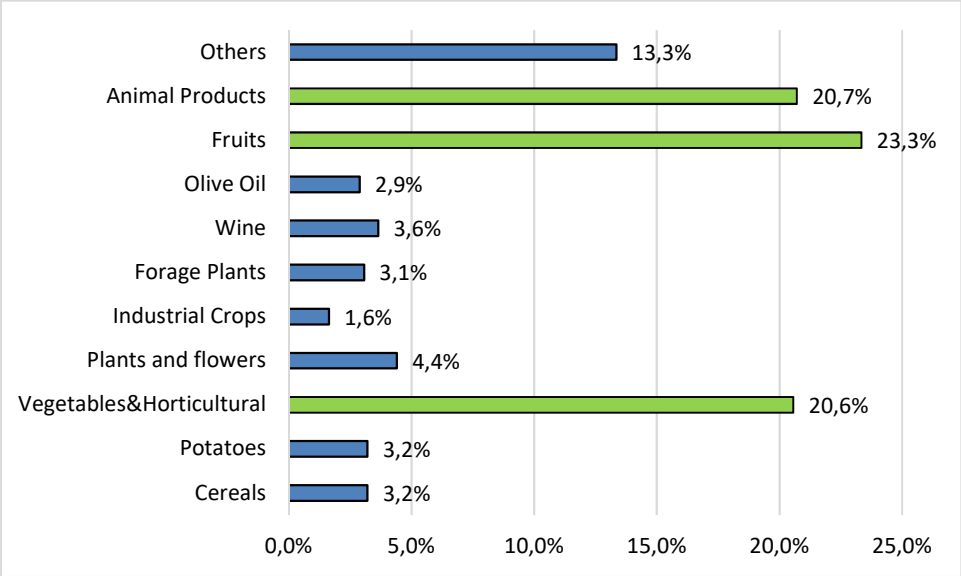
Figure 3.1: Campania agricultural sector: GVA, GFCG, and people employed, 2000-2016



Source: Authors' elaboration on Eurostat data "Gross value added at basic prices by NUTS 3 regions [nama_10r_3gva]", "Employment (thousand persons) by NUTS 3 regions [nama_10r_3empers]", and "Gross fixed capital formation by NUTS 2 regions [nama_10r_2gfcf]", 2019.

Campania's primary sector heavily relies upon some specific agricultural sub-sectors, namely the production of fruits, vegetables and horticultural products, and animal products (see Figure 3.2), with the former two macro-categories being labour-intensive sectors characterised by high demand of seasonal labour.

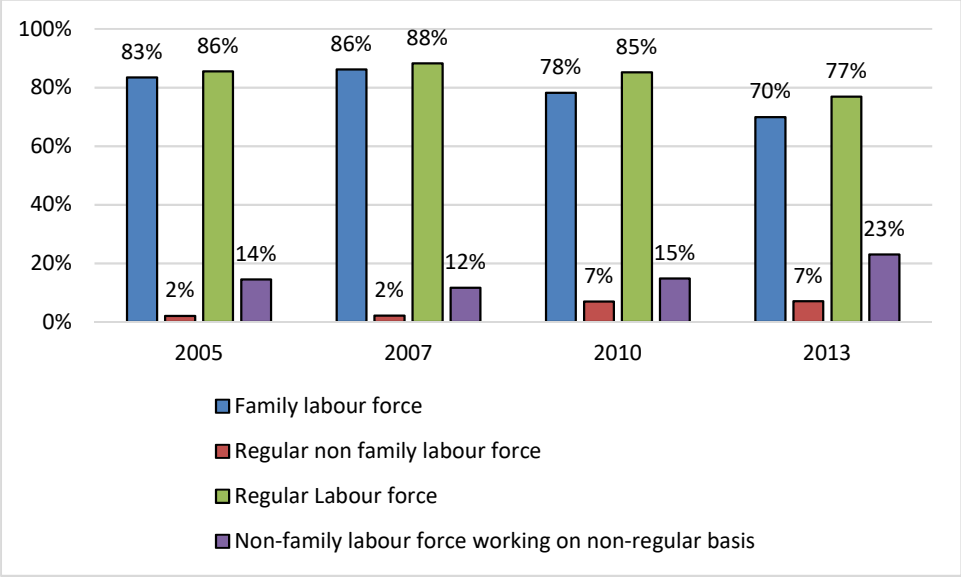
Figure 3.2: Agricultural sub-sectors importance in economic terms, Campania, 2018



Source: Authors' elaboration on ISTAT "Conti della branca agricoltura, silvicoltura e pesca", 2019.

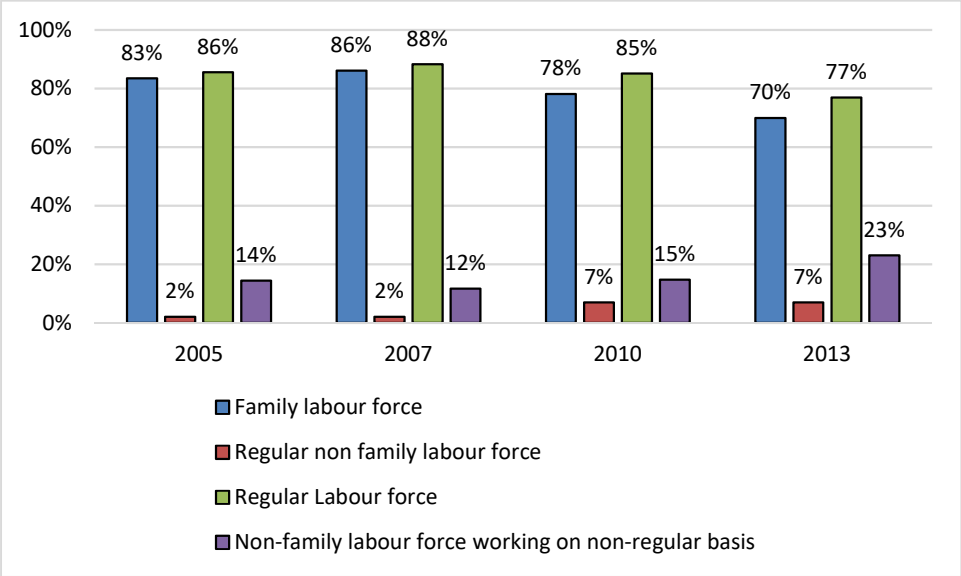
When analysing the type of labour-force on the farm, is it crystal clear how family-work represents yet the lion share for regional (and Italian) agriculture. However, its importance is declining, with Campania showing a faster downwards pace. On the other hand, non-family labour, especially on a non-regular basis (part-time and seasonal workers) rose significantly, particularly in Campania

Figure 3.3: Composition of on-farm labour by type of worker in AWU, Campania, 2005 – 2013



Source: Authors' elaboration on Eurostat "Labour force: number of persons and farm work (AWU) by sex of workers and NUTS 2 regions [ef_olfreg]", 2019.

Figure 3.4: Composition of on-farm labour by type of worker in AWU, Campania, 2005-2013

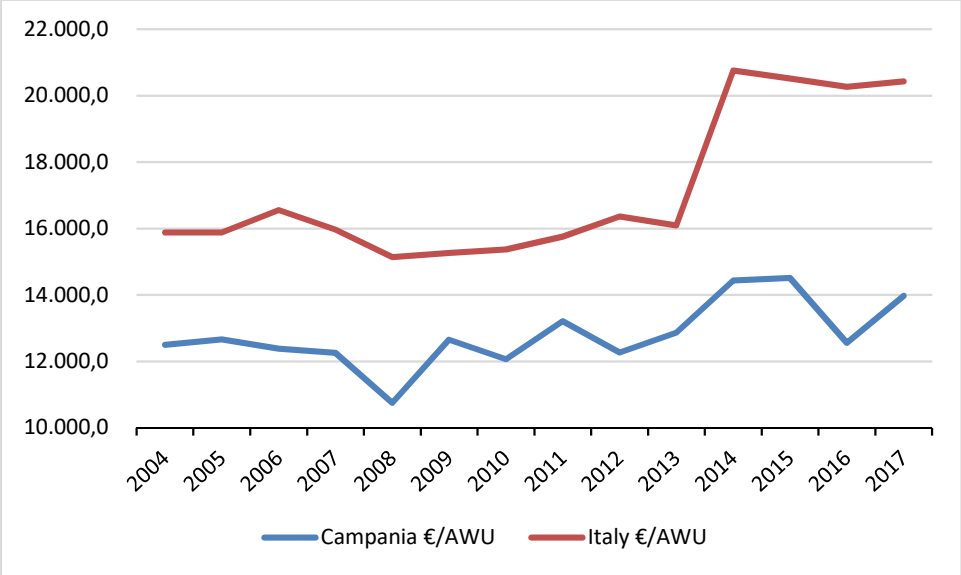


Source: Authors' elaboration on Eurostat "Labour force: number of persons and farm work (AWU) by sex of workers and NUTS 2 regions [ef_olfreg]", 2019.

Campania featured a surprisingly high increase in labour productivity, doubling Italian average. Such a rise may be due to the decrease in labour-force described earlier, but it also indirectly enlight the concern of underreporting of agricultural work.

Concerning wages, Figure 3.5 shows how Campania's level is far lower than the Italian level, albeit both witnessed an increase in the period analysed. Such a figure may partially explain the huge drop in agricultural employees the region witnessed, and the scarce presence of young people employed.

Figure 3.5: Wages expressed in € per AWU, 2004 -2017



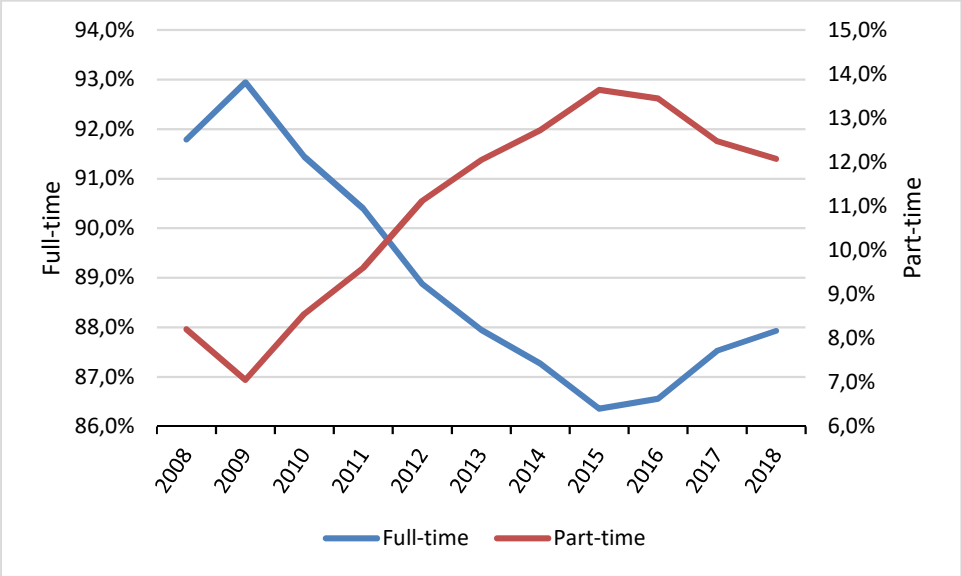
Source: Authors' elaboration on FADN Public Database, Measure SE020, SE021, SE370, 2019.

Furthermore, as pictured in Figure 3.6 and Figure 3.7, Campania's labour market seems to be experiencing an increasing level of precarious positions. Indeed, the volume of non-family labour force increased in the last period, with workers on non-regular basis (i.e., part-time/seasonal) tremendously increased, together with those with temporary contracts.

Figure 3.6: Total number of days, employees, and work intensity in the Campania's agricultural sector, 2013-2016

Source : Authors' elaboration on ISTAT "Struttura delle aziende agricole: Persone e giornate di lavoro per tipo di manodopera", 2019.

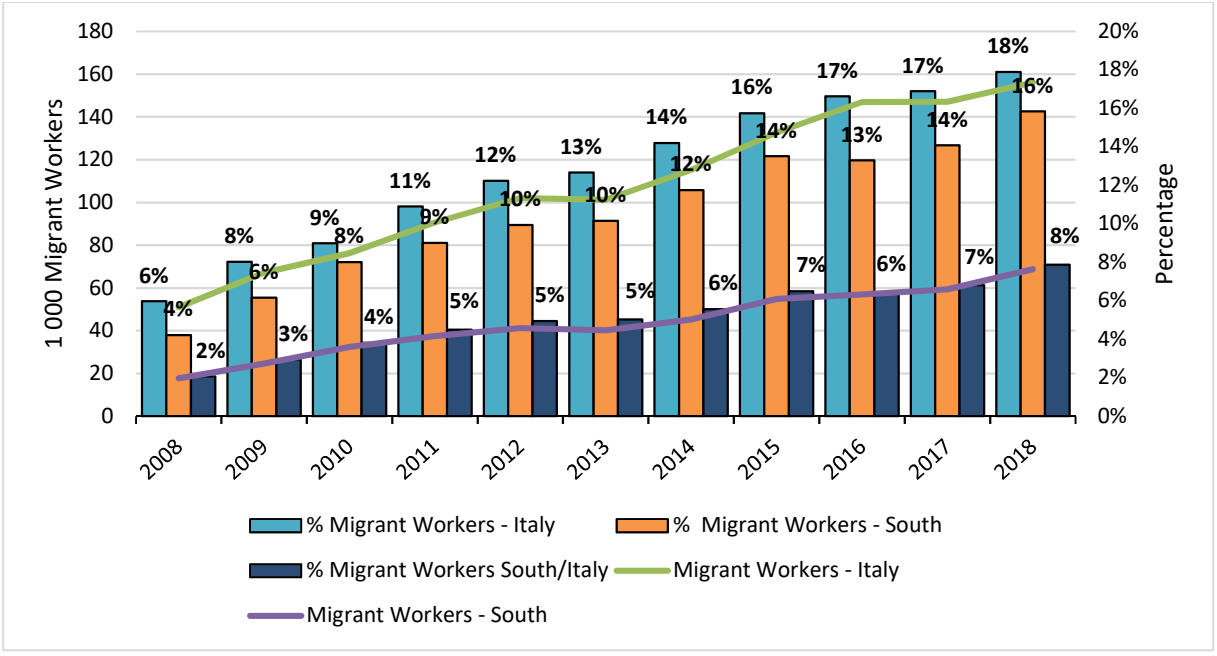
Figure 3.7: Full-time and part-time share on total labour in the South of Italy, 2008-2018



Source: Authors' elaboration on ISTAT "Occupati (migliaia): Ateco 2007 – posizione professionale, tempo pieno/parziale", 2019.

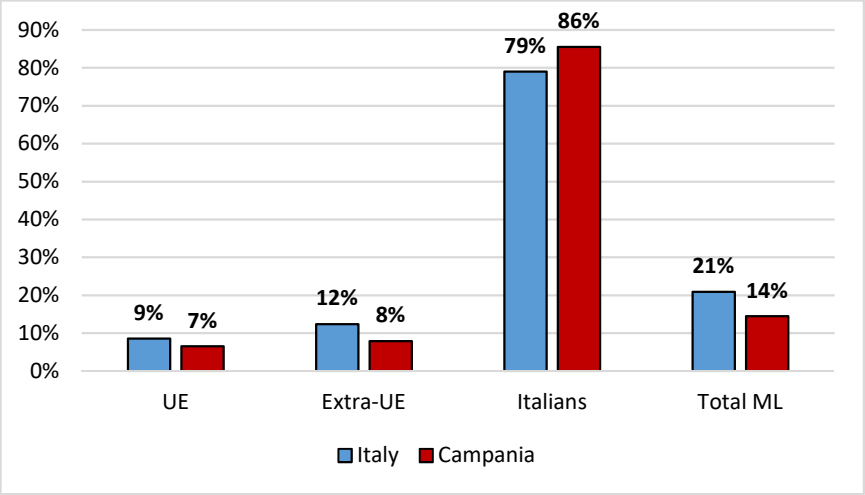
Such a rise in non-regular basis and temporarily contracts may be explained by the trend depicted in Figure 3.8. In fact, there has been a significant rise in migrant workers, especially in the South of Italy, where Campania is located. Indeed, there is a clear increase also regarding the weight of migrant workers in the south of Italy on the total national volume of foreign labourer. Concerning the country of origin, the latest data provided by the agricultural census of 2010 points to a fair distribution between Europeans and Extra-Europeans workers (see Figure 3.9). However, dynamics may have changed since this picture, and more actual data will be presented in the following sections.

Figure 3.8: Migrant workers trends in agriculture, Italy and South of Italy, 2008-2018



Source: Authors' elaboration on ISTAT "Occupati (migliaia): Ateco 2007 – posizione professionale, cittadinanza", 2019.

Figure 3.9: Composition of migrant workers by origin, 2010



Source: Authors' elaboration on ISTAT "Insieme di dati: Altra manodopera aziendale", Agricultural Census 2010, 2010.

3.1.4. Prevalent challenges in the CS region

The CS focuses on the role of migrant workers in agriculture using Campania (Italy) as a case study.

Italian agriculture, as well as for other EU member states, experienced an increasing role of foreign workers, especially in the southern regions. Seasonal and migrant workers are now a common feature in many labour-intensive farm enterprises, especially in some regions of Italy such as Campania; in fact, around ¼ of the total hired labour is estimated to be provided by foreign workers and, according to interviews and analyses, in some areas this value reaches ¾ of the whole labour force. Migrant workers form part of those "external" tactics intended to ensure the economic sustainability of farms. They have been used to palliate the agricultural labour market gaps (i.e. the shortage of seasonal farmworkers threatening the competitiveness of labour-intensive farms), and to reduce production costs. However, the social conditions of migrant workers have been a cause of relevant concern. Legal and social vulnerability of migrant workers results in forms of human rights violations (CGIL – FLAI, 2018). Farm labourers often work very long hours, exposed to heat and chemicals, and travelling to the place of work under dangerous conditions. Furthermore, their living conditions are very harsh in many cases: most live in tent cities or urban slums, have limited access to sanitary and health services (Open Society Foundations, 2018).

The regional farm sector is faced with the main challenge of the migrant labour force. The demand of agricultural workers, especially of seasonal nature, to which the domestic supply of workers has not been able to respond, and a skyrocketing flow of migrants into EU territories, resulted in an increased importance of the migrant in the agricultural job market. In addition, the evolution of the agricultural labour market shows a reduction in family-work, increasing the role of part-time and seasonal workers. Low agricultural wages and an increased in economic terms of other sectors of the Italian economy made the agricultural sector unappealing for young and educated people, inducing to a shortage of domestic supply of agricultural labourers. In Campania, where the primary sector relies heavily on both labour- and seasonal-intensive sectors is furtherly challenged by the role of migrant workers in agriculture and their living and work conditions.

Environmental challenges are also present in the regions, particularly regarding soil contamination and climate change. The former relates to the unregular disposal system for toxic waste that affects some areas of the region (in the provinces of Naples and Caserta), contaminating the soil and underground water, and eventually contaminating agricultural productions (for further details see ARPAC, 2017).

Moreover, especially the vegetable and horticulture production weakened the organic composition of the soil (Regione Campania, 2019a), and calls for the optimisation of the water management (Regione Campania, 2019b).

Regarding the climate change, specific regional productions (e.g., DOC wines) are already been affected, with hail, high temperatures, droughts, spring frosts, unpredictable and changing the way of farming and the quality of the product (Repubblica, 2019). Finally, socioeconomic challenges are also affecting this territory, with unfair competitive practices from extra-UE countries hampering the value-added of some regional (and typical) products (e.g., tomatoes), and the uncertainty concerning the Brexit: a no-deal would mean a significant loss for the agricultural economy of Campania, with its exports to the UK representing 12.5% of regional agricultural GVA (CIA, 2019).

3.1.5. Institutional frameworks governing the regional agricultural labour market

Name of the institutional framework	Short description (aim and target beneficiaries)	Governance level (EU, national, regional, local)
The 2015 European Agenda on migration	Aimed at managing migration, especially across the Mediterranean. Cooperation with third countries mainly concerning return policies, border management, and measures against illegal migration (repressing labour exploitation via the "Employers Sanctions Directive").	EU
Directive 2014/36/EU "on the conditions of entry and stay of third-country nationals for the purpose of employment as seasonal workers"	For responding to the need for seasonal workers in many EU economies and provide a treatment equal to domestic labour force.	EU/National (Member States can impose restrictions on equal treatment).
Regulation 492/2011 "on freedom of movement for workers within the Union"	Setting workers' rights in the EU Member States.	EU
Directive 2004/38/EC "on the right of citizens of the Union and their family members to move and reside freely within the territory of the Member States"	Rights and limitations for EU citizens to move freely within the EU.	EU
Directive 2009/52/EC "providing for minimum standards on sanctions and measures against employers of illegally staying third-country nationals"	Sets sanctions against employers who make use of irregular workforce. It offers citizenship to third-country workers under some conditions and if they cooperate in the criminal proceeding. It concerns undocumented migrants, only.	EU
Law No. 40/1998 (Italian Government)	It defines the entry system for third-country workers into the Italian labour market, which relies upon the specific request of labour from a resident employer.	National
Decreto Flussi ("Decree on Flows [of migrant labour]")	It regulates the inflow of migrant workers onto the Italian territory. It consists of a yearly decree in which the number of workers to admit is communicated (total and seasonal workers)	National
"Decreto Salvini" (2018) Law-Decree on immigration and security.	Abolishes residence permits for humanitarian reasons (Decree No. 286/98)	National
2011, Article 603bis of the Criminal Code	Introduces the crime of "unlawful gang-mastering and labour exploitation"	National
Legislative Decree No. 109/2012,	Transposed the "Employer Sanctions Directive" (52/2009/CE)	National
Legislative Decree 2014/24	Transposed the EU Directive 2011/36/EU on trafficking	National
Law No. 199/2016	Provides severe penal sanctions to gang-masters and employers taking advantage of workers' neediness. Furthermore, it ensures social rights to victims of severe exploitation. Finally, it strengthens the previous "Network of Quality Agricultural Work (Rete del Lavoro agricolo di Qualità)", supporting the formation of local branches for better targeted and more active policies to address labour intermediation.	National
Delibera della Giunta Regionale della Campania n. 242 del 24/05/2016 "schema di protocollo sperimentale contro il caporalato e lo sfruttamento lavorativo in agricoltura "cura -legalita" – uscita dal ghetto"	It builds a solid network of all interested parties to fight illegal labour intermediation and improve migrant labour conditions.	Regional

Source: Authors' elaboration on desk research, CGIL – FLAI (2018), and Open Society Foundations (2018).

3.2. Regional thematic focus

Analysis of the migrant workers in the farming sector of Campania

Introduction

The following analysis presents first the challenges related to the use of migrant workers in the farming sector of Campania. Then it describes strategies and policies in place at regional, national and EU level related to migrant workers in agriculture and bottom-up responses. This is based on a desk analysis of the literature available and the main official documents, as well as findings of the interviews carried out with specialists of the labour sector. The latter has been particularly useful to cover all those elements that are not captured by the data and desk analysis. Using the Italian FADN data, it also provides a quantitative analysis of characteristics and evolution of foreign workers in Campania as well as the characteristics of the farms using migrant labour. Finally, based on the analysis of the data and interviews with three experts[8], some policy recommendations are provided. These are aimed at improving the functioning of the regional agricultural labour market, with an emphasis on the previously mentioned challenges.

Challenges related to the use of migrant workers

The use of migrant workers is now a common feature in Campania as in many other regions of the Italian territory. The relative importance of migrant workers on the on-farm labour force has increased, especially for labour-intensive farms: this is especially the case in farms with a high demand for seasonal work (i.e. fruit and vegetables), and in those specialized in livestock activities. According to the interviewers, the Italian labour market does not provide workers willing to accept these types of job, especially in agriculture. Migrant workers from different countries have different specializations, according to the country of origin and cultural traits. For example, Indians have been found very appropriate to work in dairy farms, for their ability in animal-care, while migrants from Romania in sheep husbandry or vineyard farms.

However, there still exist diverse challenges related to the use of migrant workers in agriculture. Firstly, there is a need for ameliorating the interaction between the demand and supply in the farming sector, as present public institutions (Centri per l'impiego – *Employment Centres*) seem not to be able to handle it efficiently, especially concerning migrant workers. The abolition of labour vouchers caused an increased complexity in labour recruitment, the system for providing temporary labour permits is found complex (only a share of the potentially available positions at the end result in the formalization of labour contracts), and private temporary employment agencies do not work in the farming sector.

Such rupture between the two sides of the job market allows the entry of illegal intermediaries, as the so-called phenomenon of "*caporalato*" (CGIL – FLAI, 2018), an illegal intermediation system often linked to gang-masters and resulting in the reduction of wages, the increase of exploitation (e.g. unpaid longer working days), and causing social vulnerability and human rights violations (Open Society Foundations, 2018). For many migrant agricultural workers, such illegal activity is welcomed, since it represents an efficient way to enter the country, find accommodation and entering in the domestic labour market (Carchedi, 2018).

On the economic side, there is a need for regularising informal migrant workers. According to Carchedi (2018), Campania's agricultural labour force hosts around 30% of informal agricultural workers. Eliminating disparities in terms of wage is a further crucial need: around 50% of the agricultural labour

[8] Details on the interviews can be found in the Appendix III.

force in Campania receives a wage level that is not aligned with the official one (i.e., stipulated on a regional and/or national level among social parties). For example, concerning the Rom community in Campania, the hourly wage is around € 5/7 for an entire family working in the fields, while the lawful regional contract for a single agricultural workers sets it at € 7.50 per hour worked (Carchedi, 2018). While regularly registered migrant workers are paid as Italian workers, there are several ways this is circumvented: working additional unpaid hours/days (Open Society Foundations, 2018); a share the of the wage retained by the "*caporale*" (i.e., the informal intermediary between the farm and the worker); and a reduction of the expected wage because of a trial unpaid period, usually one week (Carchedi, 2018). Furthermore, because the migrant's permit for a legal stay in Italy is linked to an already-signed labour contract, migrant workers are in a vulnerable position with respect to their employers (Open Society Foundations, 2018).

All these elements often resulted in work provided by migrants being paid less than that of Italian workers. This generates a downside pressure on the wage that has negative consequences also on Italian workers (Personal communication from one of the interviewed).

The legal and social vulnerability of migrant workers results in many forms of human rights violations (CGIL – FLAI, 2018). Farm labourers often work very long hours, are exposed to heat and chemicals, with limited access to sanitary and health services. Most live in tent cities or urban slums, transported to the place of work in very dangerous conditions, as testified by several fatal car accidents. These conditions strongly hinder the capacity of the migrant to integrate into the local society. This can have long-term negative consequences in terms of exacerbating income and social disparities, hampering the creation of regular jobs and fuelling contrasts between local and migrant populations. Note that while the analysis refers to the region Campania, the phenomenon has very similar characteristics in other regions of Italy, especially in the southern part, and other Mediterranean countries of the EU as Spain and Greece (Gertel and Ipple, 2014; Nori, 2017).

Strategies and policies in place at regional, national and EU level related to migrant workers in agriculture and bottom-up responses

The institutional response to this phenomenon has been a repressive approach, prosecuting the "*caporalato*" phenomenon, seen as the main responsible for exploitation in agriculture. In 2011, the national Criminal Code introduced the crime of "unlawful gang-mastering and labour exploitation". In 2012, Italy transposed the Employer Sanctions Directive (52/2009/CE) into national law (Legislative Decree No. 109/2012), while in 2014 (the Legislative Decree 2014/24) transposed the Directive 2011/36/EU on human trafficking. However, commenters have found these steps inadequate (Mancini, 2017; Palumbo, 2016). A further step against exploitation and trafficking has been done by the Italian government with the Law 199/2016. This provides victims of severe exploitation with a programme of assistance and social integration, with a residence permit for social protection in some specific cases. Despite these efforts, the "*caporalato*" is still active and strong, especially because of the limited number of operators involved: the number of inspections has declined, and the rate of irregularities/inspections has not increased (Open Society Foundations, 2018).

National legislation supported the establishment of the "Rete Agricola di Qualità" (Farm Quality Network) that, at the local level pursues the intermediation between labour demand and supply, transport and accommodation. The first objective should have been reached by establishing a database where workers and employees could interact in a transparent way, the second by the provision of public-governed transport services, and the latter by providing decent accommodations. However, several difficulties have made this proposal not very effective. For example, transport services are sees as a way to potentially identify irregular work, and many municipalities have opposed placing

migrants within their boundaries. The "Rete Agricola di Qualità" has also given the opportunity to develop a certification and labelling system for those farms that step into the network. This gives them the opportunity to receive farm inspections and, potentially, to use their status for marketing their products. However, a specific logo has not been developed, and nowadays only around 3,500 farms are involved in the network on a total of a population of more than 700,000 units, making the system not effective.

Others bottom-up initiatives took place, scattered onto the national territory. In Campania, the association "Nero e non *solo – Black and not alone*" born in Caserta in 1991, acknowledging migrants on Italian and European laws, supporting them in managing bureaucratic and administrative duties, offering legal assistance, and providing Italian language courses. Finally, the association organises initiatives on the territory to increase the awareness of the general public overexploitation in agriculture of migrants. While this represents a successful initiative, many others are not. In Apulia, a southern Italian region, a transparent certification system was settled-up ("*Equapulia, no black work*"), giving special status to those employers hiring workers regularly. Due to the lack of participation, the project failed.

The main strengths of such initiatives are they are very much tailored to local needs and characteristics, involving several stakeholders that operate in the field. In contrast, weaknesses rely on the lack of coordination among the different authorities working in this sector and, even more importantly, the limited participation of farmers that employ migrant workers.

Quantitative analysis based on individual farms from the Italian FADN database

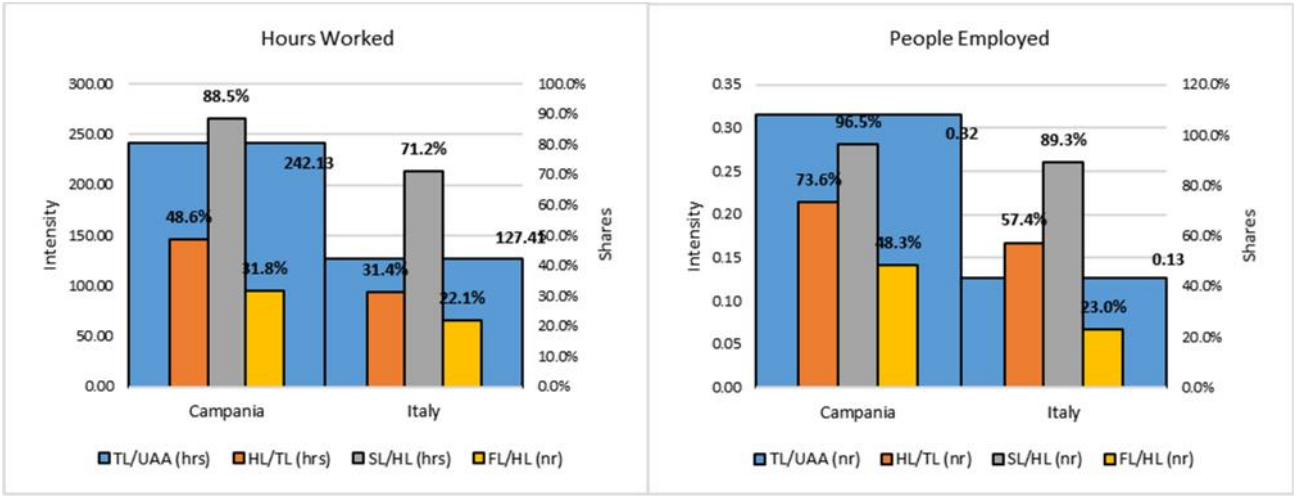
This quantitative in-depth analysis relies on the FADN Italian database[9] and covers: A) the characteristics and evolution of foreign workers and B) the characteristics of the farms using migrant labour. Comparing these topics is useful to understand how the articulated supply and demand interact in the case of Campania. However, it is important to recall that this is a rotative survey in which the sampled farms change over time. Therefore, it may not truly represent the evolutions of the considered phenomena over time. In this regard, it is better to rely on the data analysis performed in 3.1 of this analysis. The main figures are reported in the text while more data can be found in chapter 3.3.

Characteristics and evolution of foreign workers in Campania according to the FADN database

Campania region, in comparison with Italian average, is characterized by a higher labour intensity (expressed as total labour (TL) on UAA – TL/UAA), and a relatively higher level of hired labour (HL), both in terms of employees and hours worked. However, both aspects have declined relatively more in Campania than at the national level, with a particularly intense decline after 2015. Finally, due to the type of agricultural productions developed in the region, seasonal workers are very important in Campania, more than in other parts of Italy. The relatively high use of hired labour and of temporary workers explains the fact that in Campania foreign workers are a fundamental source of seasonal labour. In facts, the relative share of foreign workers over the hired workers is indeed around twice the Italian figure. However, the data shows a drastic decline after 2014 (see).

[9] The authors are grateful to the *Consiglio per la Ricerca in agricoltura e l'analisi dell'Economia Agraria – Centro di Politiche e Bioeconomia* (CREA-PB) of Rome (Italy) for providing the data used in the following sections. The information and views set out in this report are those of the authors and do not necessarily reflect the official opinion of the CREA-PB. The authors are the only responsible for all the data elaborations.

Figure 3.10: Hours worked and employed people, average labour indicators, 2008-2017

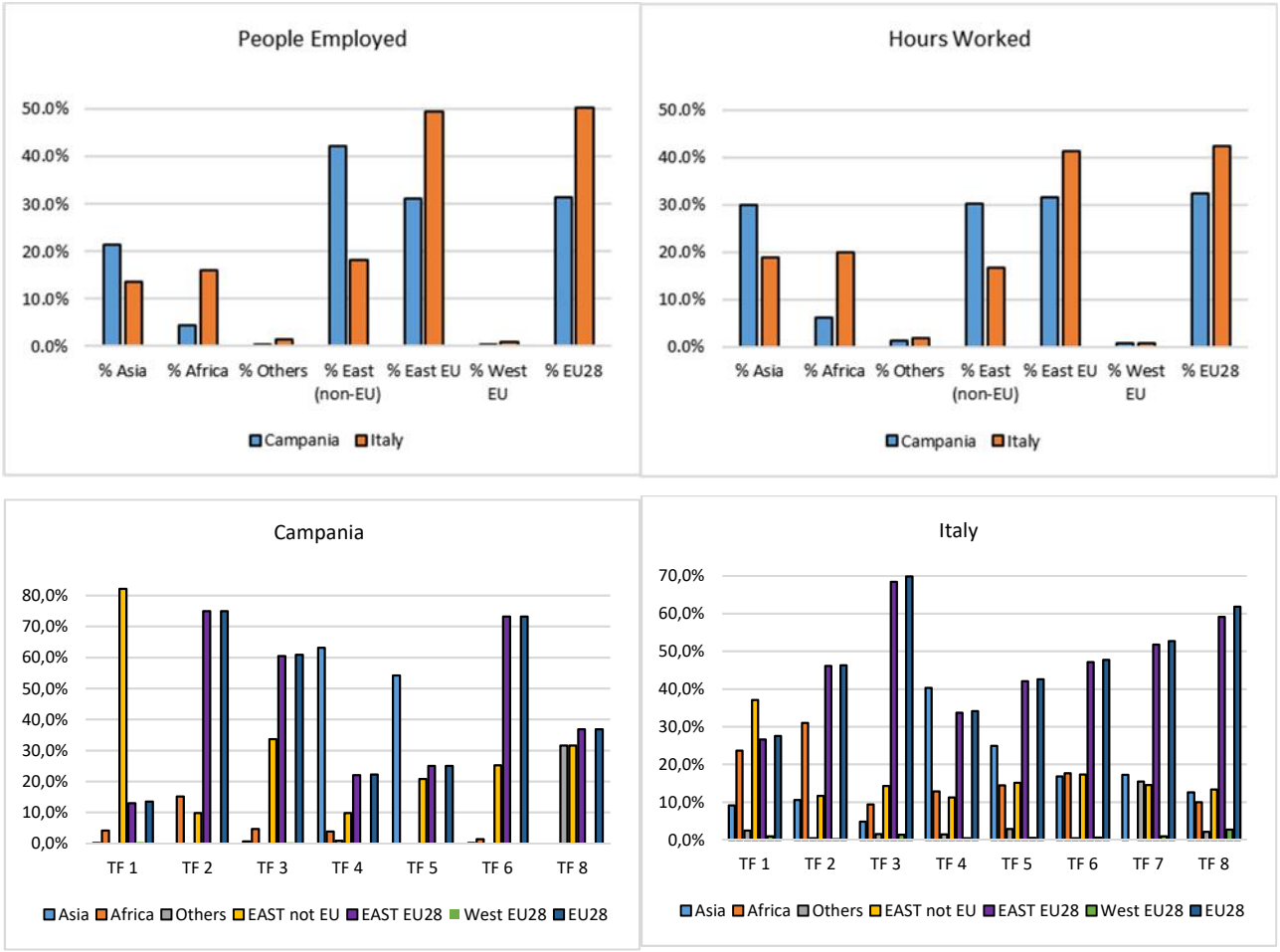


Source: Authors' elaboration on FADN data (see Table 3.20 and Table 3.21).

The high relative importance of foreign workers is also echoed by the fact that the relative number of farms with foreign workers on average on the period 2008-2017, is higher in Campania (i.e., 17%) than the national average (i.e., 10%) (see **Table 3.22).** It is also important to note that in Campania the number of farms using foreign workers has declined after 2015, causing the decline of the share of foreign workers is also due to this evolution.

Regarding the country of origin of migrant workers, the FADN dataset provides a unique micro-survey, supplying the most precise and in-depth data on migrant agricultural workers. Figure 3.11 provides insights into the origin of migrant workers in terms of both employed people and hours worked. For both indicators, there is a tremendous increase in Asian workers, more in Campania than Italy as a whole, in detriment of Eastern workers not belonging to the EU. Both Eastern workers belonging to the EU, and Europeans workers generally, depict a steady presence either at regional and national levels. Concerning the last year available, 2017, while in Italy the largest group of foreign workers are from eastern EU-28 countries (mostly from Romania), and Africans, Campania is mostly represented by Asian, Eastern workers from the EU, and non-EU eastern workers (mainly Albania). Africans workers are less represented in the regional context with respect to the national one. However, the relative importance of workers from different foreign countries has changed during the considered period. The relative number of workers from Africa and from Eastern EU has increased strongly in Campania at the end of the considered period.

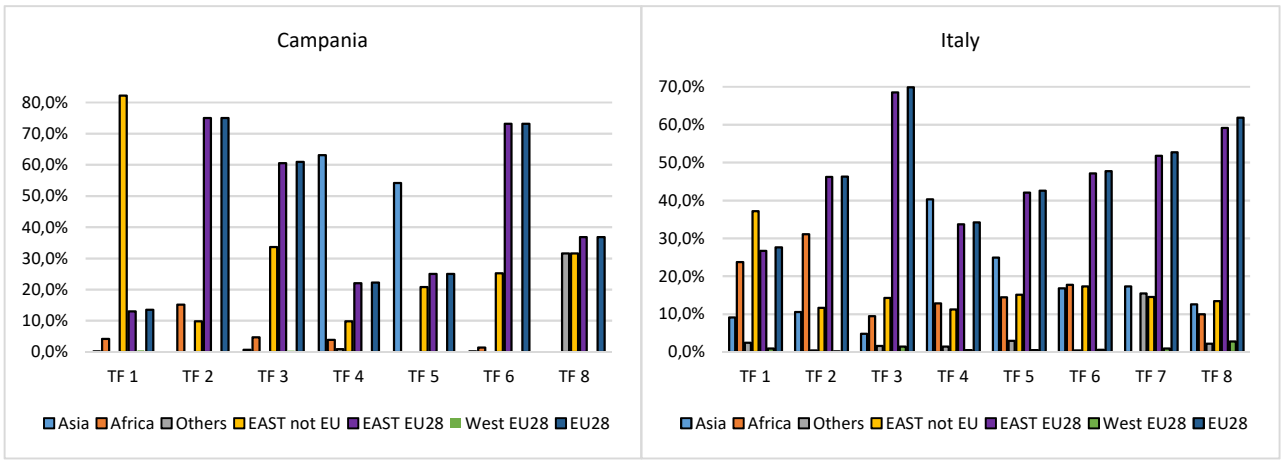
Figure 3.11: Hours worked and employed people, migrant workers' origin, average 2008-2017



Source: Authors' elaboration on FADN data (see Table 3.23 and Table 3.24).

Migrant workers from different countries are distributed differently among diverse farm typologies. Hence, it seems that according to skills and knowledge, or the accumulation of experience in certain agricultural sub-sectors, migrant workers tend to specialise. For example, migrants from East European countries are more commonly encountered in farms specialized in permanent crops (TF3), while Asian workers are more commonly encountered in grazing livestock farms (TF4).

Figure 3.12: Hours worked per type of farm, average 2008-2017

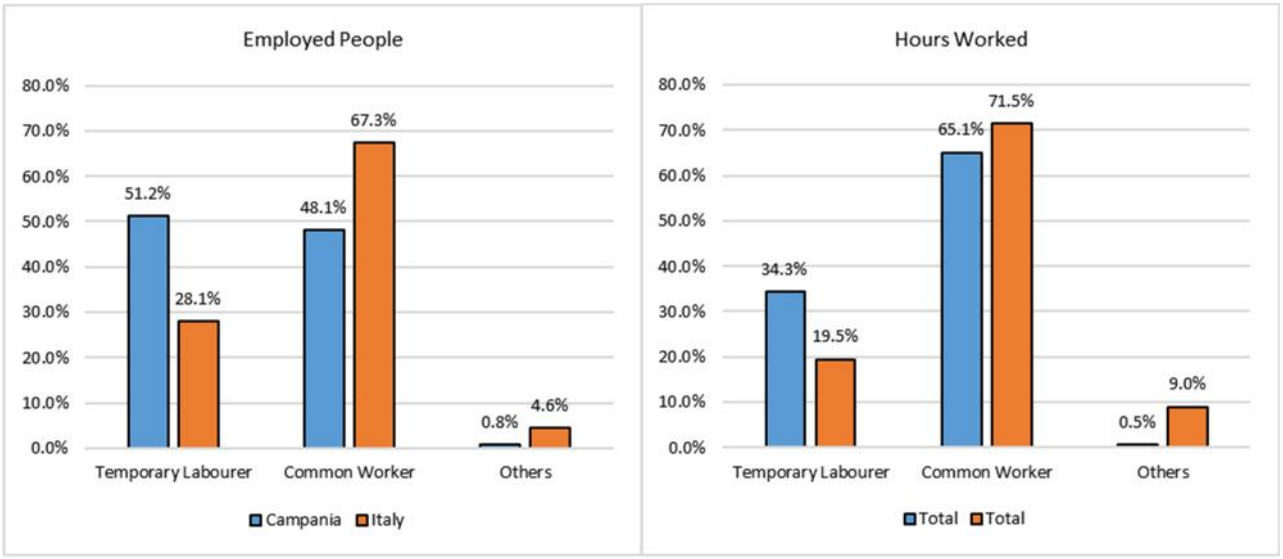


Source: Authors' elaboration on FADN data (see **Table 3.25**).

As **Table 3.26** illustrates, the vast majority of foreign workers are male, both in Italy and Campania. However, this is, even more, the case in Campania: while in Italy slightly less than 20% are female, in Campania female are only around 10% of the total foreign workers.

The large majority of foreign workers are contracted as common workers, followed by temporary workers, both on the national and regional basis. However, according to Figure 3.13, the Italian situation shows also other types of contract for migrant labourers, such as qualified workers and specialized workers, even if they represent just around 7% of the whole hours of work provided by foreign workers. This is not the case in Campania, where these types of contracts account for a very negligible amount of hours.

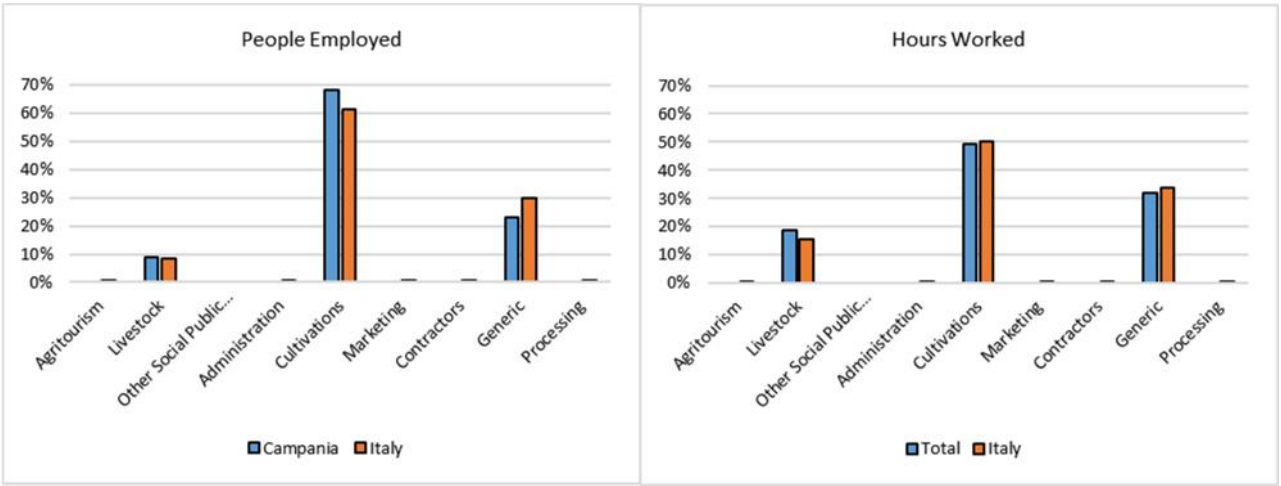
Figure 3.13: Hours worked and employed people, migrant workers' qualification, average 2008-2017



Source: Authors' elaboration on FADN data (see Table 3.27 and Table 3.28).

Foreign workers are employed in several farm activities but mostly in cultivation (around ½), generic activities, and livestock activities. Remaining activities play a negligible role. The relative importance of the considered functions in Campania is very much in line with the national figures (see).

Figure 3.14: Hours worked and employed people, migrant workers' qualification, average 2008-2017



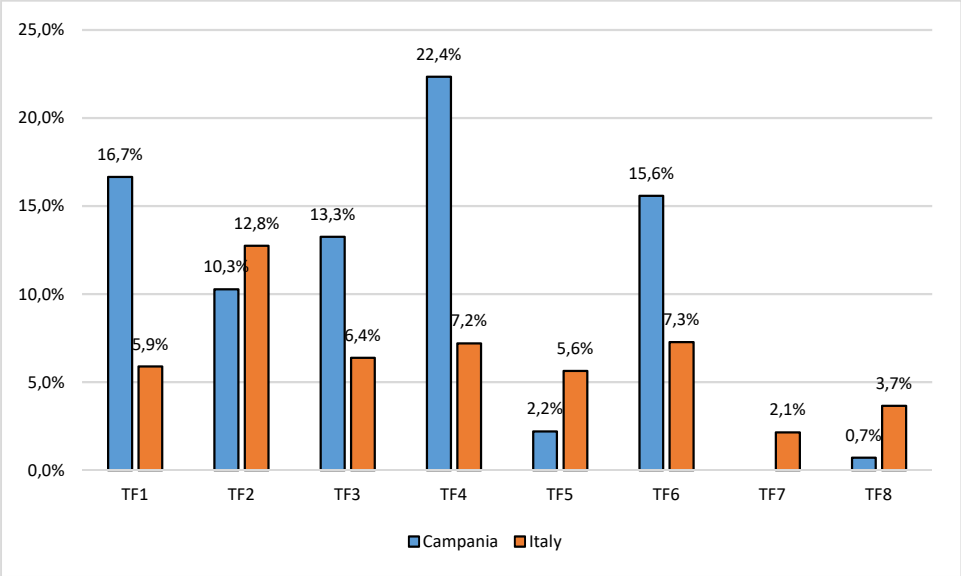
Source: Authors' elaboration on FADN data (see Table 3.29 and Table 3.30).

Characteristics of the farms using migrant labour

The relative importance of foreign workers varies according to the production orientations of the farm. In Campania, migrant workers provide a large amount of worked hours in farms specialized in grazing livestock. Slightly less in the case of farms specialized in arable crops and mixed crops. In contrast, they are not important in the case of mixed livestock and mixed crop and livestock farms, as well as in granivore farms.

This is not only the result of the relative importance of hired workers. For example, even if hired workers are very important in the case of specialized arable crops and granivore, here the relative importance of foreign workers in comparison to the overall hired workers is limited. In contrast, foreign workers represent a relevant share of the hired workers in farms specialized in grazing livestock, arable crops and mixed crop farms (see Figure 3.15).

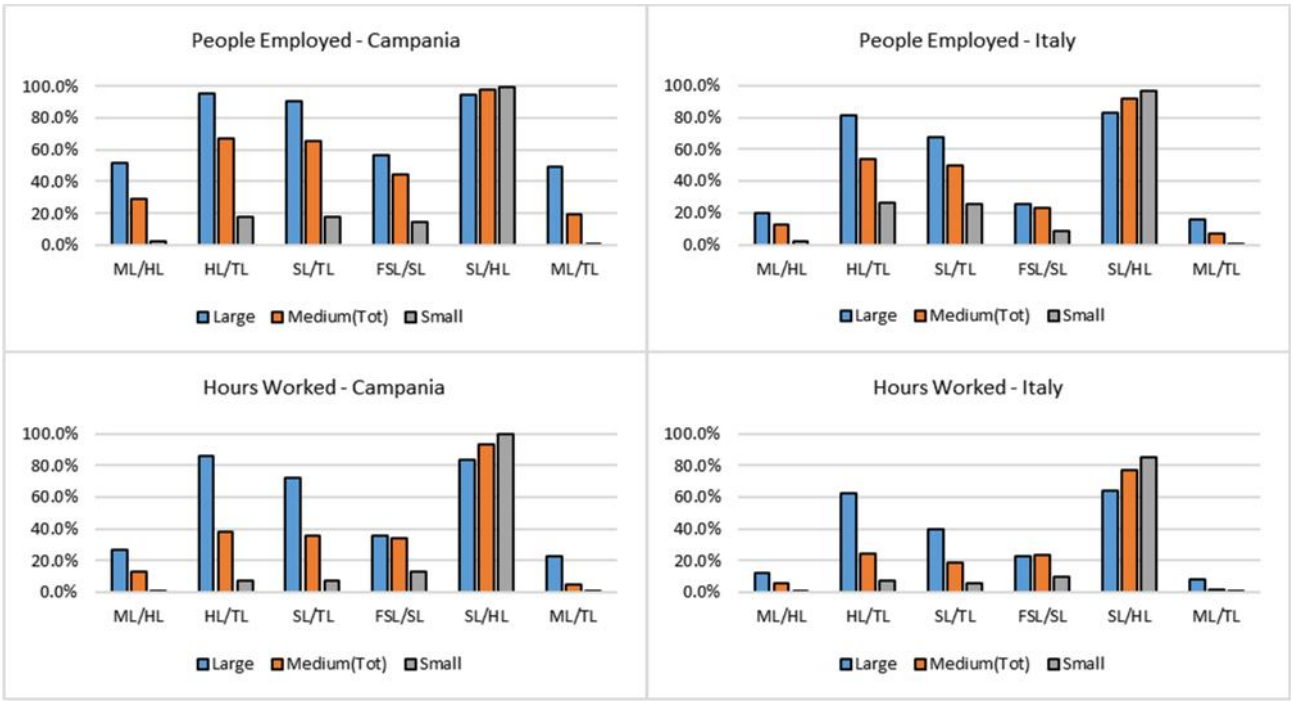
Figure 3.15: Share of farms using migrant labour per type of farming, average 2008-2017



Source: Authors' elaboration on FADN data (see **Table 3.31**).

As already said, migrant workers represent a larger share of the whole labour force in Campania in comparison with the national figure, and this ratio increases according to farm size. Migrant workers provide on average around 25% of the worked hours in large farms, 12% in medium farms, and only around 9% in small farms for the considered period. Larger farms rely more on hired labour than small farms: more than 85% of the labour in large farms is indeed hired. In contrast, only around 7% of the whole amount of worked hours is provided by hired workers for small farms. However, it is also true that small farms tend to rely less than larger farms on foreign workers within the hired workers only (see Figure 3.16).

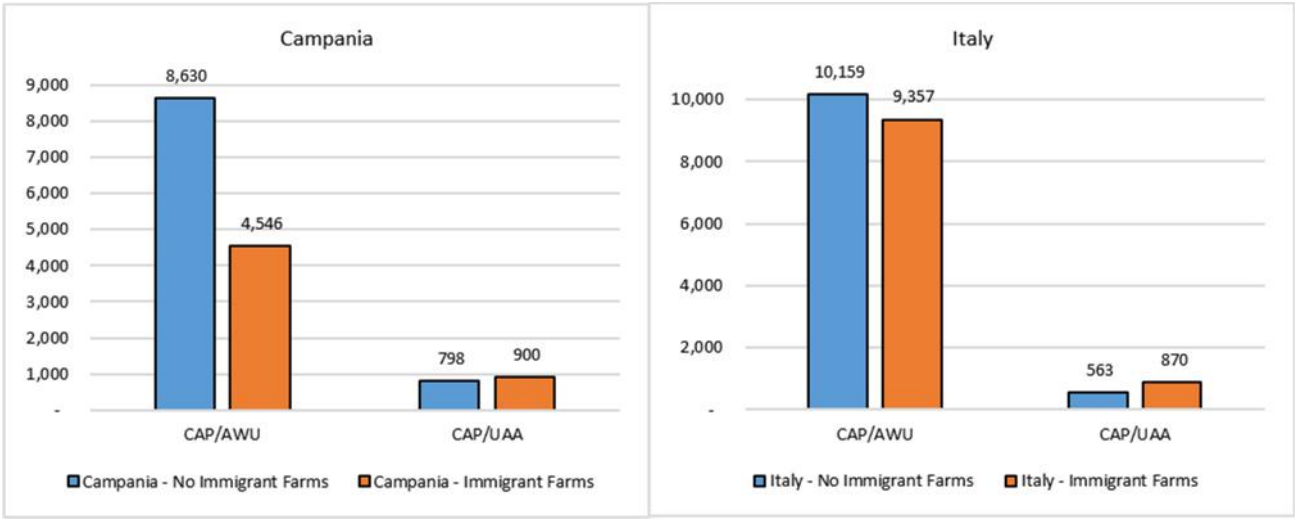
Figure 3.16: Share of farms using migrant labour per farm size, average 2008-2017



Source: Authors' elaboration on FADN data (see Table 3.32 and Table 3.33).

Farms using migrant workers are also recipients of CAP support. The overall amount of support per unit of land in these farms in Campania is relatively high when compared to the average national figure. However, this is not the case when CAP support is related to the amount of used work. In this case, the relative amount of support in the farms using migrant workers in Campania is around half the average Italian figure (see Figure 3.17). This is in line with the higher labour-intensity of farms in Campania as described earlier. On the one hand, this result suggests to reflect on conditioning the CAP's overall payment to the fulfilment of adequate labour conditions, since it may be of limited impact: farms may decide to not comply whenever the foregone support is lower than the benefits they obtain by not complying. In this latter case, however, not complying may help in unveiling criminal activities and lead to on-farm inspections.

Figure 3.17: Share of farms using migrant labour per farm size, average 2008-2017



Source: Authors' elaboration on FADN data (see Table 3.34 and Table 3.35).

Policy recommendations

Based on the analysis of the data and interviews with experts, it is possible to draw the following policy recommendations. These are aimed at improving the functioning of the regional agricultural labour market, with a particular emphasis on the previously mentioned challenges. The recommendations are divided according to their level of implementation.

At the ***EU level,*** it seems crucial to:

- improve the implementation of the principles stated in EU initiatives related to the labour markets and conditions (e.g. EU Social Pillar and Europe 2020 Strategy on Growth and Jobs) as well as migration (e.g. Marrakech declaration on migration). These principles are not acknowledged nor fully respected in the case study region. This is particularly the case for the Marrakech Declaration on migration, given the high vulnerability of migrant workers;
- assess the full implementation of directives into the national laws, as some questioned their righteous transposition;
- verify whether a sufficient and effective resource-enforcement of these laws is ensured.

An additional potential area of intervention could be the development of an EU-level labelling scheme referring to labour standards, to add value on the final consumer market as already intended by some national initiatives previously described.

Finally, some specific recommendations refer to the implementation of the Common Agricultural Policy, following the interest the European Commission put on migration and agriculture in its communication of 2017 "The Future of Food and Farming", intending a role for the CAP in managing both economic and social issues generating from migration flows within the EU-territory (RRN, 2018). These refer to the conditionality and the enlargement of the scope of Rural Development Policies:

- Albeit conditionality has already been introduced within the CAP, it does not explicitly refer to the fulfilment of labour rights and minimum standards. In this regard it seems interesting to mention the very recent law of the Latium region: "Disposizioni per contrastare il fenomeno del lavoro irregolare e dello sfruttamento dei lavoratori in agricoltura" (Provisions to combat the phenomenon of irregular work and the exploitation of workers in agriculture) (Consiglio Regionale del Lazio, 2019). Article 4 of this law introduces "congruity indexes", which define the relationship between the quantity and quality of goods and services offered by employers and the number of hours worked. These are useful for identifying farms with potential irregularities. This could represent the basis on which inspecting the farm to determining whether a particular recipient of the CAP is incurring in irregularities and provide to control the actual situation. In case irregularities are found, conditionality is activated, and CAP payments might be suspended. A claim for such conditionality of the CAP relative to the respect of labour conditions (i.e., "social conditionality") has been moved already by the European Coordination of Via Campesina (ECVC) (ECVC, 2018).
- Extending the role of Rural Development Programs, especially regarding priority number 6 "promoting social inclusion, poverty reduction and economic development in rural areas". This can be done by the implementation of LEADER projects through CLLD (Community led-local development). In this regard, some Italian regions are already considering the migrant workers' issue by means of measures 16.9 and 19 (e.g., Tuscany, Umbria, Apulia, and Marche):
  (1) To support actions aimed at promoting the integration of migrant and refugees in rural areas.
  (2) To support economically those farms that participate in voluntary certification schemes related to labour conditions.

(3) To provide financial support to projects aimed at ameliorating living, social and working conditions specifically for migrant workers (e.g., accommodation, health services, language courses).

At the ***national level,*** it seems of crucial importance to:

- Improve and develop an efficient and lawful system of intermediation between the employer (i.e., the farm) and the employee (i.e., the migrant worker), able to substitute and, hence, eliminate the "*caporalato*" system.
- Reconsider the overall body of laws regarding immigration, accounting for their weaknesses. Among these, it is worth considering the very weak position of the migrant workers that are often not in the state of reporting infringement of the law by their employers. This is particularly the case of those employees that receive the unemployment payments: according to one interviewee from a labour union, workers can benefit from unemployment subsidies whenever they do not reach a given number of working days. Hence, employers can exploit the situation by not registering supplementary days of work. Because workers access to this public support irregularly, they cannot anymore report any irregularity regarding their labour position, as they would be spoiled of such benefits apart being prosecuted.
- Reinforce and make more effective the enforcement of the laws especially by increasing the number of inspections and the prosecution against criminal actions related to the "caporalato" system.

However, an approach only based on repression is probably not going to be effective. Because of this, it seems advisable also:

- To encourage the participation of the farms in the Network of Quality Agricultural Work by making it worth from an economic point of view too. In this regard, it may be possible to evaluate positively the participation to such network within public national tender concerning the public provision of food (e.g., public canteens).
- To develop an information campaign targeting foreign workers, consumers and functionaries of the public offices regarding the issue related to the condition of migrant workers. Indeed, according to RRN (2018, p. 8) "[…] ministers responsible for sectoral policies are often not acknowledge with the effects of migration on their areas of action". Such informational campaign should be aimed at increasing the awareness of the phenomenon, extending the culture of the respect of fair working conditions for all workers, increasing the monitoring of these phenomena, and, finally, combatting the reluctance to report the infringements of the laws related to working conditions of migrant persons.

3.3. Appendix: Tables chapter 3.2

Table 3.20: People employed: total labour, hired labour, seasonal labour, and migrant labour 2008-2017

	TL	UAA	HL	SL	ML	TL/UAA	HL/TL	SL/HL	ML/HL
Campania									
2008	3,195	6,966	2,441	2,373	1,433	0.46	76.4%	97.2%	58.7%
2009	3,951	7,576	3,185	3,074	1,576	0.52	80.6%	96.5%	49.5%
2010	4,661	10,006	3,620	3,493	2,063	0.47	77.7%	96.5%	57.0%
2011	4,372	9,727	3,340	3,202	1,859	0.45	76.4%	95.9%	55.7%
2012	3,739	11,568	2,734	2,623	1,341	0.32	73.1%	95.9%	49.0%
2013	3,955	12,253	2,946	2,832	1,799	0.32	74.5%	96.1%	61.1%
2014	3,535	12,802	2,619	2,538	1,476	0.28	74.1%	96.9%	56.4%

	TL	UAA	HL	SL	ML	TL/UAA	HL/TL	SL/HL	ML/HL
2015	2,546	11,914	1,700	1,645	289	0.21	66.8%	96.8%	17.0%
2016	2,322	14,246	1,402	1,363	296	0.16	60.4%	97.2%	21.1%
2017	2,730	14,010	1,775	1,722	316	0.19	65.0%	97.0%	17.8%
Total	*35,006*	*111,067*	*25,762*	*24,865*	*12,448*	*0.32*	*73.6%*	*96.5%*	*48.3%*
Italy									
2008	49,049	384,452	28,408	25,194	4,778	0.13	57.9%	88.7%	16.8%
2009	47,203	369,066	27,161	24,073	6,116	0.13	57.5%	88.6%	22.5%
2010	50,259	371,248	29,815	26,886	5,493	0.14	59.3%	90.2%	18.4%
2011	49,112	361,418	28,287	25,574	5,777	0.14	57.6%	90.4%	20.4%
2012	49,698	369,415	29,337	26,444	6,165	0.13	59.0%	90.1%	21.0%
2013	47,768	388,625	27,353	24,445	7,206	0.12	57.3%	89.4%	26.3%
2014	42,209	347,549	23,727	20,970	6,984	0.12	56.2%	88.4%	29.4%
2015	38,140	319,820	21,253	18,883	4,937	0.12	55.7%	88.8%	23.2%
2016	39,754	341,722	21,970	19,483	5,999	0.12	55.3%	88.7%	27.3%
2017	41,773	342,874	23,651	21,140	6,533	0.12	56.6%	89.4%	27.6%
Total	*454,965*	*3,596,188*	*260,962*	*233,092*	*59,988*	*0.13*	*57.4%*	*89.3%*	*23.0%*

Source: Authors' elaboration on Italian FADN, 2019.

Table 3.21: Hours worked: total labour, hired labour, seasonal labour, and migrant labour 2008-2017

	TL	UAA	HL	SL	ML	TL/UAA	HL/TL	SL/HL	ML/HL
Campania									
2008	2,255,831	6,966	1,193,425	1,079,891	354,806	323.81	52.9%	90.5%	29.7%
2009	2,381,530	7,576	1,353,993	1,171,187	381,979	314.37	56.9%	86.5%	28.2%
2010	3,016,809	10,006	1,575,392	1,368,748	655,134	301.50	52.2%	86.9%	41.6%
2011	2,681,553	9,727	1,265,214	1,031,709	550,390	275.69	47.2%	81.5%	43.5%
2012	2,892,933	11,568	1,379,264	1,190,469	419,365	250.09	47.7%	86.3%	30.4%
2013	2,996,300	12,253	1,472,297	1,269,089	493,236	244.54	49.1%	86.2%	33.5%
2014	3,087,681	12,802	1,552,721	1,407,006	602,602	241.19	50.3%	90.6%	38.8%
2015	2,341,054	11,914	937,706	849,103	191,535	196.49	40.1%	90.6%	20.4%
2016	2,687,015	14,246	1,287,337	1,228,311	273,188	188.62	47.9%	95.4%	21.2%
2017	2,551,922	14,010	1,040,625	955,819	233,383	182.15	40.8%	91.9%	22.4%
Total	26,892,628	111,067	13,057,974	11,551,332	4,155,618	242.13	48.6%	88.5%	31.8%
Italy									
2008	49,782,366	384,452	17,141,648	11,897,291	2,540,445	129.49	34.4%	69.4%	14.8%
2009	46,188,985	369,066	15,081,350	10,141,177	2,853,269	125.15	32.7%	67.2%	18.9%
2010	47,268,497	371,248	14,867,154	10,409,218	2,794,946	127.32	31.5%	70.0%	18.8%
2011	48,108,884	361,418	14,848,665	10,612,365	2,992,235	133.11	30.9%	71.5%	20.2%
2012	49,330,538	369,415	16,055,310	11,672,656	3,323,812	133.54	32.5%	72.7%	20.7%
2013	49,451,121	388,624	15,577,453	11,257,568	3,986,078	127.25	31.5%	72.3%	25.6%
2014	44,631,045	347,549	14,056,746	10,156,760	3,857,305	128.42	31.5%	72.3%	27.4%
2015	40,155,757	319,820	12,118,548	8,685,178	2,766,352	125.56	30.2%	71.7%	22.8%
2016	41,383,207	341,722	12,059,214	8,741,579	3,111,050	121.10	29.1%	72.5%	25.8%
2017	41,892,911	342,874	12,214,565	8,965,982	3,552,562	122.18	29.2%	73.4%	29.1%
Total	458,193,311	3,596,188	144,020,653	102,539,774	31,778,054	127.41	31.4%	71.2%	22.1%

Source: Authors' elaboration on Italian FADN, 2019.

Table 3.22: Population of farms employing foreign labour-force in the Italian FADN database, 2008-2017

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total
Campania											
Nr. Farms	439	439	591	570	580	596	587	552	591	627	5,572
Nr. Farms w/FL	68	73	116	107	114	105	125	82	78	77	945
% Farms w/FL	15.5%	16.6%	19.6%	18.8%	19.7%	17.6%	21.3%	14.9%	13.2%	12.3%	17.0%
Italy											
Nr. Farms	11,369	11,088	11,231	11,323	11,244	11,381	10,557	9,544	10,045	10,288	108,070
Nr. Farms w/FL	899	1,012	938	993	1,097	1,139	1,120	918	1,078	1,181	10,375
% Farms w/FL	7.9%	9.1%	8.4%	8.8%	9.8%	10.0%	10.6%	9.6%	10.7%	11.5%	9.6%

Source: Authors' elaboration on Italian FADN, 2019.

Table 3.23: People employed: country of origin and seasonal workers, 2008-2017

			Extra-EU28 Migrant Workers				EU28 Migrant Workers		
	ML/HL	MSL/SL	% Asia	% Africa	% Others	% East (non-EU)	% East EU	% West EU	% EU28
Campania									
2008	58.7%	59.9%	0.8%	1.8%	0.0%	66.6%	30.7%	0.1%	30.8%
2009	49.5%	50.9%	2.4%	2.7%	0.0%	69.4%	25.3%	0.1%	25.4%
2010	57.0%	58.8%	10.6%	10.5%	0.0%	50.5%	28.0%	0.4%	28.4%
2011	55.7%	57.7%	9.1%	3.3%	0.0%	49.8%	37.3%	0.5%	37.8%
2012	49.0%	50.7%	25.9%	1.0%	0.0%	39.4%	32.8%	0.8%	33.6%
2013	61.1%	63.1%	44.4%	1.6%	1.1%	28.3%	24.3%	0.3%	24.6%
2014	56.4%	57.6%	50.2%	4.4%	0.9%	6.3%	38.1%	0.0%	38.1%
2015	17.0%	16.8%	37.4%	20.1%	2.1%	14.5%	26.0%	0.0%	26.0%
2016	21.1%	21.0%	37.8%	8.1%	1.0%	8.4%	43.6%	1.0%	44.6%
2017	17.8%	17.9%	39.2%	7.0%	0.0%	13.9%	39.2%	0.6%	39.9%
Total	48.3%	49.6%	21.4%	4.5%	0.3%	42.2%	31.2%	0.3%	31.5%
Italy									
2008	16.8%	16.8%	5.7%	15.0%	1.5%	30.1%	46.7%	1.1%	47.7%
2009	22.5%	23.3%	7.1%	10.6%	1.2%	27.3%	53.2%	0.5%	53.8%
2010	18.4%	18.2%	12.6%	16.1%	1.0%	26.3%	41.2%	2.7%	43.9%
2011	20.4%	20.4%	12.2%	11.9%	0.7%	24.6%	49.1%	1.4%	50.6%
2012	21.0%	20.8%	18.6%	15.2%	1.0%	18.7%	44.8%	1.6%	46.4%
2013	26.3%	26.5%	20.2%	16.0%	1.7%	15.7%	45.7%	0.7%	46.4%
2014	29.4%	29.7%	20.4%	16.5%	1.1%	10.9%	50.7%	0.4%	51.1%
2015	23.2%	22.8%	12.0%	17.5%	1.3%	10.3%	58.6%	0.3%	58.9%
2016	27.3%	26.9%	12.1%	21.7%	1.9%	12.2%	51.5%	0.6%	52.1%
2017	27.6%	27.2%	11.4%	19.6%	4.1%	10.9%	53.5%	0.4%	53.9%
Total	23.0%	22.9%	13.7%	16.1%	1.6%	18.3%	49.4%	1.0%	50.4%

Source: Authors' elaboration on Italian FADN, 2019.

Table 3.24: Hours worked: country of origin and seasonal workers, 2008-2017

			Extra-EU28 Migrant Workers				EU28 Migrant Workers		
	ML/HL	MSL/SL	% Asia	% Africa	% Others	% East (non-EU)	% East EU	% West EU	% EU28
Campania									
2008	58.7%	31.5%	5.9%	3.0%	0.0%	62.4%	27.8%	0.9%	28.7%
2009	49.5%	31.2%	9.5%	6.6%	0.0%	59.4%	23.5%	0.9%	24.4%
2010	57.0%	46.8%	16.5%	18.4%	0.0%	37.5%	26.5%	1.1%	27.6%

			Extra-EU28 Migrant Workers				EU28 Migrant Workers		
	ML/HL	MSL/SL	% Asia	% Africa	% Others	% East (non-EU)	% East EU	% West EU	% EU28
2011	55.7%	51.4%	24.5%	3.1%	0.0%	36.4%	35.1%	0.9%	36.0%
2012	49.0%	33.8%	32.8%	1.4%	0.0%	30.9%	33.6%	1.3%	34.8%
2013	61.1%	37.1%	45.2%	2.7%	4.3%	20.8%	25.8%	1.2%	27.0%
2014	56.4%	41.3%	37.8%	3.6%	2.9%	10.4%	45.3%	0.0%	45.3%
2015	17.0%	20.2%	49.5%	10.5%	4.9%	12.6%	22.5%	0.0%	22.5%
2016	21.1%	20.9%	46.0%	4.5%	1.9%	5.2%	41.9%	0.4%	42.3%
2017	17.8%	22.9%	57.0%	4.4%	0.0%	12.1%	26.2%	0.3%	26.5%
Total	48.3%	34.4%	29.9%	6.2%	1.3%	30.2%	31.6%	0.8%	32.4%
Italy									
2008	16.8%	15.3%	14.3%	17.3%	1.3%	23.9%	41.9%	1.2%	43.2%
2009	22.5%	21.0%	16.3%	15.0%	0.9%	20.1%	46.8%	1.0%	47.7%
2010	18.4%	19.4%	18.8%	22.4%	1.8%	19.5%	35.7%	1.8%	37.5%
2011	20.4%	21.3%	22.3%	14.7%	0.9%	20.1%	40.8%	1.1%	42.0%
2012	21.0%	20.7%	24.5%	19.0%	1.1%	15.2%	38.9%	1.3%	40.2%
2013	26.3%	26.8%	20.9%	26.9%	2.4%	13.0%	36.3%	0.4%	36.8%
2014	29.4%	28.7%	17.5%	24.9%	1.9%	14.5%	40.7%	0.5%	41.2%
2015	23.2%	22.0%	16.0%	17.4%	2.2%	16.5%	47.4%	0.5%	47.9%
2016	27.3%	25.3%	18.9%	18.7%	2.5%	15.4%	43.6%	0.9%	44.5%
2017	27.6%	29.3%	18.1%	19.6%	3.7%	14.4%	43.6%	0.5%	44.1%
Total	23.0%	22.7%	18.9%	20.0%	1.9%	16.9%	41.4%	0.9%	42.3%

Source: Authors' elaboration on Italian FADN, 2019.

Table 3.25: Foreign labour origin per type of farming, 2008-2017

	Asia	Africa	Others	EAST not EU	EAST EU28	West EU28	EU28	Total
Campania								
1	0.2%	4.1%	0.0%	82.1%	13.0%	0.5%	13.5%	100.0%
2	0.0%	15.2%	0.0%	9.9%	75.0%	0.0%	75.0%	100.0%
3	0.7%	4.7%	0.0%	33.7%	60.5%	0.4%	60.9%	100.0%
4	63.1%	3.9%	0.9%	9.8%	22.1%	0.2%	22.3%	100.0%
5	54.2%	0.0%	0.0%	20.8%	25.0%	0.0%	25.0%	100.0%
6	0.2%	1.4%	0.0%	25.3%	73.2%	0.0%	73.2%	100.0%
7								
8	0.0%	0.0%	31.6%	31.6%	36.8%	0.0%	36.8%	100.0%
Italy								
1	9.1%	23.7%	2.5%	37.1%	26.7%	0.9%	27.6%	100.0%
2	10.6%	31.1%	0.4%	11.7%	46.2%	0.1%	46.3%	100.0%
3	4.8%	9.4%	1.6%	14.3%	68.5%	1.4%	69.9%	100.0%
4	40.3%	12.8%	1.4%	11.3%	33.7%	0.5%	34.2%	100.0%
5	24.9%	14.5%	2.9%	15.1%	42.1%	0.5%	42.6%	100.0%
6	16.8%	17.7%	0.4%	17.3%	47.1%	0.6%	47.7%	100.0%
7	17.3%	0.0%	15.5%	14.5%	51.8%	0.9%	52.7%	100.0%
8	12.6%	10.0%	2.1%	13.4%	59.1%	2.7%	61.9%	100.0%

Source: Authors' elaboration on Italian FADN, 2019.

Table 3.26: Foreign employees: gender composition, 2008-2017

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total
Campania											
Male	96.2%	96.3%	91.5%	89.8%	89.0%	93.3%	85.0%	88.9%	81.4%	80.1%	91.0%
Female	3.8%	3.7%	8.5%	10.2%	11.0%	6.7%	15.0%	11.1%	18.6%	19.9%	9.0%
Italy											
Male	84.8%	81.6%	84.1%	82.8%	82.2%	82.0%	79.4%	81.2%	82.3%	82.2%	82.1%
Female	15.2%	18.4%	15.9%	17.2%	17.8%	18.0%	20.6%	18.8%	17.7%	17.8%	17.9%

Source: Authors' elaboration on Italian FADN, 2019.

Table 3.27: Foreign employees: professional qualification composition, 2008-2017

Year	Temporary Labourer	Whitecollar	Common Worker	Qualified Worker	Super Qualified Worker	Specialised Worker	Super Specialised Worker
Campania							
2008	1.2%	0.0%	98.7%	0.0%	0.0%	0.0%	0.1%
2009	0.9%	0.0%	99.1%	0.0%	0.0%	0.0%	0.0%
2010	69.6%	0.0%	30.2%	0.2%	0.0%	0.0%	0.0%
2011	73.8%	0.0%	25.9%	0.3%	0.0%	0.0%	0.0%
2012	74.5%	0.0%	21.7%	3.8%	0.0%	0.0%	0.0%
2013	82.9%	0.0%	15.3%	0.0%	0.0%	0.0%	1.1%
2014	64.2%	0.0%	35.8%	0.0%	0.0%	0.0%	0.0%
2015	1.0%	0.0%	99.0%	0.0%	0.0%	0.0%	0.0%
2016	26.4%	0.0%	73.6%	0.0%	0.0%	0.0%	0.0%
2017	3.5%	0.0%	96.5%	0.0%	0.0%	0.0%	0.0%
Total	51.2%	0.0%	48.1%	0.5%	0.0%	0.0%	0.2%
Italy							
2008	16.9%	0.0%	77.7%	2.9%	0.3%	1.3%	0.8%
2009	17.3%	0.0%	79.7%	1.4%	0.2%	1.2%	0.1%
2010	42.6%	0.1%	53.8%	1.9%	0.3%	1.0%	0.2%
2011	39.1%	0.1%	57.4%	2.2%	0.2%	0.7%	0.1%
2012	38.2%	0.1%	57.9%	2.2%	0.6%	0.7%	0.1%
2013	42.5%	0.0%	54.6%	1.3%	0.3%	0.8%	0.4%
2014	32.8%	0.1%	62.9%	3.0%	0.4%	0.7%	0.2%
2015	16.9%	0.3%	77.9%	2.7%	0.4%	1.3%	0.2%
2016	18.1%	0.2%	73.8%	6.5%	0.4%	0.6%	0.3%
2017	11.9%	0.2%	81.9%	5.2%	0.1%	0.5%	0.1%
Total	28.1%	0.1%	67.3%	2.9%	0.3%	0.9%	0.2%

Source: Authors' elaboration on Italian FADN, 2019.

Table 3.28: Hours worked by migrant workers: professional qualification composition, 2008-2017

Year	Temporary Labourer	Whitecollar	Common Worker	Qualified Worker	Super Qualified Worker	Specialised Worker	Super Specialised Worker
Campania							
2008	7.6%	0.0%	92.1%	0.0%	0.0%	0.0%	0.3%
2009	3.2%	0.0%	96.8%	0.0%	0.0%	0.0%	0.0%
2010	50.2%	0.0%	49.0%	0.8%	0.0%	0.0%	0.0%
2011	45.8%	0.0%	53.9%	0.3%	0.0%	0.0%	0.0%
2012	55.0%	0.0%	42.8%	2.1%	0.0%	0.0%	0.0%
2013	59.3%	0.0%	39.5%	0.0%	0.0%	0.0%	0.7%
2014	29.5%	0.0%	70.5%	0.0%	0.0%	0.0%	0.0%

Year	Temporary Labourer	Whitecollar	Common Worker	Qualified Worker	Super Qualified Worker	Specialised Worker	Super Specialised Worker
2015	0.6%	0.0%	99.4%	0.0%	0.0%	0.0%	0.0%
2016	34.3%	0.0%	65.7%	0.0%	0.0%	0.0%	0.0%
2017	4.4%	0.0%	95.6%	0.0%	0.0%	0.0%	0.0%
Total	34.3%	0.0%	65.1%	0.4%	0.0%	0.0%	0.1%
Italy							
2008	12.2%	0.1%	75.7%	6.1%	0.9%	2.8%	2.1%
2009	9.8%	0.1%	81.5%	4.7%	0.7%	2.6%	0.5%
2010	26.2%	0.4%	65.0%	4.4%	0.7%	2.5%	0.6%
2011	21.0%	0.3%	71.2%	4.2%	0.7%	2.1%	0.5%
2012	24.4%	0.2%	68.0%	4.1%	1.0%	1.9%	0.3%
2013	34.8%	0.1%	58.5%	3.2%	0.9%	1.9%	0.6%
2014	22.7%	0.2%	70.3%	3.8%	0.8%	1.6%	0.5%
2015	10.5%	1.0%	79.1%	5.4%	0.7%	2.4%	0.5%
2016	14.1%	0.7%	73.4%	8.7%	0.9%	1.5%	0.5%
2017	12.3%	0.7%	77.6%	7.1%	0.4%	1.4%	0.4%
Total	19.5%	0.4%	71.5%	5.1%	0.8%	2.0%	0.6%

Source: Authors' elaboration on Italian FADN, 2019.

Table 3.29: Foreign employees: sector activity composition, 2008-2017

	Agritourism	Livestock	Cultivations	Generic	Processing
Campania					
2008	0.0%	0.8%	97.5%	1.7%	0.0%
2009	0.0%	4.5%	92.8%	2.7%	0.0%
2010	0.0%	10.0%	78.6%	11.4%	0.0%
2011	0.0%	7.1%	86.8%	6.1%	0.0%
2012	0.0%	13.7%	71.1%	15.2%	0.0%
2013	0.0%	5.2%	40.1%	54.7%	0.0%
2014	0.0%	9.6%	21.2%	69.2%	0.0%
2015	0.0%	34.6%	48.1%	17.3%	0.0%
2016	0.0%	27.0%	51.4%	21.6%	0.0%
2017	0.0%	23.1%	35.1%	41.8%	0.0%
Total	0.0%	8.8%	68.2%	23.1%	0.0%
Italy					
2008	0.1%	7.5%	65.2%	26.6%	0.5%
2009	0.3%	9.4%	72.1%	17.5%	0.7%
2010	0.2%	9.4%	69.8%	20.5%	0.1%
2011	0.3%	9.1%	72.6%	17.9%	0.1%
2012	0.4%	10.4%	62.9%	26.1%	0.1%
2013	0.2%	6.2%	52.8%	40.7%	0.1%
2014	0.3%	6.8%	46.1%	46.5%	0.1%
2015	0.2%	7.9%	56.4%	35.3%	0.1%
2016	0.2%	9.8%	64.0%	25.9%	0.1%
2017	0.3%	8.4%	56.1%	35.1%	0.0%
Total	0.3%	8.4%	61.3%	29.8%	0.2%

Source: Authors' elaboration on Italian FADN, 2019.

Table 3.30: Hours worked: sector activity composition, 2008-2017

	Agritourism	Livestock	Cultivations	Generic	Processing
Campania					
2008	0.0%	5.0%	85.2%	9.8%	0.0%
2009	0.0%	6.6%	81.7%	11.7%	0.0%
2010	0.0%	14.3%	56.3%	29.4%	0.0%
2011	0.0%	20.0%	60.9%	19.2%	0.0%
2012	0.0%	25.5%	46.0%	28.5%	0.0%
2013	0.0%	16.6%	35.2%	48.2%	0.0%
2014	0.0%	18.5%	17.1%	64.3%	0.0%
2015	0.0%	44.1%	34.0%	21.9%	0.0%
2016	0.0%	29.7%	47.3%	23.0%	0.0%
2017	0.0%	27.7%	28.2%	44.1%	0.0%
Total	0.0%	18.7%	49.3%	32.0%	0.0%
Italy					
2008	0.1%	16.8%	48.6%	33.3%	0.8%
2009	0.4%	14.4%	57.3%	27.3%	0.4%
2010	0.3%	16.4%	51.3%	31.5%	0.2%
2011	0.4%	17.4%	54.9%	26.9%	0.2%
2012	0.6%	17.2%	49.4%	32.5%	0.3%
2013	0.3%	12.0%	51.8%	35.7%	0.2%
2014	0.4%	12.4%	42.4%	44.4%	0.2%
2015	0.3%	14.2%	45.1%	40.0%	0.3%
2016	0.3%	18.5%	51.6%	29.3%	0.1%
2017	0.3%	16.9%	49.2%	33.2%	0.1%
Total	0.3%	15.5%	50.0%	33.8%	0.2%

Source: Authors' elaboration on Italian FADN, 2019.

Table 3.31: Hours worked: foreign labour on total labour per type of farming, 2008-2017

	COP	F&V	PERC	ERB	GRAN	MIXC	MIXL	MXC&L
Campania TF								
FL/TL	FL/TL	FL/TL	FL/TL	FL/TL	FL/TL	FL/TL	FL/TL	FL/TL
2008	27.6%	6.8%	16.4%	17.6%	6.9%	8.7%	0.0%	0.0%
2009	30.8%	4.9%	17.7%	18.4%	3.9%	10.4%	0.0%	0.0%
2010	26.0%	22.7%	16.4%	22.6%	3.0%	46.1%	0.0%	0.0%
2011	29.5%	6.2%	11.8%	25.9%	2.9%	38.0%	0.0%	0.0%
2012	12.6%	8.9%	15.0%	22.8%	2.1%	7.7%	0.0%	0.0%
2013	14.7%	4.6%	11.0%	29.4%	0.3%	9.0%	0.0%	5.6%
2014	12.6%	3.8%	30.7%	27.6%	0.4%	3.6%	0.0%	0.2%
2015	7.4%	2.6%	3.6%	17.0%	1.0%	0.0%	0.0%	0.2%
2016	6.0%	29.2%	2.1%	16.1%	0.5%	0.0%	0.0%	0.2%
2017	8.1%	6.3%	5.4%	19.1%	0.3%	0.0%	0.0%	0.0%
Total	16.7%	10.3%	13.3%	22.4%	2.2%	15.6%	0.0%	0.7%
Italy TF								
2008	4.3%	8.7%	5.2%	6.0%	3.3%	3.1%	0.9%	2.3%
2009	4.9%	8.2%	7.3%	6.9%	2.6%	4.9%	0.8%	2.2%
2010	5.6%	9.4%	4.2%	6.5%	3.6%	10.8%	0.6%	3.0%
2011	5.8%	9.1%	4.9%	7.2%	4.7%	9.2%	1.5%	2.6%
2012	6.2%	12.5%	5.5%	7.9%	3.9%	5.3%	1.9%	3.6%
2013	5.6%	17.7%	7.0%	7.8%	4.7%	11.8%	3.5%	4.7%
2014	6.8%	19.0%	8.5%	8.0%	5.0%	9.9%	1.6%	5.0%
2015	6.2%	16.9%	6.6%	6.4%	5.2%	4.4%	3.8%	3.4%
2016	5.7%	13.2%	7.9%	7.4%	9.7%	4.0%	2.9%	6.7%
2017	7.9%	16.7%	7.1%	7.8%	11.5%	9.3%	7.0%	4.0%
Total	5.9%	12.8%	6.4%	7.2%	5.6%	7.3%	2.1%	3.7%

Source: Authors' elaboration on Italian FADN, 2019.

Table 3.32: Employed person: type of labour per farm size, 2008-2017

Campania		ML/HL	HL/TL	SL/TL	FSL/SL	SL/HL	Italy	ML/HL	HL/TL	SL/TL	FSL/SL	SL/HL
Large												
2008		67.7%	94.6%	91.1%	73.7%	96.4%	2008	14.2%	79.5%	66.6%	18.9%	83.8%
2009		51.0%	95.9%	91.8%	55.1%	95.7%	2009	18.5%	78.9%	65.9%	25.5%	83.4%
2010		53.8%	97.6%	92.9%	57.8%	95.1%	2010	16.2%	85.1%	70.9%	19.8%	83.3%
2011		51.2%	97.3%	91.7%	55.5%	94.3%	2011	18.2%	83.6%	69.6%	23.2%	83.2%
2012		38.5%	95.7%	90.0%	42.6%	94.0%	2012	19.5%	84.6%	71.2%	23.9%	84.2%
2013		65.7%	95.7%	90.5%	72.2%	94.6%	2013	26.1%	83.2%	69.6%	33.7%	83.6%
2014		65.1%	95.7%	91.6%	70.6%	95.7%	2014	27.5%	80.7%	66.1%	36.3%	81.9%
2015		18.2%	92.0%	83.2%	20.9%	90.4%	2015	18.0%	78.7%	63.4%	23.4%	80.6%
2016		18.0%	92.5%	89.2%	19.6%	96.4%	2016	23.1%	80.5%	66.5%	29.5%	82.6%
2017		14.7%	89.8%	81.4%	17.1%	90.7%	2017	25.1%	79.7%	64.5%	32.2%	80.9%
Total		51.8%	95.7%	90.8%	56.6%	94.9%	Total	19.8%	81.3%	67.5%	25.7%	83.0%
Medium												
2008		20.8%	59.5%	58.8%	35.0%	98.8%	2008	7.7%	47.8%	44.7%	15.1%	93.6%
2009		24.2%	60.1%	59.3%	40.7%	98.7%	2009	10.7%	48.2%	45.1%	22.0%	93.6%
2010		44.4%	72.4%	70.8%	62.4%	97.7%	2010	11.2%	57.6%	53.3%	18.9%	92.6%
2011		44.1%	71.0%	69.1%	63.3%	97.2%	2011	12.1%	56.4%	52.2%	21.0%	92.6%
2012		40.3%	66.2%	64.8%	61.5%	97.9%	2012	12.1%	56.4%	52.2%	20.8%	92.4%
2013		37.2%	68.4%	66.8%	55.1%	97.7%	2013	13.8%	54.6%	50.0%	24.8%	91.6%
2014		33.2%	69.4%	67.9%	48.3%	97.8%	2014	16.0%	55.0%	49.9%	28.9%	90.6%
2015		11.6%	69.3%	68.2%	16.3%	98.3%	2015	13.5%	55.0%	50.2%	24.0%	91.3%
2016		12.9%	57.8%	56.4%	22.0%	97.6%	2016	14.9%	53.4%	48.5%	27.2%	90.7%
2017		12.7%	68.5%	67.6%	18.5%	98.8%	2017	15.3%	56.1%	51.5%	26.8%	91.9%
Total		29.4%	67.0%	65.7%	44.3%	98.0%	Total	12.7%	54.2%	49.9%	22.9%	92.1%
Small												
2008		1.8%	13.6%	13.6%	13.3%	100.0%	2008	1.7%	18.8%	18.0%	8.7%	95.8%
2009		1.9%	13.1%	13.1%	14.3%	100.0%	2009	1.6%	18.7%	17.5%	6.2%	93.4%
2010		6.0%	25.9%	25.9%	23.1%	100.0%	2010	2.0%	29.7%	28.7%	5.8%	96.8%
2011		3.6%	25.7%	25.7%	14.0%	100.0%	2011	2.0%	29.4%	28.6%	6.5%	97.2%

Campania		ML/HL	HL/TL	SL/TL	FSL/SL	SL/HL	Italy	ML/HL	HL/TL	SL/TL	FSL/SL	SL/HL
2012		1.4%	17.1%	17.1%	8.2%	100.0%	2012	2.3%	29.1%	28.3%	7.3%	97.2%
2013		3.5%	16.6%	16.6%	21.0%	100.0%	2013	2.9%	27.2%	26.3%	10.2%	96.9%
2014		1.4%	14.2%	14.2%	9.8%	100.0%	2014	2.9%	25.6%	23.9%	10.7%	93.1%
2015		1.0%	17.4%	17.4%	6.0%	100.0%	2015	1.8%	24.7%	24.1%	7.1%	97.4%
2016		1.8%	12.1%	12.1%	14.7%	100.0%	2016	2.2%	22.0%	21.4%	9.9%	97.1%
2017		0.3%	10.9%	10.6%	2.9%	97.1%	2017	2.9%	24.3%	23.5%	11.4%	96.8%
Totale		2.6%	18.1%	18.0%	14.5%	99.8%	Totale	2.3%	26.1%	25.2%	8.2%	96.5%

Source: Authors' elaboration on Italian FADN, 2019.

Table 3.33: Worked hours: type of labour per type of farming, 2008-2017

Campania	ML/HL	HL/TL	SL/TL	FSL/SL	SL/HL	Italy	ML/HL	HL/TL	SL/TL	FSL/SL	SL/HL
Large											
2008	28.1%	81.2%	70.4%	38.1%	86.7%	2008	8.1%	61.7%	39.9%	14.4%	64.8%
2009	23.9%	85.1%	70.4%	32.0%	82.7%	2009	10.0%	59.7%	37.3%	19.8%	62.4%
2010	38.2%	89.8%	71.9%	52.2%	80.1%	2010	10.3%	66.9%	40.6%	17.3%	60.7%
2011	34.0%	86.6%	62.9%	52.1%	72.6%	2011	11.2%	65.6%	40.3%	19.5%	61.4%
2012	21.1%	86.4%	70.7%	28.9%	81.8%	2012	12.3%	67.2%	44.7%	18.8%	66.6%
2013	28.7%	86.3%	71.2%	38.9%	82.5%	2013	17.5%	64.4%	42.3%	31.7%	65.6%
2014	37.2%	87.8%	77.3%	46.6%	88.1%	2014	17.7%	63.0%	41.8%	31.9%	66.4%
2015	12.1%	84.4%	70.7%	15.0%	83.7%	2015	12.3%	60.0%	38.5%	20.9%	64.1%
2016	17.0%	89.1%	84.5%	19.0%	94.9%	2016	15.2%	59.0%	38.7%	27.7%	65.5%
2017	15.6%	83.1%	69.9%	20.5%	84.1%	2017	17.9%	57.3%	35.9%	35.1%	62.6%
Total	26.8%	86.1%	72.0%	35.7%	83.7%	Total	12.5%	62.5%	40.0%	22.4%	64.0%
Medium(Tot)											
2008	8.0%	36.0%	34.7%	22.3%	96.4%	2008	3.6%	19.3%	15.2%	17.0%	78.7%
2009	9.4%	32.4%	31.2%	29.6%	96.1%	2009	4.3%	18.7%	14.2%	23.0%	76.1%
2010	19.0%	45.2%	41.7%	44.3%	92.3%	2010	5.6%	25.9%	19.7%	21.2%	76.0%
2011	19.8%	39.7%	35.3%	54.0%	89.1%	2011	5.9%	25.8%	20.0%	23.0%	77.4%
2012	14.0%	35.0%	32.3%	41.2%	92.1%	2012	6.0%	25.5%	19.7%	22.8%	77.3%
2013	12.6%	36.6%	33.3%	35.4%	91.0%	2013	6.3%	25.1%	19.3%	24.3%	77.0%
2014	14.4%	40.3%	37.5%	36.7%	93.0%	2014	7.3%	26.2%	20.0%	27.6%	76.3%

Campania	ML/HL	HL/TL	SL/TL	FSL/SL	SL/HL	Italy	ML/HL	HL/TL	SL/TL	FSL/SL	SL/HL
2015	8.7%	35.3%	33.2%	23.6%	94.1%	2015	6.4%	25.3%	19.1%	23.7%	75.8%
2016	9.0%	38.5%	36.8%	22.6%	95.8%	2016	6.5%	24.5%	18.7%	24.8%	76.2%
2017	9.2%	36.5%	35.3%	24.8%	96.6%	2017	7.3%	25.5%	20.1%	27.6%	78.6%
Total	12.6%	37.8%	35.4%	34.0%	93.4%	Total	5.9%	24.3%	18.7%	23.7%	76.9%
Small											
2008	0.6%	6.5%	6.5%	8.7%	100.0%	2008	0.4%	4.8%	3.7%	8.3%	76.7%
2009	0.5%	6.1%	6.1%	8.2%	100.0%	2009	1.1%	5.9%	4.6%	14.1%	77.2%
2010	2.0%	10.7%	10.7%	18.3%	100.0%	2010	0.9%	7.4%	6.3%	10.3%	85.0%
2011	0.9%	9.4%	9.4%	9.7%	100.0%	2011	0.7%	7.4%	6.4%	8.7%	86.5%
2012	0.6%	6.5%	6.5%	9.2%	100.0%	2012	0.8%	7.1%	6.2%	9.8%	86.6%
2013	1.1%	5.7%	5.7%	20.1%	100.0%	2013	0.8%	6.7%	5.9%	10.3%	87.4%
2014	0.6%	5.2%	5.2%	12.6%	100.0%	2014	0.9%	7.2%	5.4%	12.1%	74.2%
2015	0.6%	8.2%	8.2%	7.3%	100.0%	2015	0.6%	7.5%	6.8%	5.8%	91.0%
2016	1.1%	5.5%	5.5%	19.3%	100.0%	2016	0.7%	6.4%	5.7%	10.7%	89.6%
2017	0.2%	4.6%	4.5%	4.4%	97.5%	2017	0.9%	7.0%	6.3%	12.1%	90.4%
Total	0.9%	7.1%	7.1%	12.7%	99.8%	Totale	0.8%	6.9%	5.9%	10.0%	85.4%

Source: Authors' elaboration on Italian FADN, 2019.

Table 3.34: CAP support in farms with migrant labour: CAP/UAA and CAP/AWU, 2008-2017

	AWU (€/AWU)							UAA (€/ha)								
	CDP	DDP	DDP (green)	RDPA (aes)	RDPA (other)	RDPO	CAP	CDP	DDP	DDP (green)	RDPA (aes)	RDPA (other)	RDPO	CAP	Total Farms	Nr. Of Recipients
Italy																
2008	5,441	7,612		3,951	4,836	10,922	11,504	191	565	186		222	9,025	1,238	899	574
2009	3,801	6,002		3,453	3,815	10,145	9,019	305	408	229		183	4,565	784	1,012	604
2010	3,345	7,468		3,681	4,243	16,326	10,610	287	415	228		208	4,741	877	938	669
2011	3,373	7,149		4,184	3,982	15,519	9,698	636	458	262		316	2,696	916	993	797
2012	2,958	7,053		3,990	2,555	14,172	9,130	604	479	268		210	2,604	872	1,097	882
2013	2,826	7,169		3,402	2,615	9,320	8,615	609	499	227		200	1,594	833	1,139	937
2014	3,048	7,033		3,566	3,160	8,925	8,723	676	571	239		253	3,150	971	1,120	964
2015	1,555	4,398	2,239	4,774	3,008	15,920	9,618	142	321	161	380	226	1,807	797	918	789

	AWU (€/AWU)							UAA (€/ha)								
	CDP	DDP	DDP (green)	RDPA (aes)	RDPA (other)	RDPO	CAP	CDP	DDP	DDP (green)	RDPA (aes)	RDPA (other)	RDPO	CAP	Total Farms	Nr. Of Recipients
2016	1,746	4,024	1,992	3,878	3,472	10,540	8,667	171	330	161	253	235	5,708	761	1,078	947
2017	1,568	3,509	1,756	3,834	3,043	7,724	7,982	157	272	136	285	184	3,535	649	1,181	1,055
Total/Average	2,966	6,142	1,996	3,871	3,473	11,951	9,357	378	432	210	306	224	3,942	870	10,375	8,218
Campania																
2008	228	2,420		1,880			2,328	49	668		561			650	68	33
2009	9,775	1,525		1,866			2,574	4,573	445		500			911	73	41
2010	2,076	1,650		2,414			1,959	760	370		648			475	116	64
2011	3,487	1,904		1,646	2,409	66,583	3,248	1,637	418		495	470	15,588	762	107	78
2012	7,482	4,381		3,298	4,767		5,945	1,623	668		388	359		920	114	78
2013	7,448	4,320		1,266	3,153		4,978	1,752	768		300	443		916	105	81
2014	5,866	4,538		1,458	4,544		5,485	1,566	821		240	504		1,036	125	91
2015	1,871	3,855	1,938	1,695	1,969	46,099	7,031	267	671	342	392	117	23,723	1,432	82	68
2016	1,678	3,636	1,733	2,258	4,349		6,292	219	598	280	279	193		969	78	65
2017	1,235	3,139	1,483	2,529	4,316		5,617	161	548	269	531	389		932	77	68
Total/Average	4,115	3,137	1,718	2,031	3,644	6,341	4,546	1,261	598	297	433	354	9,655	900	945	667

Source: Authors' elaboration on Italian FADN, 2019.

Table 3.35: CAP support in farms without migrant labour: CAP/UAA and CAP/AWU, 2008-2017

	AWU							UAA								
	CDP/AWU	DDP (other)/ AWU	DDP (green)/ AWU	RDPA (aes)/AWU	RDPA (others)/ AWU	RDPO/AWU	CAP/AWU	CDP/UAA	DDP (other)/ UAA	DDP (green)/ UAA	RDPA (aes)/UAA	RDPA (others)/ UAA	RDPO/UAA	CAP/UAA	Total Farms	CAP Recipients
Italy																
2008	2,326		7,724	4,641	3,245	14,019	9,733	120		347	236	211	1,778	468	10,470	8,202
2009	2,704		8,022	4,628	3,592	18,671	10,476	112		345	245	201	2,882	512	10,076	8,127
2010	3,782		7,397	4,096	2,942	22,681	10,050	165		361	251	203	3,412	574	10,293	8,357
2011	3,092		7,273	3,931	2,989	27,298	9,520	163		378	260	224	4,296	585	10,330	8,615
2012	1,982		7,686	4,236	2,885	24,794	9,632	155		394	282	239	2,741	570	10,147	8,601
2013	2,064		8,092	4,435	2,994	29,214	10,337	168		401	245	197	3,999	599	10,242	8,790
2014	2,207		7,889	4,454	3,264	25,658	10,293	196		383	256	242	3,220	598	9,437	8,246

	AWU							UAA								
	CDP/AWU	DDP (other)/ AWU	DDP (green)/ AWU	RDPA (aes)/AWU	RDPA (others)/ AWU	RDPO/AWU	CAP/AWU	CDP/UAA	DDP (other)/ UAA	DDP (green)/ UAA	RDPA (aes)/UAA	RDPA (others)/ UAA	RDPO/UAA	CAP/UAA	Total Farms	CAP Recipients
2015	1,516	5,123	2,590	5,172	3,353	25,810	10,616	78	272	136	348	218	3,869	643	8,626	7,634
2016	1,470	5,125	2,583	5,467	3,118	15,941	10,652	74	251	126	301	173	1,548	545	8,967	8,067
2017	1,346	4,692	2,392	5,460	2,897	15,934	10,280	72	230	116	308	155	2,055	534	9,107	8,227
Total/ Average	**2,249**	**4,980**	**6,165**	**4,652**	**3,128**	**22,002**	**10,159**	**130**	**251**	**299**	**273**	**206**	**2,980**	**563**	**97,695**	**82,866**
Campania																
2008	2,667	6,076		3,013	8,505		8,620	712	572		321	236		804	371	179
2009	3,946	5,931		6,247	7,440	8,315	10,061	1,155	580		471	247	1,905	1,027	366	190
2010	3,052	4,425		5,926	5,689	8,985	7,695	787	483		452	298	1,322	730	475	225
2011	3,854	4,708		4,462	4,604	11,901	6,394	1,240	486		466	467	1,585	700	463	268
2012	5,832	5,208		5,000	5,397		7,640	1,624	572		430	726		898	466	311
2013	2,603	5,652		4,391	5,628	7,317	8,199	423	589		456	499	1,500	843	491	338
2014	2,957	5,788		3,440	5,430	6,593	8,920	387	566		317	442	1,500	842	462	330
2015	1,269	3,908	2,025	3,368	4,692	117,284	9,292	62	387	200	314	220	23,632	800	470	379
2016	1,078	4,128	2,177	5,203	6,383	1,730	10,039	43	351	178	386	271	333	697	513	426
2017	933	3,840	2,010	4,461	5,750		9,438	46	296	149	425	247		640	550	461
Total/Aver	**2,819**	**4,966**	**2,071**	**4,551**	**5,952**	**23,161**	**8,630**	**648**	**488**	**175**	**404**	**365**	**4,540**	**798**	**4,627**	**3,107**

Source: Authors' elaboration on Italian FADN, 2019.

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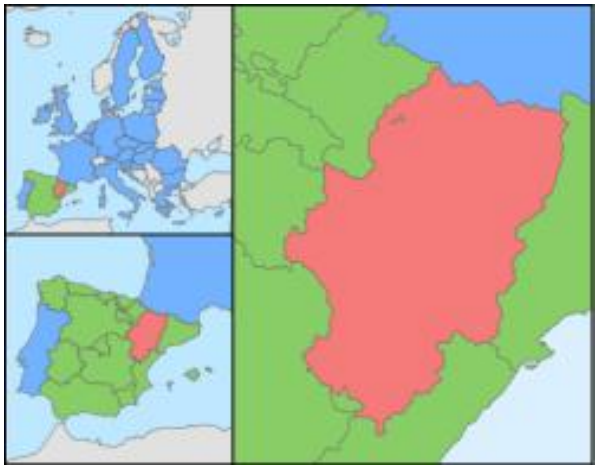
4. ARAGON (SPAIN)

Country	Spain
Region (NUTS 2)	Aragon (ES24)
Cluster	4

4.1. Contextual information on the agricultural labour market

4.1.1. Territorial characterisation of the region

Localisation of the region of Aragon, Spain



The region of Aragon is located in the Northeast of Spain. It covers 47,719 km² (9.4% of the Spanish territory) and is composed of three provinces, Huesca, Teruel and Zaragoza. It is a mountainous area, with more than 40% of the territory being located at an altitude of more than 1,000 metres. Aragon is home of 1.31 people (INE, 2018), with an average density of only 27.42 inhabitants/km², far below the national average (92.6 inhabitants/km²). There are only three municipalities with more than 30,000 inhabitants, and the rest of the territory gathers 42% of the population on almost 97% of the Autonomous Region, which results in a rural population density of 11.62 inhabitants/km². The rural areas of Aragon suffer, for the most part, a **high degree of aging and serious risks of depopulation.**

4.1.2. Background data on the agricultural sector and farming employment in Aragón

Economic breakdown by sector

In Aragon, as in Europe and Spain, the tertiary sector concentrates more than 70% of the labour force. However, in Aragon, this proportion is 7 percentage points under the national average. Although the weight of the primary sector (6%) is limited, it exceeds the national and European average. The **evolution of the employment** by sectors shows the impact of the economic crisis. While industry and construction have been heavily affected (the number of people employed in the secondary sector having fallen by 44% between 2008 and 2013), agriculture, however, succeeded in even slightly increasing the number of people employed in this sector (a 13% increase between 2008 and 2019).

With regard to the **gross value added** (GVA), the share of the primary sector in Aragon in 2017 (4.8%) was almost three times greater than in Europe (1.7%) and quite above the Spanish one (2.8%).

The aragonese **agricultural gross value added** was on a downward trend between 2000 and 2008, when it begins to increase progressively. In 2017, it reached € 1,736.70 million, 31 percentage points more than in 2000, and meant 5.43% of the total gross value added of Aragon, with € 1,326.99 per inhabitant.

Main types of agricultural products

Regarding the production per main agricultural sub-sector, the **animal production** accounts for 63.51% of the total production and represents € 2,515.97 million, with a specialization in the pig sector, which reaches 66.38% of the value of the total livestock sector. The **plant production** accounts for 36.49% of the total production and represents € 1,445.34 million. The main vegetal products in terms of value are cereals (45%), fruits (25%), fodder (11%) and vegetable (9%). In the fruit sector, the main products in terms of value are peach (44%), almond (20%) and cherry (17%).

Agricultural training of farm managers

74.03% of the farm managers have practical education, while 23.12% have basic agricultural training and only 2.18% have complete agricultural training (CAP context indicator C.24). The older the farm managers, the less education they have. The evolution of the education of the head of the farm in Aragon shows that the high number of people with exclusively practical experience tends to decline, and decreased by 16% between 2005 and 2016 (Survey on the structure of agricultural operations carried out by the National Statistics Institute).

Agricultural labour force

56% of the farm managers are more than 55 years old, whereas only 3% are less than 35. Between 2003 and 2015, the number of farm managers younger than 40 years old decreased by 53.7%, reaching 3,153 people, and illustrating the **progressive aging of the agricultural sector.** This is also a **highly male-dominated sector,** with 77.20% of the labour force being men in 2013.

Between 2003 and 2016, the number of full time agricultural workers decreased by 33%, reaching 81,243 people, and the number of members of the farm manager's family working in the holding was cut in half. However, the number of permanent workers increased by 51% in the period.

In terms of AWUs, in 2016, the total amount of AWUs was split between farm managers (44%), family members (19%), permanent paid work (26%) and temporary paid work (11%). There is no notable evolution in the share of the temporary paid work in the period.

It is also of high relevance that in Aragon, 56.7% of the affiliates to the Spanish agricultural social security are foreigners, much more than the national average (18.25%).

Agricultural labour productivity, agricultural factor and entrepreneurial income, gross fixed capital formation and farming wages

According to the RDP of Aragon, the agricultural labour productivity was € 28,557.7/AWU in 2011, the agricultural factor income € 37,327.34/AWU in 2015, the entrepreneurial income € 53,680.28/AWU in 2015 and the gross fixed capital formation wage € 1,576 million in 2017.

Data on pluriactivity and on/off farm diversification

The main types of farm diversification are contractual agricultural work for other farms (460 holdings), tourism (193 holdings) and processing of agricultural products (111 holdings). It is notable that between 2003 and 2007, the number of holdings with activities linked to tourism was multiplied by 3, and then significantly fell down. The number of holdings with contractual agricultural work for other farms was 2.4 times greater in 2013 than in 2003, but decreased between 2013 and 2016. As a whole, the number of holdings with diversification activities increased by 30% between 2003 and 2016, from 652 to 939.

Agricultural employment and CAP in Aragon

The analysis of agricultural employment involves looking at **two main groups:** the farm owners and agricultural workers (wage earners), an important part of them being temporary workers.

The progressive ageing of farm owners, which cannot be slowed down by the incorporation of new assets, is one of the key elements that compromises the future of the sector. To date, the RDP has influenced the incorporation of 1,331 young people into the sector through the RDP, despite this, the number of farmers has decreased from 51,237 in the year 2003 to 44,262 in 2016. In certain sectors, as it is the case in other parts of the country, the arrival of investment groups that displace the family farming model is becoming frequent.

Overall, the family farming model that involves the essential socioeconomic fabric of the Aragonese rural areas is going through various difficulties. In this respect, the Government of Aragon diagnoses that part of the problems of the sector derives from the current articulation of the CAP, which has produced a certain "patrimonialization of aids", which is reflected in that more than a third of the recipients of the CAP are older than 65 years. In this sense, Aragon's government is promoting, in the frame of future CAP Strategic Plans negotiations, some relevant changes. Specifically, its position is clearly articulated towards focusing aid on professional farmers closely linked to the territory. They propose, accordingly, the withdrawal of historical rights. "*We need a CAP linked to employment and the maintenance of assets in the rural environment, for which it must definitely promote multifunctionality and encourage the sectors that generate the highest employment rates," says* Aragón's position paper for the future CAP, which also mentions the possibility of *"a mandatory limitation of direct payments, taking into account the workforce to prevent jobs from being negatively affected, or the need to strengthen the social dimension of agriculture and livestock farming, paying greater attention to the working conditions of the ever-increasing* ***number of employed agricultural workers, linking the aid granted to the employment generated, thus combating the black economy."***[10]

4.2. Temporary/immigrant workers, their integration into rural communities and the role of the CAP or other programmes and institutional frameworks in order to facilitate their integration

Analyzing the situation of **temporary agricultural workers in Aragon** necessarily implies focusing attention on **the fruit sector, which concentrates 65.16%[11] of temporary wage labour** (specifically, of the 10,230.8 thousand hours of temporary wage labour in 2016, a total of 6,666.9 thousand were focused on this sector).

The **fruit sector** concentrates 24.33% of the total AWUs. In 2016, the fruit sector in Aragon accounted for 39,498 AWUs, being the sector that gathers the highest number of AWUs, followed by cereals with 22.61% of the total. This characteristic is essentially due to temporary work. Indeed, if we analyze the distribution by sectors of the *total amount of work excluding the temporary workers*, the cereal sector doubles the weight of the fruit sector, with respectively 34.40% and 16.35% of the total of the workers.

	Total Aragon	Fruit sector	% of the total
Full time: number of people	10,182	1,212	11.90%
Total work excluding temporary workers: number of people	81,243	13,286	16.35%

[10] https://www.agronegocios.es/aragon-presenta-su-posicion-sobre-la-pac-post-2020-en-defensa-de-la-agricultura-familiar-profesional/
[11] Farm Structure Survey , 2016 (INE).

	Total Aragon	Fruit sector	% of the total
Spouse and other members of the holder's family: number of people	29,410	5,756	19.57%
Permanent salaried work: number of people	17,206	3,523	20.48%
Temporary wage labour: Thousands of hours	10,230.8	6,666.9	**65.16%**

Source: Farm structure survey, 2016 INE.

4.2.1. The fruit sector in Aragon

The fruit sector **has a very relevant weight** in the Final Agricultural Production (FAP) of Aragon. In 2016, fruit farms, a total of 7,890, accounted for 4.91% of the total UAA and 11.89%[12] of the Agrarian Branch's total production, contributing to production only behind cereals and the pig sector. The predominant species in order of economic importance are peach and nectarine, pear, cherry, apple, apricot and plum.

Aragon represents **one fifth of the total Spanish area dedicated to fruit growing** (it is the main national producer of cherry and the second of peach and apple). Specifically, in Spain the total area planted with peach, nectarine, apricot, cherry, plum, apple almost amounts to 200,000 hectares. On its side, Aragon has more than 38,000 hectares of fruit dedicated to these crops and distributed in the regions of Valdejalón, Bajo Cinca, Calatayud, Aranda, Caspe, Bajo Aragón, Matarraña and La Litera.

The dedicated surface and total production, and the weight in the national set is distributed as follows:

	Distribution cultivated area 2018			Production sharing (Tons) 2018		
	Has Spain	Has Aragon	%	Tons 2018 ESPAÑA	TONS 2018 ARAGON	%
CHERRY	27,592	8,246.16	29.89%	101,989	32,289	31.66%
APRICOT	21,002	2,512.68	11.96%	186,468	21,896	11.74%
PEACH	52,141	13,313.21	25.53%	948,623	278,309	29.34%
NECTARINE	32,078	6,887.85	21.47%	566,010	181,376	32.04%
PLUM	15,199	1,068.12	7.03%	151,145	13,031	8.62%
PEAR	21,880	3,117.93	14.25%	333,132	53,145	15.95%
APPLE	30,550	3,239.37	10.60%	515,034	97,373	18.91%
	200,442	**38,385.32**	19.15%	**2,802,401**	**677,419**	24.17%

Source: Information provided by UAGA and elaborated from MAPA and DGA statistics.

The fruit sector is considered to be a strategic sector in Aragon, due to its turnover and the impact in terms of **employment creation, not only in a direct, but also in an indirect way** (supply of phytosanitary products and inputs, warehouses, transformation, etc.). The representatives of the agricultural organisations interviewed estimate the number of direct and indirect jobs linked to the fruit sector at 15,000.

Main challenges and problems of the Aragonese fruit sector

The Aragonese fruit sector, specifically stone fruit, **is going through a time of great uncertainty,** marked by the fall in sales prices and the continuous increase in costs, which determines a decrease in profits and compromises the viability of part of the farms.

A determining factor in the current situation has been the so-called **Russian veto,** established in 2014. The consequences of this veto, which affected several sectors, were of special relevance in the case of

[12] Indicators Report by Autonomous Community, MAPA
https://www.mapa.gob.es/es/ministerio/servicios/analisis-y-prospectiva/dossier_aragon_tcm30-507671.pdf

stone fruit from Aragon which is very focused on the Russian market and which, after five years of vetoing, has not been able to find alternative markets.

Generally speaking, it is worth pointing out the disadvantage faced by a **highly fragmented sector** in front of a highly concentrated distribution with regard to the commercialization of its product. This is especially true at times of high production when producers' fear of not being able to place a perishable product on the market causes sales prices to fall.

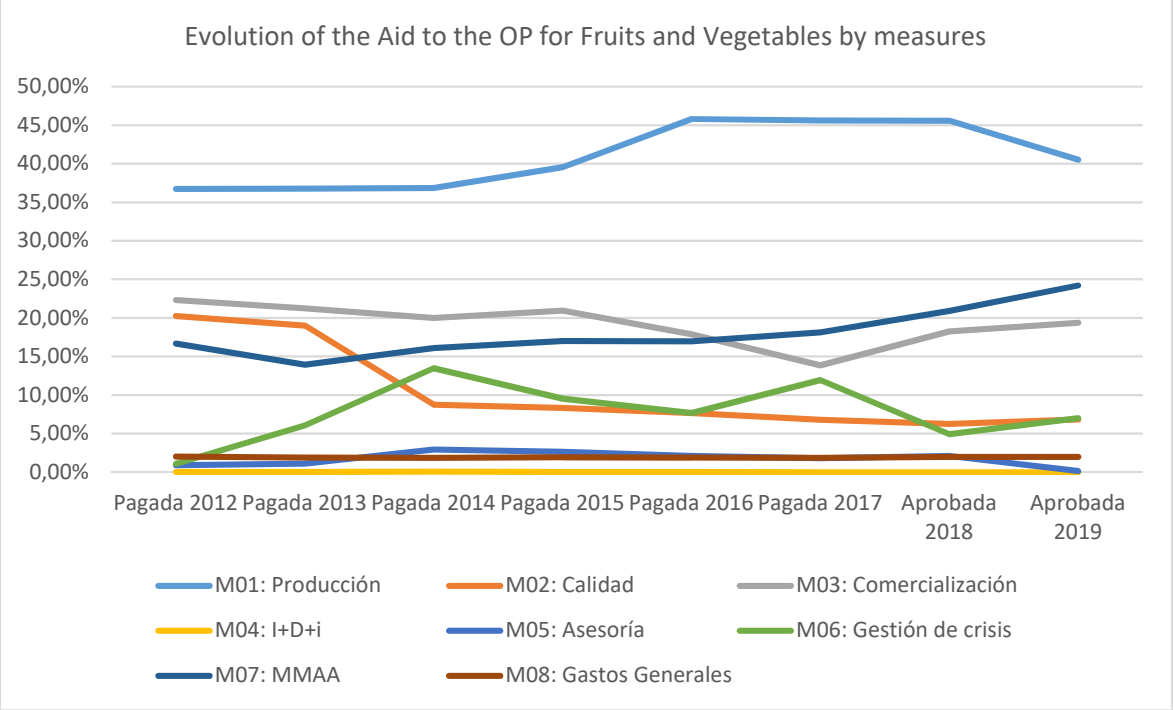
The Ex ante Evaluation of the RDP of Aragon presents in summary form some of the main difficulties suffered by the Aragonese fruit sector: (…)*(...) although it is a technologically advanced producing sector, the atomisation of the farms and also of the commercial structures makes it difficult to respond to the demands of the market. These difficulties are aggravated by the scarce evolution and development in relation to the identity and typification of the product, especially in the case of sweet fruit where Aragon has an outstanding productive position in the national panorama. The problems are even more marked in the horticultural sub-sector where the scarce culture of multi-year planning and contracting by farmers hinders industrial activity, which has not been integrated and coordinated.*

The impact of the CAP on the Aragonese fruit sector

The close relationship that exists in Aragon between temporary agricultural work and the fruit sector means that the impact of the CAP on this group of workers may occur, indirectly, through its support for the sector.

Within the framework of the first pillar of the CAP, the payments made by the EAGF in Aragon amounted to € 550 million/year on average, of which € 430 million/year are directed towards direct payments, among which, in Spain, the fruit sector is not included.

Figure 4.1: Evolution of the Aid to the OP for Fruits and Vegetables by measures



Source:
https://www.aragon.es/documents/20127/674325/BOLETIN_AGROAMBIENTAL_201903.pdf/a3984bbe-b16f-8a8a-1745-5668936325fc

Support to the sector is articulated through operational programmes for fruit and vegetables. Fruit and vegetable producer organizations (FVPOs) or their associations may set up an operational fund to be financed by the contribution of their members and EU aid.

In 2018 there were a total of 46 FVPOs in Aragon which marketed more than € 300 million of production. These are small organizations, a reflection of a sector that is highly atomized in the region.

The analysis of the actions implemented in the framework of the Operational Programmes reflects a strong concentration on measure 1, related to investments.

The **second pillar of the CAP** through the Rural Development Programme which has a total financial allocation of € 944 million, € 467 million from EAFRD; (between 15-20% of the annual CAP payment corresponds to EAFRD) is also having an impact on the sector through the various measures under implementation:

- Support for the **setting-up of young farmers** (1,331 young people set up to date) and investment in the **modernization of farms** or action to improve irrigation infrastructure.
- Actions on transfer of knowledge to the sector. To date, 683 technological farmer training activities have been carried out and 1,813 farms have received technical advice.
- The development of 140 cooperation **projects for innovation** (measure 16) among which initiatives linked to the sector (for example: the operating group Tecnifrut designed technological solutions for monitoring commercial quality of fruit during the logistical cycle or the group Improving the quality of the Golden Valdejalon apple).
- In terms of investments in the processing and marketing of agricultural products, there is a demarcation between action through the RDP and action by the FVPOs (which develop all investments below € 400,000, leaving to the RDP those that exceed this amount).

4.2.2. Temporary work in the fruit sector: a snapshot of seasonal workers

The **difficulty in mechanising** certain tasks associated with fruit growing, mainly harvesting, but also other preparatory tasks such as thinning or bagging in the case of peaches, determines the significant need for temporary labour at certain times of the year. Specifically, in the case of Aragon, the contracting needs begin with the harvesting of the cherry in the month of April-May and last until October. The following graph illustrates the relevance of agriculture in the hiring of foreign people in Aragon and the strong temporality of this hiring. The following graph illustrates the relevance of agriculture in the hiring of foreign people in Aragon and the strong temporality of this hiring.

Source: Integral Plan for the Management of the Cultural Diversity of Aragon 2018-2021, based on data from the Ministry of Employment and Social Security.

Whereas in other kind of crops innovations have been progressively adopted and have meant an **important substitution of manpower by machines, it is not the case in the Aragonese fruit growing.** As Solé, Allepuz and Gordo (2014) point out: the importance of the product's appearance in terms of marketing means that manual harvesting, which causes less physical damage to the product, continues to be the main bet. In addition, hand-picking facilitates the pre-selection or preparation of the product, as well as the harvest of products at different stages of maturity. On the other hand, the possible implementation of labour-saving technologies is hampered by the high initial investments that would be necessary and subsequent maintenance costs, as well as the need to adapt farms and crops to them. In short, this is a **difficult bet in a sector that is going through a critical moment** marked by the low profitability of farms.

Snapshot of the temporary workers

The profile of seasonal workers in Aragon has evolved until **being now mainly covered by foreign population.** During the economic boom years, many locals decided to work in other productive sectors more attractive than agriculture and, although during the economic crisis there was a certain return to agricultural tasks from the local population, these are still mainly realised by the foreign population.

The analysis of the figures of the 2019 agricultural campaign provided by the Aragonese Employment Institute (INEAM), and prepared by the digital medium Agrodigital, shows that out of the 31,641 work contracts signed during the second half of the year, 93.07% were temporary and **85.65% were signed by foreign people.** Of these, 41.16% are EU foreigners.

In terms of nationalities, Romania stands out with 33.91% of the total (10,778 contracts), followed by Morocco (3,822), Senegal (2,466), Pakistan (1,656), Bulgaria, Algeria, Mali and Gambia with around 1,000 each.

75.05% of the people hired are men, and the majority (49%) are between 25 and 44 years old.

In addition, they are low-skilled workers who find in seasonal agricultural work a labour alternative that they do not find in other sectors and who take on jobs that are rejected by national collectives.

The hiring essentially takes place in the regions of Bajo Cinca, Valdelajón and Bajo Aragón Caspe (between 8,000 and 7,000 hires each) and, to a lesser extent, in the Central district, Calatayud district, Cinca Medio and the Cariñena district (with about one thousand hires each).

The interviews conducted in the course of the case study indicate that in most cases, people are hired for short periods from 1 month to 2 months. The cherry is the product that requires a greater number of workers and when this harvest ends, the needs are reduced. In any case, it is frequent that the farms do not have only one crop and therefore a part of the workers can finish one crop and then start with another. A percentage of about 50-60% of the total could link the end of one crop with the begin of another, and so on until cover about 5 months of work.

According to the appraisals of the interviewed agents, a significant percentage of the hired persons (between 60% and 80%) come there to work year after year.

On the other hand, it is frequent that the workers who arrive in Aragon during the season come from other parts of the Spain, where the citrus or olive campaigns have ended. In many cases, we are talking about a "floating" collective, without permanent residence anywhere, which moves from one campaign to another (Fernandez Such, 2016).

However, the agents interviewed do estimate that around 20-30% of the seasonal workers working in the campaigns have settled in the territory, mainly in the regional head offices of the fruit-growing areas. They usually combine seasonal work with other agricultural tasks (pruning, harvesting almonds, etc.), work in other productive sectors (such as industry), or with unemployment benefits.

These valuations are confirmed by the figures provided by the continuous Register of the National Institute of Statistics regarding the percentage of foreigners by municipalities. It is indeed in the agricultural regions where the weight of immigration is greater. Specifically, although on average in Aragon in 2018 there were 10.47% of foreigners in the capitals of agricultural fruit regions such as Valdejalón, these porcentages reach 28.60% in Almunia de Doña Godina, 22.43% in Caspe, 22.05% in Fraga and 17.32% in Calatayud.

Challenges faced by farmers and adaptation strategies

One of the problems affecting the sector is the **availability of workers.** Each year, farmers face uncertainty about whether they will be able to gather the required number of workers at the necessary time. This situation is even more difficult for small farmers, since for temporary workers it is more attractive to be employed in a big farm where they will be able to carry out more work days.

Indeed, although in the time of economic crisis agriculture served as refuge from other sectors that destroyed employment such as services, industry or construction, nowadays it is back to being a job that, due to its hardness and temporality, is not attractive, especially for native workers.

The entry of countries such as Romania into the European Union facilitated the arrival of workers from this country, which, as noted previously, represent the largest group of workers.

The possibility of receiving **agricultural unemployment benefits** once enough days of work have been accumulated also discourages part of the potential workers.
Farmers try to convince an important part of the workers to come back from one year to the next and subsequently use word of mouth and direct communication with potential workers to try to complete the crews.

The experiences of **contracting at origin,** common in other producing areas of the country, have not been very frequent in the case of Aragon. The employment of **temporary employment agents** (sometimes foreign) is growing, being mainly used by large farms.

On the other hand, the **main problem** faced by the fruit sector is the **wage cost** associated with high labour needs (the agents interviewed estimate that labour represents between 60 and 80% of the cost of 1 kg of fruit, or average amounts of € 5,500/ha for crops such as cherry and about € 2,500/ha for peach).

The **progressive increase in costs,** not only for salaries, but also for other inputs: phytosanitary products, fuels, etc. or of agricultural insurance and the **impossibility of transferring this increase in production costs to the final sale price** puts the sector in a critical situation of progressive loss of profitability.

Aragonese fruit growers have **a very limited impact on the sale price: prices are formed from top to bottom,** in a context marked by:

- the progressive liberalization of markets and the increase in product from third countries at more competitive prices;
- a very atomized supply and a strong concentration of demand in the distribution.
- the perishable nature of the products

Thus, the evolution of the prices perceived by the fruit growers of Aragon showed in 2017 a decrease in the average price of 14% in cherry, 18% in plum and apricot and 19% in peach

The differences between what the consumer paid for the products and what the farmer receives are valued by representatives of the agricultural sector at 600%.

The **continuity and profitability of farms is limited** and relies heavily on trying to guarantee the lowest possible wage costs, so, at this time, the agreements around the new Collective Agreement of the agricultural workers.

The entry into force in Spain on January 1, 2019 of **a rise in the minimum wage,** to € 900 per month has been a **point of discussion** between representatives of agricultural organizations and class trade unions. Another point of disagreement derives from the new obligation to register the working day. The representatives of the agrarian organizations indicate that it is not viable for their exploitations to pay the extra hours. However, during these specific moments such as the collection, both workers and farmers consider it appropriate to extend the working hours beyond 8 hours and the possibility of extending the possible standard working hours by agreement is under discussion.

Given the difficulties generated by the high need for labour, another of the strategies that fruit growers in the region are adapting is **the reconversion or progressive replacement of fruit trees** with other less demanding crops such as almond or cereal. Thus, in addition to reducing costs, they escape the difficult annual management of such a large number of farmers on their farms.

In this sense, the **availability of accommodation** for temporary workers is configured as another key problem, which requires investments by farmers (some aid programs have been developed in this direction by the Government of Aragon.)

Problems from the perspective of temporary workers

As Fernando Fernandez Sulch describes in his article "*From campaign to campaign: the phenomenon of seasonal agricultural work"* (Magazine "Soberanía Alimentaria", 2016):

The life of the temporary person is very hard; the permanent mobility and seasonality accompanied by the lack of social recognition of work, the precariousness of the living conditions during the campaigns, the poor social protection in the long run, the fact of leaving the family permanently behind or, worse, having to drag

it in each campaign, they are elements that hinder the construction of a life project and social and political participation. In addition, the work environment makes organizing difficult (13: 2016)

Temporary workers, mostly foreigners, in many cases make up a *"floating" population* without a fixed residence and a vulnerable group at risk of exclusion.

The Trade Unions denounce, as is clear from the numerous news presented in the press, as main problems that workers accept, sometimes, salaries below the agreement, do not charge overtime and in some cases concealment of the real day or the entire work day is not always declared. Likewise, they point out that the entry into operation of the intermediation of Temporary Employment Agents with greater capacity for the negotiation of working conditions is influencing a progressive precariousness of the Aragonese field.

In this sense, representatives of agricultural organizations highlight a very favorable evolution of the regularization of temporary work and the progressive improvement of conditions. By way of illustration, they point out that the percentage of infractions detected in labour inspections carried out by agricultural companies in the Community has been very low (they represent 0.01% of the total number of hired workers).

The **problem of accommodation** remains a key issue and although there has been a progressive improvement in the region, there are still situations of concentration of many workers under-housing situations. So, as Caritas points out[13] in their activity report and diagnosis of the situation of the seasonal workers in the Cinca Medio and Bajo Comarcas, 2017, the seasonal workers: *in many cases they live in agricultural warehouses or booths without electricity or running water, some sleep inside from tents to protect against moisture and mosquito bites at night*.

4.2.3. Integration of the migrant population in the Aragonese territory

The arrival in a short space of time of numerous workers, usually foreigners, in small population centers brings with it the need to adapt the services and infrastructure available in the receiving populations. In the first instance, it is the farmers who must guarantee the availability of accommodation in optimal conditions, which, as previously described, is a critical point. In response, since 2017, the Government of Aragon has launched a **subsidy to** support farmers *in* the preparation of temporary workers"[14]. This aid allowed in the year 2019 to finance 465 accommodation places.

In addition, it is common for agricultural organizations, social services, unions and different agents of the local administration to **hold coordination meetings** prior to each campaign and try to define measures for the proper management of this situation: information is shared around the available resources , number of workers expected to receive, etc. In some regions and municipalities, **plans or measures** are being promoted **to favor the integration of these groups** (for example, in Almunia de Doña Godina).

On the other hand, **non-governmental organizations such** as the Red Cross or Caritas are playing a decisive role in this matter. Thus, for example, in Caritas Barbastro, with a grant from the General Secretariat of Immigration and Emigration, a *Program of Attention to temporary workers in the settlements is developed* that allows to advance in the diagnosis of the situation of the seasonal workers, to locate settlements or substandard housing; inform and advise seasonal workers.

As previously mentioned, the number of workers who settle, also with their families, is growing in the producing areas, especially in the county headwaters, but also in other smaller nuclei. The **integration**

[13] http://www.caritasbarbastromonzon.es/wp-content/uploads/2018/05/Memoria-temporeros-2017.pdf
[14] http://www.boa.aragon.es/cgi-bin/EBOA/BRSCGI?CMD=VEROBJ&MLKOB=1079046601212

of these groups is marked by the cultural characteristics of the countries of origin, being more effective to date in the case of workers from Eastern countries. In any case, this process stands out as a long-term journey.

In this regard, initiatives are being implemented in Aragon that **aim** at a **double objective of curbing the depopulation of certain areas of the rural environment through the integration of the foreign population.** Such is the case of programs such as the one promoted by the CEPAIM Foundation, "*Program for the Integration of Migrants in the Rural Environment of Aragon*"[15] funded by the ESF and the Government of Aragon and framed in the *Comprehensive Plan for the Management of Diversity Culture of Aragon, 2018-2021*. The program acts in a double direction of support to the receiving rural municipalities and to the immigrant families that wish to initiate the integration process.

The **Rural Development Program (RDP),** co-financed by EAFRD, the second pillar of the CAP, has among its six priorities *Promote social inclusion, poverty reduction and economic development in rural areas*. Specifically, the action of the **Local Action Groups (LEADER)** gathered in the Aragonese Rural Development Network, usually in collaboration with all organizations and associations, may also have a relevant impact on this issue.

4.3. General conclusions

The subject matter of the case study is a **crossroads of various policies beyond agricultural policy.** In particular, **employment and migration policy, but also international trade.** The joint understanding of the impact of these policies and the need to find elements of cooperation and coordination in their implementation is presented as one of the main conclusions. This element, within the framework of the European funds and the possible coordination between the ESF and the CAP as a whole, **is particularly relevant in a future scenario** in which, in the next programming period, the EAFRD will be separated from the rest of the structural funds by leaving the Regulation on Common Provisions.[16]

4.3.1. Integration of immigrant population in rural Aragonese areas

The figures show that the integration of the migrant population in rural areas of Aragon has acquired a very relevant dimension, especially in some fruit-growing regions, where the foreign population represents more than 20% of the total population. The arrival of migrant population attracted by the labour possibilities of the agrarian sector can constitute an important contribution to face the dynamic regressive populations that affects the region.

In any case, in order for this proposal to be favorably consolidated, it is recommended:

- **Reinforce the processes of effective integration** of these groups, with the implementation of concrete actions aimed at this end and working from a two-way perspective by focusing not only on the immigrant population that is integrated, but also on the host population in the receiving rural municipalities.
- To work within the framework of an **integral planning** aimed at facing the different deficits (services, employment possibilities, communications...) that these areas suffer from and that are largely at the origin of these depopulation processes. The fact that the installation of migrant population is understood as one more piece of a broader and more comprehensive strategy,

[15] http://cepaim.org/que-hacemos-convivencia-social/desarrollo-rural/programa-integracion-de-personas-migrantes-en-el-medio-rural-de-aragon/

[16] Proposal for a regulation COM/2018/375 final – 2018/0196 (COD).

necessarily implies networking and coordination with multiple agencies, institutions or collectives working on the same territory.

In both matters, the **rural development policy financed with the second pillar of the EAFRD** could constitute a relevant contribution, always in synergy and coordinated with other funds, especially the European Social Fund. In particular, Local Action Groups as agents with knowledge of the territory can play a very relevant role within the framework of possible multifund Local Development Strategies

4.3.2. The impact of the CAP on Aragonese temporary work: action in the fruit sector

The close relationship that exists in Aragon between temporary agricultural work and the fruit sector means that the impact of the CAP on this group could be indirectly produced through an improvement in the fruit sector.

Specifically, the future articulation of operational funds in Aragon so that they favor:

- **Greater cooperation and better organization of producers**, achieving that the 46 existing FVPOs in the region are grouped and articulated together and betting on greater organization and production planning.
- Strengthen, within the framework of operational programs for fruit and vegetables, the promotion of other measures, beyond investments, such as those related to **marketing and promotion of products**.

To date, the Operational Programmes do not promote actions that could favor the organization of producers with a view to contracting and managing the temporary work needs of the sector, although it has been noted that this is a common and persistent problem.

In any case, it is stressed that the solution to the sector's **problems goes beyond the CAP** and involves being able to pass on rising costs to sales prices. In order to do this, it is essential to **strengthen the position of the producing sector in price formation.** Beyond working on better organization and planning of supply, it is still necessary to work on the effective application of the actions set out in the *Control Plan of the Food Information and Control Agency (AICA)*, especially in relation to the compulsory contracting established by Law 12/2013 on measures to improve the food chain.

On the other hand, as reflected in the situation triggered by the Russian *veto*, the impact on this issue of **international trade** is key. Competitiveness is not measured in local markets, but on the international stage. Moreover, in the case of the export of food for final consumption such as fruit, farms do not compete directly but do so through industry and distribution (Ex ante of Aragon RDP 14-20: 44).

The need to make further progress in the **agricultural insurance system** in order to guarantee stability in the face of increasingly frequent climatic risks is another of the sector's challenges.

Nor should we forget the challenge presented by the **technology revolution** (Big data, 5G...) in all production sectors: **organization and cooperation** between family farms in the sector is a key element in gaining access to this technology.

4.3.3. A broader view: Towards a social conditionality of the CAP?

The CAP has made progress in incorporating environmental or animal welfare issues, but to date it has not integrated what we might call a "social conditionality" linked to the "social welfare" of agricultural workers. That is to say, it has not conditioned the aid received through the CAP to the adequate fulfilment of the working conditions of the workers, among others.

The future implementation of the CAP is designed as an opportunity for the inclusion of this issue at Community level or at least for its inclusion to be an optional element that the Member States can incorporate in their CAP Strategic Plans.

In this sense, we can expect the reticence of the producing sector, which has already been subjected to growing environmental conditions and requirements, and which, as in the case under study, is subject to difficult survival in a context of global competition and scarce bargaining power in prices.

However, as happened in the past with environmental issues, everything points to the fact that the adequate incorporation of social issues into production could have commercial repercussions and be configured at the end as a comparative advantage facing the consumer. In this direction, the private sector is beginning to position itself, and production certifications promoted by distribution sectors, which include this issue, among other aspects, are increasingly frequent.

As a whole, after the analysis done on this study case it can be concluded that the strengthening of the "social" aspect of the CAP, including both the well-being of agricultural workers and the maintenance of a socio-economic fabric in the rural milieu closely linked to a type of family agriculture rooted in the territory, continues to constitute a key challenge for the future CAP.

4.4. References

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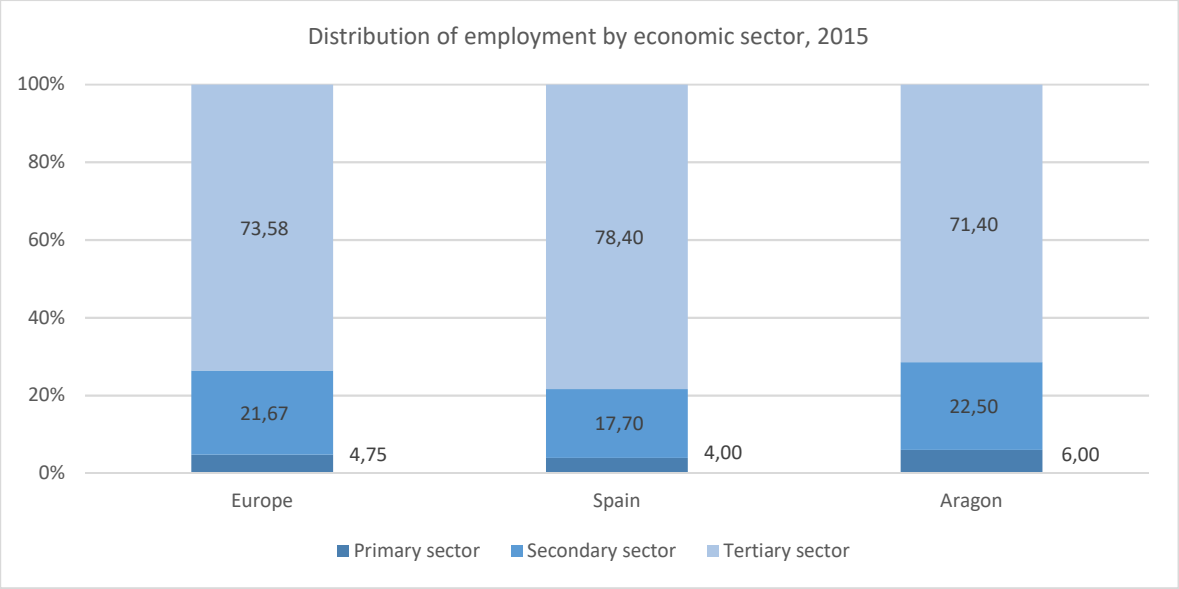
Interviews conducted

- Union of Farmers and Cattlemen of Aragón.
- Regional office, in a fruit-growing area.
- Directorate-General for Rural Development
- General Management of Agricultural Production
- Expert and Senior Scientist en Instituto de Economía, Geografía y Demografía

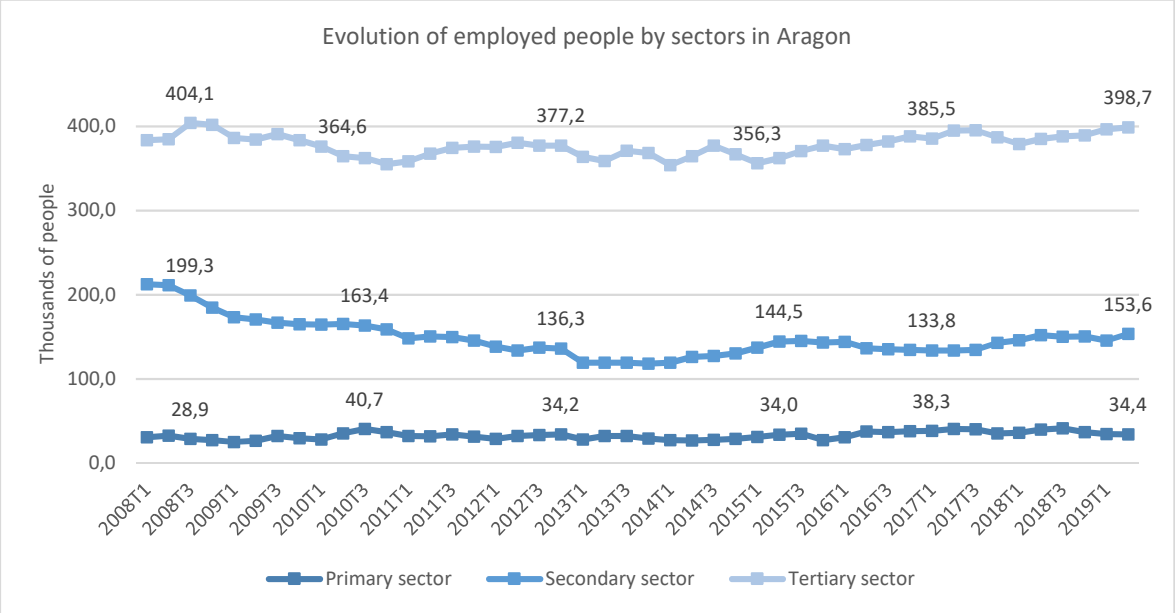
4.5. Appendix

Figure 4.2: Distribution of employment by economic sector, 2015



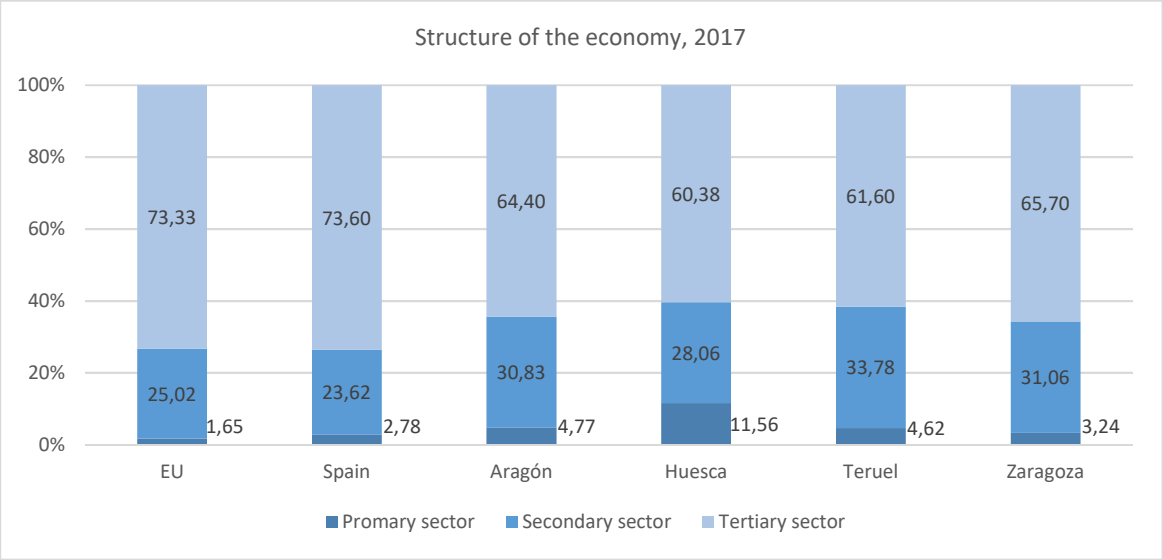
Source: C.11, Structure of the employment. CAP context indicators.

Figure 4.3: Evolution of employed people by sectors in Aragon, 2008-2019



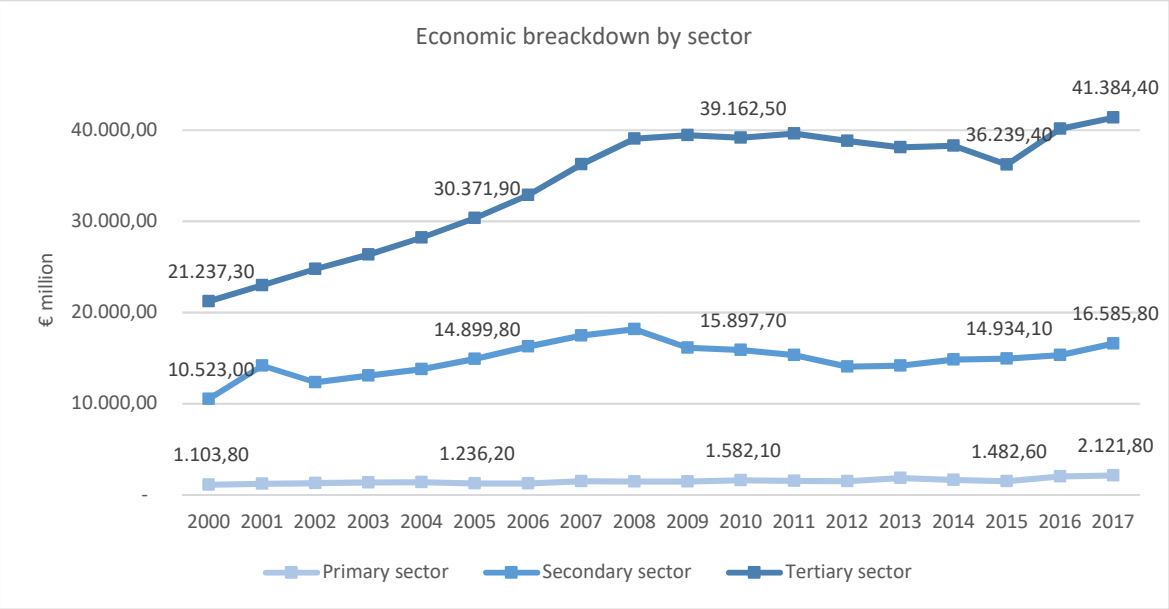
Source: Survey of active population, by region. INE.

Figure 4.4: Structure of the economy, 2017



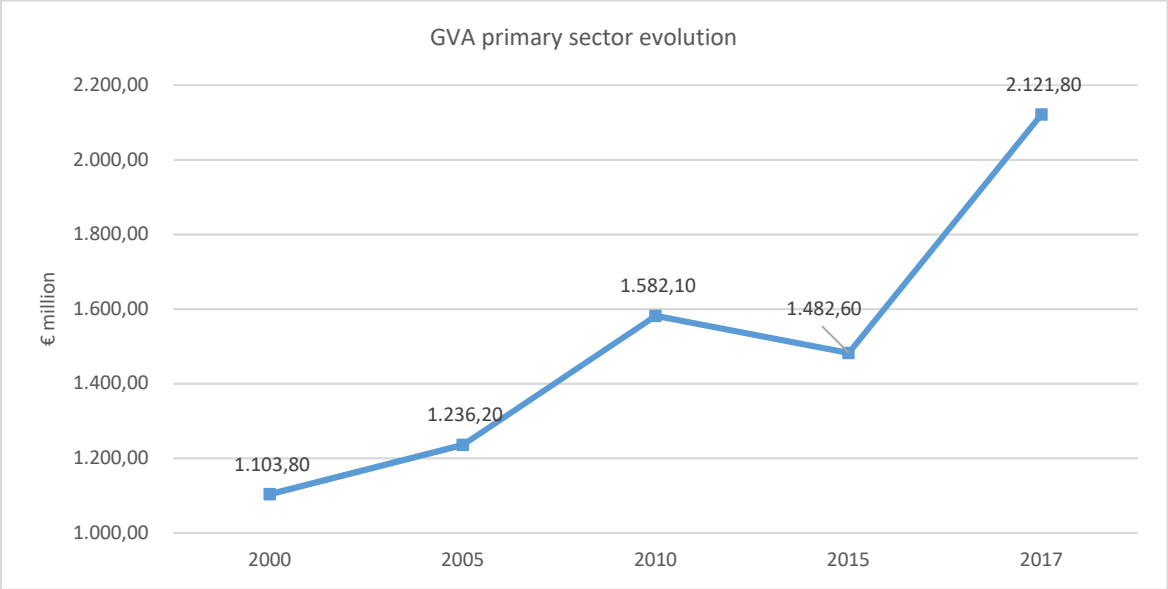
Source: C.10, Structure of the economy, CAP agri indicator.

Figure 4.5: Economic breakdown by sector, measured in GVA



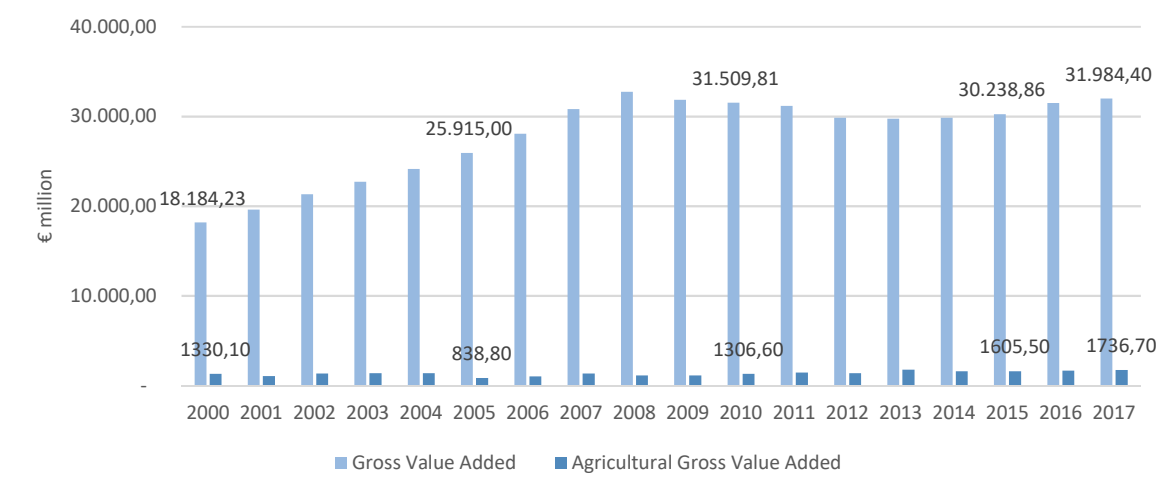
Source: Gross value added at basic prices by NUTS 3 regions, Eurostat.

Figure 4.6: GVA primary sector evolution, 2000-2017



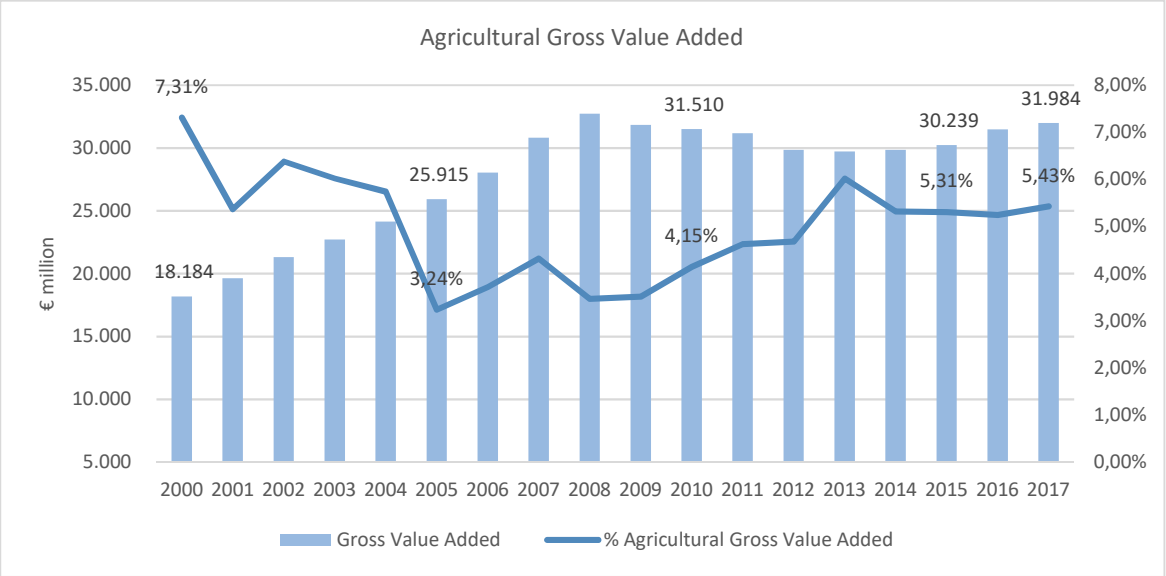
Source: Gross value added at basic prices by NUTS 3 regions, Eurostat.

Figure 4.7: Evolution of the gross value added from the agrarian sector in Aragon, 2000-2017



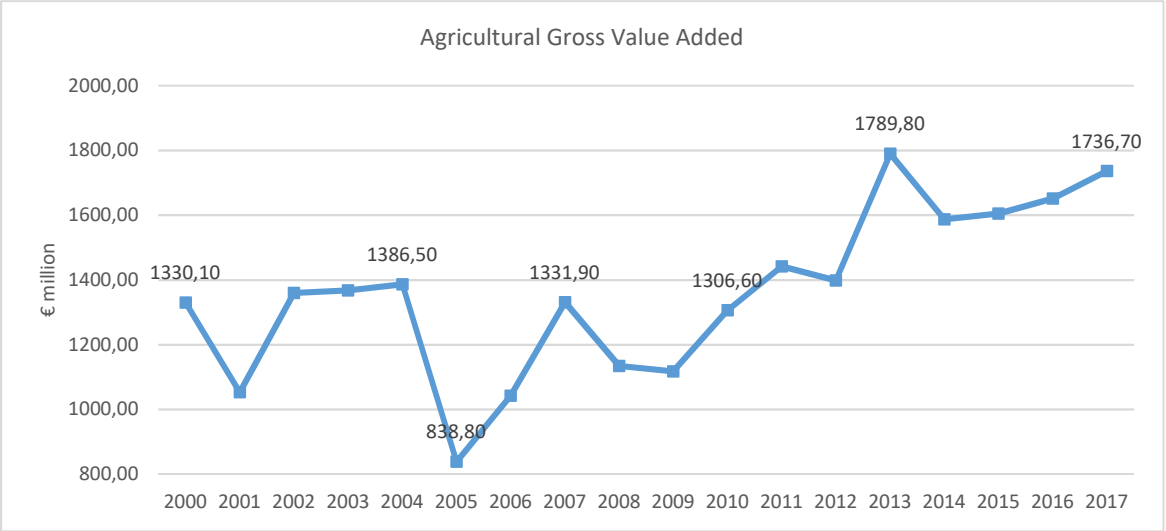
Source: Evolution of agricultural macromagnitudes: Production, Gross Value Added and Agricultural Income of Aragon, Aragonese Statistics Institute.

Figure 4.8: Evolution of the share of agricultural GVA in the total GVA in Aragon, 2000-2017



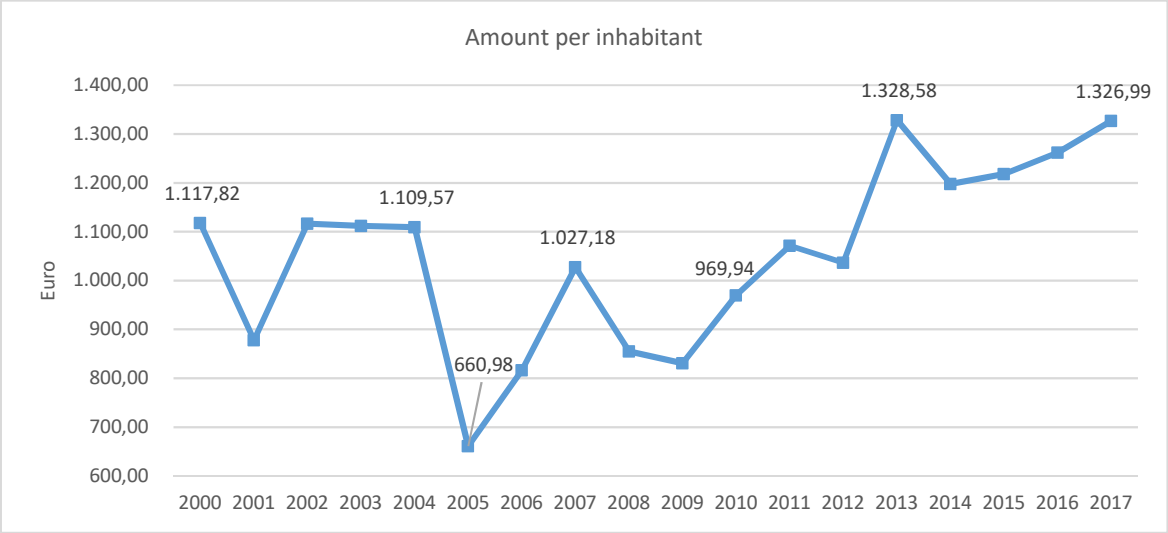
Source: Evolution of agricultural macromagnitudes: Production, Gross Value Added and Agricultural Income. Aragon and Spain. Aragonese Statistics Institute.

Figure 4.9: Evolution of the agricultural GVA (€ million), 2000-2017



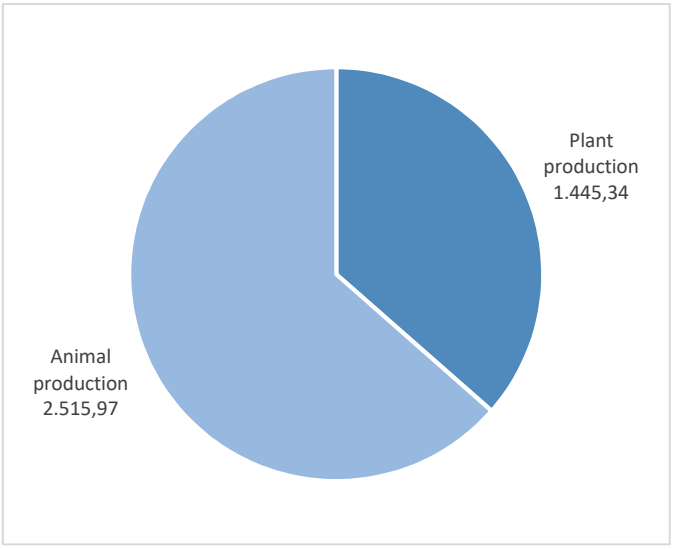
Source: Evolution of agricultural macromagnitudes: Production, Gross Value Added and Agricultural Income, Aragonese Statistics Institute.

Figure 4.10: Evolution of agricultural GVA per inhabitants (€), 2000-2017



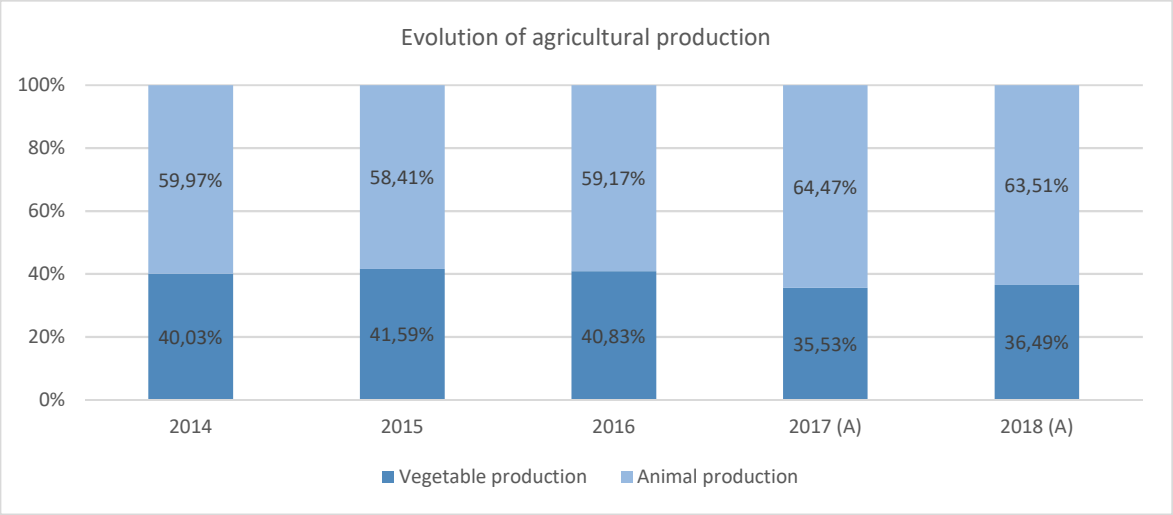
Source: Evolution of agricultural macromagnitudes: Production, Gross Value Added and Agricultural Income. Aragon, Aragonese Statistics Institute; Official population figures resulting from the revision of the Municipal Register on January 1, INE.

Figure 4.11: Production by agrarian branch in Aragon (€ million), 2018



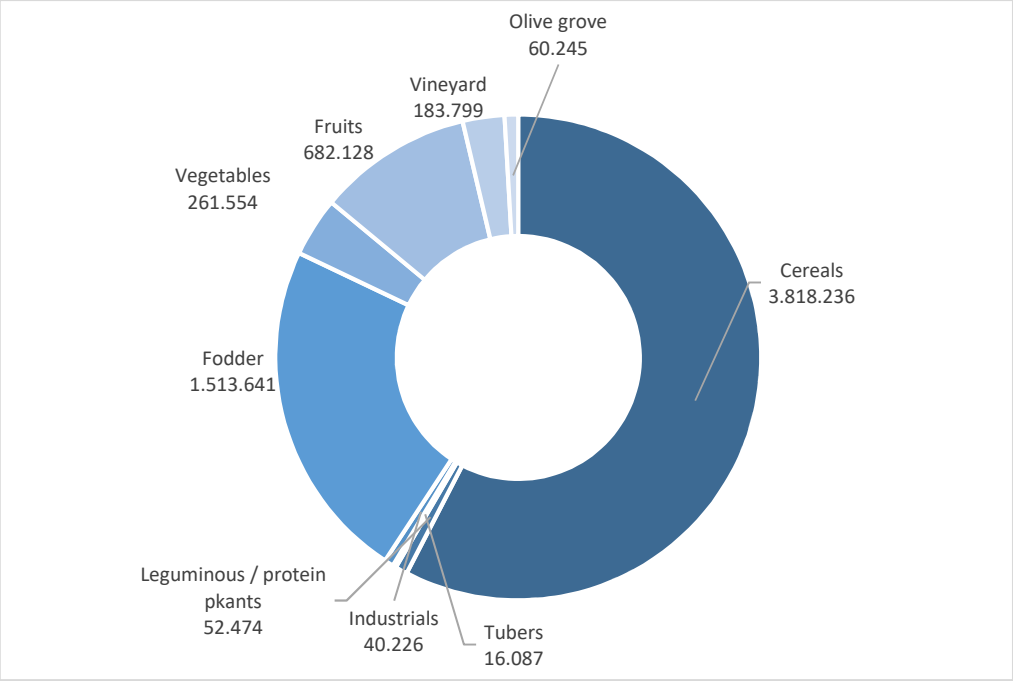
Source: Aragonese agricultural sector macromagnitudes.

Figure 4.12: Evolution of agricultural production, 2014-2018



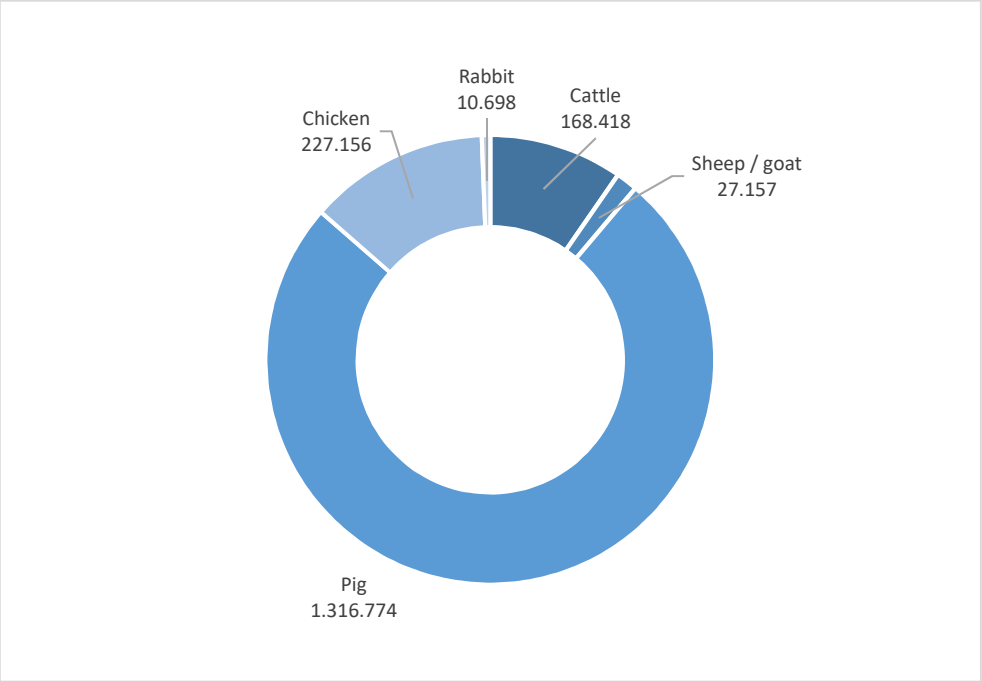
Source: Aragonese agricultural sector macromagnitudes.

Figure 4.13: Agricultural production (tons) in Aragon, 2018



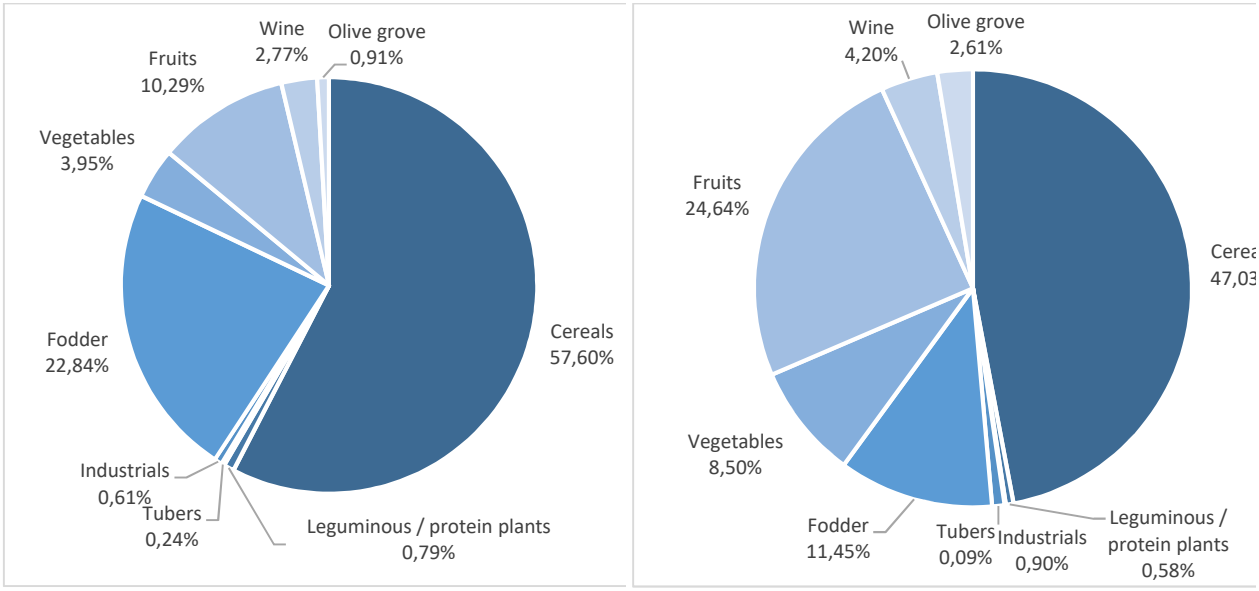
Source: Aragonese agricultural sector macromagnitudes.

Figure 4.14: Livestock production (tons) in Aragon, 2018



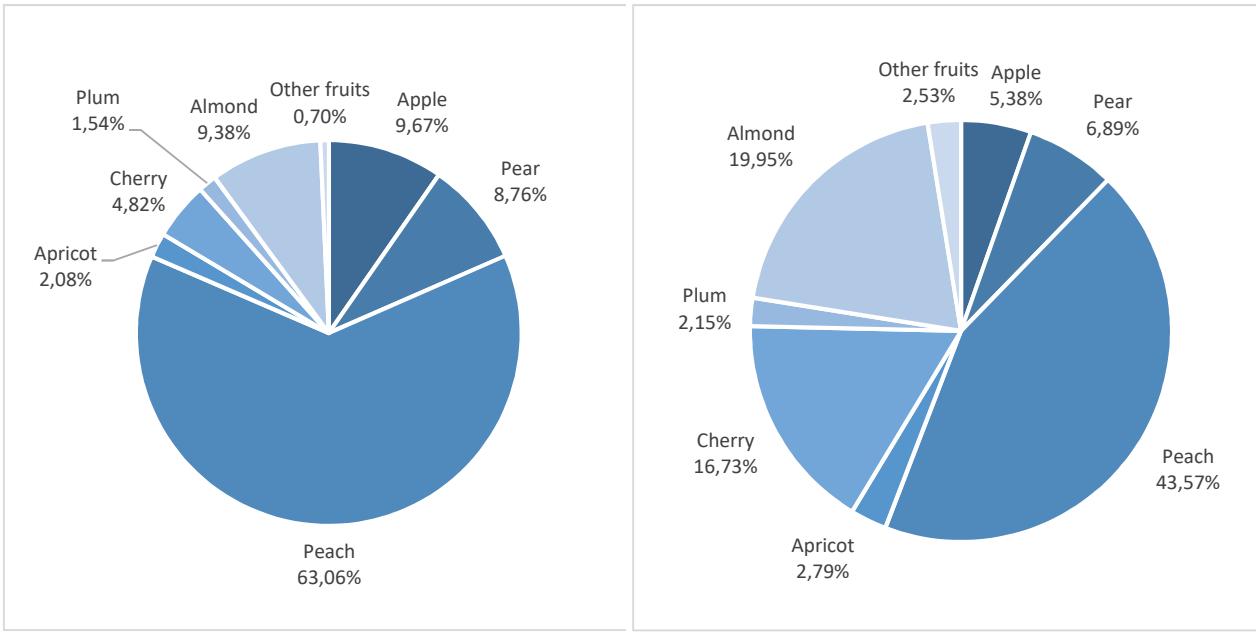
Source: Aragonese agricultural sector macromagnitudes.

Figure 4.15: Share of the agricultural products in Aragon, 2018 (left: by units, right: by production value)



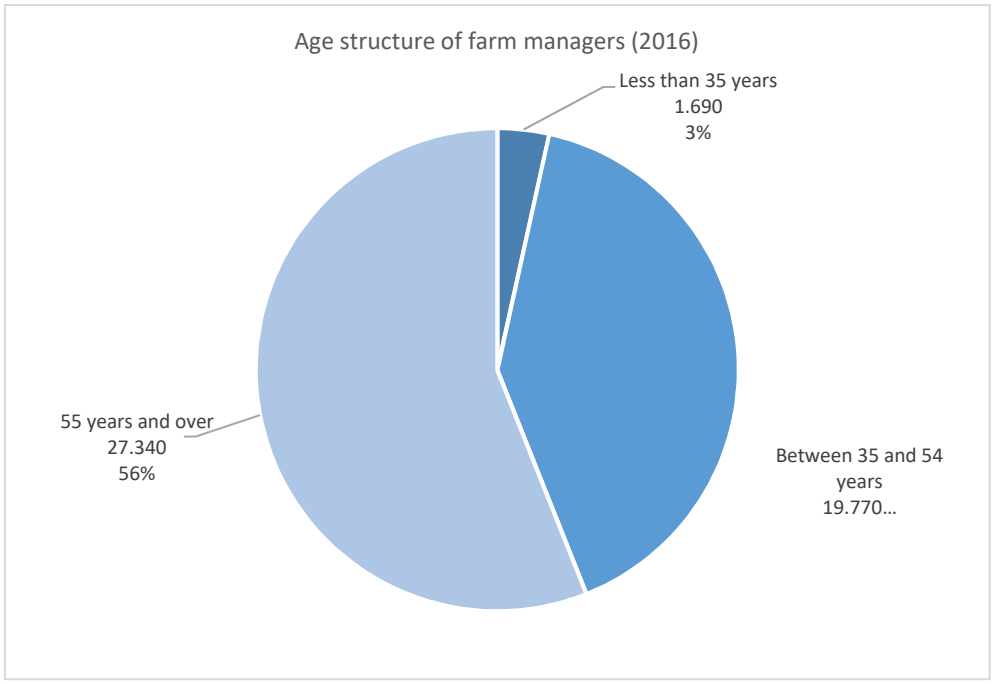
Source: Aragonese agricultural sector macromagnitudes.

Figure 4.16: Distribution of fruit production in Aragon, 2018 (left: by tons, right: by production value)



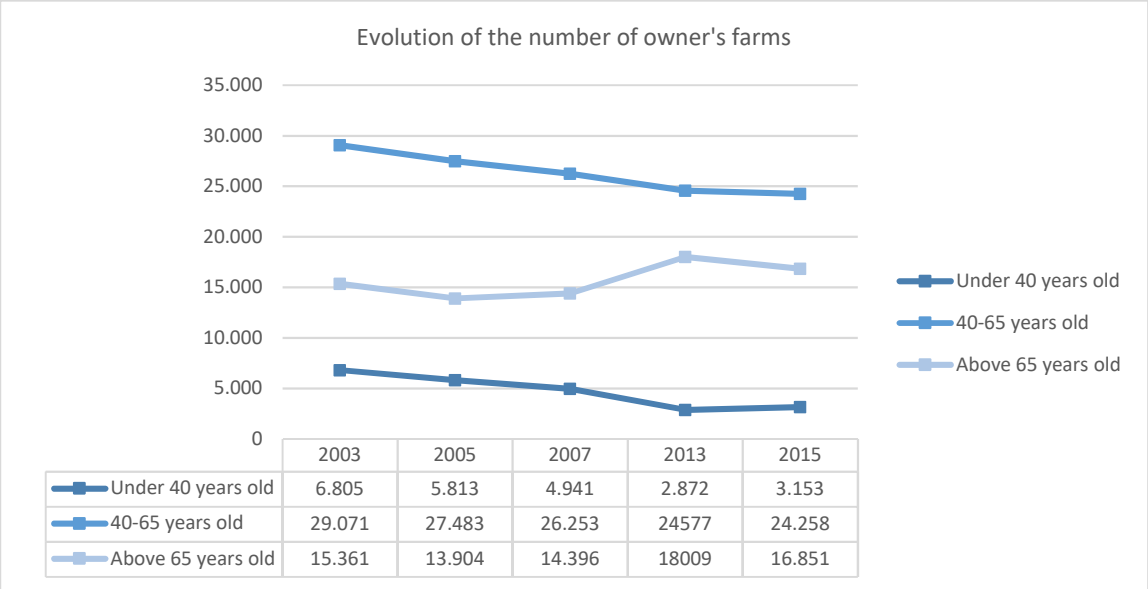
Source: Aragonese agricultural sector macromagnitudes.

Figure 4.17: Age structure of farm managers, 2016



Source: C.23 Age structure of farm managers, CAP context indicators 2018.

Figure 4.18: Evolution of the number of owner's farms



	2003	2005	2007	2013	2015
Under 40 years old	6.805	5.813	4.941	2.872	3.153
40-65 years old	29.071	27.483	26.253	24577	24.258
Above 65 years old	15.361	13.904	14.396	18009	16.851

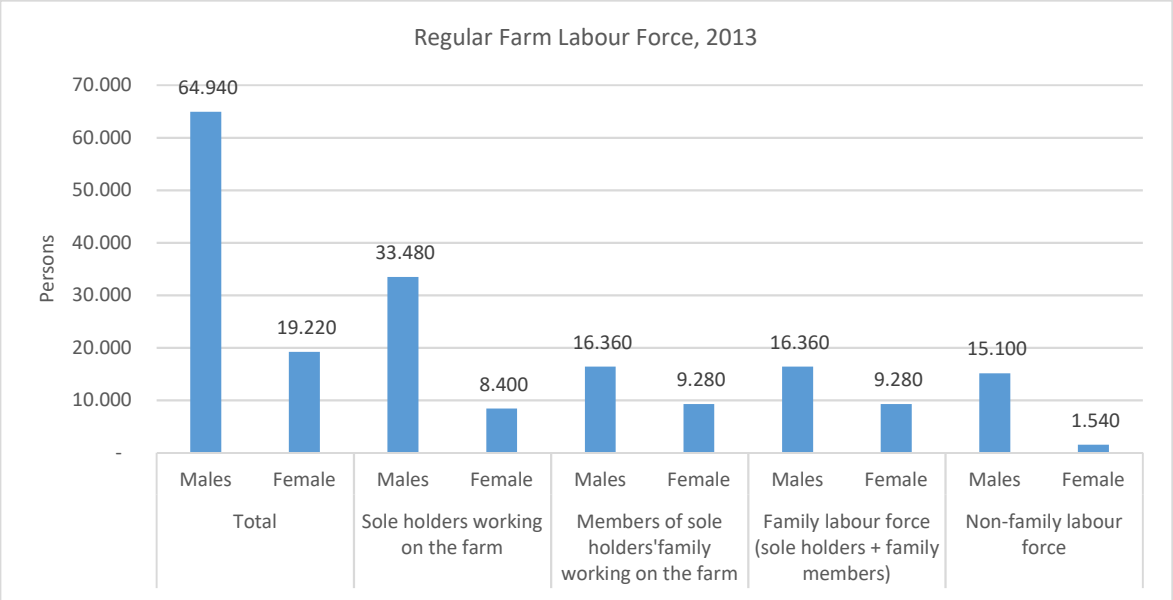
Source: Survey of the structure of agricultural holdings, INE.

Table 4.1: Labour force by sex, 2013

Regular Farm labour force		Persons	% of total	AWU	% of total
Total		84,160		35,220	
	Males	64,940	77.20	29,750	84.50
	Female	19,220	22.80	5,770	16.40
Sole holders working on the farm		41,880		17,430	
	Males	33,480	79.90	15,090	86.60
	Female	8,400	4.99	5,770	13.40
Members of sole holders' family working on the farm		25,640		7,580	
	Males	16,360	63.80	5,120	67.50
	Female	9,280	36.20	2,620	34.60
Family labour force (sole holders + family members)		67,520		25,020	
	Males	16,360	63.80	20,210	80.80
	Female	9,280	36.20	4,960	19.80
Non-family labour force		16,640		10,200	
	Males	15,100	90.70	9,540	93.50
	Female	1,540	9.30	810	7.90

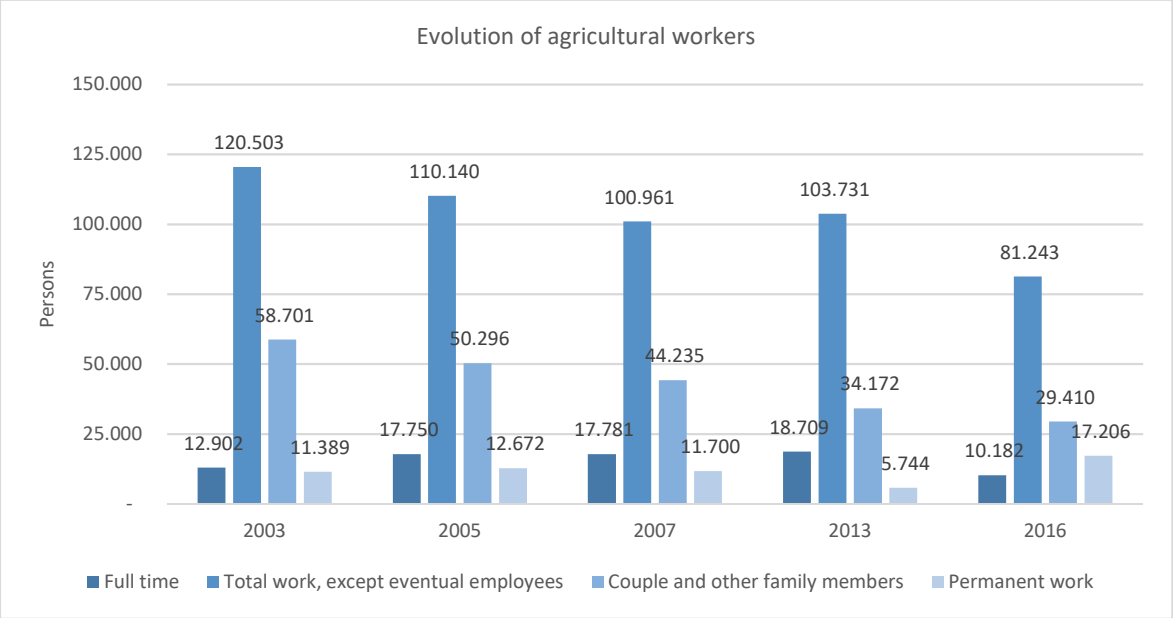
Source: Labour force: number of persons and farm work by sex of workers and NUTS 2 regions, Eurostat.

Figure 4.19: Regular farm labour force, 2013



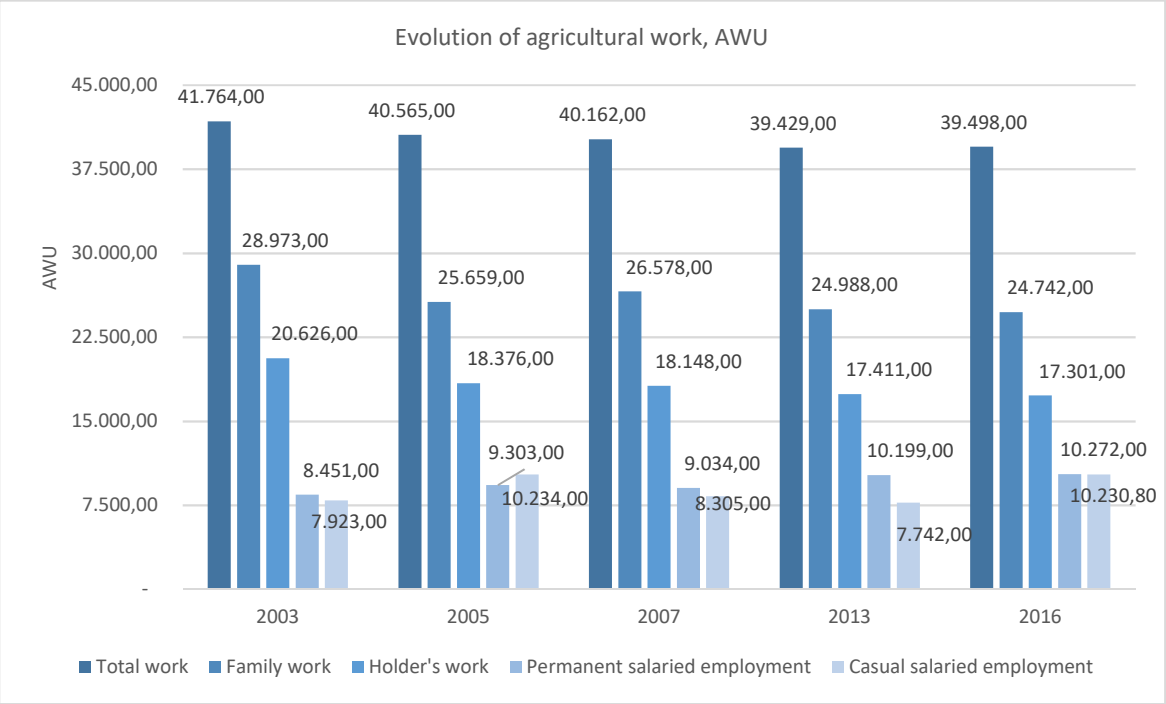
Source: Labour force: number of persons and farm work by sex of workers and NUTS 2 regions, Eurostat.

Figure 4.20: Evolution of agricultural workers, 2003-2016



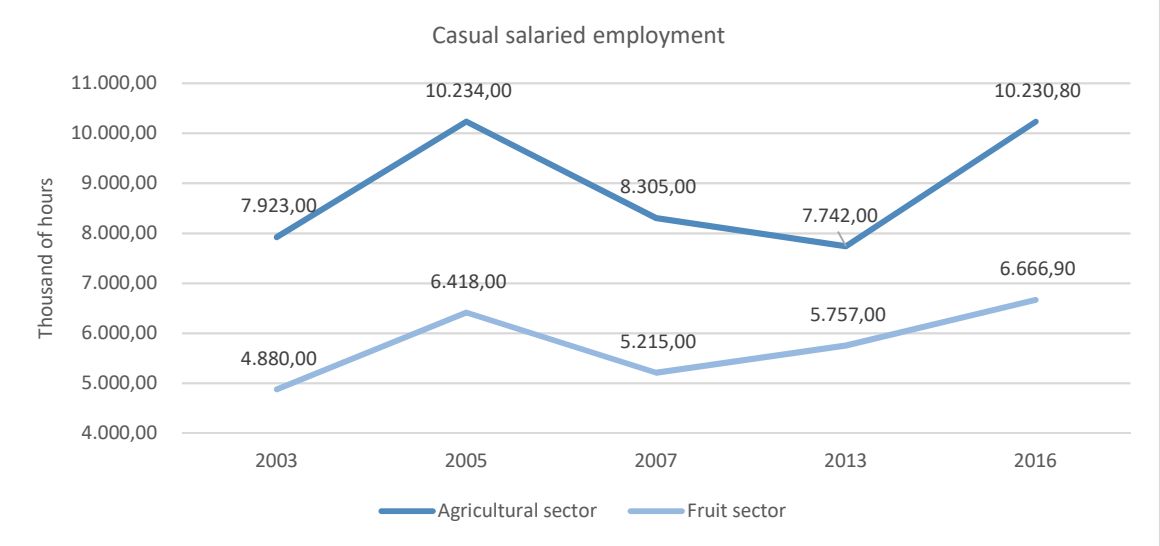
Source: Survey of the structure of agricultural holdings, INE.

Figure 4.21: Evolution of agricultural work (AWU), 2003-2016



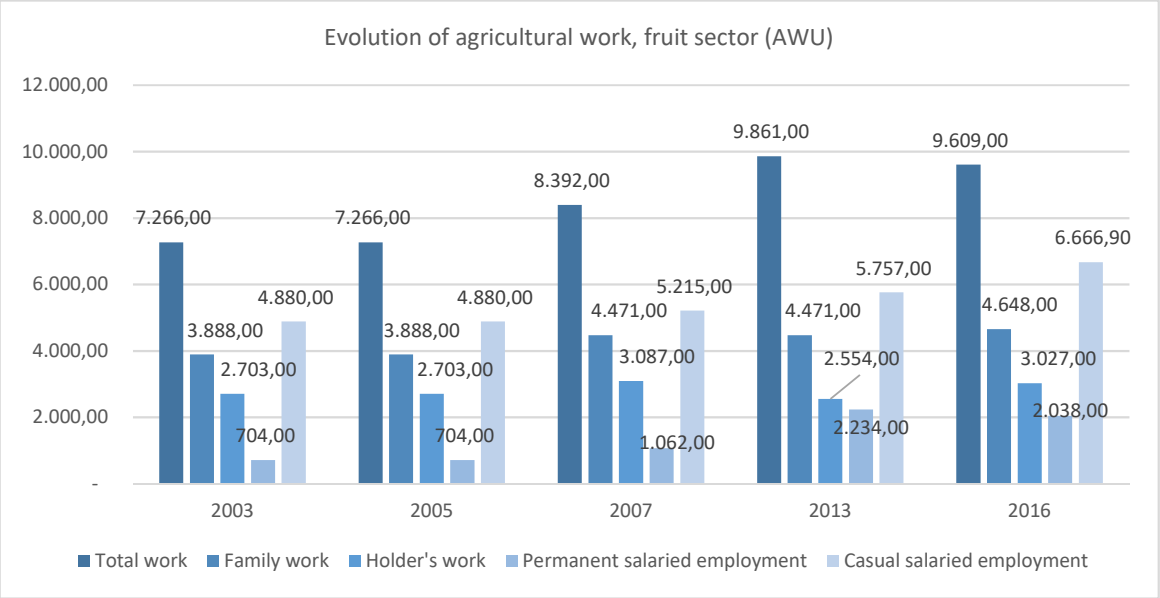
Source: Survey of the structure of agricultural holdings, INE.

Figure 4.22: Evolution of casual salaried employment, 2003-2016



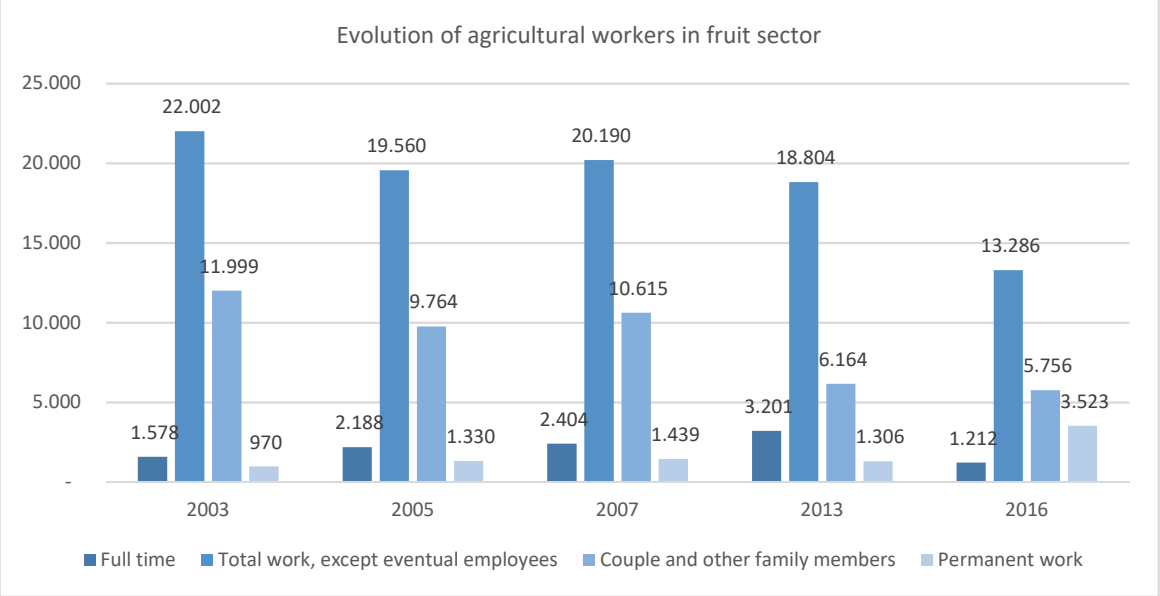
Source: Survey of the structure of agricultural holdings, INE.

Figure 4.23: Evolution of agricultural work, fruit sector (AWU), 2003-2016



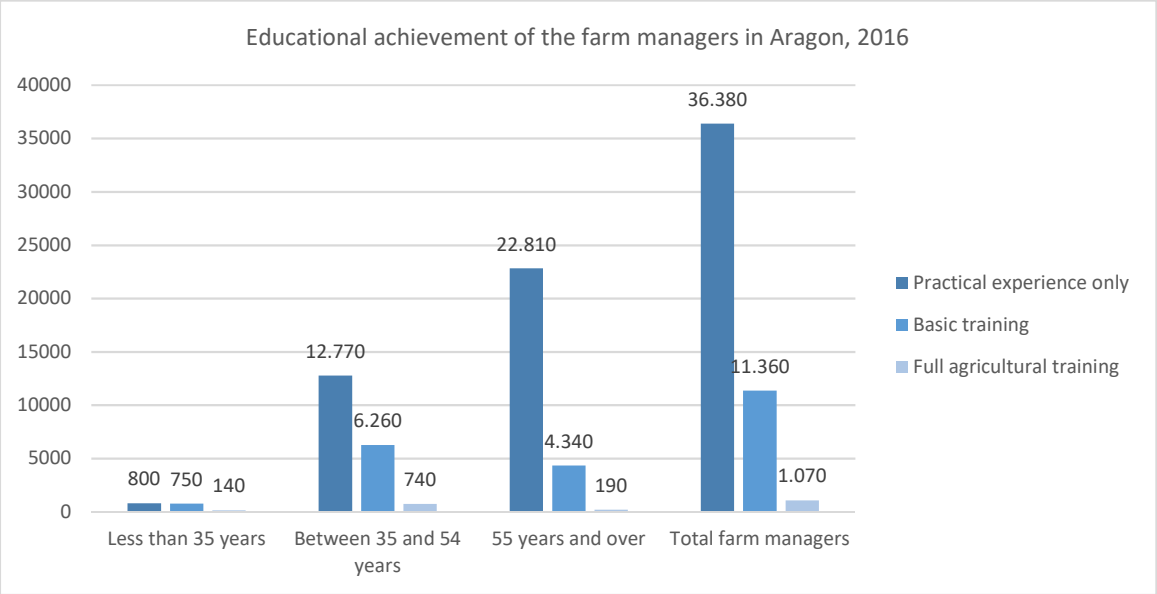
Source: Survey of the structure of agricultural holdings, INE.

Figure 4.24: Evolution of agricultural workers in fruit sector, 2003-2016



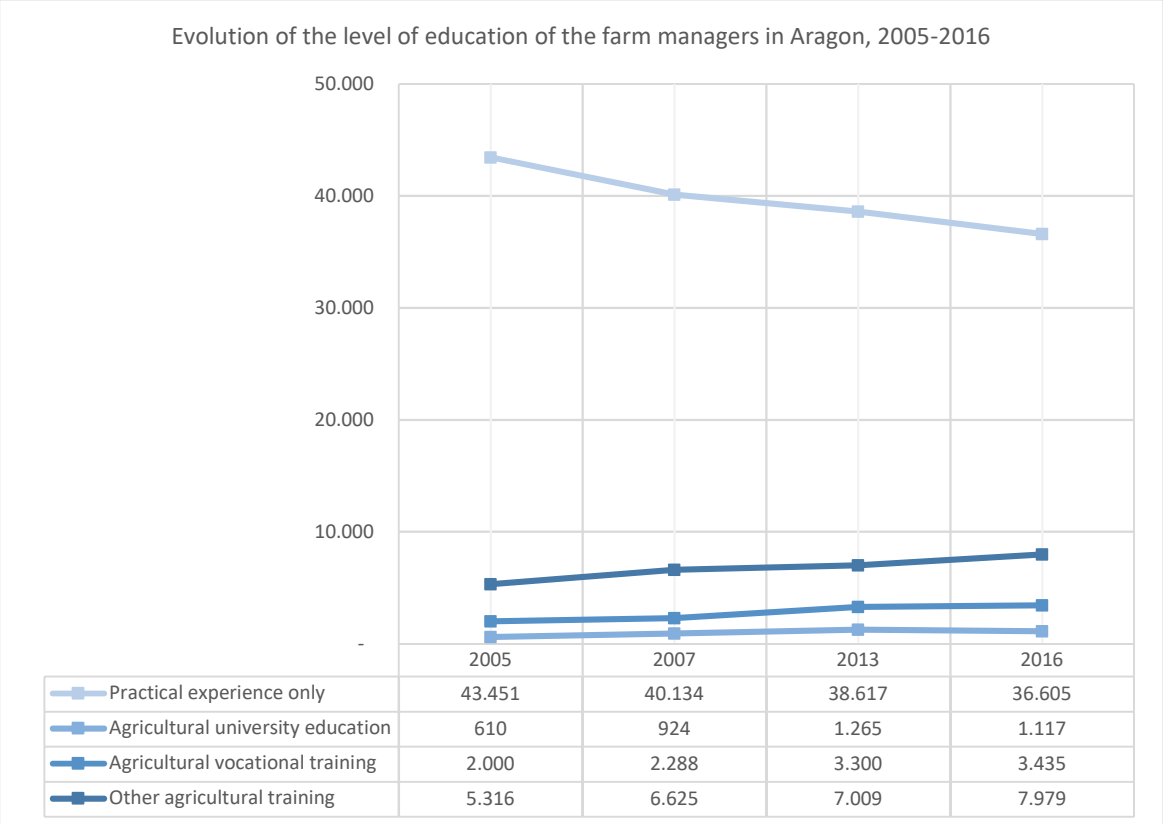
Source: Survey of the structure of agricultural holdings, INE.

Figure 4.25: Educational achievement of the farm managers in Aragon, 2016



Source: C.24, Agricultural training of farm managers, CAP agri indicator.

Figure 4.26: Evolution of the level of education of the farm managers in Aragon, 2005-2016



	2005	2007	2013	2016
Practical experience only	43.451	40.134	38.617	36.605
Agricultural university education	610	924	1.265	1.117
Agricultural vocational training	2.000	2.288	3.300	3.435
Other agricultural training	5.316	6.625	7.009	7.979

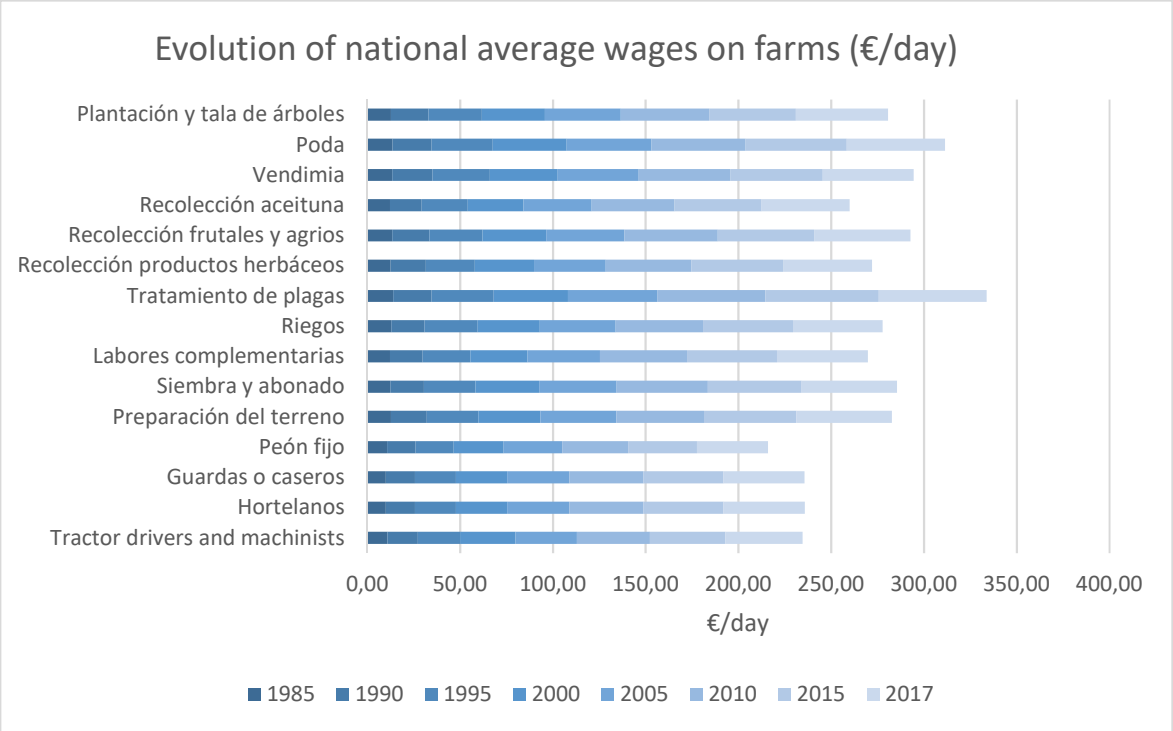
Source: Survey of the structure of agricultural holdings, INE.

Table 4.2: Agricultural labour productivity, agricultural factor and entrepreneurial income and gross fixed capital formation

	Unidad	Valor	Año	Valor actualizado	Año actualización
Agricultural labour productivity	€/UTA	28,557.70	2011		
Agricultural factor	€/AWU	37.78	2009	37,327.34	2015
Entrepreneurial income	€/AWU	31,384.90	2010	53,680.29	2015
Gross fixed capital formation	€ million	381.23	2011	1,576.70	2017

Source: RDP Aragon 2014-2020 and C.25, C.26 and C.28 CAP context indicators.

Figure 4.27: Evolution of national average wages on farms (€/day), 1985-2017



Source: Agricultural wages, Ministry of Agriculture, Fisheries and Food of Spain.

Table 4.3: Evolution of complementary activities on the farm, 2003-2016 (nº of holdings)

	2003	2005	2007	2013	2016
Total	652	1,125	1,519	1,361	939
Tourism, accommodation and other recreational activities	138	241	447	322	193
Artesanía	–	–	9	14	–
Processing of agricultural products (cheese, wine...)	202	554	565	64	111
Production of renewable energy for sale (wind, biogas, solar...)	2	2	26	91	42
Wood processing	–	–	18	13	–
Aquaculture (fish breeding, crabs,...)	–	10	–	–	–
Contractual agricultural work for other farms	232	263	276	563	460
Non-agricultural work under contract	–	–	–	76	32
Forestry	–	–	–	61	1
Provision of health, social or educational services	–	–	–	–	32
Other	78	55	178	310	109

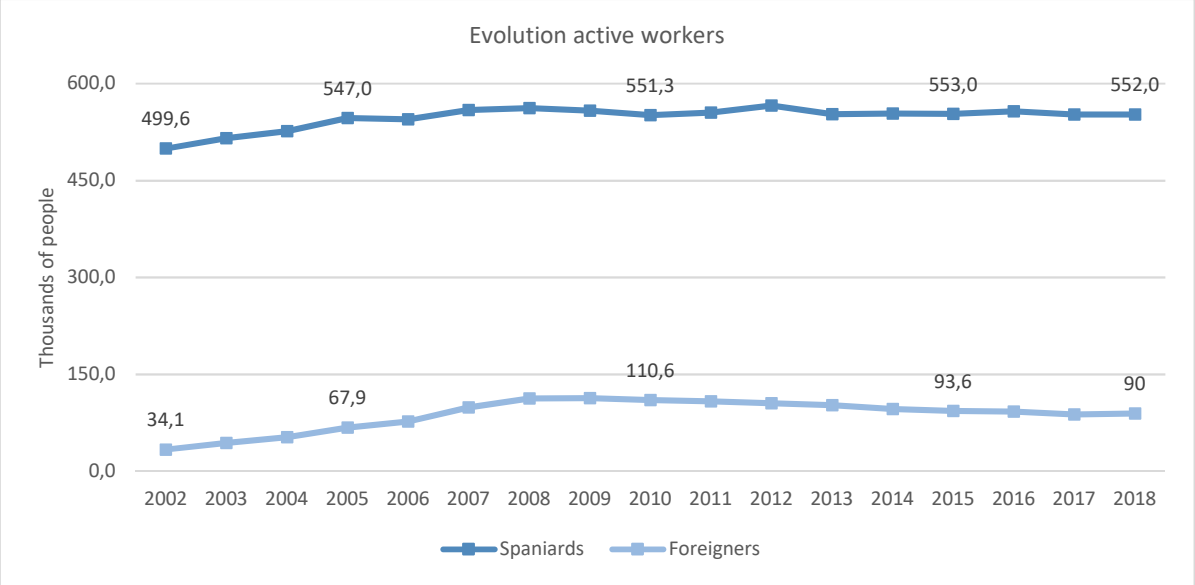
Source: Survey of the structure of agricultural holdings, INE.

Table 4.4: Importance of complementary activities on the farm

	2013	2016
% <= 10	560	517
10< % < 50	544	334
50< % < 100	257	88

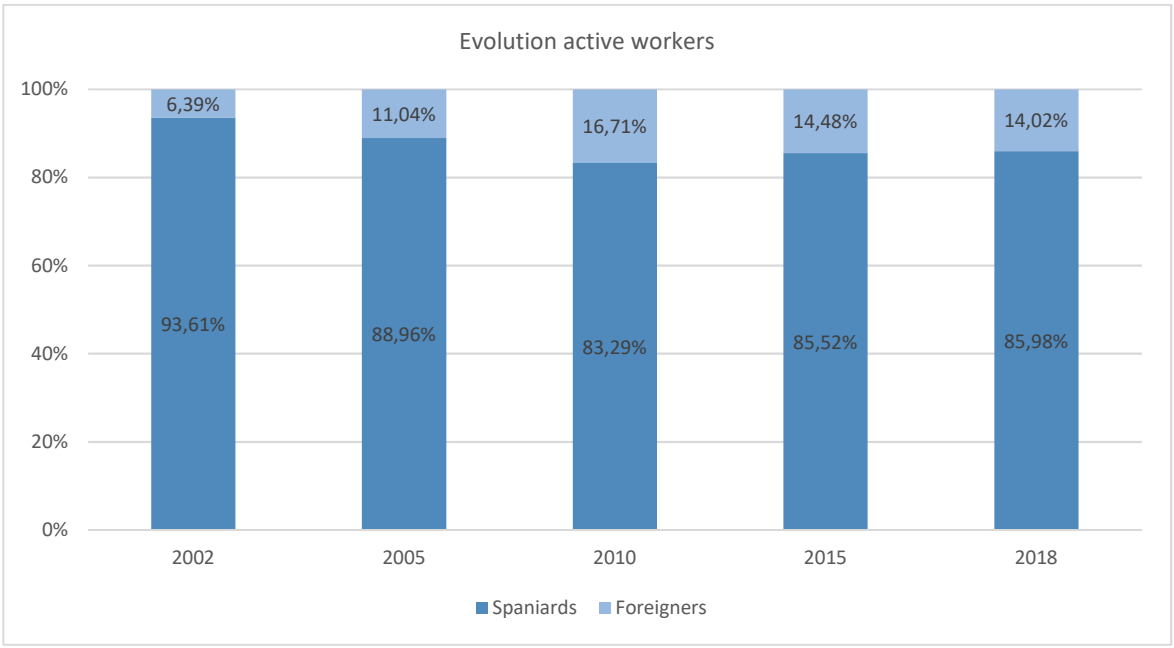
Source: Survey of the structure of agricultural holdings, INE.

Figure 4.28: Evolution active workers, 2002-2018



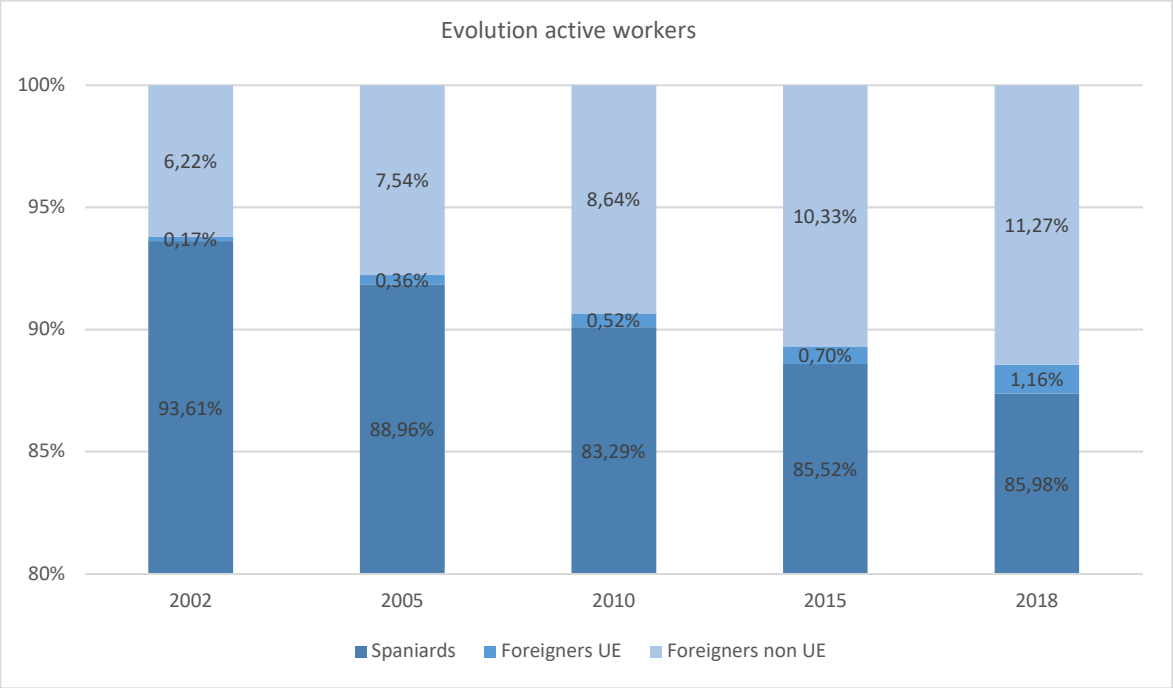
Source: Population over 16 years of age, by nationality, relationship with economic activity and sex. Aragonese Institute of Statistics.

Figure 4.29: Evolution active workers, shares, 2002-2018



Source: Population over 16 years of age, by nationality, relationship with economic activity and sex. Aragonese Institute of Statistics.

Figure 4.30: Evolution active workers, shares, 2002-2018



Source: Population over 16 years of age, by nationality, relationship with economic activity and sex. Aragonese Institute of Statistics.

5. SOUTHERN AND EASTERN REGION (IRELAND)

Country	Ireland
Region (NUTS 2)	Southern and Eastern Region (IE02)
Cluster	5

5.1. Contextual information on the agricultural labour market

5.1.1. Territorial characterisation of the region

The Southern and Eastern NUTS2 region of Ireland covers an area of 36,414 km², or just over half of the total area of Ireland. It is made up of 13 counties with four cities, including Dublin, the most densely populated part of the country. Ireland is variable geographically and from an agricultural perspective. The climate is mild and can be described as temperate oceanic with cool summers and mild winters. Prevailing winds are from the southwest, and the north Atlantic current keeps the country warm in winter and cool in summer, with relatively high levels of rainfall year round. Rainfall varies from west to east with the western coastal areas being receiving considerably more rain (ranging from 1,400mm on the south west coast to 762mm in Dublin on the east side of the country), although rainfall can be significantly higher in mountain regions. Average temperatures range from 4 – 7° C in winter to 14 – 16°C in summer. Wind can be a significant factor affecting temperatures, particularly in the western coastal regions.

Figure 5.1: Bright green area is the Southern and Eastern NUTS 2 region

Source: NUTS 2 statistical regions of the Republic of Ireland
https://ipfs.io/ipfs/QmXoypizjW3WknFiJnKLwHCnL72vedxjQkDDP1mXWo6uco/wiki/NUTS_2_statistical_regions_of_the_Republic_of_Ireland.html

The EU NUTS 2016 classification is valid since January 2018 and reflects the new regional assembly structure in Ireland under the 2014 Local Government Act. These changes included the alteration of NUTS 2 regional boundaries and the creation of a third NUTS 2 level region. The changes are depicted n the Table below. For the purposes of this case study however, we have focused on the pre-2018 NUTS2 boundary in order to access relevant data before and up to 2018.

Table 5.1: Changes to the Southern & Eastern NUTS2 Region adopted in 2018

Prior to 2018	After 2018
Southern & Eastern NUTS2 Region	Southern NUTS2 Region
Dublin City	Clare Dublin
Dun Laoghaire-Rathdown	Limerick City & County
Fingal	Tipperary
South Dublin	Carlow
Kildare	Kilkenny
Meath	Waterford City & County
Wicklow	Wexford
Clare	Cork City
Limerick City	Cork County
Limerick	Kerry
North Tipperary	
Carlow	
Kilkenny	
South Tipperary	
Waterford City	
Waterford	
Wexford	
Cork City	
Cork	
Kerry	

The richest land is in the southern part of the country and the poorest land in the north and west. Dairy farming tends to dominate the south and south west, and most of the arable land is in the (slightly drier) south-east. Beef and sheep tend to be dominant in the north and west of the country. Statistical evidence indicates that the dairy sector is by far the most productive area of agriculture in Ireland, while Beef and sheep production are the most vulnerable sectors (a significant proportion of farms in this sector are not financially sustainable without CAP support payments). Farms tend to be larger and more productive in the south, and smaller and more marginal in the north and west. Recent statistics from Eurostat suggest that the Southern NUTS2 region is one of the most significant cattle production areas in the EU-28 as well as being the second most productive region for dairy. (Irish Examiner, 18th

September 2019. https://www.irishexaminer.com/breakingnews/farming/Eurostat-says-ireland-southern-nuts2-region-no-1-in-europe-for-cattle-951636.html)

5.1.2. Background data on the agricultural sector and farming employment in the CS region

Background data on the agricultural sector in Ireland

Ireland has a total of 137,500 farmers (2016 survey data) the vast majority of which are family farms and the majority (88%) of farm holders are male. The farm population shows an aging structure (see Figure 2.1), in common with many other parts of Europe with more than half of holders aged 55 or over, while just 5% of farm holders were aged under 35. The proportion of farm holders aged 65 and over was highest in the Mixed Field Crops (40.2%), Specialist Beef (32.4%) and Specialist Sheep (29.8%) farm types. Figure 5.2 illustrates the gender breakdown with the majority of non-family labour being male with a more significant number of female family workers involved in farm work.

More than half (72,500) of farm holders stated that farming was their sole occupation, while just under one-quarter (23.5%) regarded it as a subsidiary occupation. This statistic hides considerable variability across the sector with almost half (52.1%) of farm holders for whom farming was their sole occupation being in the Specialist Beef production category, and a further 17.5% were in Specialist Dairying. Specialist Dairying had the highest proportion of farmers with farming as their sole occupation (78.9%).

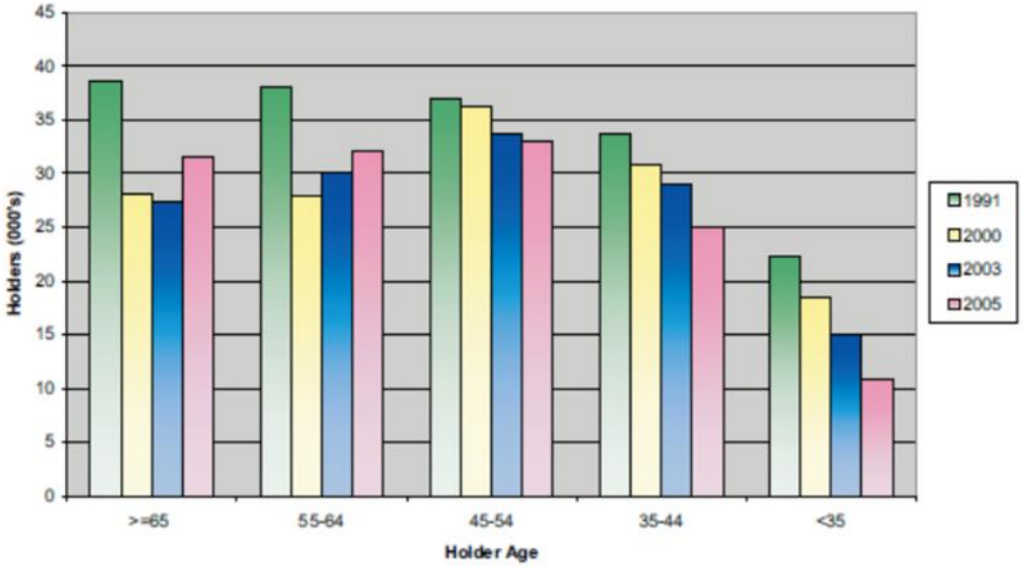
A significant number (approximately 60%) of farm holders are part-time, while only 40% (50,500) worked a full AWU in 2016, and a further 21.1% worked between 0.75 and 1 AWU. In 2016 a total of 265,400 people worked on farms. Of these, 51.7% (137,100) were the farm holders, 41.4% (109,800) were family members, and the remainder (18,500) were non-family workers. Just over one quarter (26%) of people working on farms worked full-time (1.00 Annual Work Unit) while 42.8% contributed less than half an Annual Work Unit. The table below summarises the key aspects of the farming context.

Table 5.2: Farm Ownership and workforce – all Ireland (2016 data)

Farm Holder
– 137,500 farms in Ireland, of which (99.7%) were classified as family farms. – Over 88% (121,100) of family farm holders were male. – Over half of farm holders aged 55 or over; 5% of farm holders aged under 35. – The proportion of farm holders aged 65 years: Mixed Field Crops (40.2%), Specialist Beef (32.4%), Specialist Sheep (29.8%).
Significance of Farm work
– Over half (72,500) of farm holders stated that farming was their sole occupation; (23.5%) regarded it as a subsidiary occupation. – 52.1% of farm holders for whom farming was their sole occupation were in the Specialist Beef production category, and a further 17.5% were in Specialist Dairying. – Specialist Dairying had the highest proportion of farmers with farming as their sole occupation (78.9%). – Those in the Specialist Sheep and Mixed Field Crop farm types were least likely to have farming as their sole occupation. – 40% (50,500) of farm holders worked a full AWU in 2016, while a further 21.1% worked between 0.75 and 1 AWU.
Farm Workforce
– A total of 265,400 people working on farms: – 51.7% (137,100) farm holders; 41.4% (109,800) family members; remainder were non-family workers (18,500). – Over a quarter (71,700) of those working on farms were female. However, less than one quarter (16,100) were holders of the farms on which they worked. – 26% of people working on farms worked full time (1.00 Annual Work Unit); – (42.8%) contributed less than half an Annual Work Unit.

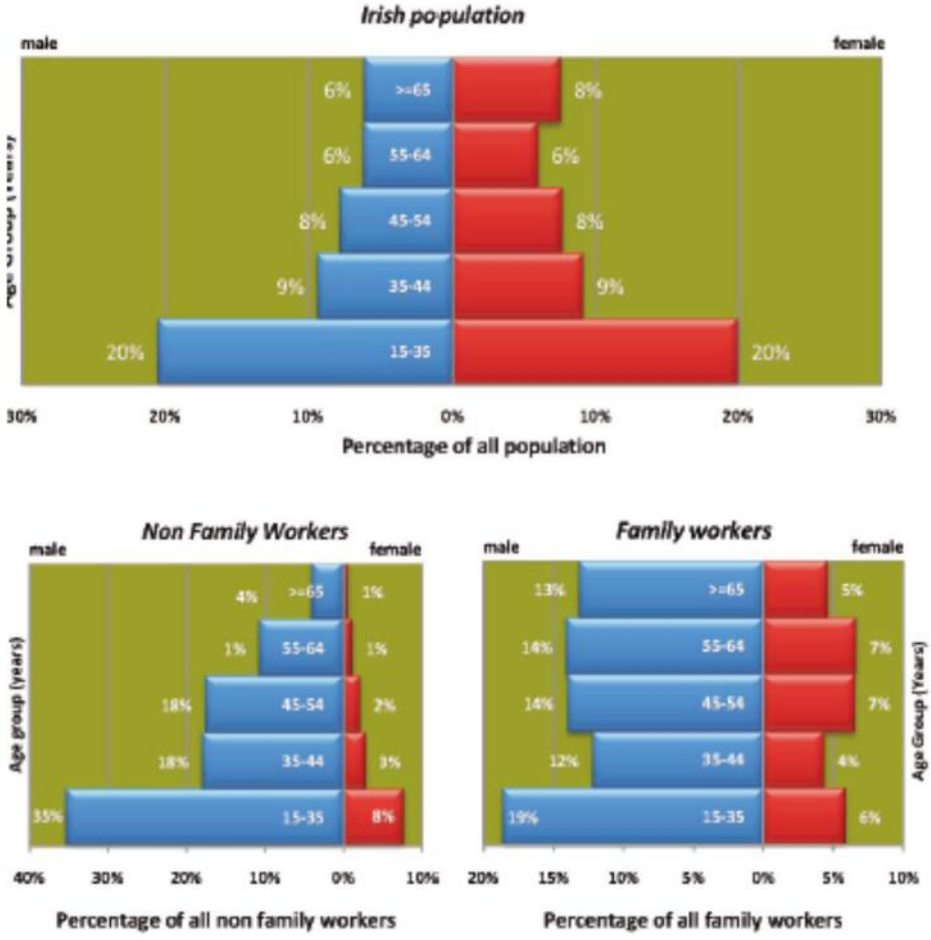
Source: CSO Ireland, Farm Structure Survey 2016.

Figure 5.2: Age of farm holders Ireland 1991-2005



Source: CSO Ireland, Farm Structure Survey 2003 and 2005.

Figure 5.3: Age pyramids – Ireland 2007



Source: CSO Ireland, Farm Structure Survey 2007.

Regional data on the agricultural sector

Table 5.3 and Table 5.4 illustrates the overall economic situation in the Southern and Eastern NUTS2 region of Ireland and the contribution from the agricultural sector. The population has remained almost stable over the period with only a very slight increase (from 3.03 million to 3.38 million) and the number of persons at work shows a similar pattern with only a slight increase from 1.446 million to 1.465 million over the ten-year period. There has been a significant increase in gross value added (GVA) across the regional economy over the period 2005-2015, which has more than doubled over the ten-year period. The data suggest that although GVA has increased in the agricultural, forestry and fishing sector it has done so at a much lower level (32%), than some other sectors (e.g. a 118% increase for the manufacturing, building and construction sector). Table 5.4 for the agricultural sector alone suggests that GVA at basic prices has increased by 21% over the period.

Table 5.3: Economic breakdown by sector, measured in GVA and labour force

Economic overview and breakdown	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Gross value added (GVA) at Basic Prices (€ million)	122,953	131,758	142,395	137,635	126,521	125,620	128,865	132,216	138,245	150,021	213,542
Gross value added (GVA) at Market Prices (€ million)	138,649	149,857	161,051	153,410	138,981	138,151	141,054	144,796	151,631	164,879	230,101
Population (Thousand)	3,030	3,101	3,208	3,286	3,314	3,325	3,336	3,344	3,349	3,361	3,380
Persons at work (Thousand)	1,446	1,514	1,588	1,601	1,471	1,414	1,387	1,379	1,394	1,443	1,465
GVA at Basic Prices – Agriculture, Forestry and Fishing (€ million) (Primary)	1,220	1,203	1,504	1,212	736	1,148	1,522	1,169	1,446	1,723	1,611
GVA at Basic Prices – Manufacturing, Building and Construction (€ million) (Secondary)	41,144	43,769	44,952	38,378	35,253	32,148	34,879	35,571	36,590	40,474	90,082
GVA at Basic Prices, – Market and Non-Market Services (€ million) (Tertiary)	79,025	86,337	96,147	97,008	88,336	91,903	92,123	94,962	101,329	109,160	121,955
Gross value added (GVA) per person at Basic Prices (€)	40,583	42,490	44,392	41,892	38,174	37,782	38,630	39,544	41,278	44,634	63,179

Source: Central Statistics Office of Ireland, https://www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=RAA01&PLanguage=0

Table 5.4: Agricultural gross value added

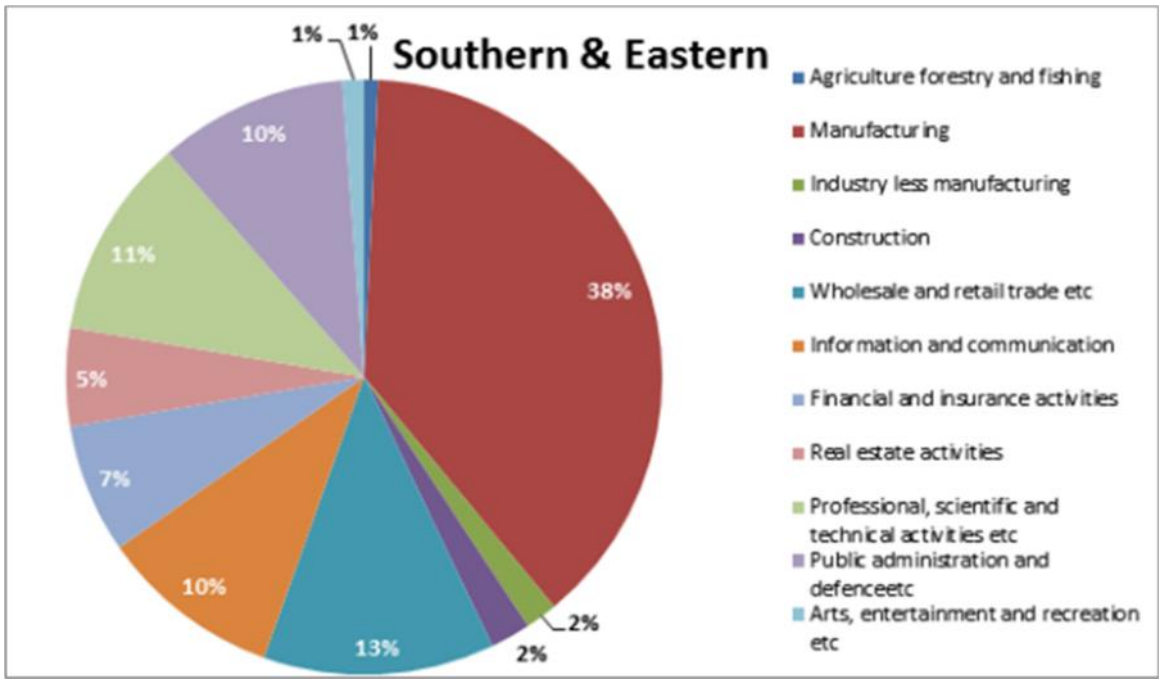
Agriculture production data	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Goods Output at Producer Prices (€ million)	3,243	3,350	3,726	3,858	3,046	3,593	4,091	4,204	4,800	4,569	4,600	4,560
Agricultural Output at Basic Prices (€ million)	3,630	3,499	3,885	4,019	3,205	3,784	4,289	4,390	5,014	4,781	4,759	4,783
Gross value added at Basic Prices (€ million)	1,324	1,063	1,336	1,127	661	1,040	1,398	1,226	1,466	1,536	1,641	1,606
Net Value Added at Basic Prices (€ million)	919	648	891	644	172	583	971	778	1,023	1,055	1,130	1,062
Agricultural Output at Basic Prices per inhabitant (€)	1,198	1,128	1,211	1,223	967	1,138	1,286	1,313	1,497	1,422	1,408	
Gross value added at Basic Prices per inhabitant (€)	437	343	416	343	199	313	419	367	438	457	486	

Source: Central Statistics Office of Ireland, https://www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=ACA01&PLanguage=0

The data also indicate the impact of the economic recession which started in 2008. The number of persons working, for example, dropped from a high of 1.601 million in 2008 to a low of 1.379 million in 2012, and had still not recovered to its high point by 2015. Overall GVA also declined from a high in 2008 not reaching the same level until 2013. The effects of the recession were also felt in the agricultural sector with GVA declining in 2008 to its lowest level in 2009 and then not reaching its previous high point until 2011, illustrating perhaps, the underlying strength of the sector based on exports of agricultural produce.

Figure 5.4 provides some context for the agricultural sector within the region indicating that in terms of gross value added agriculture, forestry and fishing contributes only 1% to the total regional incomes, however, this hides the significance of the agricultural sector across the region in terms of economic importance.

Figure 5.4: Gross value added by Sector in the Southern and Eastern Region



Source: CSO, 2018, County Incomes and Regional Accounts.

Table 5.5 to Table 5.7 provide some contextual information on the farming sector across the Southern and Eastern NUTS2 Region in Ireland. In terms of agricultural labour there has been virtually no change in the number of farm holders across the 2003-2016 period (49,900 in 2003 down to 49,400 in 2016) but at the same time the number of family members working on the farm appear to have increased from a low of 10,800 in 2007 to 23,400 in 2016 while there has only been a very slight increase in regular non-family labour (5,100 to 5,900 over the 2003-16 period).

In terms of gender the majority (72%) of employed farm labour is male and 28% female, with virtually no change in the numbers over the 2013-16 period. What the data do indicate is an increase in part-time workers, along with a slight decrease in the number of directly employed full-time workers on the farm across the 2003-16 period. In 2016 approximately 29% of all farm labour was full-time, while just under one quarter (24%) were working in the 0 – <0.25 AWU category per year, a total of 43% worked less than half time and 28% worked more than half time but less than full time. In terms of part-time labour there has been a significant increase in the number of units undertaken by part-time workers (including farm holders) over the 2003-16 period.

The data in Table 5.5 suggest little change in the overall number of persons directly employed over the period. Across the region there is a slight increase in the number of farmers over the 2003-16 period (from 62,500 to 64,700) a small increase in the number of family members working and a small increase in the number of non-family regular workers (from 8,500 to 10,500 persons). Over the 2013-16 period the proportions of directly employed labour that are farm holders (50%), family members (42%) and non-family regular workers (8%) have been virtually stable.

Table 5.6 provides some additional information on age and AWUs worked by "farm holders" across the 2003-16 period for the Southern & Eastern region, taken from the Ireland CSO farm structure surveys. The data indicate a decrease of 30% in the number of full-time farm holders in the region compared to an overall 53% increase in those working part-time. Table 5.6 also identifies a slight decrease in the number of farmers undertaking farming as a sole occupation along with an increase in the number of those for whom farming is a "major occupation"; again suggesting a decline in full time farmers and an increase in part-time farmers. In terms of age Table 5.6 indicates an increasing age structure of farm holders with a decline in the number of farm holders under 44 years and a significant increase in the number of farm holders over 65 years.

Table 5.5: Agricultural labour force in the Southern & Eastern NUTS2 Region

Agriculture labour data: S-E IE	In thousand				Percentage	
	2003	2007	2013	2016	2013	2016
Labour directly employed by the farm (by type in AWU)						
Holder	49.9	45.9	49.8	49.4	59%	61%
Other family workers	12.4	10.8	24.6	23.4	29%	29%
Spouse	12.2	10.3				
Regular non-family workers	5.1	5.0	5.9	5.9	7%	7%
Non-Regular Labour			3.7	1.9	4%	2%
Total AWU	79.6	71.9	84	80.6	100%	100%
Labour directly employed by the farm (by gender in persons)						
Male			95.1	94.1	72%	72%
Female			37.3	36	28%	28%
Labour directly employed by the farm (by Annual Work Unit in persons)						
0 – < 0.25	7.3	-	30.8	30.7	23%	24%
0.25 – < 0.50	6.8	-	24.8	24.3	19%	19%
0.50 – < 0.75	6.0	-	19.8	19.4	15%	15%
0.75 – < 1.00	4.2	-	16.7	17.4	13%	13%
1.00 (full-time)	39.5	-	40.2	38.4	30%	29%
Labour directly employed by the farm (by type in persons)						
Holder	62.5	59.1	65.6	64.7	50%	50%
Spouse & other family	51.3	50.2	56.9	55	43%	42%
Regular non-family workers	8.5	9.2	9.8	10.5	7%	8%

Source: Central Statistics Office of Ireland.
By gender: https://www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=FSA26&PLanguage=0
By Annual Work Unit: https://www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=FSA24&PLanguage=0
By type (Persons) (Thousand): https://www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=FSA25&PLanguage=0
By type (AWU)(Thousand): https://statbank.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=FSA27&PLanguage=0
for 2007: Farm Structure Survey 2007
https://www.cso.ie/en/media/csoie/releasespublications/documents/agriculture/2007/Farm_Structure_Survey_2007.pdf
for 2003: Farm Structure Survey 2003 and 2005
https://www.cso.ie/en/media/csoie/releasespublications/documents/agriculture/2005/farmstructure_20032005.pdf

Table 5.6: Family Farms[17] classified by characteristics of Holder Southern and Eastern Ireland ('000)

Characteristics of holder	2003	2013	2016
Age:			
< 35	7.8	4.1	3.5
35 – 44	14.7	11.9	11.0
45 – 54	16.4	17.1	16.2
55 – 64	13.9	16.6	16.5
>= 65	11.0	16.0	17.6
Annual work unit[18]			
0 – < 0.25	7.3	5.4	4.8
0.25 – < 0.50	6.8	8.9	8.6
0.50 – < 0.75	6.0	10.9	11.2
0.75 – < 1.00	4.2	11.7	12.6
1.00	39.5	28.8	27.5
Importance of farm work			
Sole Occupation	38.5	35.3	36.3
Major Occupation	8.6	15.4	14.0
Subsidiary Occupation	15.6	14.9	14.4

Source: CSO Ireland, Farm Structure Survey 2003, 2013, 2016.

Agricultural produce

Table 5.8 and Table 5.9 provide some basic data on the main types of agricultural produce for the Southern & Eastern Region. In terms of agricultural output value, livestock and livestock products dominate, while cereals, vegetables, and horticulture are far smaller (in terms of value). The majority of arable production lies in the drier eastern parts of the region while livestock, and in particular specialist dairy and beef production are more dominant in the western and central parts of the region. Across the 2005-2016 period livestock and livestock products have increased in output along with cereals (value has more than doubled), potatoes, vegetables and other horticultural products, while only "industrial" crops have declined. In terms of goods outputs at producer prices root crops and other vegetables have remained stable or even declined slightly in value while livestock and livestock products have all increased in value. Livestock output at producer prices has increased by 46% over the period and livestock product by 38%. It is also interesting to note that the value of cereal outputs has increased by 82% over the 10 year period.

[17] Farms run by commercial concerns or institutions are excluded from this table.
[18] One Annual Work Unit =1,800 hours or more of labour input per person per annum.

Table 5.7: Main types of agricultural products

Goods Output at Producer Prices	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
All Livestock (€ million)	1,319	1,382	1,371	1,488	1,276	1,260	1,471	1,714	1,778	1,735	1,944	1,936
Livestock – Cattle (€ million)	851	902	907	1,026	903	868	1,038	1,232	1,256	1,181	1,376	1,335
Livestock – Pigs (€ million)	155	165	155	182	143	172	204	231	251	246	231	228
Livestock – Sheep (€ million)	91	88	85	81	74	75	86	93	93	106	108	113
Other Livestock (€ million)	222	227	224	199	156	145	143	159	178	203	228	260
All Livestock Products (€ million)	1,054	1,048	1,306	1,306	897	1,262	1,505	1,339	1,697	1,700	1,523	1,461
Livestock Products – Milk (€ million)	1,038	1,033	1,292	1,292	884	1,246	1,485	1,318	1,673	1,676	1,496	1,435
Livestock Products – Other Products (€ million)	16	15	13	15	13	15	20	21	24	24	27	26
All Crops (€ million)	870	921	1,050	1,064	873	1,072	1,115	1,150	1,325	1,134	1,133	1,164
Crops – Cereals (€ million)	102	129	194	159	86	155	234	267	233	225	210	186
Crops – Root Crops (€ million)	117	79	74	60	63	87	65	77	121	66	93	103
Crops – Forage Plants (€ million)	470	525	590	652	528	647	620	617	784	649	625	662
Crops – Vegetables (€ million)	103	100	104	105	113	92	94	87	92	98	104	103
Crops – Fresh Fruit (€ million)	30	36	29	29	29	29	28	37	40	41	41	41
Crops – Turf (€ million)	7	8	8	7	8	7	7	6	0	0	0	0
Crops – Other Crops	42	43	51	51	46	54	66	60	56	56	61	70

Source: Central Statistics Office of Ireland, https://www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=ACA01&PLanguage=0

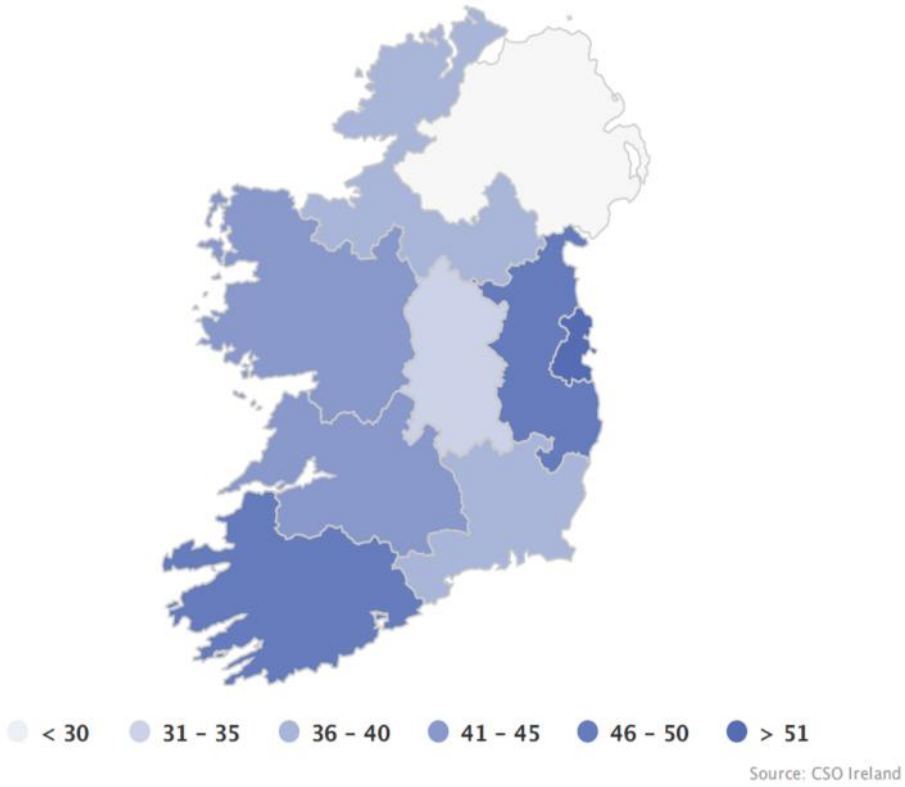
Agriculture output (Eurostat classification) (€ million)	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Cereals (including seeds)	150	179	275	226	127	235	314	335	305	300	305
Industrial crops	57	0	0	0	0	12	21	18	8	5	8
Forage plants	422	466	483	558	486	568	541	550	712	576	531
Vegetables and horticultural products	103	100	104	104	112	141	147	134	139	148	157
Potatoes (including seeds)	56	86	78	52	56	87	65	77	121	66	93
Fruits	30	36	29	29	29	28	28	37	40	41	41
Animals	1,569	1,380	1,363	1,496	1,285	1,262	1,473	1,716	1,766	1,731	1,947
Animal products	1,029	1,032	1,291	1,289	884	1,246	1,489	1,310	1,680	1,675	1,447

Source: Eurostat, https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=agr_r_accts&lang=en

Educational achievement of the Southern & Eastern region's population and agricultural training of the farm manager population

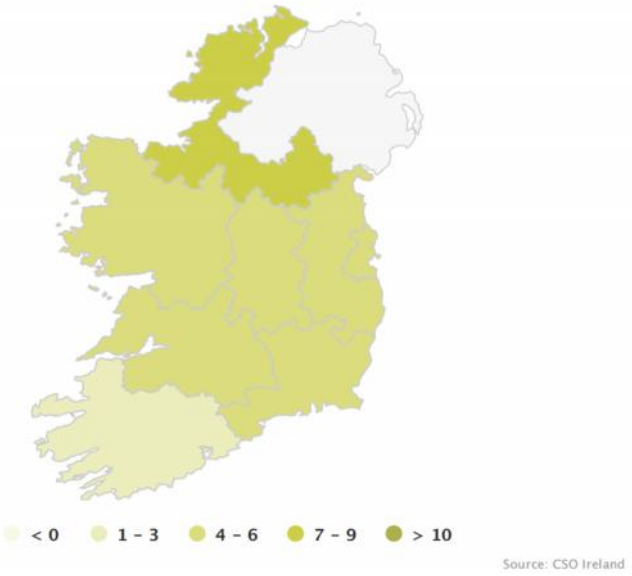
According to the 2016 Census education levels have greatly improved in Ireland since 1991. Of those aged 15 and over 42.0% had a third-level qualification, compared with 13.6% in 1991. The 2016 Census shows that, in general, women were better educated than men, with 43.2% of females aged 15 and over having a third level qualification compared with 40.7% of males. The counties with the highest rates of completed third-level education were Dún Laoghaire-Rathdown with 61.1%, Galway City with 55.2%, and Dublin City and Fingal, both with 48.7%.

Figure 5.5: Percentage of people 25-64 with third level education, NUTS1 Q2 2018



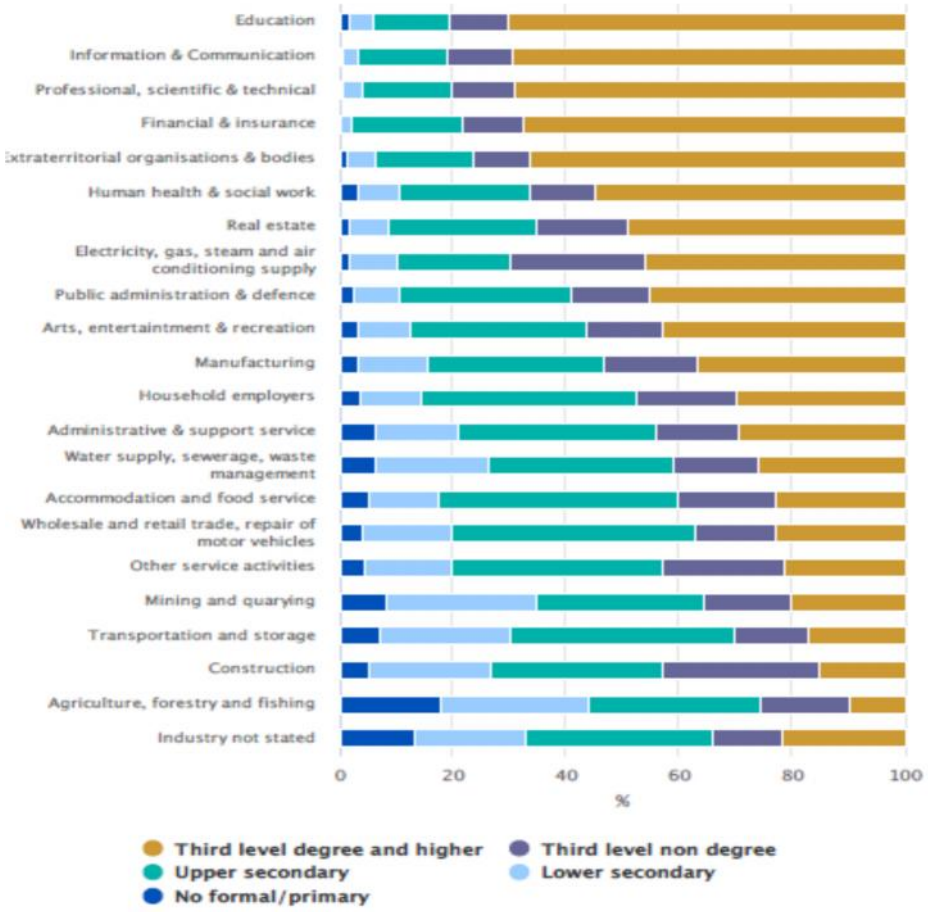
Source: CSO Ireland, 2018.

Figure 5.6: Percentage of people 25-64 with primary level of education, NUTS1 Q2 2018



Source: CSO Ireland, 2018.

Figure 5.7: Educational attainment of person at work by broad industrial groups, NUTS1 2016



Source: CSO Ireland, 2016.

It has been difficult to track down the educational level of the farming population as data have not been collected since 2007. Training of farm managers was part of the Farm Structure Survey conducted by Central Statics Office until 2007, since then no data available. However, Ireland is among the 8 Member States and 3 regions that added additional eligibility criteria with regard to appropriate skills and training in respects of the 2014-2020 CAP implementation period (BE-F, BE-W, BG, IE, ES, FR, HR, AT, PT, SK and UK-Northern Ireland). Of these, BE-W, ES, FR, PT and SK implemented the criteria related to both skills and training. In addition, Ireland applied the additional eligibility criteria to all young farmers applying for YFP. In order to be eligible for CAP support all young farmers have to complete a recognised course of education in agriculture giving rise to an award at FETAC level 6 or its equivalent.

Table 5.8 and Table 5.9 below illustrate the trend of educational attainment among the farm population across all of Ireland from 2003-2007. The data indicate a slight reduction in the number of farm managers that have no formal qualifications (i.e. practical experience only) and a small increase in the number of managers with some kind of formal qualifications. The main changes have occurred in the specialist dairy and beef sectors, which are the most profitable part of the agricultural economy.

The other key point to note from Table 5.8 and Table 5.9 is that it is the larger farms that tend to have managers with higher levels of formal qualifications. In 2007, for example, more than 80% of farm managers in categories of less than 10 ha only had practical experience and no formal training, compared to56% of farmers in the 30 – 50 ha farm size and 48% of those in the >100 ha size category. At the same time 26.8% of farm managers in the specialist dairy sector and 22% of farm managers in specialist tillage had either a certificate in farming or a full-time third level qualification, compared to only 11.4% of those in specialist beef and 7.7% of those in specialist sheep production.

The CSO data presented in the tables below indicates the beginnings of a current trend for a more educated and highly trained agricultural workforce. Interviewees have indicated that agricultural course recruitment is high (particularly after the 2008 financial crisis), partly driven by the desire of farming families to see their children receive university education, and partly by the criteria for accessing Young Farmer CAP Pillar 1 & 2 funding, which require completion of a level 6 certificate in agriculture.

Younger farmers thus tend to be more highly educated than the older generation. There is a lot more degree level and agricultural education occurring which suggests young people are interested in agriculture, although they may not all end up working in the sector after completion of their studies (Teagasc Interview 2019). In addition the young are attracted to the more profitable activities within agriculture (dairy, tillage), which is where there is most scope for developing profitably business. The Southern and Eastern Region has a higher proportion than average of large farms and a large proportion of both the dairy and tillage farms in Ireland. In general, it can be stated that farm managers in the region are likely to be managing larger farms and be more highly educated than those in the borders and northern areas of Ireland (where farms tend to be smaller, less profitable, and farm managers are older).

Table 5.8: Number of farm managers distinguished by level of training- Ireland 2003

Farm characteristics	Full-time 3rd level qualification	Certificate in farming or farm apprenticeship	Other formal course of at least 60 hours	Other courses	Practical experience only	Total
	'000					
Farm size (AAU) - hectares						
< 5	0.3	0.3	0.2	0.4	7.5	8.6
5 - < 10	0.4	0.7	0.5	1.2	17.1	19.9
10 - < 20	0.7	1.7	1.7	2.6	25.4	32.1
20 - < 30	0.5	2.2	1.9	2.3	17.0	23.9
30 - < 50	0.9	4.7	3.5	2.5	16.5	28.1
50 - < 100	0.8	4.6	2.7	1.4	9.0	18.5
>= 100	0.4	1.1	0.6	0.3	2.1	4.5
Farm type						
Specialist tillage	0.4	0.8	0.5	0.4	2.6	4.6
Specialist dairying	0.8	5.6	4.1	1.6	12.2	24.3
Specialist beef production	1.4	5.2	3.7	5.1	52.2	67.7
Specialist sheep	0.4	0.8	0.8	1.5	12.3	15.7
Mixed grazing livestock	0.5	1.8	1.3	1.5	12.2	17.4
Mixed crops and livestock	0.2	0.7	0.5	0.3	2.0	3.8
Other	0.3	0.3	0.2	0.2	1.1	2.0
Economic size (ESU)[1]						
0 - < 2	0.3	0.4	0.3	0.8	14.0	15.8
2 - < 4	0.3	0.5	0.4	1.0	13.8	16.1
4 - < 8	0.7	1.5	1.3	2.7	23.2	29.3
8 - < 16	0.7	2.7	2.2	2.7	20.0	28.4
16 - < 40	0.9	4.5	3.4	2.2	15.5	26.5
40 - < 80	0.7	4.2	2.6	0.9	6.3	14.7
>= 80	0.5	1.4	0.8	0.3	1.8	4.8
Total	4.0	15.3	11.0	10.7	94.7	135.6
of which:						
Farms keeping accounts	3.5	13.7	9.6	8.9	51.1	86.8

[1] 1 European size unit = €1,200 using 2002 standard gross margins - see introductory text

Source: CSO Ireland, Farm Structure Survey 2003.

Table 5.9: Number of farm managers distinguished by level of training- Ireland 2007

Farm characteristics	Full-time 3rd level qualification	Certificate in farming or farm apprenticeship	Other formal course of at least 60 hours	Other courses	Practical experience only	Total
	'000					
Farm size (AAU) - hectares	5.2	12.8	12.7	12.0	85.5	128.2
< 5	0.2	0.2	0.2	0.4	7.4	8.4
5 - < 10	0.6	0.5	0.5	1.2	13.5	16.2
10 - < 20	1.0	1.5	1.7	3.3	22.9	30.5
20 - < 30	0.9	2.2	2.4	2.7	15.8	24.1
30 - < 50	1.0	3.8	4.0	2.7	14.9	26.3
50 - < 100	1.0	3.8	3.2	1.4	8.9	18.2
>= 100	0.4	1.0	0.7	0.2	2.2	4.5
Farm type						
Specialist tillage	0.4	0.7	0.6	0.4	2.8	5.0
Specialist dairying	0.9	4.3	4.1	1.2	8.9	19.4
Specialist beef production	2.3	5.5	5.5	6.4	48.6	68.3
Specialist sheep	0.5	0.7	0.6	2.1	11.6	15.5
Mixed grazing livestock	0.6	1.2	1.3	1.5	11.3	16.0
Mixed crops and livestock	0.2	0.4	0.4	0.3	1.8	3.1
Other	0.2	0.1	0.1	0.1	0.6	1.0
Economic size (ESU)[1]						
0 - < 2	0.5	0.4	0.5	1.5	17.9	20.8
2 - < 4	0.5	0.6	0.6	1.8	13.7	17.2
4 - < 8	0.8	1.4	1.6	2.8	17.9	24.6
8 - < 16	1.1	2.6	2.7	3.0	16.6	25.9
16 - < 40	1.1	3.4	3.5	2.0	12.5	22.5
40 - < 80	0.7	3.0	2.7	0.8	5.3	12.5
>= 80	0.5	1.4	1.0	0.2	1.6	4.6
Total	5.2	12.8	12.7	12.0	85.5	128.2
of which:						
Farms keeping accounts	4.3	11.5	11.0	9.8	39.2	75.9

[1] 1 European size unit = €1,200 using 2004 standard gross margins - see introductory text

Source: CSO Ireland, Farm Structure Survey 2007.

Table 5.10 to Table 5.13 provide some data on labour productivity, costs and farm diversification. Table 5.10 suggests a 14% increase between 2013 and 2016 in labour productivity while Table 5.11 indicates a 62% increase in net entrepreneurial income across the 2007-17 period. The impact from the financial crisis of 2008 is again apparent in the sharp decline in income experience sin 2009-10, although the sector appears to have recovered relatively quickly, with income stabilising and growing once more from 2014 onwards. Fixed capital formation however has declined by 37% across the same ten-year period. In 2009 fixed capital formation dropped to around one quarter of the level in the previous year and in 2017 is still significantly below the value achieved in 2008. The data suggest that business survival has been at the expense of investment over the period since the financial crisis of 2008. At the same time it is surprising to see the limited level of diversification occurring in the farm sector across the region. Over the 2007-16 period the number of farms involved in some form of diversification or pluri-activity has increased, albeit from a low base level (even in 2016 only 9,200 farms were engaged in some form of pluri-activity across the region). The most commons forms of farm diversification were agricultural contracting and forestry work, only very small numbers of farms were diversifying into agritourism, on-farm processing, or other activities. Interviewees suggested that diversification opportunities were limited in many areas by the limited and dispersed nature of the population, and

limited levels of visitors (although even on the west coast which is a favoured tourism destination the level of diversification is limited).

Table 5.10: Agricultural labour productivity, agricultural factor and entrepreneurial income, gross fixed capital formation and farming wages

NUTS 2 level: Southern and Eastern Ireland	2013	2016
Labour productivity (Total GVA per Labour force directly employed – annual working unit) (€)	17,454	19,928
Factor Income (€ million)	1,890	1,937

Labour productivity: own calculations based on Central Statistics Office data on GVA and total AWU, following Eurostat C.14 indicator.
Factor income, Source: Central Statistics Office of Ireland,
https://www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=ACA01&PLanguage=0

Table 5.11: Net entrepreneurial income and gross fixed capital formation 2007-17

NUTS 1: Ireland (€)	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Net entrepreneurial income (€ million)	1,948	1,554	950	1,321	2,006	1,770	1,852	1,972	2,262	2,343	3,164
Gross fixed capital formation (€ million)	1,263	1,950	575	439	606	723	727	799	965	850	789

Source: Eurostat, https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=aact_eaa01&lang=en

Table 5.12: Labour costs

NUTS 2 level: Southern and Eastern Ireland	2013	2016
Compensation of Employees (€ million)	279	289

Source: Central Statistics Office of Ireland,
https://www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=ACA01&PLanguage=0

Table 5.13: Data on pluri-activity and on/off farm diversification

Data on diversification (farm in thousand) Southern and Eastern IE	2007	2013	2016
All farms reporting gainful non-agricultural activity	2.9	7.2	9.2
Farm tourism	0.7	0.7	0.8
Home crafts	0.1	0.2	0.2
Processing farm products	0.1	0.2	0.6
Renewable energy production	0.1	0.3	0.3
Wood processing	0.1	0.2	0.2
Fish farming	0.0	0.1	0.2
Agricultural contracting	1.6	1.3	2.7
Other contracting		0.6	1.1
Forestry		3.8	4.6
Provision of health, social or educational services			0.3
Recreational activities	0.3	0.5	
Other	0.3	0.5	

Source: Central Statistics Office of Ireland – Farm Structure Surveys
https://www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?maintable=FSA65&PLanguage=0

Migrant/seasonal workers

There is no data on migrant, seasonal workers nor foreign labour in agriculture available at any level-NUTS1 or NUTS2 within Ireland. With a low unemployment rate there is a need for additional labour from outside the EU, especially in horticulture, dairy and pigs, however, Irish farms still largely rely on the domestic workforce, especially family members, neighbours and casual labour. Only a small percentage of farms employ foreign workers. A recent survey by Teagasc (2018/19 not yet published), which aimed to identify the profile of dairy farm workers in Ireland and to establish current human

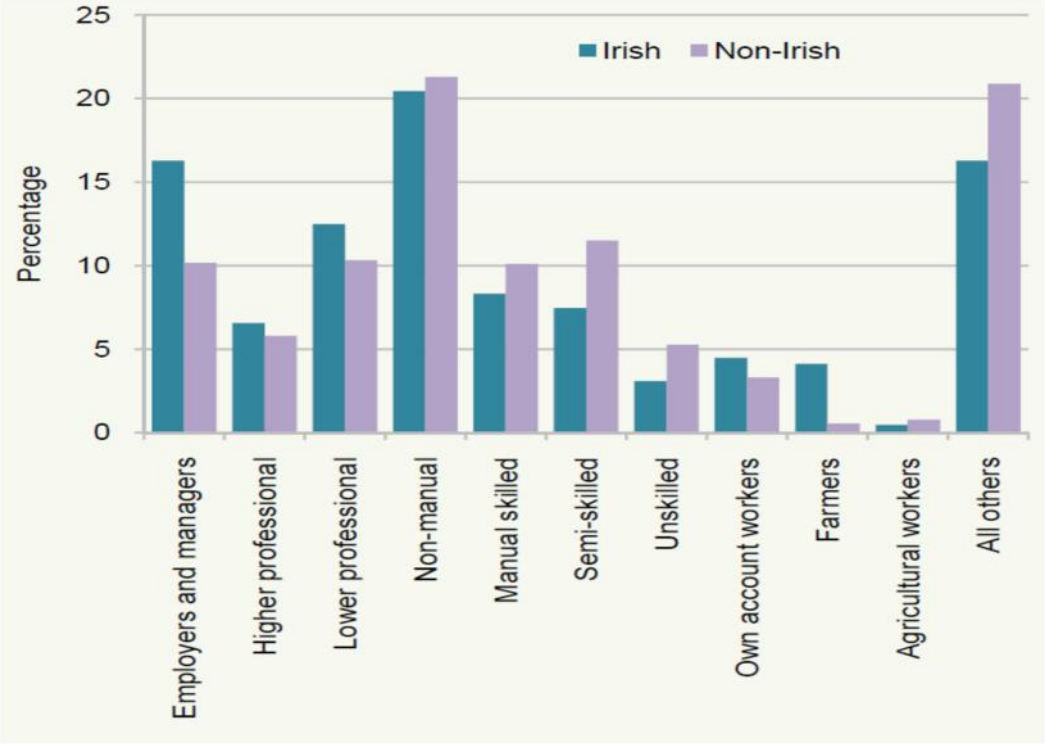
resource management practices, included a question on foreign labour. Out of a total of 302 farmers that responded to the question *"In the last 12 months have you employed any overseas workers on your farm?"* 22 (7.3%) answered yes, and 280 (92.7%) said no. the results suggest a relatively low level of migrant workers in the agricultural sector.

An indication on numbers of migrant workers in agriculture might be drawn from the number of working permits issued by the Department of Business, Enterprise and Innovation. In 2018 the Department announced changes to the Employment Permit Regulation- on a pilot basis- in order to make it easier for certain businesses in the agri-food sector to source workers outside EEA. The scheme has been in place since May 2018 and has capped General Employment Permits at 500 for horticulture workers at, 250 for meat processors, and 50 for dairy farm assistants (2018 quotas), again suggesting limited demand across the sector.

In 2019 a maximum quota of 1,500 General Employment Permits for Meat Processing Operatives has been set. There is a maximum quota of 300 General Employment Permits for Meat de-boners and a maximum quota of 101 General Employment Permits for Dairy Farm Assistants.

There are no data available for EEA nationals working in the agricultural sector.

Figure 5.8: Irish and non-Irish nationals by socio-economic group, 2011



Source: CSO Ireland, Census 2011.

CAP funding data and other institutional frameworks

NUTS 1

Table 5.14: CAP Pillar 1 and Pillar 2 funding in Ireland relevant to generational renewal

Instrument	Institutions	Level (national/regional)	In charge of (payment/screening of the request/control etc.)	Financial resources planned (€ public expenditures)	Financial resources spent in the area (€ 000 public expenditures)
Pillar 1 SFP	Young Farmers support	National	DAFM	€ 24 million per yr. This is a cut of 2% from the 2013 allocation.	YF scheme: 2015: € 18.6 m 2016: € 19m 2017: € 19.7m 2018: € 19.8 m Total Pillar 1: 2015 € 1.215bn 2016 € 1.213bn 2017 € 1.211bn 2018 € 1.211bn 2019 € 1.211bn Total for Pillar 1: 2015-2019 is € 6.06 billon
M 4.1	Young Farmer Capital Investment Scheme. 20% additional support for investment grants for YFs	National	DAFM	96,000,000	€ 73,118,864 (September 2019)
M 16 Collaborative Farming General EIP	Partnership agreement support.	National	DAFM	€ 2,206,000 3,000,000 4,000,000	
M19	LEADER	National	Department of Rural and Community Development, Pobal, local authorities	€ 250,000,000	??
M1	Knowledge Transfer Joint funded EAFRD & National Exchequer. Operating 2016-19	National	Innovation Unit, DAFM.	€ 125,800,000	??
M2	Advisory Services	National	DAFM	€ 8,300,000	??
National Reserve	From the Basic Payment envelope, a mandatory deduction of up to 3% must be applied for the National Reserve. This would result in a National Reserve of an estimated € 25 million/yr	National	DAFM		€ 31 million over 2015-18
Rural regeneration fund	Department of Rural and Community Development	National (Targeted at towns/villages with pop.< 10,000)		Target € 1 billion Over period 2019-27	€ 315 million allocated on a phased basis 2019 – 22.
The Future Growth Loan Scheme	Department of Bussiness, Entreprise and Innovation	National (focus on agri-food sector in rural areas)		Target € 300 million.Range from € 100,000 (€ 50,000 for farmers) to € 3 million per eligible business, with unsecured loans up to € 500,000.	

Instrument	Institutions	Level (national/regional)	In charge of (payment/screening of the request/control etc.)	Financial resources planned (€ public expenditures)	Financial resources spent in the area (€ 000 public expenditures)
Agriculture Cash Flow Support Scheme	DAFM and SBCI(strategic Banking Corporation Ireland)	National	AIB, Bank of Ireland and Ulster Bank	€ 150m, 2.95% interest for 2016,2017	
Brexit Loan Scheme	SBCI (support from FI)	National		€ 300m 31st March 2018 until 31st March 2020.	

Table 5.15: CAP Pillar 2 expenditure under TAMS II – Targeted Agricultural Modernisation Scheme payments- NUTS 1

Payments to date data (September 2019)	Expenditures (€)	Payments to date data (September 2019)	Expenditures (€)
AWNSS[19]	25,325,593	PPIS	971,595
DES	33,320,753	YFCIS	73,118,864
LESS	11,477,816	TCIS	10,516,461
OCIS	1,798,333		

Source: DAFM, 2019.

Table 5.16: CAP Pillar 2 payments under TAMS II- YFCIS payments NUTS 2

Nuts2 Code	Nuts 2	Amounts Paid (€)
IE04	Northern and Western	15,891,320.54
IE05	Southern	44,728,456.87
IE06	Eastern and Midland	12,024,371.27
Total		72,644,148.68

Source: DAFM 2019.

5.1.3. Prevalent challenges in the CS region

Key employment trends are driven by developments in the dairy and tillage sectors within the region. In tillage the increasing investment in machinery increases the demand for skilled labour and decreases the potential for using unskilled family or casual labour. An additional trend is the development of contracting, meaning farmers do not have to invest in machinery, or additional labour. The demand for unskilled labour is therefore likely to decrease over the coming years. Tillage however only covers 9% of the farmed area of Ireland, and in the Southern and Eastern region the current trend is for renting out land to the expanding dairy sector. Over the last six years approximately 15% land has been lost to tillage, largely as a result of the expanding dairy sector and a trend of mixed farms converting to dairy (although there has also been some afforestation). Arable

[19] TAMS II compromises six individual schemes:
1. **Young Farmer Capital Investment Scheme** (YFCIS).
2. Dairy Equipment Scheme (DES).
3. Organic Capital Investment Scheme (OCIS).
4. Low Emission Slurry Spreading Equipment Scheme (LESS).
5. Pig and Poultry Investment Scheme (PPIS).
6. Animal Welfare Safety and Nutrient Storage Scheme (AWNSS).

farming is currently not profitable, despite high yields, due to high input costs (Teagasc Interview, 2019).

In the dairy sector the move to larger herd sizes and improved milking technology (e.g. robotics) makes farms more labour efficient, and also decreases the scope for employment. The dairy industry requires skilled labour but has difficulty in getting and retaining workers. Few young people want to work with livestock as a career if there is no scope for development and career progression. Overall the trend in both dairy and tillage is for fewer but more highly trained workers (Teagasc Interview, 2019).

Age structure

Rural areas in Ireland tend to have a higher proportion of older men (over 45 years) compared to women, and the average age in rural areas is higher than in urban areas. The age difference between rural and urban areas has increased over the period 2011-16 from 1.9 years to 2.4 years. More significantly, across Ireland, there is a population peak in urban areas at 36 years, compared to 45 years in rural areas, associated with the movement of young people aged 19 – 24 years to the urban centres. In areas close to an urban centre such as Cork and Dublin different demographic characteristics are apparent with a larger proportion of younger people remaining in rural areas (where they can access the urban centres for employment). It is worth noting that Cork City was one of only three administrative areas in the whole country to see an increase in this age group (5.5%) over the period. (https://www.cso.ie/en/releasesandpublications/ep/p-cp3oy/cp3/agr/). A farm structure survey (CSO, 2016) noted only 5.4% of farmers were under 35 years of age and 30% over 65 years. There are a total of farms 137,500 farms in Ireland, of which all but 400 are classified as family farms (DAFM Fact Sheet on Irish Agriculture, 2018).

Financial sustainability

Statistical evidence indicates that the dairy sector is by far the most productive area of agriculture in Ireland, while beef and sheep product are the most vulnerable sectors (a significant proportion of farms in this sector are not financially sustainable without CAP support payments). Farms tend to be larger and more productive in the south, and smaller and more marginal in the north and west. A significant number of farms are too small to be financially viable in the long term.

The average farm size is 32.4 ha with an estimated 7,400 farm holders under 35 years of age (5.4% of the total) while 41,200 are over 65 years (30%). More than half (52.7%) of all farms are located in the Border, Midland and Western (BMW) region. Farms in the Southern and Eastern (SE) region tend to be larger than in other parts of the country. Farms in the SE region are 41.3% larger than those in the BMW region, with an average farm size of 38.3 hectares compared to 27.1 hectares. Almost one in five of all farms (18.0%) were 50 hectares or more in size while just over two in five farms (43.4%) had less than 20 hectares. Over 60% of farms of 10 hectares or less were in the BMW region, while almost 70% of farms of 100 hectares or more were in the SE region (Farm Structure Survey 2016).

According to the Farm Structure survey (2016) specialist Beef production continued to be the most common farm type or activity, accounting for over half of all farms in 2016 (72,400). Over two thirds of Specialist Sheep farms were in the BMW region (68.4%), while the SE Region contained almost 80% of Specialist Tillage farms (78.7%) and Specialist Dairying farms (77.2%). Specialist Beef production was more common in the BMW, where it accounted for almost six in ten of all farms (59.7%). In contrast under half (44.9%) of farms in the SE region were engaged in Specialist Beef production.

There were almost 4.9 million hectares of Agricultural Area Used (AAU) in 2016 in Ireland, including 427,800 hectares of commonage. Almost 4.1 million hectares was Grassland, with the remaining

composed of Cereals (280,400), Other Crops, Fruit and Horticulture (71,100 hectares) and Rough Grazing (16,300 hectares). Two thirds (280,000 hectares) of the total commonage was located in the BMW region. Just over half (54.0%) of the AAU was located in the SE Region. The SE region contained just over 80% of the total land devoted to cereals. (Farm Structure Survey 2016)

Farm viability of the 83,000 larger farms is also assessed in the Annual Review (DAFM, 2018). Economic viability is based on the extent to which capital investment and family labour can be remunerated. Farms are divided into three categories, which are described below with the proportion of farms assigned to each category in 2017:

- Viable (43%) – a farm is defined as economically viable if the farm income can remunerate family labour at the minimum agricultural wage, and provide a 5% return on the capital invested in non-land assets.
- Sustainable (27%) – if the farm business is not viable, the household is still considered sustainable if the farmer or spouse has an off-farm income.
- Vulnerable (30%) – a farm is considered to be economically vulnerable if the farm business is not viable and if neither the farmer nor spouse works off the farm.

There is considerable variation across the agricultural sector with 91% of dairy farms considered as economically viable or sustainable, compared to only 64% of "cattle other" farms. Geographically the area with the highest proportion (83%) of viable farms is the southwest (including County Cork) while the Border and Mid-West regions (including Co Mayo) has the highest proportion of vulnerable farms (33% and 36% respectively).

Access to land

Access to land remains difficult across Ireland. The majority of farms are family owned and there is a deep cultural bias towards holding on to land at any cost. No farmer wants to be the generation that failed and lost the family farm. Limited amounts of land are available for purchase although more is now becoming available for longer term rent (up to 15 years) due to tax incentives encouraging longer term leasing. A major constraint on farmers wishing to expand or new entrants is the "conacre" form of land rental (11 month rental) which mitigates against long term planning and investment in improvements.

Although tax incentives are increasing the availability of land for longer term rental the conacre agreements are still the most common form of rental, though it is expected this may slowly decline over the coming decade as long as the tax incentives remain in place.

5.1.4. Institutional frameworks governing the regional agricultural labour market

There are seven key schemes which have a direct impact on the agricultural labour market. The role of some of these schemes is described in more detail under the regional thematic focus on generational renewal.

Name of the institutional framework	Short description (aim and target beneficiaries)	Governance level (EU, national, regional, local)
Tax relief schemes – land lease	Exemption of Certain Income from Leasing of Farm Land € 18,000 per annum where leases are 5 or 6 years € 22,500 per annum where leases are 7 but less than 10 years € 30,000 per annum where leases are for 10 but less than 15 years € 40,000 per annum where leases are for 15 years or more	national
Stock Relief	25% General Stock Relief on Income Tax 100% Stock Relief on Income Tax for Certain Young Trained Farmers	national

Name of the institutional framework	Short description (aim and target beneficiaries)	Governance level (EU, national, regional, local)
	50% Stock Relief on Income Tax for Registered Farm Partnerships Relief for Stock Transfer due to discontinued Farming Trade	
Farm Assist Scheme	Farm Assist is a weekly means-tested payment for low-income farmers age between 18 and 66 years; who satisfy a means-test;	national
PRSI for Farming Spouses or Civil Partners	From 2014, certain spouses and civil partners of people who are self-employed can access social insurance by paying Pay Related Social Insurance (PRSI) to build up entitlement to social insurance benefits as a self-employed worker.	national
Rural Social Scheme (RSS)	The Rural Social Scheme (RSS) is aimed at low-income farmers and fishermen/women. To qualify for the RSS farmer must be getting a social welfare payment. In return, people participating in the RSS provide services that benefit rural communities.	national
Young Trained Farmer Relief	provides for relief from stamp duty on the transfer by way of gift or sale of agricultural land (including buildings) to young trained farmers who meet certain conditions.	national till 2018
Employment Incentive and Investment Scheme (EII)	Individual investors obtaining tax relief on investments made into EII certified qualifying companies	national

EU Social Pillar

The EU social Pillar (ESP) was announced by the President of the European Commission in Gothenburg during the EU social summit in 2017. The ESP has the objective of strengthening the social dimension of the EU's policies, and especially to promote fair labour markets and inclusive growth (EC, 2017). The ESP was developed under 20 key principles that address labour conditions, divided into three categories:

(1) Equal opportunities and access to the labour market.
(2) Fair working conditions.
(3) Social protection and inclusion.

One key element of the ESP is new – the European Labour Authority (ELA). The ELA should be established in 2019 and should reach full operational capacity by 2024. The ELA will be the common Labour Authority for the EU Single Market, aiming to guarantee the effectiveness and implementation of EU rules on labour mobility, and ensuring that fair social security rules are enforced and coordinated throughout the Single Market (EC, 2019). The relationship between the CAP and the ESP, it is not yet clear as it is such a recent innovation.

Agriculture is very important in rural Ireland in comparison to many other EU countries and farmers play a vital role in rural communities. They are still seen as key entrepreneurs and drivers of economic activity. A number of respondents mentioned the "ripple effect" created by supporting farmers as they tend to spend locally and hire local companies as subcontractors; which results in a "*huge spin off*". However, this economic impact can largely be attributed to CAP support measures. National schemes have little impact on keeping farmers on the land, though they do support some of the poorest farmers, and the succession advice planning is bringing some farming families into formal partnership arrangements. The most significant impacts of national programmes come from the two welfare support schemes that have been established to support farmers, and administered by the Department of Employment and Social Protection. First, Farm Assist provides support to over 7,000 low income farmers on a weekly basis (estimated expenditure on Farm Assist in 2017 was € 79 million). Secondly, the Rural Social Scheme provides supplementary income to farmers who are already in receipt of a social welfare payment (including Farm Assist). In return for the support participants must work for 19.5 hours a week providing services that are beneficial to the local community (approximately 2,656 people received support in 2017, with estimated expenditure of € 45.5 million).

Europe 2020 Strategy on Growth and Jobs (smart, sustainable and inclusive growth)

On the 3rd March 2010 the EC launched the Europe 2020 strategy as a follow up of the Lisbon Strategy of the period 2000–2010. Europe 2020 is a 10-year strategy aiming to economic development and "smart, sustainable, inclusive growth" through improved coordination and integration between national and European policies.

The strategy outlined five main targets to achieve its priorities (EC, 2010):

(1) 75% employment rate for the population aged between 20 to 64;
(2) 3% of the EU's GDP spent on Research and Development;
(3) meeting the "20/20/20" climate and energy targets: 20% cut in greenhouse gas emissions (from 1990 levels); achieve 20% of EU energy from renewables; 20% improvement in energy efficiency;
(4) reduce the rate of early school dropout to less than 10% and achieve tertiary degree for at least 40% of the young population;
(5) reduce to less than 20 million the EU people at risk of poverty.

Moreover, the support of the CAP, through the Pillar II measures, to bio-energy production from agriculture and forestry and the use of bio-energy on farms and in rural areas, indicates a correspondence with the second objective of the 2020 Strategy on cutting gas atmospheric emissions and enhancing renewable energies. This is even more evident by looking at the proposal for the future CAP post 2020, where a number of the future objectives are directly linked to the 2020 Strategy:

- Ensuring viable farm income: support viable farm income and resilience across the Union to enhance food security.
- Efficient soil management: foster sustainable development and efficient management of natural resources such as water, soil and air.
- Agriculture and climate mitigation: contribute to climate change mitigation and adaptation, as well as sustainable energy.
- Jobs and growth in rural areas: promote employment, growth, social inclusion and local development in rural areas, including bio economy and sustainable forestry.

In Ireland the key strategies driving overall development of the agricultural sector are Food Harvest 2020 (Agriculture Fisheries and Food, 2010) adopted in 2010, and Food Wise 2025 (Mathews, 2015), both part of a series of rolling ten-year strategies for the agri-food sector. The Food Harvest strategy was developed following extensive industry and stakeholder consultation with over 200 recommendations and suggestions for change. Key proposals to be implemented by 2020 include the following:

- Increasing the value of primary output of the agriculture, fisheries and forestry sector by 33% increase compared to the 2007-2009 average.
- Improving the value added in the sector by € 3 billion.
- Achieving an export target of € 12 billion for the sector (a 42% increase compared to the 2007-2009 average).
- Increasing milk production by 50%.
- Adding 20% to the value of the beef sector.
- improving cost competitiveness by 20%, relative to main competitors.
- doubling industry spending on R&D.

The Food Wise strategy continues the direction established in 2010 but with a focus on adding value and a smaller number of broad objectives to be met over the 2015-25 period, including:

- increase the value of agri-food exports by 85% to € 19 billion;
- increase value added to the sector by 70% to € 13 billion;
- increase the value of primary production by 65% to € 10 billion;
- deliver an additional 23,000 jobs in the agri food sector by 2025 (as a result of the investment).

The impact on the agricultural sector is proving to be significant with productivity improvements in particular to the dairy sector resulting investment in improved technology and removal of the milk quotas in 2015 which has underpinned expansion in farm and herd size. Concerns remain, however, with regard to the anticipated environmental impacts from growth in the sector. For example, agriculture produced 32% of Ireland's greenhouse gas emissions in 2012, and agricultural emissions were anticipated to increase by a further 12% over the 2010-20 period (http://www.antaisce.org/issues/food-harvest-2020). A recent study also suggested that Ireland has the highest level of greenhouse gas emissions (GHGs) per euro of agricultural output of all 28 EU member states (Kennedy, 2017; Government of Ireland, 2019) largely due to its focus on dairy and beef production.

Marrakesh declaration on migration

The Marrakesh Political Declaration is a key outcome from the 5th Euro-African Ministerial Conference on Migration and Development, held on the 2nd of May 2018 in Marrakesh, which defines the current multi-annual cooperation programme of the Rabat Process. The Rabat Process is a regional multi-lateral dialogue between the countries on the migration routes linking Central, West and Northern Africa with Europe. It started in 2006 and the dialogue concerns technical and political issues related to migration and development, bringing together countries of origin, transit and destination of the migration routes. The process resulted in a three-year (2018-20) Action Plan for multi-annual cooperation programme with 10 objectives grouped in 5 domains:

- Domain 1: Development benefits of migration/Root causes of irregular migration & forced displacement
  (a) Maximise the positive impact of regular migration for development (3 actions)
  (b) Understand the root causes of irregular migration & forced displacement
- Domain 2: Legal migration and mobility
  (a) Promote regular migration & mobility (especially young people, women)
  (b) Encourage facilitation of visa issuing procedures
- Domain 3: Protection and asylum
  (a) Strengthen the protection of refugees and the forcibly displaced
  (b) Promote the integration of refugees and the forcibly displaced into host communities
- Domain 4: Irregular migration, migrant smuggling and trafficking in human beings (THB)
  (a) Build capacities for border management and combating migrant smuggling and THB
  (b) Improve the protection of those who have been smuggled and of victims of THB
- Domain 5: Return, readmission and reintegration
  (a) Build capacities for identification processes & the issuing of travel documents
  (b) Encourage the safe return and sustainable reintegration of migrants

The relationship between EU agricultural policy and the Marrakesh Declaration is unclear, although there is little doubt that the current discussions about the future CAP recognise the growing dependence of the agricultural sector on migrant workers (both intra- and extra-EU).

Ireland had an open-door policy following enlargement of the EU in 2004 and a high demand for labour in all economic sectors as the "Celtic tiger" economy took off in the 1990s. Large numbers of migrants from Eastern Europe moved to Ireland, working largely in the construction and service sectors in the more urbanised parts of the country. Since the financial crisis of 2008 some migrant workers have returned and a new policy of demand led work permits for non-EU countries has been put in place to limit inward migration.

The role of migrant workers in Ireland's agriculture appears to be significantly limited at present, although there are some suggestions that labour demand is increasing across certain parts of the sector (e.g. dairy and meat processing). Migration into Ireland is a relatively recent phenomenon that only started in the 1990s, reversing a historical pattern of emigration. The economic boom created a huge demand for labour. In 2002 non-nationals amounted to 7% of the population and by 2016 the census indicated just over 14% of the population were of non-Irish origin. After enlargement of the EU in 2004 Ireland accepted large numbers of EU nationals although following the 2008 recession large numbers of migrants returned home.

Although the majority of migrants were drawn by employment opportunities to the cities, significant numbers of moved to rural areas (Woods, 2018) for a variety of reasons (e.g. creation of asylum accommodation, employment such as opening of halal – meat processing plants, construction work, and pre-existing family links). More recently non-EU migration has been controlled by the Employment Permits (Amendments) Act 2014 (modifying two earlier Employment Permits Acts adopted in 2003 and 2006). The employment permits system is based on need, and permits are only issued when employment vacancies have been identified as a result of labour or skills shortage. In 2014 5,000 permits were issued (an increase of 36% from 2012 but a huge reduction compared to the 30,000 permits issues in 2001 at the height of the economic boom.

5.2. Regional thematic focus: Generational renewal and new entrants in agriculture (especially younger people and women)

The region is an interesting case for an in-depth analysis of generational renewal in agriculture because Ireland is facing significant problems in relation to farm succession. Cultural factors linked to land ownership severely restrict access to land, and socio-economic factors such as lack of rural housing, lack of financial support, declining rural services, and access to higher paid jobs in other economic sectors have both limited retirement of older farmers and encourage out-migration of young people from rural areas.

Agricultural generational renewal in Ireland has been of concern for several decades and many of the issues associated with an aging farm population have been recognised since the early 1970s. This has become more apparent in recent years with a rapid increase in older farmers (31% increase in those aged over 65 years over the period 2000-10), and a reduction of 52% in the number of farmers aged under 35 years (Bogue, 2013). The previous CAP programming period (2007-13) included a Young Farmer Installation Scheme and an Early Retirement Scheme (neither of which are available in the current 2014-20 programme). Both schemes only operated for a short period and were closed down in 2009 following the financial crisis of 2008 as money saving measures.

A longstanding issue identified as a barrier to entry for young farmers (YFs) in Ireland has been access to land (Ecorys, 2015). Specific problems include:

- Older farmers not retiring (due to loss of status, social exclusion, loss of income, poor pension provision).
- Older farmers can reduce agricultural activity and still draw down EU support payments.
- Limited land available for sale (less than 1% agricultural land available each year).
- High price of land; small farm size (average size of 32ha not enough to support family).
- Limited availability of land for long-term lease (larger proportion available on "conacre" system (11-month informal lease).

Other factors creating barriers to YFs include: lack of succession planning; tax incentives and financial penalties for early transfer; cultural perceptions on the importance of keeping land in the family; young people's perceptions of agricultural work as low paid and hard work; lack of start-up aid for new YFs; lack of services in rural areas for young people and young families; and, high levels of employment in the Irish economy with better paid jobs in the urban areas (Bogue, 2013; Macra na Feirme, 2018; Conway, et al., 2017; Leonard, et al., 2017).

Lack of succession planning.

Traditionally farms have passed to the younger generation only on death or incapacity of the farm holder. There is thus a tendency for farmers not to inherit the farm until they are in their 50s or 60s. There are multiple reasons for the lack of planning, including:

- a desire to keep land in the family and concerns over the potential impact of divorce among younger generations;
- farmer's refusing to accept the concept of retirement and the consequent loss of status (and long-standing social relationships) if they had to stop farming along with a concern over loss of connectedness with the local community (Conway, et al., 2017 and 2018);
- a lack of children going into farming leaving no clear successor.

However, in a survey of 421 Irish Farmer's Association (IFA) members, Bogue (2013) found that 29.4% of respondents indicated the main reason for not engaging in succession planning was lack of children while two-thirds of those without succession plans stated it was important the farm stayed in family ownership. In addition, around half of all farmers indicated they would, or might, need an income from the farm when they could no longer farm it themselves. Bogue (2013) identified a significant lack of planning for farm succession with half of all farmers over 50 years of age having no identified successor, and this is supported by more recent estimates suggesting that 48% of full-time farmers have no identified farming successor (Land Mobility Service, 2017)

Access to land and land mobility

The majority of land is transferred within families with very limited amounts (often less than 1% of the total) made available for sale in any one year (Bogue, 2013). A YF might have to wait a long time to inherit from the older generation and those not born into a farming family have virtually no opportunity to purchase land; prices are high and YFs have limited access to credit.

The only alternative option is land rental. Land can be rented in a variety of ways but until recently the majority of land was only available on short-term 11-month leases (known as "conacre"). Longer-term leases are reported as becoming more available but in the most profitable sectors competition for land, and prices, are high, again making it harder for YFs to compete with established farmers. Tax relief on long-term leasing has started to open up the market as both YF and the land owner benefit,

but there is a reported reluctance to engage in long-term leasing due to concerns over potential loss of earnings if the market changes (Bogue, 2013).

According to the DAFM Annual Review and Outlook (2018a), long term leasing allows young farmers and new entrants to the sector gain access to land by providing a cheaper means of long-term access, and provides a route to retirement for older farmers, assisting in generation renewal. This is echoed by Teagasc (2018b) stating that long term leasing is increasing, and the enhanced Income Tax incentives and security of tenure for the lessee are proving to be key drivers. In order to qualify for the income tax incentives, land must be leased for a minimum of 5 years but can be leased for up to 25 years. The number of long-term land leases almost doubled from 3,590 to 6,830 between 2011 and 2015 (ibid).

Cultural factors play an important role, land is perceived as "almost sacred" and the person who sells the family farm, or even part of it can feel a failure (Livestock farmer, Co Cork). In the northern areas of the country this has led to an increase in "under-utilised" land as the farming population gets older and gradually reduces the amount of investment and activity in the land.

Afforestation

A more recent concern has been proposed targets for forest cover and pressure for afforestation as an alternative to farming. Planting grants can be attractive to those wanting to hold onto their land, although the requirement to re-plant in perpetuity following harvesting is off-putting for some. Some interviewees expressed concern at the proposed increase in forest cover, and concerns are being expressed about the potential for making land even less accessible to YFs and/or new entrants through external investors buying land for afforestation (Farm Ireland, 2019).

Afforestation is largely driven by two factors: government planting targets of 7,000ha/year to help Ireland meet its climate change goals, and older farmers seeing woodland as a means of generating a form of "retirement income" with less associated risk than leasing. Farmers present at a farm succession workshop (held in Galway 2019) noted that afforestation prevented neighbouring farms from expanding, and that it has a social stigma attached as it is seen as "giving up" with consequent loss of respect of their peers.

5.2.1. Anticipated short-term, mid-term and long-term developments/impacts of this challenge

The lack of young farmers creates a number of threats to the long-term sustainability of the agricultural sector. The issue is widespread across Ireland and not limited to the Southern and Eastern region.

The farm population is aging resulting in older farmers gradually pulling back from investment in improvements and switching to less physically demanding forms of agricultural activity (e.g. from beef to sheep, and then possibly to afforestation or renting). In some areas (e.g. north west Ireland), the lack of investment in the land is resulting in land degradation and abandonment.

The lack of pension planning also results in older farmers hanging on to land as a source of income and a place to live, rather than innovating and developing new business.

Older farmers also tend to be less well educated, again limiting the spread of innovation and new techniques. Younger farmers are more highly trained and educated and more likely to invest in innovative methods and techniques. Where young farmers have managed to access land or farms, evidence suggests they increase employment through hiring full/part-time labour, and also create work for other in rural areas (e.g. fencing, walling, construction).

An aging population of farmers makes fewer (or different) demands on local services resulting in loss of local services required or favoured by younger people and families.

5.2.2. Strategies/policies in place at regional/national/EU level designed to specifically overcome/mitigate this challenge

EU support

Under the current 2014-20 programming period there are three CAP measures utilised in support of Young Farmers:

- Pillar 1 Young Farmer Payment support.
- Pillar 2 Measure 4.1 (TAMS II- Young Farmer Capital Investment Scheme).
- M16 Cooperation (support for partnerships agreements).

In addition M19 under Pillar 2 of the CAP is LEADER support, which provides wider support across rural areas for generational renewal in the local economy.

Pillar 1 Young Farmer Payment support

Under the Young Farmers Scheme the basic payment awarded to young farmers, newcomers or farms set up in the previous five years is increased by 25% for the first five years of farming. The YF top-up support under Pillar 1 amounts to a 25% top-up of the average farm payment in Ireland (currently set at € 68 per entitlement ha up to 50 ha) is created from a 2% top-slicing of Pillar 1 funding across Ireland.

"It has been a huge success in terms of spending and supports young farmers in the key years following establishment of a holding, building up a herd and investing in the farm." (EF National Policymaker)

Prior to 2015 there was nothing comparable to the YF support under Pillar 1 in Ireland.

The current CAP programme runs from 2015 to 2019. Ireland's total ceiling for direct payments (Pillar 1) from 2015-2019 is € 6.06 billon

Pillar 2 YF Support Schemes

M.4.1 TAMS II: Targeted Agricultural Modernisation Scheme.

TAMS II compromises six individual schemes:

(1) Young Farmer Capital Investment Scheme (YFCIS).
(2) Dairy Equipment Scheme (DES).
(3) Organic Capital Investment Scheme (OCIS).
(4) Low Emission Slurry Spreading Equipment Scheme (LESS).
(5) Pig and Poultry Investment Scheme (PPIS).
(6) Animal Welfare Safety and Nutrient Storage Scheme (AWNSS).

The **Young Farmer Capital Investment Scheme** has a total budget which will not exceed € 120 million (DAFM, 2019) and young farmers have to meet a number of **requirements** before they can take part in this scheme.

National level policymakers managing the scheme indicated the high level of applications, the extensive consultation that had been undertaken, and the lack of lobbying and complaints as indicative of a successful scheme implementation. They noted that the National Reserve and Pillar 1 YF scheme had also created additional benefits through provision of incentives for young people to

return home, get married and live in the local area resulting in increased demand for local services (although no evidence was available to demonstrate impact) (EF, National Policy maker).

National level policy implementation personnel also noted the economic significance of funding flowing into the rural economy from both the YF scheme and additional support to young farmers under the TAMS scheme. A total of € 73 million has flowed into rural areas under TAMS under YF support since 2015, and slightly over € 100 million from a combination of the Pillar 1 YF support and entitlements from the National Reserve. In terms of the Pillar 1 support there has been a concentration of funding focused on the westernmost counties in Ireland. Approximately 50% of National Reserve allocations have been awarded to the western seaboard counties and 45% of the YF scheme beneficiaries are located in these counties. (National Policy makers EF and MM)

National schemes and national legislation relevant for generational renewal in agriculture

Tax schemes/incentives

There are 3 core tax relief schemes:

- 100% Young farmer stamp duty relief (max. age 35) for change of ownership.
- 100% stock relief based on growth herd over the first four years of production (capped at € 70,000).
- Succession Farm Partnership Scheme: Tax credit on Farm succession partnerships up to € 5,000 per year for 5 years but older farmer must transfer at least 80% of the farm within 10 years. The 2016 National Budget introduced a new initiative to assist succession, referred to as the Succession Farm Partnership Scheme. This scheme provides a structure through which farmers and successors can enter into a partnership with an appropriate profit-sharing agreement, on the understanding that the farm would eventually be transferred to the successor at the end of a specified period, not exceeding ten years. To support this transfer, a tax credit of up to € 5,000 per annum for five years, can be allocated to the partnership, once the family farm partnership is entered on the appropriate Succession Farm Partnership Register.

National Reserve

The National Reserve, which was launched in 2015, enables allocation of entitlements on a permanent basis; allocation is undertaken in conjunction with an Agricultural Advisory Committee. The EU Regulations underpinning the operation of the National Reserve provide for priority access to the mandatory categories of "Young Farmer" and "New Entrant to Farming". The Reserve is a maximum of 3% (€ 24 million) per annum. The scheme allows successful applicants to be eligible for an allocation of entitlements on land for which they hold no entitlements. It can also be used to top up the value of existing entitlements, held by applicants, where such entitlements have a value below the National Reserve [national] average. Successful applicants who hold leased entitlements that have a value below the National Reserve [national] average also qualify for a top-up to the value of these leased entitlements. A key criterion is a maximum of € 40,000/yr off-farm income (in order to avoid the situation of funding part-time farmers not based on the farm). Over the period 2015-18 (except 2016 when due to a budgetary deficit the scheme failed to open for applications) there have been over 7,000 successful applicants who have received payments totalling over € 30 million. The National Average Value is currently € 185 per entitlement, although with the greening payment this increases to € 270 per entitlement (EF, National Policymaker).

Future Growth Loan Scheme

The Future Growth Loan Scheme makes up to € 300 million of loans available with a term of 8-10 years. This scheme will be available to eligible Irish businesses and the primary agriculture and seafood sectors to support strategic long-term investment in a post-Brexit environment. Finance provided under the scheme will be competitively priced and have favourable terms, for example no security required for loans up to € 500,000. This is a new scheme launched in 2019.

The scheme has been developed by the Department of Business, Enterprise and Innovation and the Department of Agriculture, Food and the Marine (DAFM) in partnership with the Department of Finance, the Strategic Banking Corporation of Ireland (SBCI) and the European Investment Fund (EIF). It is delivered through participating finance providers.

Effectiveness of national/regional schemes

The dairy sector is well serviced by cooperatives. Farmers sell into the cooperative which then obtain the best prices for milk which may be sold fresh or processed (butter, cheese, milk powder) for export. Access to markets are therefore ensured for farmers, even those remote from urban centres. Cooperatives vary in effectiveness across the agricultural sector, for example:

- One cooperative enables farmers to access credit more easily through "Milkflex". Farmers can borrow up to € 300,000 as an unsecured loan at an interest rate of 3.9%, through Finance Ireland. The finance is channelled through the cooperative which takes payments out of the monthly cheque given to farmers for their milk. Milk prices are volatile and vary considerably in the short term. Milkflex enables farmers to underpay their loan (or even take a re-payment "holiday" when prices are low) without any penalties, and overpay their loan when milk prices are high. There is a stress test requiring a 40% loan to value ratio, which makes the loan unavailable to YFs, but it is a valuable support to older farmers.
- Some of the dairy cooperatives run farm monitoring programmes to demonstrate best practice and help improve efficiency. A "green dairy farm" initiative in County Cork (in the western part of the region) has helped increase environmental awareness throughout the production process. Aimed at all farmers but very beneficial to YFs – as both young and old farmers can be slow to take up new ideas.
- Cooperatives provide financial stability through purchasing milk

Teagasc – the Agriculture and Food Development Authority – is the national body providing integrated research, advisory and training services to the agriculture and food industry and rural communities. Teagasc provide advice and support for developing business plans and making applications for grants. The support makes commercial loans easier to access since the banks know and trust Teagasc.

Teagasc run farmer discussion groups which are a form of knowledge transfer. Groups meet monthly to share knowledge and experiences, and to visit each other's farms. Groups vary in capacity and effectiveness; some are very basic, while others are more innovative and forward looking. For example, the Co Cork group (West Cork) has 12 farmers in the area meeting monthly to discuss issues and engage in peer-to-peer learning.

Teagasc run "Transferring the Family Farm" clinics which are considered very successful. Over the past 5 years more than 5,000 farmers attended (Teagasc farm specialist). The Teagasc workshops include advice from accountants, tax advisers, solicitors, succession mediators, social welfare advisers, citizens information, and Teagasc education officers/collaborative farming/financial specialists who all offer free consultation.

5.2.3. Policy recommendations

The lack of any incentive for older farmers to retire limits the effectiveness of young farmer support measures. Older farmers tend to hang on to land as they can slowly reduce labour input while retaining CAP financial support, and national afforestation programmes also provide an attractive alternative for those seeking a retirement income. National tree planting targets potentially create competition with farmers wishing to expand their farm size by buying up or leasing neighbouring land.

Land mobility remains a complex socio-cultural issue that is not directly addressed by either CAP or national level schemes. Farms are therefore likely to remain relatively small (Teagasc Interview, 2019) although there may be a scope for creation of a few large farms (e.g. 3,000 acres tillage; 2,000 cows). YFs cannot access land because older farmers are reluctant to enter into partnerships and relinquish control, and where land is available the lack of access to finance makes it virtually impossible for a young farmer to make a purchase.

In the region dairy farming is seen as the main driving force in the agricultural sector and it will continue to expand, largely through rental of land rather than purchase. Tillage (cereals, potatoes and other vegetable crops) is viewed as a highly efficient area of activity and will continue to be a significant part of the agricultural activity in the region, though much smaller than the dairy sector (Teagasc Interview, 2019). A significant challenge for the tillage sector is dealing with changes to controls on agri-chemicals (e.g. bans on neo-nicothoids and other pesticides) which may result in yield reduction. Cereal farms for example will find it difficult to compete in a global market if crop yields decline.

Recommended changes include the following:

- Addressing the issue of who/what is an active farmer – redefining the term "active farmer" to encourage older farmers to leave and support new entrants, and to encourage farm transfer to younger farmers. One suggestion is for restrictions on the level of farm payments to those over 65 or 70 years of age.
- Provision of support to help active farmers manage risk (e.g. from climate change; introduction of new techniques), and to support more innovative behaviour. Provision of higher levels of investment support (e.g. restrictions on grant support limit what can be accomplished in certain sectors such as purchase of machinery for tillage.
- Provide greater support for collaboration between farmers. There is a need to accept the potential value in collaboration at the policy level. One example is that currently only one form of partnership is eligible to draw down aid yet there are any forms of collaborative working in existence.
- Increase availability of permits for migrant workers, in order to introduce more flexibility into the system.
- Currently young farmers are well supported with good incentives but older farmers lack support and as its stands the new RDP will not introduce support for older farmers. The defined age of YF is a problem in Ireland as the majority of people do not inherit, or take over the farm until they are 35 – 40 years old. Need to revisit the definition of young farmer and provide more flexibility in the programme to enable support for both young and old farmers.
- Currently there is great uncertainty in the agricultural sector due to Brexit, unpredictability regarding trading partners and limited scope for expansion. Many farms are not profitable, and dairy is the only financially viable form of enterprise.

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Interviews with key stakeholders from:

- Teagasc
- University College Dublin
- Department of Agriculture, Food and the Marine (DAFM)

6. CORSICA (FRANCE)

Country	France
Region (NUTS 2)	Corsica (FR83)
Cluster	5

6.1. Contextual information on the agricultural labour market

6.1.1. Territorial characterisation of the region

Corsica is an island located in the Mediterranean Sea, south of France. The region has a population of around 336,000 inhabitants and a population density of only 39 inhabitants/km^2. The population is actually mostly concentrated on the coastline, away from the many mountains. In addition, more than half of the island is covered by forests. Corsica has a Mediterranean climate, however with a high level of rainfall in some parts of the island (above 1000mm per year). Agricultural activities are mainly concentrated on the arboriculture-oriented eastern lowlands.

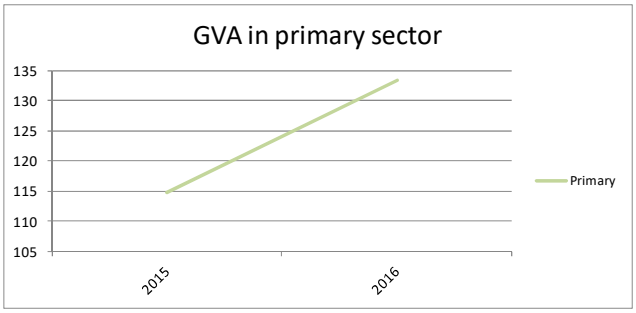
6.1.2. Background data on the agricultural sector and farming employment in the CS region

Economic breakdown by sector

Primary sector

Gross value added of the region's primary sector has increased between 2015 and 2016, reaching € 133 million.

Figure 6.1: Regional GVA of the primary sector in € million at basic prices

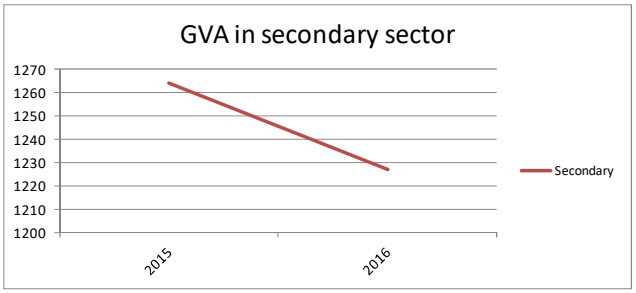


Source: Eurostat, gross value added at basic prices by NUTS 3 regions [nama_10r_3gva].

Secondary sector

Conversely, gross value added of the region's secondary sector has decreased between 2015 and 2016, down to € 1.2 billion.

Figure 6.2: Regional GVA of the secondary sector in € million at basic prices

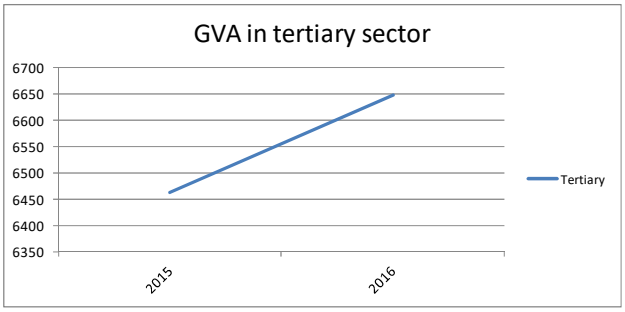


Source: Eurostat, gross value added at basic prices by NUTS 3 regions [nama_10r_3gva].

Tertiary sector

Gross value added of the region's tertiary sector has increased between 2015 and 2016, reaching € 6.6 billion.

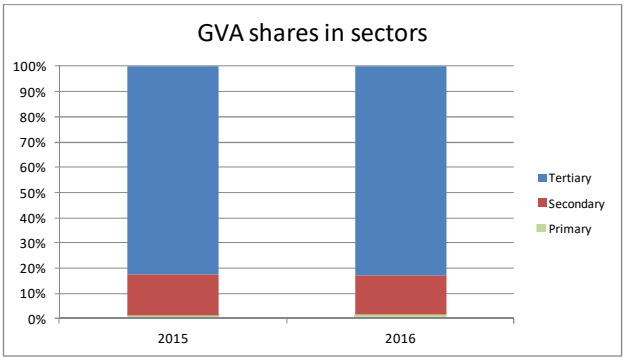
Figure 6.3: Regional GVA of the tertiary sector in € million at basic prices



Source: Eurostat, gross value added at basic prices by NUTS 3 regions [nama_10r_3gva].

The tertiary sector is by far the largest contributor to the regional GVA (83%), followed by the secondary sector (15%) and the primary sector (1.7%).

Figure 6.4: Breakdown of the regional GVA by economic sector



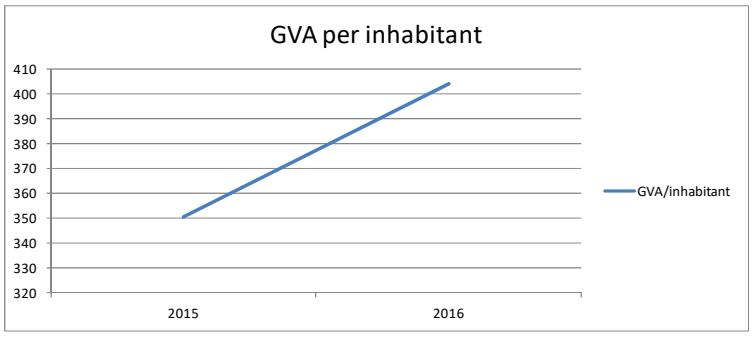
Source: Eurostat, gross value added at basic prices by NUTS 3 regions [nama_10r_3gva].

Agricultural gross value added (incl. evolution over 2005-2019)

Amount per inhabitant

The GVA per inhabitant of the primary sector has grown from around € 350 in 2015 to around € 400 in 2016.

Figure 6.5: GVA of the primary sector in € per inhabitant



Source: Eurostat; Population on 1 January by age group, sex and NUTS 2 region [demo_r_pjangroup] and gross value added at basic prices by NUTS 3 regions [nama_10r_3gva].

Agricultural labour force (incl. evolution over 2005-2019) *(numbers, AWUs + shares)*

By age range (under 40 years old, 40-65 years old, above 65 years old)

In 2016, 300 farms were managed by farm managers below 35 years old (11%), 190 by farm managers aged 35-39 years old (7%), 2070 by farm managers aged 40-64 years old (73%) and 280 by farm managers aged 65 years old and over (10%)[20].

By gender

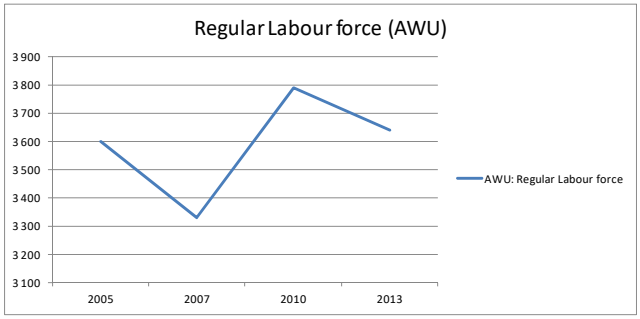
In 2016, 1,020 female AWU were directly employed by farms in the region on a regular basis (25%), compared to 3,120 male AWU (75%)[21]. In that same year, 680 farms were managed by women (24%), and 2,150 by men (76%)[22].

As noted in the Rural Development Programme, the share of women in the farming population is increasing, thereby also increasing the diversification of activities.

Split of regular family workers, regular non-family workers and temporary workers

The regular labour force employed in the agricultural sector has swayed between 3,300 AWU and 3,800 AWU over the 2015-2016 period.

Figure 6.6: Agricultural regular labour force in AWU

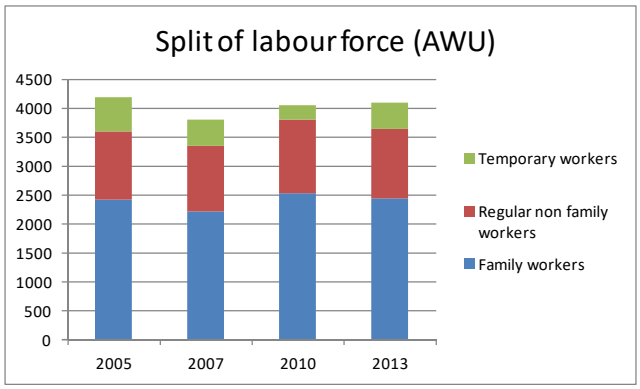


Source: Eurostat, Labour force: number of persons and farm work (AWU) by sex of workers and NUTS 2 regions [ef_olfreg].

Family workers have continuously accounted for the majority of the total agricultural labour force of the region (around 60%), followed by regular non-family workers (nearly 30%) and temporary workers (10-12%).

[20] Source: Eurostat, dataset [ef_m_farmang].
[21] Source: Eurostat.
[22] Source: Eurostat, dataset [ef_m_farmang].

Figure 6.7: Breakdown of total agricultural labour force in AWU



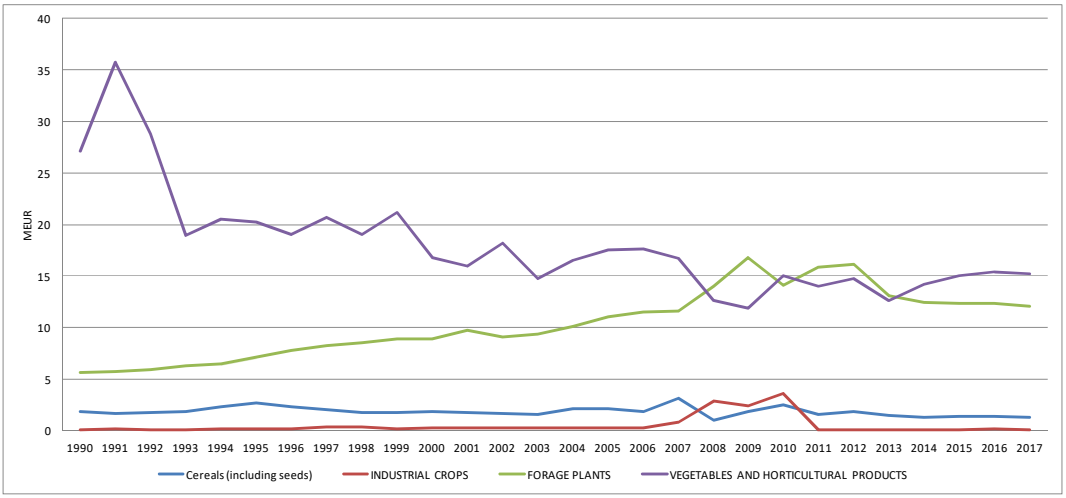
Source: Eurostat, Labour force: number of persons and farm work (AWU) by sex of workers and NUTS 2 regions [ef_olfreg].

Main types of agricultural products (by units and by production value at basic price)

Vegetables and horticultural products have long shown the highest production value, caught up in the last decade by forage plants.

In particular, wine accounted for 42% of the agricultural production value (€ 258 million) in 2016, followed by fruits (namely citrus fruits) with 23%[23].

Figure 6.8: Production value at basic price (in € million) of main agricultural products



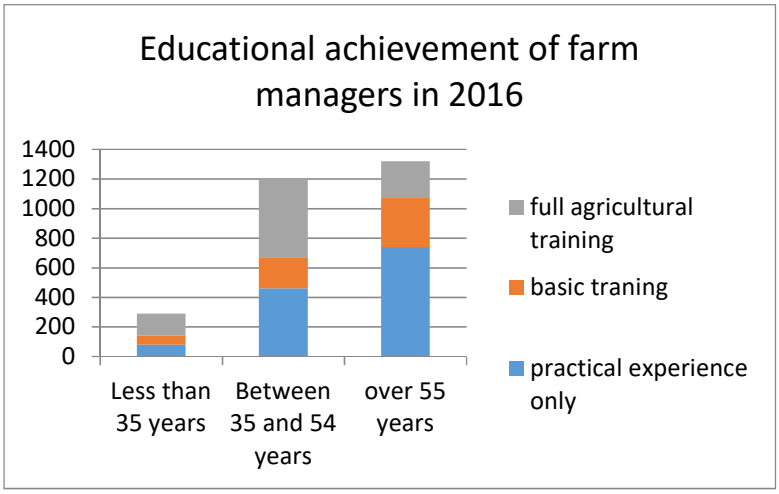
Source: Economic accounts for agriculture by NUTS 2 regions (until 2012) [agr_r_accts_h] und Economic accounts for agriculture by NUTS 2 regions [agr_r_accts], bis 2010 = agr_r_accts_h, ab 2011 = [agr_r_accts].

Educational achievement of the region's population and agricultural training of the farm managers population (by age group: under 35, 35-54, 55 and over)

In 2016, slightly more than half of the Corsica-based farm managers over 55 years old had practical experience only, while nearly two thirds of farm managers aged between 35 and 54 have basic or full agricultural training. For younger farms, this proportion increases further.

[23] Source: Agreste – Comptes provisoires 2016.

Figure 6.9: Agricultural training of farm managers in 2016



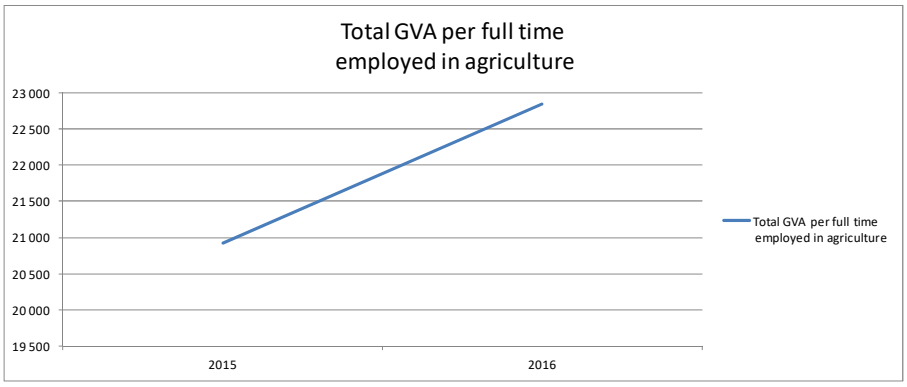
Source: Common context indicators for rural development programs (2014-2020), C.24 – Agricultural training of farm managers.

The Rural Development Programme indicates that agricultural training of Corsican farmers is generally low, which further limits the possibility of technical assistance[24].

Agricultural labour productivity, agricultural factor and entrepreneurial income and gross fixed capital formation

The GVA of the primary sector per person employed full time in the primary sector has increased from 2015 to 2016, reaching € 22,844 in 2016.

Figure 6.10: GVA of the primary sector in €/person employed full time in the primary sector

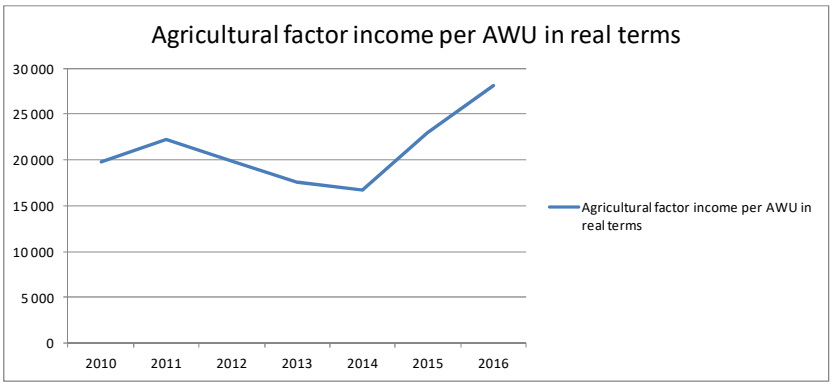


Source: Eurostat, gross value added at basic prices by NUTS 3 regions [nama_10r_3gva] and Employment (thousand persons) by NUTS 3 regions [nama_10r_3empers].

Agricultural factor income per AWU has increased in recent years, passing the € 25,000 mark in 2016.

[24] Source: Rural Development Programme, 2018, p.97.

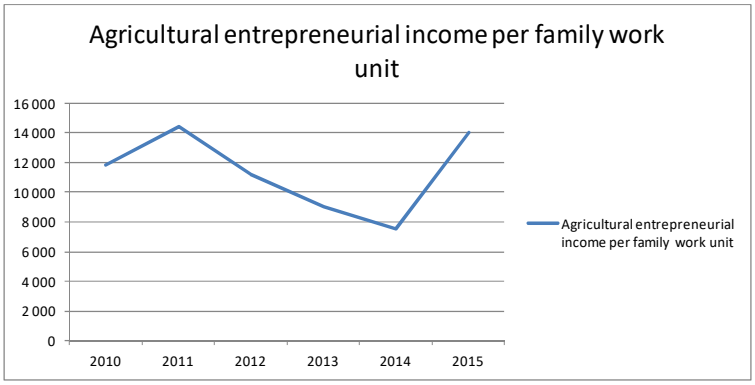
Figure 6.11: Agricultural factor income per AWU real terms (in €/AWU)



Source: Common context indicators for rural development programs (2014-2020), CCI 25 based on Eurostat – Economic Accounts for Agriculture (calculations: DG AGRI), Regional data: DG AGRI estimates.

Agricultural entrepreneurial income per family work unit has oscillated between € 8,000 and € 12,000 between 2010 and 2015.

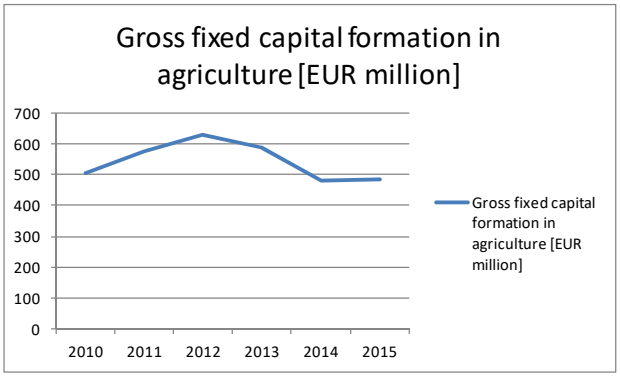
Figure 6.12: Agricultural entrepreneurial income per family work unit (in €/AWU)



Source: Common context indicators for rural development programs (2014-2020), CCI 26 based on Eurostat – Economic Accounts for Agriculture, National data: tables aact_eaa04 (last update: 14/12/2018) and aact_ali01 (last update: 14/12/2018).

After an increase between 2010 and 2012 and a subsequent decrease between 2012 and 2014, gross fixed capital formation in agriculture has returned to its 2010 level in 2015.

Figure 6.13: Gross fixed capital formation in agriculture (in € million, in current prices)



Source: Common context indicators for rural development programs (2014-2020), CCI 28 – Gross fixed capital formation in agriculture.

Labour costs: main components of farming labour costs

Salaries and social security contributions represent the bulk of labour costs.

Data on pluriactivity and on/off farm diversification

Off farm employment/farmers performing other gainful activities (diversification)

National statistics from 2010[25] show that almost three quarters of Corsican farm managers have agriculture as their main activity without any secondary activity, while only 18% of farm managers have it as a secondary activity. In the wider national context however, Corsica is nowadays the French region with the highest share (more than 15%) of agricultural holdings practising at least one para-agricultural activity, as reported by national statistics from 2016[26].

Types of gainful activities

These para-agricultural activities encompass processing-on-commission (outsourced processing of raw agricultural products), agricultural product processing (e.g. from olives to olive oil), agritourism (e.g. farm bed&breakfast) and energy production (in particular through solar panels).

Specificities of the regional agricultural labour market

Migrant/seasonal workers

The proportion of seasonal workers in the regional agriculture remains overall low (in 2010, seasonal AWUs accounted for 5.7% of the total AWUs in Corsican agriculture[27]), though it is slightly higher on the North-Eastern shores of the island[28]. Seasonal workers have different origins. Some are actually local workers (from Corsica), however the number of seasonal workers from other EU MS than France is increasing. In addition, seasonal workers from outside Europe (in particular Maghreb countries) have come to Corsica some decades ago (in particular for the production of clementines, now a renowned local variety). These initially seasonal workers have now been integrated in the regional agriculture as permanent workers. Nowadays, there are also entire families coming from Morocco to Corsica from one year to another, working on the same agricultural holding. These families, working in closed groups, have developed their own work management. Working conditions of migrant workers have considerably increased in recent years, starting from very poor conditions and reaching decent standards (e.g. hosted in villas) – an improvement which is closely linked to agricultural revenues.

Foreign labour per agricultural sub-sector

The seasonal farming labour force in Corsica is mostly employed in the viticulture, arboriculture and citrus fruit growing sectors as well as fodder and cereal crops. Seasonal labour is primarily employed during summer, and to a lesser extent in winter (e.g. clementines, cheese).

CAP funding data and other institutional frameworks *(total values in €, in € per habitant, in € per farmer)*

Pillar I payments

No available data on Pillar 1 payments.

[25] Source: Agreste, Recensement 2010.
[26] Source: Agreste, Enquête sur la Structure des Exploitations Agricoles 2016.
[27] Source: Agreste, Atlas Agricole Corse, 2015 edition.
[28] Source: Agreste, Atlas Agricole Corse, 2015 edition.

Pillar II funding (split by focus area and measure)

The EAFRD is planned to support the following rural development measures, with the following amounts for the 2014-2020 period:

Measure	Planned investment from EAFRD (not including national counterpart)
M01: Knowledge transfer and information actions	€ 1.4 million
M04: Investments in physical assets	€ 15.4 million
M05: Restoring agricultural production potential	€ 0.3 million
M06: Farm and business development	€ 7.6 million
M07: Basic services and village renewal	€ 12.4 million
M08: Investments in forest area development	€ 4.3 million
M10: Agri-environment-climate	€ 7.9 million
M11: Organic farming	€ 4.5 million
M13: Areas with constraints	€ 83.6 million
M19: LEADER/CLLD	€ 8.5 million
M20: Technical assistance	€ 3.0 million

National and regional support schemes

The CasDAR Fund (*Compte d'Affectation Spécial "Développement Agricole et Rural"*) is financed through a tax on agricultural holdings' turnover and aims at supporting the activities (e.g. collective projects, technical development) supporting the agro-ecological transition of agriculture and undertaken as part of the National Programme for Agricultural and Rural Development. In 2017, it amounted to €133.4 million.

6.1.3. Recent trends and patterns in the CS region, determinants of future employment evolution

Total agricultural employment (as measured in AWUs) has decreased by 30% between 1988 and 2000 and by a further 22% between 2000 and 2010. The trend has however recently reversed, with an increase of 1.1% between 2010 and 2016. More specifically, employment has increased across all agricultural sectors over this period, apart from the cattle meat and poultry sectors[29].

The stagnation or even decrease of employment in animal husbandry – especially cattle and pig husbandry – is mostly due to the issue of access to land in Corsica. In addition, the sale price for cattle, sheep and goat meat has been reported as dramatically low. It should also be noted that for some regional meat-based agricultural products, sales are considerable varying throughout the year, with peaks in Christmas and Easter and much more difficult marketing during the rest of the year.

On the other hand, a few agricultural sectors are performing particularly well in Corsica, namely viticulture, citrus fruits growing and organic farming. In the region more generally, revenues from crop production are higher than revenues from livestock production and the crop sector is also better organised and structured than the animal husbandry sector, both factors inducing some young farmers to a shift from livestock to crop farming.

In terms of future employment prospects, no radical change is to be expected in the coming years, as employment figures have been pretty stable in the last few years. The majority of agricultural holdings in Corsica are human-sized, and no further consolidation of the sector is to be foreseen, due to the

[29] Source: Agreste, Recensements 1988, 2000 and 2010, and Bilan annuel de l'emploi agricole – Résultats 2016 et estimations 2017, Extrait de « Agreste Chiffres et Données – Série Agriculture n° 253 »

specificities of the territory, the difficulty for accessing land and the rearing methods used by Corsican farmers.

Nonetheless, two crucial points should be raised, in that regard: first, the agricultural under-production which characterises the region both with regard to local and external demand as well its agricultural potential is not sufficiently taken into account in the current CAP, and especially Pillar 1 decoupled aids which are not (sufficiently) encouraging production. A CAP support tailored to the needs of the region could further stimulate agricultural production and employment locally without hampering the region's transition to a more sustainable and ecological economy, as demonstrated by the region's inclination to protect its many natural areas; second, a properly established land cadastre (and consequent restructuration of agricultural lands) would allow for more farming land transfers to younger, more productive generations and significantly fewer problematic area-related direct payments controls. Without these two required improvements, the Corsican farming sector is at risk of recession over the short-to-longer term.

6.1.4. Prevalent challenges in the CS region

Agricultural under-production

Despite a large agricultural potential (arising from, inter alia, the vast amount of unfarmed land, the agricultural know-how of local farmers and the region's favourable territorial conditions for producing quality products) the region's agricultural supply falls behind the demand[30] – which can only be met through importations from the continent (not only of agricultural products, but also of agricultural inputs such as fodder). Most strikingly, this under-production issue is further exacerbated by a range of aspects. Insularity is obviously one of them, as distance to the continent adds transport costs to the burden incurred by Corsican farmers when importing their primary agricultural inputs from outside the island – an obstacle to investing in additional production capacity. This issue is not currently addressed by the CAP – and in particular the regional RDP -, as the relative closeness of the region to the rest of Europe prevents the region from any specific status vis-a-vis other European regions. Besides, the large proportion of hardly accessible, unfarmed land as well as the low investment capability on already farmed land (a direct consequence of low agricultural income) are further curbing agricultural production in the region. The CAP, because of its uncoupled financial support to farmers, is not aiding agricultural production. Finally, agricultural under-production combined with a high demand for Corsican products gives rise to the commercialisation of fraudulent products, wrongly branded as quality products from Corsica.

Access to land

Access to land in Corsica has been highlighted by interviewed stakeholders as well as in the 2014-2020 Rural Development programme as the main issue for farmers, and more broadly for the agricultural development of the region. The cadastre of the region is dramatically incomplete and outdated, preventing property titles to be issued for the transfer of agricultural holdings outside the family circle. This results in a high proportion of fertile though unfarmed lands whose owners do not make available for other farmers, as 1) property transfer is hardly feasible without a proper land register and 2) agricultural pensions are deemed to be very low – lower than CAP Pillar 1 direct payments -, therefore inducing older farmers to stay in business, even for no or little production. In a region characterised by agricultural under-production, access to uncultivated lands (for instance by dissociating ownership and farming rights) is of pivotal importance. It is estimated that out of the 450,000 hectares of

[30] Local agricultural production meets only one third of local demand (Rural Development Programme, 2018, p.67).

agricultural land in Corsica, only 250,000 hectares are declared by farmers – this means that around 44% of agricultural land is unfarmed. Additionally, agricultural production is in competition with the tourism and construction sectors for accessing land (Rural Development Programme, 2018).

Generational renewal

According to the 2010 survey from Agreste, farm managers older than 60 years old represented nearly one fifth of all farm managers of the region. Furthermore, more than half of the Corsica-based farm managers are aged 50 years old and above, and more than two thirds of them do not know who will take over their holding. This percentage is higher in sectors such as cattle and multispecies breeding, and lower in viticulture, where 55% of winegrowers above 50 years old know their successor on the holding[31].

While this could raise concerns regarding generational renewal in the agricultural sector of the region, the clear lack of farm transfer/succession to younger farmers is compensated for by a high rate of farm business set-up from young farmers. Indeed, the number of farms managed by farmers under 35 years old has increased by 25% between 2010 and 2016. Nonetheless, it is believed that more young people (including those without 'agricultural roots') could be prompted to 1) take over agricultural holdings, should a proper land register be in place and 2) take up agricultural jobs, should the sector be more attractive in terms of income and working time.

Other challenges include

- **Access to credit:** The difficult relationship between banks and the agricultural sector further slows down the development of the agricultural sector in Corsica. Banks are reluctant to invest as farmers do not have any land to mortgage (also linked to the issue of deficient land cadastre).
- **Access to water resources:** Access to water is problematic on the Corsican island, due to inadequate water infrastructure. It is estimated that only 1% to 2% of rainwater is collected, while the rest flows to the Sea. Investment in water infrastructure is insufficient in comparison to the needs of the region. This issue could become more critical in the years to come, as more pressure from mass tourism and climate change is exerted on agriculture. However, rain and snow (in the mountainous parts of the island) could mitigate, to some extent, this challenge. Moreover, the rearing system widely adopted in Corsica (pastoralism) makes regional farming adapted to climate change.
- **Safeguarding sanitary conditions:** The region resorts to plant (and, to some extent, animal) importation to offset agricultural under-production, which creates a challenge in terms of health control (some species are threatened by diseases, e.g. swine fever). This issue is not addressed by the institutional frameworks in place in the region – for instance, the CAP does not tackle this issue as this first and foremost relates to regulation, and to rural development and agricultural income only indirectly.
- **Professionalisation of jobs and agricultural holdings:** there is a reported lack of training provision for specialised and high-skilled farming work as well as a prevalent low-qualified seasonal labour in e.g. arboriculture and viticulture. This could become a challenge in view of the technological advancement happening Europe-wide. Likewise, there are still very few experimentations undertaken (and no regulation in force) in the fields of cattle route management, cattle geo-tracking, electronic identification tracking and precision agriculture.

[31] Source: Agreste, Atlas Agricole Corse, 2015 edition.

6.1.5. Institutional frameworks governing the regional agricultural labour market

Name of the institutional framework	Short description (aim and target beneficiaries)	Governance level (EU, national, regional, local)
Plan d'Avenir ("Plan for the Future")	This Plan is addressed to agricultural development bodies which provide technical assistance on cross-cutting issues such as employment.	National/Regional
Fonds CasDAR (Compte d'Affectation Spécial "Développement Agricole et Rural")	Financed through a tax on agricultural holdings' turnover, this fund aims at supporting the activities (e.g. collective projects, technical development) aiming at the agro-ecological transition of agriculture and undertaken as part of the National Programme for Agricultural and Rural Development. In 2017, it amounted to € 133.4 million[32].	National
EAFRD (Rural Development Programme Corsica 2014-2020)	Based on an ex ante needs assessment of the region, the 2014-2020 Rural Development Programme of Corsica supports four broad strategic objectives (land, knowledge & innovation and business set-up, production and environmental efficiency, and territorial action) and is implemented through the EAFRD (ca. € 149 million over 2014-2020).	EU

In addition, other mechanisms with a more territorially anchored implementation structure are providing tailored support to Corsican farmers. For instance, the Chambers of Agriculture (two in Corsica, one for Southern Corsica and one for Northern Corsica) provide technical assistance to agricultural holdings. The association Inter Bio Corse is contributing to the development of organic agriculture in Corsica by providing support to farmers in the sector, e.g. through dedicated trainings. Besides, other branch-specific associations are helping with specific breeds or with quality labels. Finally, further support can be provided to farmers in relation to e.g. sanitary requirements or participation in short supply circuits. However, these mechanisms are not addressing the implementation of activities *per se*, they are more akin to "tools" and "technical support". It should also be noted that some of these mechanisms have to be paid for by farmers.

With regard to social conditions in the Corsican agricultural labour market, several points can be reported:

First, the agricultural sector in Corsica is deemed to offer equal opportunities and equal access to the labour market, as people with little money and no family ties to agriculture can, in theory, easily start up a farming business. Agricultural training offer is also perceived as satisfactory.

In terms of revenues however, the agricultural sector is not considered as very inviting. With the exception of the citrus fruits and viticulture sectors, income is low. Pension is an even more important issue, as farming pensions in Corsica feature among the lowest nationwide.

Taking into account the specific territorial characteristics of the region (insularity, mountainous areas, etc.), socio-economic development and social inclusion in particular are not balanced across the region. There are glaring differences in the living conditions of mountain-based farmers (with around half of them living with strong material deprivation and very low provision of public services) and lowland-based farmers. This is one of the main reasons for abandoning the farming sector a few years after setting-up, especially among young farmers.

6.2. Regional thematic focus

Diversification of on- and off-farm activities plays a crucial role in reducing farmers' dependence on single-source income (farming) and increasing their revenues. In particular, the **processing** (e.g. from milk to cheese, from pork to cold cuts) and **commercialisation** of agricultural products in short food

[32] Source: French Ministry for Agriculture and Food, *Développement agricole et rural : des innovations au service des agriculteurs, des filières et des territoires*, available here: https://agriculture.gouv.fr/developpement-agricole-et-rural-casdar

supply chains (e.g. on the farmers' premises or nearby local markets) as well as **agritourism** are increasingly prevalent among Corsican farmers, especially during the tourist season. In Corsica, almost two-thirds of farms holders market part of their production (except wine) in short food supply chains and therefore considerably increase their revenues: for 70% of them, this short supply marketing represents more than 75% of their holding's turnover (Agreste, 2015). On the other hand, agritourism is still under-developed relative to its potential. For those holdings in engaged in agritourism, agritourism activities represent on average nearly 40% of the agricultural holdings' turnover (LISA, 2015), but these activities are still mainly offered and organised through word of mouth and private networks (Ibid.). The limited availability of space (also due to the complexity of land transfer between farmers) constrains the possibility of hosting tourists on site. Some farmers are therefore offering more informal accommodation to hikers in so-called 'paillottes' (straw huts) during the high season only. Likewise, the installation of solar panels on sheds is gaining in importance, although the limited availability of land is a significant constraint to the further development of renewable energy production. Firewood and fuelwood production is also to be found as a fairly common secondary activity among farmers. Finally, earthwork and scrubland transformation are performed as value added activities by a minority of farmers.

The **popularity of local products** (in particular due to their quality) as well as the favourable conditions and existing infrastructure of the region for (mass) tourism are expected to further boost the importance of short food supply chains off the beaten track and the professionalisation of agritourism activities by farmers in less tourism-oriented areas. However, on-farm diversification is still predominantly seasonal and thus does not guarantee an additional source of income throughout the year. Regulation on mass catering from local products – in particular through a national law to be complied with by 2022 – should support agricultural product processing activities among farmers on a more permanent basis. These two aspects form an integral part of the product differentiation-based microeconomic strategies adopted by local farmers, relying in particular on the widely recognised value of regional products (i.e. Corsican products are deemed to be of high quality). This strategy also applies to agritourism, where "rurality" and "home produce" become compelling selling points and a **competitive advantage** in a professionalising agritourism environment (LISA, 2015). While supporting the revitalisation of rural areas, the risk is then for agritourism to 'eat up' resources (primarily agricultural land and labour time) at the expense of an already lagging agricultural production. This calls for an integrated, coherent and synergistic agritourism-rural development policy based on a thorough understanding of the specific strengths and weaknesses of the territory, where agritourism not only helps maintaining farming employment but also agricultural production.

Based on the region's territorial specificities and with due consideration of the region's agricultural situation characterised by under-production, recommendations for the CAP 2021-2027 include:With regard to Pillar 1:

- the reintroduction of coupled support, to more efficiently incentivise agricultural production and the transfer of agricultural holdings owned by older farmers;
- the rebalancing of the direct payments from aids targeted at individual farmers to aids targeted at farmers' cooperatives, so as to bolster agricultural employment, increase the availability of support to holdings in difficulty, and more generally foster economies of scale in agricultural production and marketing;
- the reduction of administrative burden and delays related to (the application for and receipt of) direct payments to farmers;
- the introduction of direct aids aimed at the preservation of the natural environment and biodiversity; for instance, support payments for the creation of natural firewall against wood fires

in areas with natural constraints – this scheme would be decoupled from production, and would contribute to the maintenance of social fabric in more remote rural areas while increasing the income of the populations living there.

With regard to Pillar 2:

- A stronger focus on and more budget allocated to farm diversification and pluriactivity, which is key is raising farmers' income and more generally increasing the attractiveness of jobs in rural areas.
- More attention paid to and support provided for the restructuring of some agricultural sectors.
- More support for technological development, in particular for farming technologies adapted to the territorial uneven relief.
- More generally, the elaboration of a more global and coherent rural and farming development programme.

6.3. References

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- Chambre d'Agriculture de Haute-Corse.

7. UPPER AUSTRIA (AUSTRIA)

Country	Austria
Region (NUTS 2)	Upper Austria (AT31)
Cluster	7

7.1. Contextual information on the agricultural labour market

7.1.1. Territorial characterisation of the region

Upper Austria is one of the federal states ("Länder") of Austria. It is bordering Lower Austria, Salzburg and Styria as well as the Czech Republic and Germany. It is characterised by three main geographic features:

- The lowlands shaped by the river Danube, mainly consisting of the "Alpenvorland" – flat to medium-hilly terrain mainly used for agriculture and partly forestry.
- The medium-height mountain range of the "Böhmische Masse" north of the danube – hilly to mountainous terrain characterised.
- The alpine regions in the south.

The region is characterised mainly by continental- and oceanic climate, with atlantic influence in the south. Average yearly temperature is 7,6°C, with denser populated lowlands closer to 9°C and less populated alpine regions averaging below 5°C. The yearly precipitation of 1150l/m^2 is above average in the Austrian context, with high fluctuations between 735l in northern mountainous regions and up to 1800l in alpine regions.

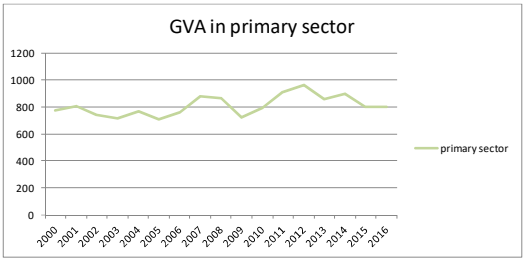
7.1.2. Background data on the agricultural sector and farming employment in the CS region

Economic breakdown by sector

While GVA in the secondary and tertiary sector has been steadily increasing (with the impacts of the 2008 financial crisis not having a lasting reduction effect), the primary sector does not show the same effect. GVA there is characterised by continuous fluctuation, with no general up or down trend to be identified. Furthermore, the share of the primary sector in relation to the other sectors has been decreasing for the past 15 years

Primary sector

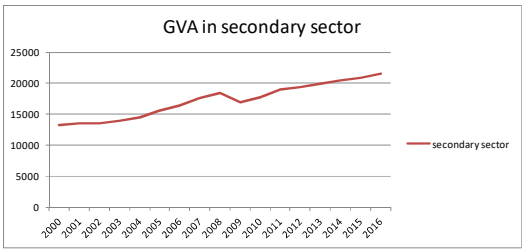
Figure 7.1: GVA in primary sector



Source: Eurostat, gross value added at basic prices by NUTS 3 regions [nama_10r_3gva].

Secondary sector

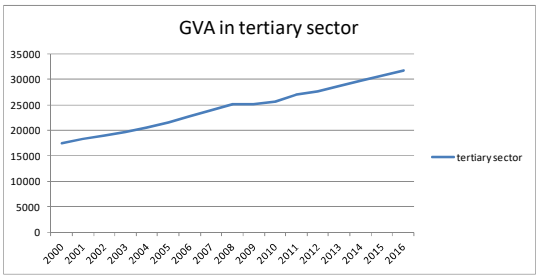
Figure 7.2: GVA in secondary sector



Source: Eurostat, gross value added at basic prices by NUTS 3 regions [nama_10r_3gva].

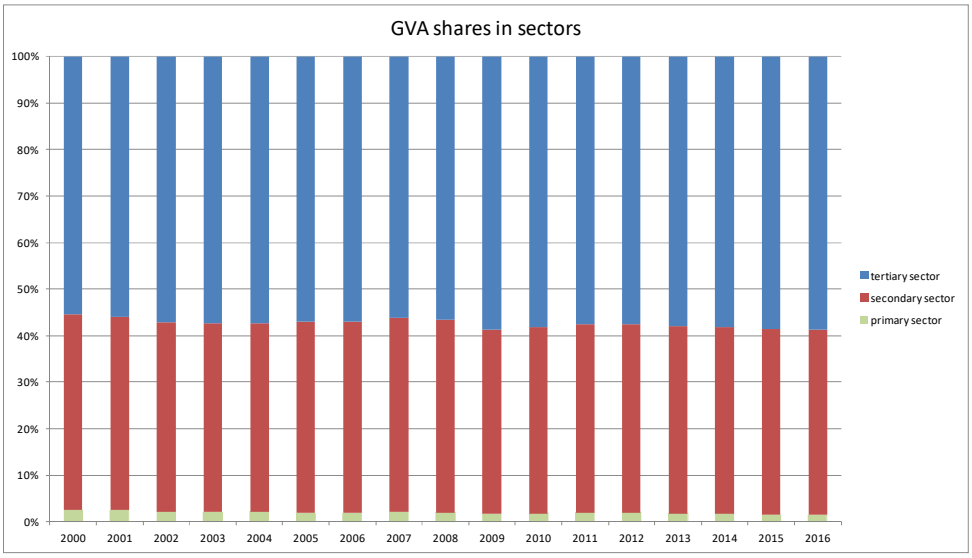
Tertiary sector

Figure 7.3: GVA in tertiary sector



Source: Eurostat, gross value added at basic prices by NUTS 3 regions [nama_10r_3gva].

Figure 7.4: GVA shares in sectors

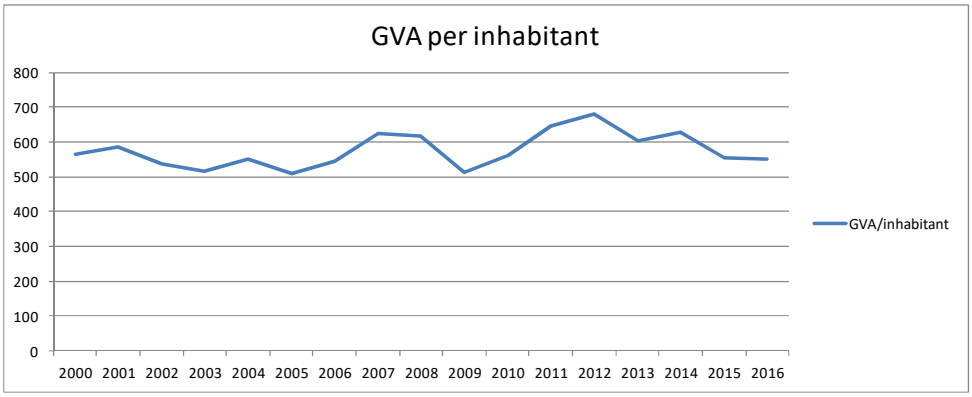


Source: Eurostat, gross value added at basic prices by NUTS 3 regions [nama_10r_3gva].

Agricultural gross value added

With no substantial change in inhabitants (less than +1% since 2000) the regional GVA in the primary sector per inhabitant does not show patterns different than the overall GVA. It is characterised by fluctuations with no particular upwards or downwards trend.

Figure 7.5: GVA per inhabitant



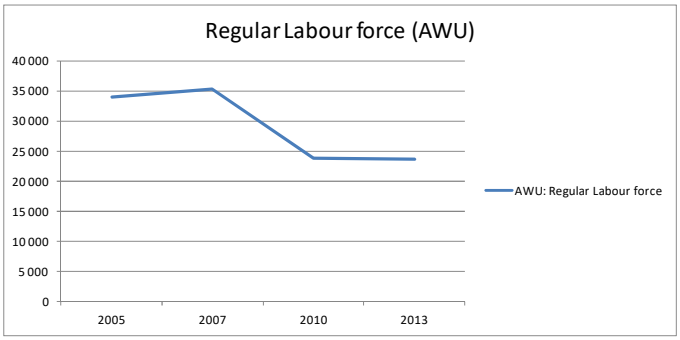
Source: Eurostat; Population on 1 January by age group, sex and NUTS 2 region [demo_r_pjangroup] and gross value added at basic prices by NUTS 3 regions [nama_10r_3gva].

Agricultural labour force

While the overall agricultural labour force shows a steady decrease in the region, the individual groups show differentiated trends. Family workers (having the highest share of AWU with almost 90% in 2013) have been reduced by 30% since 2005, while Non-Family labour force (almost 10% of the AWU in 2013) have increased by 30%. Temporary workers (around 1,5% AWU in 2013) have also shown a decrease by more than 50%.

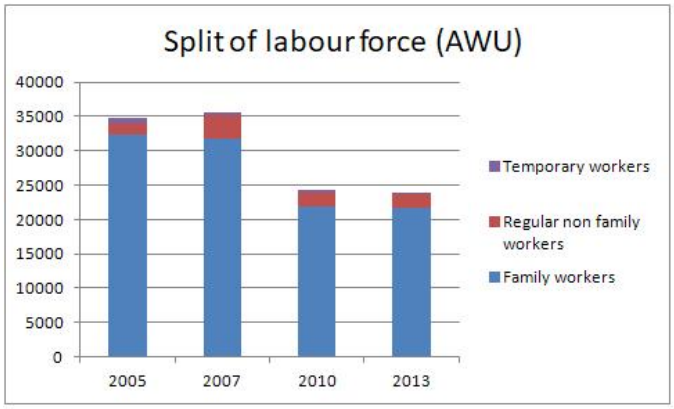
Split of regular family workers, regular non-family workers and temporary workers

Figure 7.6: Regular labour force



Source: Eurostat, Labour force: number of persons and farm work (AWU) by sex of workers and NUTS 2 regions [ef_olfreg].

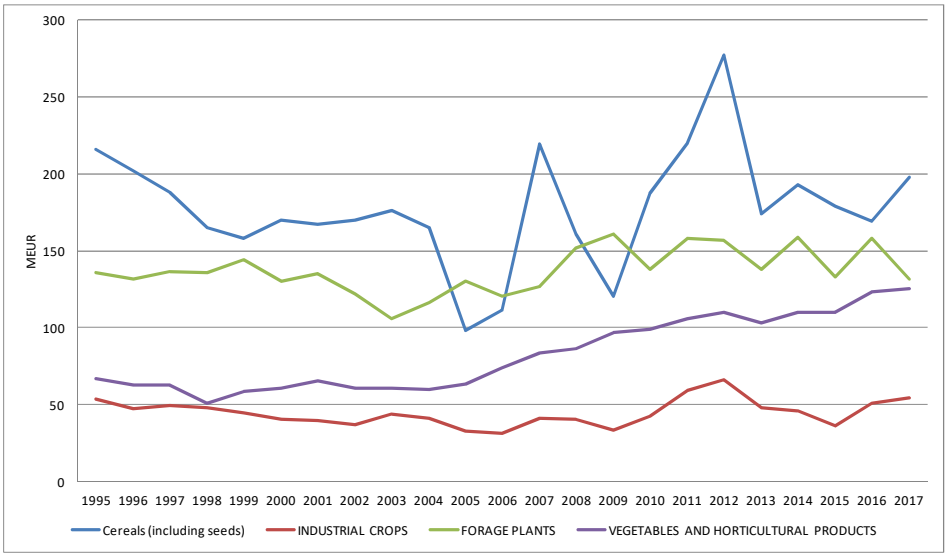
Figure 7.7: Split of labour force



Source: Eurostat, Labour force: number of persons and farm work (AWU) by sex of workers and NUTS 2 regions [ef_olfreg].

Main types of agricultural products

The main types of products show differentiated patterns, with Vegetables/Horticultural products increasing steadily, while industrial crops and forage plants remaining more or less stable and cereals showing high yearly fluctuations.

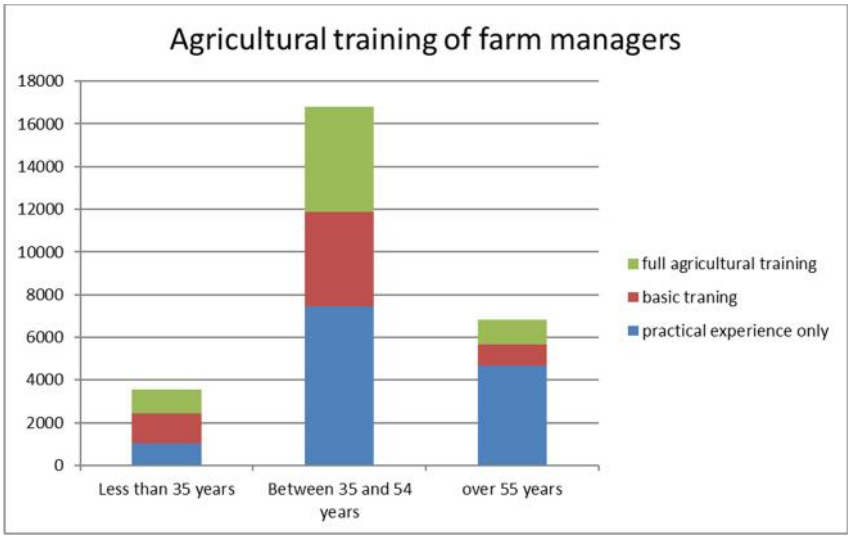


Source: Economic accounts for agriculture by NUTS 2 regions (until 2012) [agr_r_accts_h] und Economic accounts for agriculture by NUTS 2 regions [agr_r_accts]; bis 2005 = agr_r_accts_h, ab 2006 = [agr_r_accts].

Agricultural training of the farm manager population

A clear differentiation in the age groups with regards to their agricultural training is visible in the region. While farmers over 55 years mainly have no formal agricultural training, in the age group between 35 and 54 years around 50% have at least basic training. In the youngest group of farmers below 35 years this is increased to more than 2/3 of the farmers.

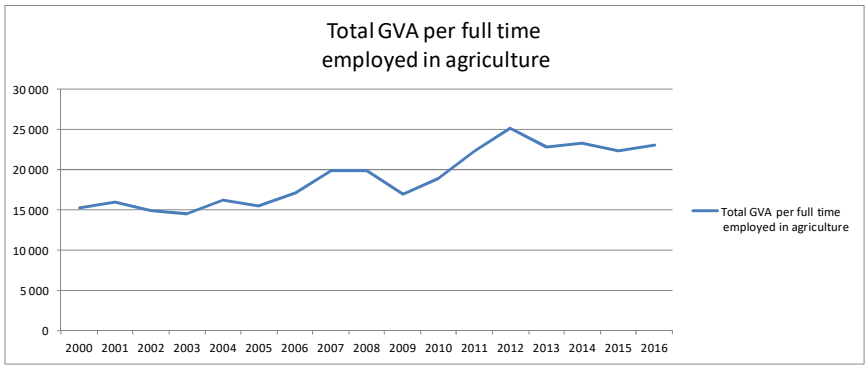
Figure 7.8: Agricultural training of farm managers in 2016



Source: Common context indicators for rural development programs (2014-2020), C.24 – Agricultural training of farm managers.

Agricultural labour productivity, agricultural factor and entrepreneurial income and gross fixed capital formation

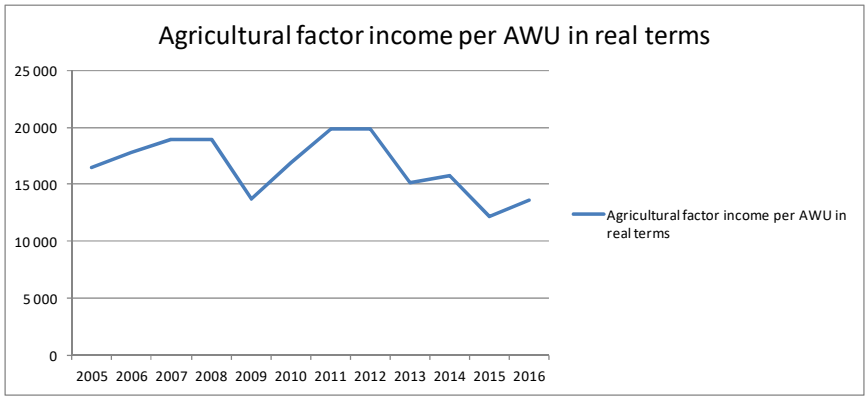
Figure 7.9: Total GVA per full time employed in agriculture



Source: Eurostat, gross value added at basic prices by NUTS 3 regions [nama_10r_3gva] and Employment (thousand persons) by NUTS 3 regions [nama_10r_3empers].

While overall GVA is fluctuating and does not show a particular upward trend, GVA per full time employed is increasing over time with a reduction of full-time employed persons in agriculture.

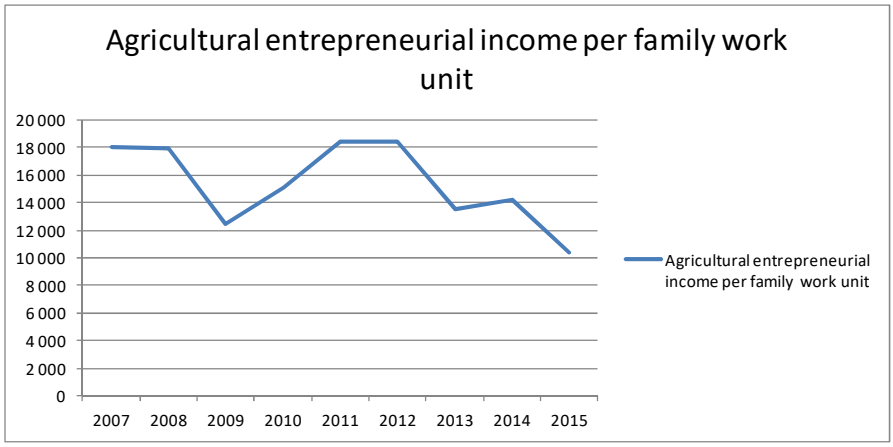
Figure 7.10: Agricultural factor income per AWU in real times



Source: Eurostat – Economic Accounts for Agriculture (calculations: DG AGRI), Regional data: DG AGRI estimates.

Agricultural factor income per AWU in latest years shows a general downward trend, having decreased below the post-2008-crisis minimum at the moment.

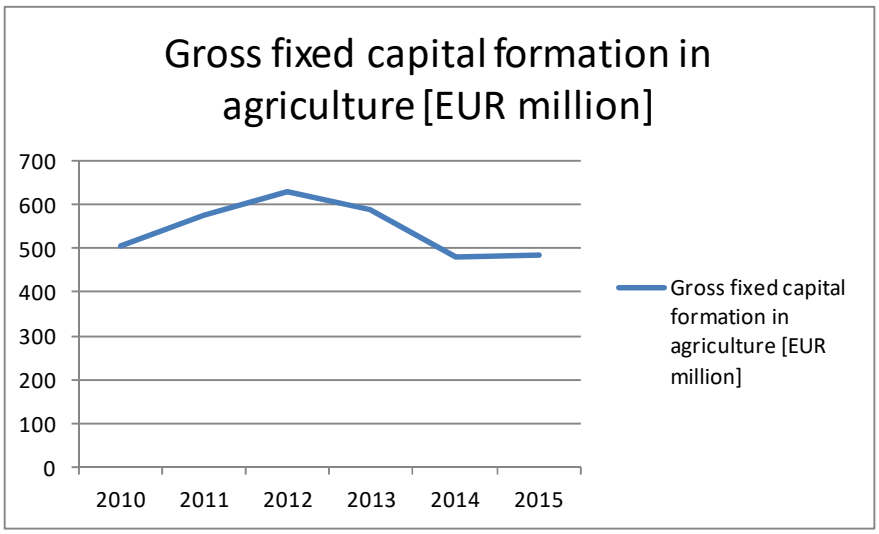
Figure 7.11: Agricultural entrepreneurial income per family work unit



Source: Eurostat – Economic Accounts for Agriculture, National data: tables aact_eaa04 (last update: 14/12/2018) and aact_ali01 (last update: 14/12/2018).

The downward trend in entrepreneurial income per family work unit visible in the graph is particular remarkable, as at the same time the number of family work units has been decreasing as well. Overall agriculture related income thus seems to be decreasing rapidly.

Figure 7.12: Gross fixed capital formation in agriculture



Source: Common context indicators for rural development programs (2014-2020), CCI 28 – Gross fixed capital formation in agriculture.

Gross fixed capital formation has shown a post-crisis upward trend peaking in 2012. In the following years it decreased by around 20% to stabilise at slightly less than € 500 million.

Labour costs

With farm owners themselves representing the majority of farm workers, labour costs components are differing from those for employment schemes. For employees, individual salaries as well as contributions by the employer to social security and health insurance determine the labour cost. Farm holders however are self employed with a special social security and health insurance provider under Austrian law, leading to slightly lower contributions necessary in most cases then for employees.

Data on pluriactivity and on/off farm diversification

Both farm pluriactivity and farm diversification play a large role in the case study region. Around 50% of farms are run part-time with the holder performing off-farm activities. Furthermore, farm-related income sources outside of traditional agriculture are crucial for many farmers in the region – however no quantitative data on that is available. Especially relevant in that regard are tourism- and marketing activities.

Specificities of the regional agricultural labour market

The labour market is characterised by a high share of family-owned farms and family workers. Professional non-family work accounts for less than 10% of AWU. Temporary workers have an even smaller share with around 1.5% of AWU. There is no specific data on migrant/seasonal workers available due to the overall low importance for the region.

CAP funding data and other institutional frameworks

CAP funding is determined by the national level in Austria. Within EAFRD, clear priority is P4 (Restoring, Preserving and Enhancing Ecosystems) with almost 2/3 of the entire budget. Measures 10 (organic

farming) and 13 (less favoured areas) have the highest relative weight, together making up about 50% of the budget.

Pillar I payments

No data available.

Pillar II funding (split by focus area and measure)

Focus Area	EAFRD amount in the Financing plan
2A	374,381,978.00
2B	63,388,417.00
P2	437,770,395.00
3A	258,782,548.00
3B	1,090,126.00
P3	259,872,674.00
P4	2,492,579,664.00
5A	10,555,428.00
5B	2,572,438.00
5C	96,198,522.00
5D	11,030,078.00
5E	2,219,608.00
P5	122,576,074.00
6A	69,279,876.00
6B	413,528,540.00
6C	27,024,411.00
P6	509,832,827.00
DM/TA	114,920,363.00
TOTAL	3,937,551,997.00

Measure	EAFRD amount in the Financing plan
M01	57,726,246.00
M02	11,686,031.00
M03	66,487,287.00
M04	452,664,251.00
M06	96,077,609.00
M07	393,147,428.00
M08	49,984,603.00
M10	1,048,380,899.00
M11	398,472,521.00
M12	3,342,259.00
M13	874,362,885.00
M14	113,127,555.00
M15	419,878.00
M16	58,988,982.00
M19	197,763,200.00
M20	114,920,363.00
TOTAL	3,937,551,997.00

National and regional support schemes

National and regional support schemes are strongly linked to the EU level funds, usually being structured as additional payments. Specific funding for farmers is scarce, however several rural development measures are financed by national and regional governments. Due to their wide coverage of sectors (e.g. infrastructure, ICT, health), they cannot be quantified within the frame of this case study.

7.1.3. Recent trends and patterns in the CS region, determinants of future employment evolution

Farm structure

Situation: With small farms (less than 20 ha UAA) making up ~60% of farms in Upper Austria and the average farm accounting for 18.6 ha, the region can be considered average in the EU context. Large farms (over 100 ha) however make up a share of less than 0.5%, far below the EU average of 3.1%. Consolidation of farms at a very slow rate is a likely trend in the future, with small and especially very small family farms getting out of business at the point of handover from one generation to the next being a frequently observed in the region. This effect is slightly more predominant with part-time run farms, which account for almost 50% in Upper Austria. Consolidation on a large scale is unlikely, as

general patterns of land ownership and land lease arrangements are scattered and thus large scale consolidation is not feasible.

Trend: Average sizes of farms will increase slightly, in parallel leading to a shift in shares from very small to small farms. Handover from one generation to the next being a driver of this effect implicates however, that the process is very slow.

Demographic change

Situation: With low average birth rates and rising life expectancy in Europe a general change in the demographic structure of societies is taking place, an effect further increased by out-migration in rural areas. As predominantly younger, well educated people (including young families) are moving towards cities with better job opportunities, the result is a further shift in the demographic structure. Generally, this effect is perceived as adverse towards rural areas, as an increase in average age has multiple typical follow-up effects such as reduction of infrastructure geared towards younger people (e.g. childcare facilities, primary schools...), less investment in public services etc., all of which lead to a reduction in quality of life for rural areas. This effect can be seen in the case study area as well, with metropolitan areas growing and especially peripheral rural areas shrinking in terms of population. Subsequently, the perspective of remaining in a rural area is less attractive to younger people, which negatively impacts their willingness to take over a family farm from their parents.

Trend: Farm numbers have been decreasing and will continue to do so. One aspect of that decrease is related to the demographic change and migration in rural areas, with younger generations not willing to take over the farm of their parents anymore. This is particular relevant for part-time farmers, whose numbers in Upper Austria have been decreasing at a much faster rate than full-time farmers.

Farm labour force

Situation: Farm workers in the case study on average are particularly well educated (e.g. share of farm managers with full agricultural training is over 2.5x the EU average) however only a small share of farm workers is not considered part of the farm holders family. Around 93% of persons employed creating responsible for 90% of AWU in the case study region are part of the farm holders family. Professional employment thus plays very little role in Upper Austria, both in terms of full time employees as well as in seasonal workers.

Trend: The general trend which is likely to continue is a reduction in the number of overall farm workers, however the shares of family and non-family workers are not likely to change. Seasonal workers in the case study region are not relevant for the predominant types of agriculture practiced and are not likely to become that in the future. Education and training of the farm labour force has not been and is likely not to be subject to major changes in the future.

National policies

Situation: Even though the principle of subsidiarity within Austria is of high importance with the "Länder" (= states) having broad authorities for regulating e.g. land use and regional development, most of the crucial funding schemes and policies for agricultural development and by extension employment are managed by the federal government. Influential funds for farming employment such as ERDF and EAFRD for example are programmed by the national level. The inclusion of states representatives in the programming process as well as the monitoring committees however ensures some level of influence in shaping funding programmes. The same holds true for national strategies such as the "Masterplan for rural areas" which is created in consultation with states representatives under the lead of the national government. Nonetheless, in a structurally (in terms of agricultural styles

and methods) differentiated country such as Austria, regional approaches are of high relevance in order to target policies and funding to the regional needs which might be at risk of being set aside in national policies.

Trend: Structurally, the responsibility for implementing EU funds as well as for the predominant influencing strategies on agricultural employment will remain on the national level. For the next programming period, EC in general has emphasized the relevance of subsidiarity and regional/territorial approaches as a guiding principle, however the practical application cannot be determined at this point.

7.1.4. Prevalent challenges in the CS region

Researcher-practitioner gap

While Austria in general and Upper Austria in particular has a high R&D expenditure, with high outputs of e.g. patents in the agricultural sector in Upper Austria, the link between practitioners and researchers is considered underdeveloped. Several initiatives are ongoing (e.g. through the EAFRD programme of Austria) to close this gap, thus an improvement is to be expected. However with generally slower uptake of technological innovation in the (small) farming sector compared to other sectors, this gap will remain a challenge in the short- and medium term.

Farm competitiveness

The relative importance of agriculture in the EU budget is being reduced over time, while at the same time several protectionist mechanisms once an integral part of EU agricultural policy (e.g. quotas) have been abolished. This leads to an increase in market orientation of agricultural production, thus the need for structural changes. Large scale investments and changes in production methods are oftentimes not feasible, particularly for small farms and part-time farmers which are predominant in the case study region. The market pressure on such farms presents a growing challenge likely to force numerous farms out of business over time.

Less-favoured areas

In addition to the already existing challenge of high market pressure on small farms, about 50% of Upper Austria's farms are considered as less favoured farms due to their location in areas facing natural constraints (in particular mountain areas). While this share is not uncommon for Austria (in fact it is below the national average), longstanding experience with the issues related to less-favoured mountain farming challenges exists and a number of support schemes are targeting such farmers explicitly, it nonetheless remains a challenge for the region. Especially in the light of EU trade agreements specifically related to agricultural products, increasing the prevalence of products of large scale industrialised agriculture within the EU, Upper Austrias farms applying conventional farming (i.e. not targeting specific niche markets, relying on specific distribution channels etc.) practices will likely not remain competitive.

Consumer demands

Due to a number of factors including targeted marketing measures, growing environmental awareness, and the increasing popularity of healthy lifestyles led to a growing demand for perceived "healthy" and "local" products. This has particular implications for the food production sector, where high quality local products changed from a niche to a mainstream market. For a growing group of consumers, price is no longer the main determining factor for their decision on what to purchase. A

small-structured farming landscape with little large scale industrial producers is well suited to profit from such a shift in consumer behaviour. Apart from higher demand out of the food processing industry, an opportunity created by this is direct marketing and "farm gate selling" greatly increasing profit margins for farms.

Information gap

The abovementioned challenges of the research-practitioner gap, changing EU agricultural policy and the resulting effects as well as the influence of extra-EU products on the EU market are well known among national and regional authorities, farmers associations and individual farmers alike. The need for structural changes to the farming sector, product and/or process innovation in order to remain competitive is recognised on all levels, with a number of general strategies such as automatisation and increased use of robotics, marketing and distribution activities or farm diversification principally suggested by numerous interviewees. On the individual farm level however, a lack of information and consultation opportunities is recognised. Farmers see the need for creating integrated farm development concepts, going beyond optimising individual steps of a production process but rather optimising the overall business strategy from administrative issues to production process to final distribution of products. Regional branches of the agricultural chamber are offering such consultation opportunities, and their prevalence and uptake is expected to increase in the future, however given the long-term orientation of such business plans the time lag between staring a consultation process and creating measurable impacts is considerable.

Low availability of agricultural area

With the overall size of farms already being quite small on average, an additional challenge is created by the structure of fields and other agricultural areas. Farmland ownership is characterized by historical land division and inheritance, resulting in block-field structures (in lowlands) and open-field systems (in hilly terrain including lower altitude mountain farming) with small field sizes. No large-scale land reform has taken place since 1848, thus only incremental changes and localized restructuring of parcels has taken place. The result for farmland availability and consolidation of farms is, that potential farmers seeking to buy or lease adjacent fields have to bargain with multiple other farmers, thus increasing the difficulties of such endeavours. As this challenge is rooted in historical land ownership mechanisms, only small improvements of land farmland structure (from an agricultural point of view) are to be expected to take place. This fact poses restrictions not only to larger farms but also to small farms seeking to increase operational efficiency. Furthermore it limits the mechanisation of crop farming.

7.1.5. Institutional frameworks governing the regional agricultural labour market

Name of the institutional framework	Short description (aim and target beneficiaries)	Governance level (EU, national, regional, local)
ERDF OP Austria	Aligned with the smart specialization framework, the food production sector is one of the focus areas of R&D. Furthermore, complementing the approach of EAFRD in Austria, tourism support is limited to small and medium sized enterprises, among others thus targeting the agritourism sector.	EU – National
RIS3 Upper Austria	Food production and processing is one of the core action fields of the strategy. An emphasis is placed on the production sector of the value chain, indirectly supporting farming employment through support for innovative development and increase of value added.	Regional
Masterplan for rural areas	Overarching national strategy to strengthen rural areas. Direct and indirect support to farming employment is outlined, e.g. support for young farmers, measures for fostering part time farmers, measures to support ageing farmers and active ageing in general.	National

Name of the institutional framework	Short description (aim and target beneficiaries)	Governance level (EU, national, regional, local)
Tourism Strategy Upper Austria	Both agricultural products as well as farms as integral part of tourism accommodations are identified as key elements for sustainable growth in upper Austria. Support schemes for small farms to stay in business and support the "destination upper Austria" from a tourism perspective are encouraged. Targeted marketing of regional products as part of the "destination" is identified as synergy with agricultural labour markets.	Regional
Workprogramme of the National Austrian Research Funding Association	Within the workprogramme, key funding priorities are defined which guide national and international funding schemes in Austria. Agriculture and especially food production are two of the priorities targeting innovation in the agricultural sector.	National
Regional development strategies	In the case study region, regional development strategies such as for LEADER-regions but also non-CAP related are broadly established. Due to their strong regional/local differentiation, no "general policy" can be identified, however influence on the agricultural labour market is exerted in many of them e.g. via land use specifications and strategies, tourism strategies etc.	Regional – Local

EU Social Pillar

Austria as a country having a particular strong tradition in social rights and especially workers rights protection, the baseline compared to the EU average is high. Nonetheless, several issues in relation to the EU Social Pillar principles remain. The gender employment gap, while below the EU average has been increasing in the past years, and still is lagging behind not only Scandinavian regions, but also e.g. German or French ones. Subsequently, a considerable pension gap is the result of such patterns on the labour market. Furthermore, while childcare opportunities on the national and regional scale are comparably well in relation to the EU average, a strong local differentiation can be regarded in the case study region. Rural areas (especially peripheral rural areas) lack childcare facilities, while urban and suburban areas are not facing the same difficulties.

Europe 2020 Strategy on Growth and Jobs (smart, sustainable and inclusive growth)

The employment goal of 75% employment rates between 20 and 64 years in general is fulfilled by Upper Austria, however in relation to gender balance the picture is differentiated. While male employment is steadily increasing and at 84.1%, female employment rates have been stagnating around 1% shy of the target for the past years. Tertiary education levels in upper Austria are also lagging behind, still below the 40% of people 30-34 aimed at by the strategy. The trend however is a steadily increasing share, thus the goal is likely to be reached soon. With regards to social poverty, while Upper Austria has a comparably high standard in relation to other regions of the EU, the improvement measured in the current programming period is lagging behind the numbers necessary for achieving the set goals. While the at risk of poverty rate has decreased by 1 percentage point, it is still quite high with 10,6% of the population. In the inner-country comparison, Upper Austria is usually fairing mediocre, with regions like Vienna and Burgenland usually lagging behind and regions like Tirol and Vorarlberg usually ahead.

Marrakech declaration on migration

As the agricultural sector in general employs very few non-family workers, migrant workers play an even lesser role and are limited to some very specific sub-sectors of vegetable and fruit related agriculture, which is of low importance in Upper Austria. Any policies and laws relating to migrant workers in general would be a national competency, not a regional one.

7.2. Regional thematic focus

Background and effects

The region of Upper Austria in the European context is characterized by very low unemployment, comparably high average income, a good overall accessibility as well as high innovativeness. The primary sector in general is of comparably low importance in terms of e.g. GVA and employment for the region as a whole compared to other sectors, however it is exerting considerable influence on other economic activities such as food processing and especially tourism. Around 100,000 jobs in the Region directly or indirectly are related to the primary sector. Rural depopulation as a phenomenon can be identified in parts of Upper Austria, with several highly industrialised as well as urbanised areas such as the Linz-Wels within the case study area and especially Vienna outside of the case study area acting as "pull-regions".

Decrease in farm numbers, a farming structure not suited for large scale industrial farming, slow consolidation efforts and considerable pressure from the EUs internal market as well as an inflow of agricultural products from outside of the EU due to free trade agreements create the need to alternative approaches in order to remain competitive. With the geography (prevalence of mountainous regions) as well as the farmland structure (see challenges described above) impeding increasing competitiveness of farms through increase in farmed areas (economies of scale approach), the region mainly has to rely on innovation both in farming practices in the classical sense as well as innovative approaches more general in farm organisation, operation and integration in regional value chains.

Impacts of non-action

Without fostering innovation potentials and increasing farm income, the downward trend of farm numbers and farm holders will continue in short- medium and long term. However, this will not only be due to consolidation and increased efficiency – i.e. producing the same output with lower numbers of workers on larger farms – but is actually likely to lead to a reduction in utilized agricultural area and general productivity. While agricultural area is valuable and is unlikely to be left out of use in the lowlands, mountainous regions are oftentimes not suited for larger scale farming and depend on a dense network of small farms with limited numbers of livestock (the prevalent farming method being grazing of livestock). The extent of this decrease is not easy to pinpoint, as past trends in the long term rather reflect a general shift in the development of the overall economy and are not specifically related to regional challenges.

In terms of employment, a differentiation of effects is likely. While short term effects might be negligible, in the long term farm managers and family members working on farms will decrease considerably, with a likely increase in professional non-family workers (although to a limited extent). Male farm managers, representing the largest group of directly employed persons in the farming sector will be predominantly impacted. While representing just a small percentage of overall rural population, losing employment opportunities in the farming sector has considerable ripple effects both in relation to families as well as on other sectors dependant on the current structure of farming (e.g. in the tourism sector).

An increase of rural depopulation with the loss of a family owned farm as an "anchor point" in the region not only for the farmer himself but also the extended family is thus likely in the medium- to long term. Typical migration patterns for Upper Austrias rural population however are regional (in the sense of "within the state"), but oriented towards regional population centers. Larger scale out-migration towards other Austrian states is unlikely, however locally the effects can be quite severe.

Current innovation trends

From a technological perspective, Upper Austria can be characterised as highly innovative (the R&D quota in Austria in general is considerable with 2.8% GDP) with a strong network between universities/colleges/polytechnic schools and large players in the industrial sector, with ever growing research cooperation efforts in the past 30 years. Agricultural technology innovation in particular is supported by the creation of respective institutes at universities and colleges as well as introduction of corresponding university majors. While this link between research institutions, education facilities and private corporations involved in technological innovation in the agricultural sector is well developed however, the uptake of the resulting products by individual farmers is lagging (see also identified challenges). The reasons for this lag are diverse:

- Technological innovation requires investment. With the farm structure being dominated by family farms and a particular high share of part-time operated farms, their economic size being € 100,000 or less in over 80% of the cases, investments are likely not paying back or at the very least present a considerable risk.
- "Mindset" of especially older farmers, is not innovation-oriented. The willingness to take great efforts in changing established practices and technologies is low, also coupled with the required investment needs. Technological innovation thus oftentimes is connected to a handover in farm management to the next generation.
- Consultation and information efforts are limited. While the agricultural chambers provide information for farmers, drafting an integrated farm development plan is considerable effort. With structurally differentiated farms, no "standard" solutions can be provided, however keeping an overview of technological innovations and realistic applications in the individual farm is challenging and requires external input.

The "soft" side of innovation however is considerably more advanced in the case study region. This is the result of on the one hand considerably lower investment needs (in most cases), longstanding experience in similar approaches thus higher willingness for "experiments" and most importantly existing frameworks and cooperation networks which support uptake.

Strategies and measures

While a number of regional and national strategies and programmes recognize the problems of lagging uptake of innovation, competitiveness of farms and rural regions in general, challenges for farming employment etc., a clear and explicit policy response is lacking. Soft innovation in that regard is targeted slightly better than classic technological innovation.

The main strategies and measures are outlined in the table below.

Table 7.1: Main strategies and measures

Programme	Measures
Regional level	
RIS3 Upper Austria	Investment in research efforts relating to the agri-food sector Support of including practitioners in innovation development Holistic approach along the whole value chain of the food industry, including every step from production to final consumer Promotion of education programmes in relation to R&D in the agri-food sector
Tourism Strategy Upper Austria	Promotion of integration of activities between agricultural- and tourism sector, especially bringing together relevant associations Adjustment of marketing campaigns in the tourism sector to increase spin-off effects on the agricultural sector

Programme	Measures
National level	
Masterplan for rural areas	Promotion of innovation partnerships between industry and research institutions Promotion of transfer of research results "on the ground" Promotion of innovative marketing and distribution channels for agricultural producers
Rural Development Programme	Support schemes for innovative business practice development + business plans
ERDF OP Austria	Financial support for direct investment measures Support of innovative pilot projects Direct support of small enterprise innovation projects in the agricultural sector (RDP) and non agricultural sector (ERDF) Promotion of knowledge transfer in the agricultural community and between agricultural community and industry/research Support of agricultural training and further educational measures Support of various activities increasing quality of life in rural areas especially concerning village renewal Specific support for less favoured regions Certification systems for green care projects to increase quality of offers

As apart from the Rural Development Programme and the ERDF-OP Austria all listed documents are of strategical nature, their effects in practice rely on activities e.g. by regional/national authorities, associations or even by individual entrepreneurs. Their strategic outline however is picked up, either explicitly or implicitly through binding acts, funding schemes etc. thus creating impacts in practice.

In none of the strategies and policies analysed, the need for development of innovative techniques and approaches in the farming sector is a main priority, with most documents associating "innovation" rather with technological- than with soft innovation. The exception is the "Masterplan Rural Areas" which explicitly lists change in marketing techniques as a necessary innovative measure on the farm level. A common approach outlined by all of the documents however is the need for integrated action rather than an isolated view on the farming sector. I.e. while direct payments and income support schemes are an integral part of maintaining farms in Upper Austria (and beyond), no business-wise sustainable future is possible where coordination with other sectors is missing. This is recognized by innovation strategies (i.e. coordination of research and practitioners, common educational targets, integrated view on production sector in the value chain ...), tourism strategies (i.e. synergies between non-farm tourism and farm tourism as well as other value added to the region by farms from a tourist perspective) as well as funding programmes (i.e. coordination of on-farm and off-farm employment, support of integration in the tourism sector, ...) all of which propose or support corresponding measures.

Farm-level responses

Technological innovation on the farm level is oftentimes driven by direct investment support, as a core issue especially for small farms is the lack of available funds and/or the long payback-period related to high-tech infrastructure. On average, these support schemes amount to € 190 million per year in Upper Austria, representing the second largest form of support for farmers after CAP Pillar 1 payments amounting to € 325 million. As a prerequisite of receiving funding in this way is usually the creation of a solid business plan, the responsibility lies with the farm to draw one up. While some support from e.g. the agricultural chamber exists, the system at the moment is underdeveloped.

Examples for "soft" innovation measures can be directly farming related, but more often correspond to farm diversification measures and include e.g.:

- "Greencare" initiatives, expanding the traditional agritourism model to people with a health interest as well as people with particular needs. This can include cooperation with other professions (e.g. therapeutic experts, professional care workers, ...) and can also be geared toward several target groups ranging from burnout-endangered persons to seniors to persons with

disabilities. The initiatives make use of existing structures and thus are integrated in the farming operations without interrupting them.

- "Destination" initiatives, representing an integrated tourism concept making use of a regions specific characteristics and seeking to develop them. While traditional tourism cooperations are less innovative, seeking to create e.g. common information points or a common accommodation management, "destination" initiatives go far beyond that. They concentrate on a specific regional characteristic – oftentimes related to agriculture – which is marketed as the main reason to visit a specific region. Participating farms (and other businesses) implement activities related to that characteristic, integrating and cooperating with other farms/businesses. Apart from classical marketing of regional products and farm-gate sales this approach could for example include on-farm courses in farming techniques, processing of food, presentations and exhibitions etc.
- "Catering" initiatives, expanding traditional methods of selling farm products. Especially popular with organic farms, the business model combines the production of home-made products traditionally sold at farm-gate sales with professional event-catering. While intermediary actors are sometimes involved, some farms have created completely independent operations.

Strengths and weaknesses

The *strategies and policie*s in place do not specifically make innovation in farming one of their main priorities, however promote an integrated approach in different sectors corresponding actually much better targeted at the needs of the region than a single "innovation priority" would be. Especially with regards to farming employment, (technological) innovation is not an isolated factor that secures jobs, but it is one of many factors in a network/system of measures designed to modernise the farming sector and ensure it is suited for future challenges. The promotion of educational measures (including both basic as well as vocational education), research and its uptake by practitioners, coordinated marketing as well as tourism related activities both for on- and of farm employment targets the needs of Upper Austria and its future development in the farming sector well. However farming-related measures alone are not enough, correspondingly the relevant strategies and policies outline the need for and support the increase of quality of life in rural areas in a broader sense.

While a holistic approach is what is needed for the region, the risk of overlooking key aspects in the multitude of priorities remains. Especially as the most relevant policies – i.e. those which are not only strategical but create direct impacts through funding activities – are managed by the national level, particular regional needs of Upper Austria might be disregarded in future programmes or funding decision, as other aspects are deemed more important by relevant authorities. The involvement of regional authorities (either directly as members of Monitoring Committees,/Steering Groups or through consultation) however slightly counteracts this weakness.

The *farm level responses*, are crucial as the success or failure has direct implications on individual employed people. Farm diversification measures in particular are the most important aspect in order to secure future employment in the farming sector. Small structured farms will not be able to cope with market pressure and especially with (economic) crisis on their own, and increasing dependency on subsidies is definetly no political aim. Thus increasing self-reliance by developing multiple sources of income on the farm level is a key aspect to stability of a farm.

In a farming landscape shaped by individual entrepreneurs and family workers, an important strength of farm level action naturally is the experience of the responsible persons and their knowledge of particular challenges of their setting, their location etc. However, while local knowledge is relevant, the overall picture of national and international developments on innovative practices requires assistance and consultation by professionals following recent trends and news – only the combination

of both can lead to a targeted strategy for the individual farm. The underdevelopment of the second element with transfer of such knowledge oftentimes relying on "word of mouth" information is a particular weakness evident in Upper Austria.

Furthermore, while direct investment support is seen as an indispensible part of small farm development, it is perceived by some as a form of "industry support" rather than "farm support". Interviewees voiced their concern, that enterprises selling innovative products are aware of the investment support schemes and correspondingly raise prices. This leads to a misallocation of funding those reducing effectiveness of support measures.

Recommendations

The following policy recommendations can be given based on the findings of the case study:

- Regionally anchored support to farm-level responses is of key importance. Farmers are usually willing to adapt to market needs, to diversify their activities and/or to take up technological advancements, however the opportunities are broad, the specific farm-level challenges differ and especially where innovation is related to investment, farmers cannot afford to experiment. Support of targeted consultation activities – expanding from the already available efforts supported by the RDP – is necessary.
- Existing initiatives such as the European Innovation Partnership "Agricultural productivity and Sustainability" are of high value in order to reduce the lagging behind of uptakes of research results by practitioners. Similar schemes, coordinating research support and farm-level support, not only on programme level but within single projects, should be expanded and also implemented on the national level.
- The holistic approach of coordinating efforts across sectors in order to create added value in each single sector going beyond what can be achieved by isolated sector-specific efforts only should be further developed. Especially in relation to general quality of life as one determining factor for young farmers to take over family farms and thus securing rural employment opportunities, untapped potentials remain.
- In light of current changes in public opinion regarding climate change especially in relation to transport policies, with regional products and higher quality products gaining new popularity, this development should be fostered on all levels. This includes e.g. support of regional certification systems, promotion activities of regional products, as well as measures on national level or above in order to reduce long-range trade of agricultural products in favour of regional markets. Especially for small farms this will increase the likelyhood of staying in business, without creating new dependencies as direct support payments would.

7.3. References

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- European Commission (2014): Investitionen in Wachstum und Beschäftigung Österreich 2014-2020 (OP ERDF Austria).
- BMLFUW – Bundesministerium für Land und Forstwirtschaft, Umwelt und Wasserwirtschaft (2017): Masterplan Ländlicher Raum (Masterplan Rural Areas).
- Amt der Oberösterreichischen Landesregierung (2017): Tourismusstrategie 2022 (Tourism Strategy Upper Austria).

- Amt der Oberösterreichischen Landesregierung (2013): Innovatives Oberösterreich, strategisches Wirtschafts- und Forschungsprogramm (RIS3 Strategy Upper Austria).
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- ÖROK – Österreichische Raumordnungskonferenz (2013): Strategierahmen Smart Specialisation Österreich.

Interviews

- Bundesministerium für Nachhaltigkeit und Tourismus (Federal Ministry for Sustainability and Tourism).
- Landwirtschaftskammer Oberösterreich (Agricultural Chamber of Upper Austria).
- Maschinenring Oberösterreich (Umbrella Association of Farm Cooperatives in Upper Austria).

8. BRANDENBURG (GERMANY)

Country	Germany
Region (NUTS 2)	Brandenburg (DE40)
Cluster	8

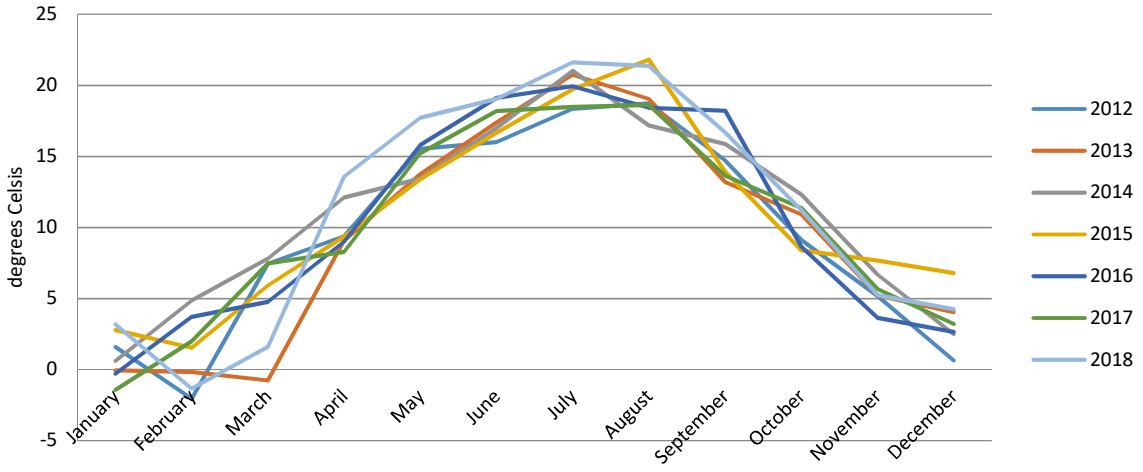
8.1. Contextual information on the agricultural labour market

The scope of this case study lies in investigating generational renewal and new entrants in agriculture in the federal state of Brandenburg. A particular focus lies on the institutional mechanisms and policies in place that enable and deter generational renewal. A lesser focus lies on the role of support, both EU and national via the GAK 2019-2022 and Pillar I and II of the RDP Brandenburg 2014-2020. Two expert interviews[33] were undertaken in the scope of this case study.

8.1.1. Territorial characterisation of the region

The federal state of Brandenburg is located within north-eastern Germany. It spans a surface area of 29,650 km^2 with a total population of 2.5 million inhabitants (Statistisches Amt Berlin Brandenburg, 2019) in 2018. As such, the state is characterised by low population density, with an average of 84 inhabitants per square kilometre. Within the German context, productivity remains low: GPD per capita amounted to € 29,340 in 2018. The state is one of the "new" federal states of Germany, having accessed into the Federation in 1990 together with the other territories of the former German Democratic Republic.

Figure 8.1: Monthly mean temperature 2012-2018, Potsdam, Brandenburg



Source: Monthly mean temperature at 2m (DWD 2019).

Brandenburg is completely landlocked by other federal states to the west and Poland to the East. The climate of the state is continental, with pronounced peaks in summer and rapid temperature changes over spring and autumn months (see Figure 8.1). As in other regions in Europe, climate change is exerting its toll. Over the past decade, temperature and weather extrema have increased in overall incidence. The state contains a high density of rivers and lakes, with over 3000 lakes and over 33

[33] Interviews were held with a representative of the Managing Authority of the RDP Brandenburg Berlin 2014-2020 and with a representative of the Brandenburg farmers' association. The author would like to express his gratitude.

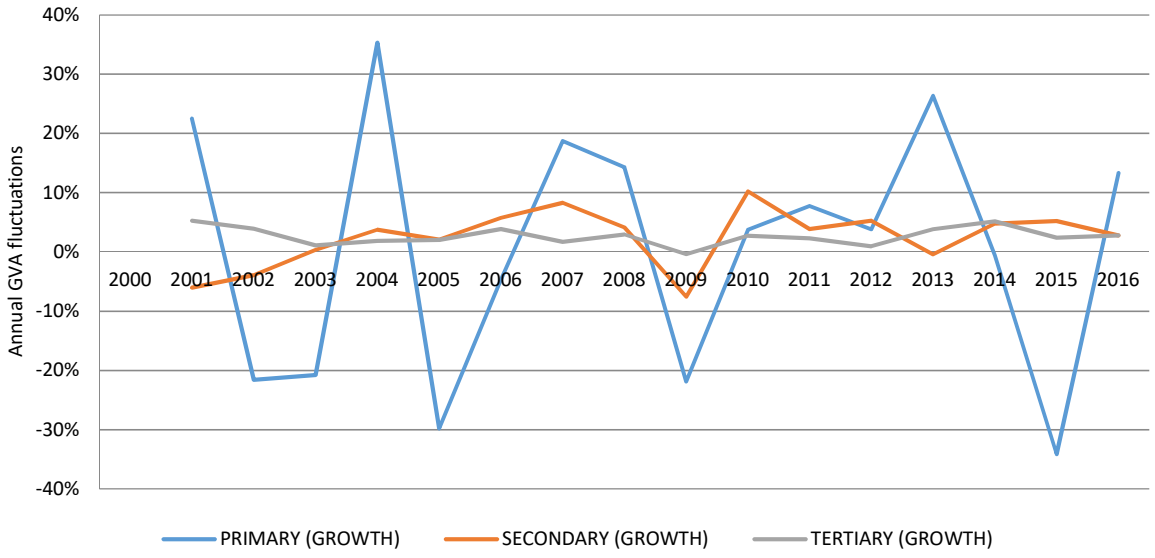
thousand kilometres of waterways. The Baltic Uplands stretch into Brandenburg, with the landscape characterised by rolling hills and fertile soil.

8.1.2. Background data on the agricultural sector and farming employment in the CS region

Economic breakdown by sector

Agriculture remains a minor economic sector in Brandenburg, forming around 1.5% of total gross value added (Eurostat 2019c), or approximately 950 MEUR out of a total 60,670 MEUR. Year-on-year fluctuations in gross value added (GVA) from agricultural activities are severe, as compared to the secondary and tertiary sector (see Figure 8.2 below). In part, these severe fluctuation stem from the agricultural sector's export orientation: changes in global and European demand are felt locally to some extent. More importantly, direct comparisons with the secondary and tertiary sector have to be taken with a grain of salt: the agricultural sector only forms a minor sub-sector of the economy of Brandenburg. The secondary and tertiary sectors encompass a wide variety of different industries and services. Fluctuations as a result of macro-economic imbalances within the sector are likely smoothed over.

Figure 8.2: Annual fluctuations in gross value added (GVA) per sector

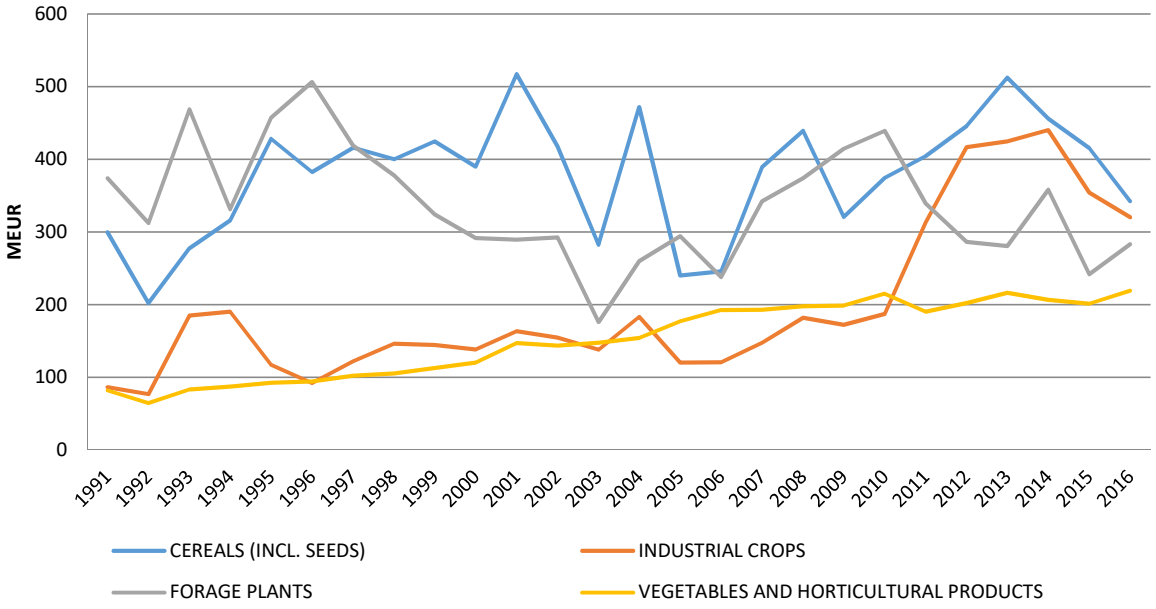


Source: Gross value added at basic prices by NUTS 3 regions [nama_10r_3gva], Eurostat (2019c).

Main types of agricultural products

The Brandenburg agricultural sector remains very productive. The main types of agricultural outputs in Brandenburg are cereals, followed by industrial crops: Vegetables, horticultural products and industrial crops are also produced to a comparably lesser extent. Over the past years, production declines have been observed, particularly in cereals, industrial crops and forage plants. Vegetables and horticulture products output has remained relatively constant. Significant fluctuations have occurred since German reunification (1991), with local minima in 1992 and 2005 for the majority of crops in the figure below, bar vegetables and horticultural products.

Figure 8.3: Annual production value at basic prices



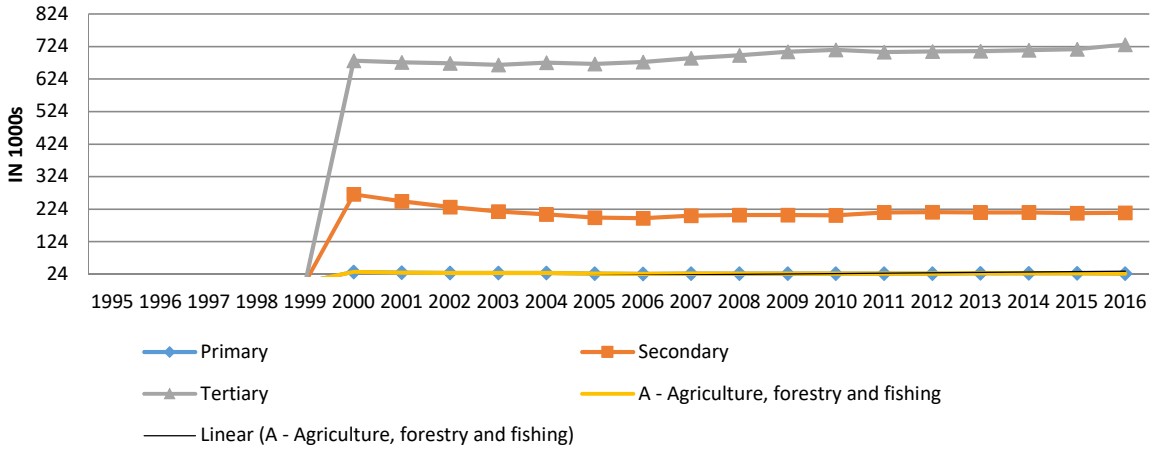
Source: Economic accounts for agriculture by NUTS 2 regions (until 2012) [agr_r_accts_h] & Economic accounts for agriculture by NUTS 2 regions [agr_r_accts] Eurostat (2019a, 2019b).

Agricultural labour force

The agricultural labour force has been in decline since the early 2000s, as seen in the figure below (Figure 8.4). Stark changes are observed in the beginning of the new millennia, with a stabilisation and minor refluxes in the mid-2000s. Since the beginning of the 2010s, signs of stabilisation have strengthened and even some temporal recoveries to its early 2000s level have been observed. Overall statistical outlook, as illustrated by the trend line, remains negative, particularly when taking into account the strong initial decline. Agricultural employment forms around 2% of total employment in Brandenburg (Eurostat 2019c).

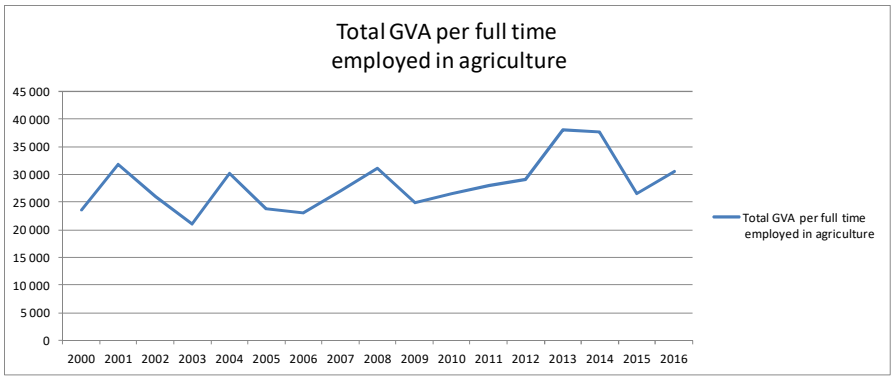
In addition to the approximately 26,000 employed persons in permanent or temporary working relations, around 16,000 seasonal workers were employed in agricultural labour market in Brandenburg in 2016 (Welker et al., 2018). This marks a stark uptick since the turn of the decade, when only 12,500 seasonal workers were employed in the sector. With further expected declines in the traditional labour force in the sector and too few new entrants, the incidence of seasonal workers is expected to further increase. In contrast to the remainder of the German agricultural labour force, only a minority of farms is operated mainly with family workers. Whereas Germany-wide approximately half of the agricultural labour force comes is family-based, in Brandenburg only 14% of the labour force are family workers(Welker et al., 2018).

Figure 8.4: Agricultural labour force



Source: Employment (thousand persons) by NUTS 3 regions [nama_10r_3empers], Eurostat (2019c).

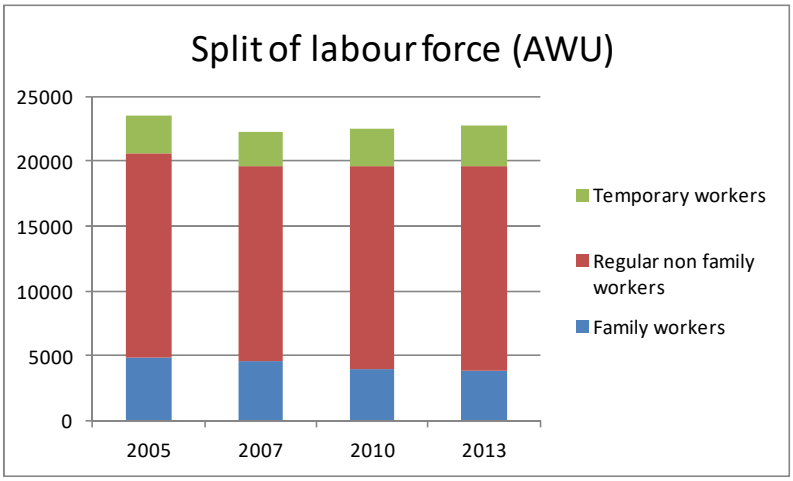
Figure 8.5: GVA per FTE in the agricultural sector



Source: Eurostat, gross value added at basic prices by NUTS 3 regions [nama_10r_3gva] and Employment (thousand persons) by NUTS 3 regions [nama_10r_3empers].

Gross value added per fulltime equivalent (FTE) has seen significant fluctuations in the early 2000s. A slight positive trend is observable in the late 2010s, however, fluctuation remain strong. This is intrinsically linked to the price instability denoted under Figure 8.5. More worryingly, despite the severe contraction in the labour force of the sector, GVA per FTE has only developed moderately.

Figure 8.6: Labour force split in agricultural working units (AWU)



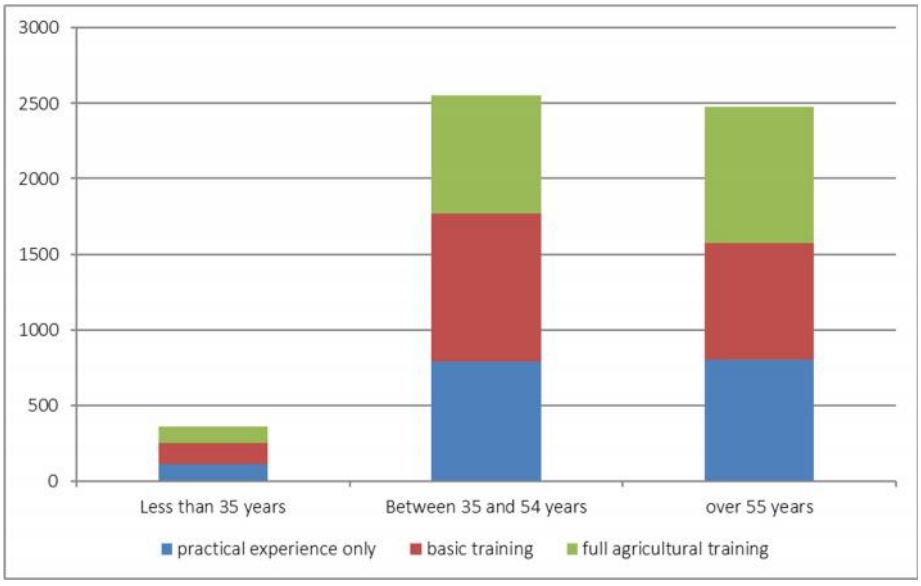
Source: Eurostat, Labour force: number of persons and farm work (AWU) by sex of workers and NUTS 2 regions [ef_olfreg].

Over the observed timeframe, a gradual decline in family workers employed on farms can be observed. Temporary workers and non-family regular workers have and counteracted the contraction in family workers. The observed timeframe (2005 to 2013) also sees a stagnation and stabilisation, as compared to the developments between 2000 and 2016 (see Figure 8.4).

Agricultural training of the farm managers population

Farm managers are moderately educated in Brandenburg (see Figure 8.7, 2016). In general, the majority of farm managers are aged upwards of 35 years, with close to half over 55. Across the three age groups observable in the figure below, educational attainment is relatively homogeneous with an approximate one-third split between each category (practical experience, basic training, full training).

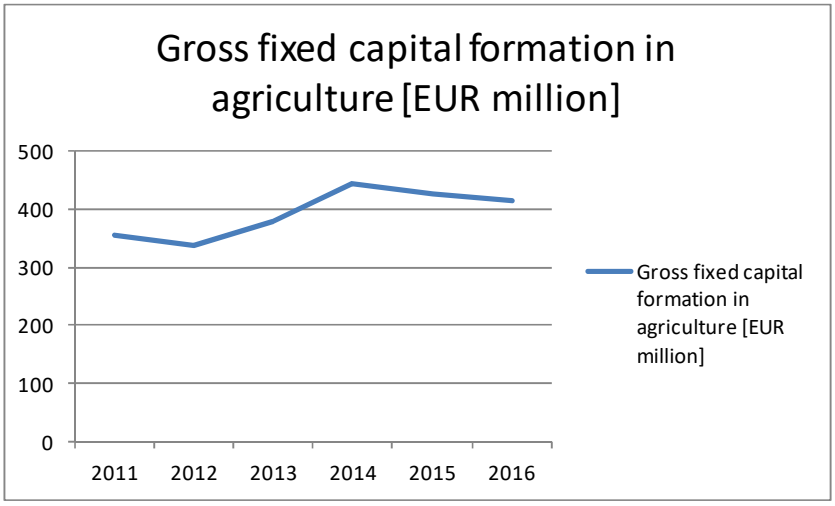
Figure 8.7: Educational attainment of farm managers in 2016



Source: Common context indicators for rural development programs (2014-2020), C.24 – Agricultural training of farm managers.

Agricultural factor and entrepreneurial income and gross fixed capital formation

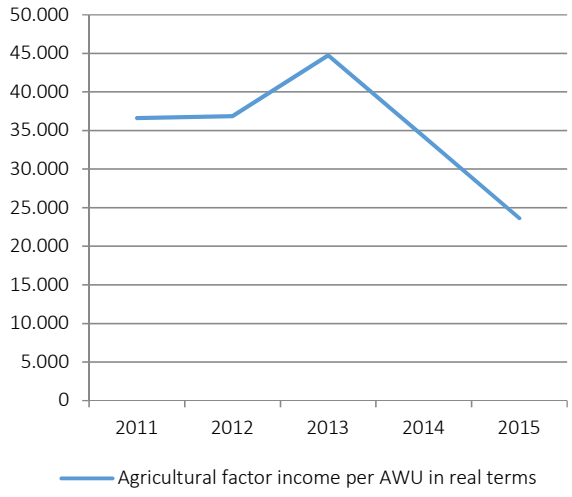
Figure 8.8: Gross fixed capital formation in € million



Source: Common context indicators for rural development programs (2014-2020), CCI 28 – Gross fixed capital formation in agriculture.

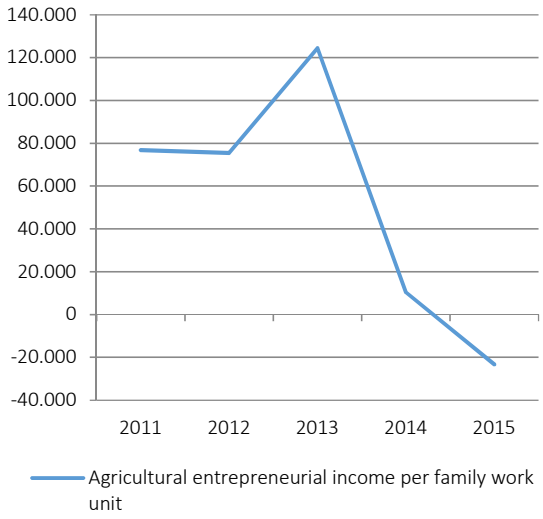
Gross fixed capital formation has remained relatively constant at approximately 400 MEUR over the time period of 2011 to 2016. Minor extrema are observable in 2012 and 2014, in line with developments in the German business cycle.

Figure 8.9: Real agricultural factor income per AWU



Source: Eurostat – Economic Accounts for Agriculture (calculations: DG AGRI), Regional data: DG AGRI estimates.

Figure 8.10: Agricultural entrepreneurial income per family working unit



Source: Eurostat – Economic Accounts for Agriculture, National data: tables aact_eaa04 (last update: 14/12/2018) and aact_ali01 (last update: 14/12/2018).

As observable in the figures above, both factor income per AWU and entrepreneurial income per family working unit (FWU) have declined substantially since 2013. In the case of entrepreneurial income per FWU, declines have been particularly substantial to negative values.

8.1.3. Main trends and patterns

The agricultural sector remains a small, but productive segment of the economy. Since the early 2000s the agricultural labour force has fallen by approximately 19%, a significant decline in persons employed in the sector. GVA has fluctuated significantly over the observed timeframe. Cereals remain the most important crop in the agricultural sector. All crops bar vegetables and horticultural products are marked by strong fluctuations. A minor sectoral reorientation is observable: the importance of vegetables and horticultural products is increasing, as is the importance of industrial crops. Since the mid-2000s, these crops have grown steadily in economic importance.

A recent study into the agricultural labour needs in Brandenburg commissioned by the agricultural ministry (Welker et al., 2018) identified several key trends in the agricultural sector:

- A massive generational replacement is necessary until 2030, with approximately 76% of jobs needing to be replaced. This trend can be observed among the general agricultural labour force, but also among leadership positions.
- A further concentration of economic activity is expected. The number of larger farms (with more than 1000ha of land usage) is increasing, inversely to the number of smaller farms.
- Continuation of the shift to organic production and production for local markets, among famers.
- As such, the agricultural sector is currently undergoing some degree of sectoral reorientation in terms of main products and consumers, coupled with significant forecasted labour shortages.

These labour shortages have potentially already impacted the increasing incidence of seasonal work in Brandenburg.

8.1.4. Institutional frameworks governing the regional agricultural labour market

The agricultural labour market in Brandenburg is primarily governed by federal labour market regulation via the Civil Code. Various minimum thresholds are established via federal law, such as through minimum wage (MiLoG). Income levels and overall working conditions in excess of federal minimum standards are established through the use of collective bargaining agreements. Bargaining between the employers' association GLFA[34] and the workers' union IG BAU[35] determines the scope of these agreements. The use of various policy instruments and measures at national and regional level allows the federal government and state government to steer and govern the labour markets throughout the Federal Republic. The federal action plan GAK (BMEL 2019) provides a set of measures aimed at increasing agricultural productivity. The GAK details the overall framework and priorities which are implemented via state level programmes. Various measures of the CAP (both Pillar I and II) via the RDP Brandenburg Berlin 2014-2020 exert direct and indirect influence on the agricultural labour market.

Name of the institutional framework	Aim and target beneficiaries	Governance level (EU, national, regional, local)
Federal labour code, via Bürgerliches Gesetzbuch (Civil Code)	Agricultural workers and employees	Federal
Collective Bargaining Agreements	Agricultural workers and employees	Federal
GAK 2019-2022	Farms. A comprehensive set of measures is supported under the GAK 2019-2022, as to improve farm productivity.	Federal, implemented on state level
RDP Brandenburg/Berlin 2014-2020	Farms. Direct payments under Pillar I RDP(primarily via M01, M04, M06)	Implemented on state level

8.1.5. Relevant measures under the RDP Brandenburg Berlin 2014-2020

The following measures were retrieved from the RDP document of the RDP Brandenburg Berlin 2014-2020 (Welker et al., 2018).

Name of the measure	Aim and context	Target beneficiaries
M01: 1.1 Training and qualification 1.3 Excursions and company visits	These measures are aimed at improving the innovation base of the agricultural sector via human capital enrichment measures. They are also aimed at ensuring an adequate supply of highly qualified workers.	Workers in the primary sector (M1.1) and education providers (M1.3).
M04: M4.1 Material investments	These investments are aimed at improving the capital stock on farms and counterbalancing capital weaknesses observed in the sector. This measure seeks to improve labour productivity by increasing the capital density.	Farms
M06: M6.4 Diversification	This measure aims at diversifying the agricultural sector in Brandenburg by supporting non-agricultural activities.	Farms

[34] Gesamtverband der Deutschen land- und forstwirtschaftlichen Arbeitgeberverbände (General Association of German Agricultural and Forestry Employers' Associations).

[35] Industriegewerkschaft Bauen-Agrar-Umwelt (Industrial Association Construction-Agriculture-Environment).

8.1.6. Relevant measures under GAK 2019-2022

Relevant measures were retrieved from the GAK 2019-2022 under the thematic funding area 2 "support of agricultural businesses". The GAK 2019-2022 serves as the overall framework of federal and state agricultural policy. Thematically, it is relatively closely tied to the CAP.

Name of the measure	Aim and context	Target beneficiaries
A: Enterprise support 1.0 agricultural investment support programme (AFP) 2.0 Diversification	Support of material investments to improve production and labour conditions, to increase productivity and to increase added value generation. (1.0) Support of non-agricultural activities (2.0) for agricultural enterprises to diversify the sector, see M6.4.	SME within the agricultural sector (1.0) Agricultural enterprises (2.0)
B: Advisory services	Advisory services are supported to increase competitiveness, animal welfare and resource efficiency	Providers of advisory services

8.2. Regional thematic focus

Generational renewal in the labour sector is investigated in Brandenburg for two distinct reasons, which are inherently tied to the geographic and demographic characteristics of Brandenburg.

- Like many newer federal states, Brandenburg sees prolonged emigration to older federal states and Berlin. In addition to the demographic transformation of the German society, strong pressures are exerted on labour supply.
- Brandenburg is a sparsely populated state surrounding the city-state of Berlin. Competition for land and labour around Berlin increases the barriers to entry for young farmers.

The information presented and analysis presented below stems from a triangulation of expert interviews and literature analysis.

8.2.1. Generational renewal: main drivers and resulting challenges

The lack of generational renewal poses a significant problem in Brandenburg. According to a study commissioned by the MA of the RDP Brandenburg, in just under half of farms a change of leadership will be necessary over the timespan of 10 years (Welker et al., 2018). This poses a significant problem for farm enterprises, due to ongoing trends of emigration to urban areas and relatively low attractiveness of the sector.

Migration to older federal states ("Länder") subjects the labour force to persisting pressure. Interregional migration of young people to the older federal states reduces the available labour pool in rural regions. The consequences of the German reunification are still felt in that regard: immediately after the fall of the Wall, significant parts of the population migrated to the older federal states, leaving a pronounced gap in the age structure. This is reflected in the findings of the study from (Welker et al., 2018) into the labour force: as significant numbers of incumbent farmers and farm workers (around 20,000 out of 26,000) move into retirement by 2030, these gaps are felt in the production capacity of the sector.

Agricultural holdings in the newer federal states are in general characterised by a lower degree of family-based ownership and production, than their counterparts in the older federal states. The post-war collectivisation policies of the German Democratic Republic played a significant role in reducing the role of family farms within the East German agricultural sector. Further, Reunification saw a collapse and restructuring of the agricultural sector with related uncertainties. Throughout the "Wende" migratory patterns to West Germany contributed to a lop-sided age structure, with many young people exiting the sector. The sector has since stabilised (as observable in Section 1); however, problems related to gaps in the age structure persist.

In addition to emigration pressures and structural change post "Wende", the agricultural sector in Brandenburg faces a variety of drivers in the context of generational renewal:

- The sector is characterised by relatively low incomes and long working hours (Welker et al., 2018).
- Stigmatisation in media due to conflicts around production methods and land-use.
- Differences in living standards between rural and (sub) urban areas.
- Labour force competition around the metropolitan centre of Berlin.

The attractiveness of sector is low as compared to other sectors: the sector is often perceived as a black sheep by the media. Consumers pose stark demands but are generally unwilling and unaware of the economic cost tied to higher production standards. To some extent, efforts by pressure groups around production methods contribute to negative societal perception of sector. However, this pressure is not necessary unwarranted and counteracted by actors within the agricultural sector. This negative perception is also influenced by reality TV shows, such as "Bauer sucht Frau" which contributes to the stigmatisation of farmers by the urban population.

Berlin exerts significant labour pressures on its surroundings: employment prospects (especially for relatively lower skilled individuals) remain high in the capital city of Germany. The intensive labour force competition around Berlin is fuelled by labour intensive sectors (such as logistics centres) which absorb significant part of local surplus labour and import labour from other regions/cross borders (e.g. from Poland). A sector which is characterised by low incomes and long and physically demanding working hours, such as the agricultural sector (Welker et al., 2018), faces problems in regards to new entrants. Generational renewal is impeded due to reduced earning potential within the agricultural sector as compared to other sectors within the economy. Primary factors in that regard are:

- Political uncertainties connected to product and production standards. Uncertainty tied to production standards, especially in light of activities of pressure groups around livestock production sites produces uncertain prospects from investment.
- Financing difficulties: land costs have increased substantially. Approximately two-thirds of farm land is leased. Agricultural leases tend to be limited to no more than ten years; with no formal price regulation (informal local practices may tie the lease per hectare to a certain local/customary price level).

The equivalence of living standards between rural and urban/peri-urban areas is not necessarily given. This contributes to emigration pushes to urban areas, such as Berlin. Even though enshrined in the federal constitution, the density of services of general economic interest in rural Brandenburg is low, with high on average travel times to the next service providers[36].

How specific are these developments to Brandenburg?

The developments observed in Brandenburg can be differentiated into two classes: applicable to Brandenburg and applicable to other newer federal states. Developments as a consequence to German reunification are found in other newer federal states as well. This concerns primarily continued emigration from rural areas. Significant gaps found in the age structure of rural areas are found across the newer federal states, as a result of sectoral restructuring post reunification and initial migration pushes in the 1990s. Labour competition due to varying levels of attractiveness of the sector and suburbanisation around Berlin are more specific to Brandenburg. Developments as a consequence of labour market competition around Berlin (primarily labour scarcity) and suburbanisation can be found to varying intensities across other urban centres (primarily Munich and

[36] Source: expert interviews.

Hamburg) as well. The case of Brandenburg is more extreme, due to the relative size (in terms of population and economy) of Berlin vis-à-vis Brandenburg

Many factors can be observed throughout other German federal states as well. However, some developments (tied to labour competition and land usage around large metropolitan areas) are significantly more pronounced in Brandenburg

8.2.2. Expected socio-economic impacts

Increased alienation between rural and urban areas – or more specifically between individuals employed in the agricultural sector and non-agriculturally employed individuals – is expected. This can contribute to more land-use conflicts in the context of continued suburbanisation around Berlin. Extra-agricultural land usage around metropolitan areas (primarily around Berlin) can further increase barriers to access for new entrants and increase operation costs for incumbent farmers due to higher factor input costs. Similarly, public discourse on production standards and sectoral foci (primarily centred on livestock farming) add production uncertainties for farmers, with associated investments held off.

Another expected development concerns the degree of independence of farms. With farms becoming increasingly integrated in vertical production chains, an associated reduction of individual responsibility of farms is expected to become increasingly prevalent. This concerns primarily production and output standards which are dictated by large intermediary consumers.

As small farms exit the market, income inequality may further rise. Incidence of sideline businesses may rise, as small farms become less profitable vis-à-vis increases in input costs. A further concentration of the sector into a smaller number of large-scale producers is expected. Decreases in labour force/overall employment in the agricultural sector are likely to persist due to competition with other economic sectors (especially around Berlin). Different types of farms are prepared to varying degrees for change in leadership and workforce. In larger companies, the transition is generally eased. Individuals are formally employed (as "Angestellte"). This translates into higher degrees of certainty in regards to post retirement remuneration, as workers receive pensions. In family farms or smaller farms with family workers, the work relations are not always formalised by "Angestelltenstatus". As such, transition is made more difficult as pension benefits are not necessarily formally divided from the farm's assets.

Innovation capacity of farms may shift: Innovation capacity of farms is inherently connected to education levels of farm leadership. Slight changes in education attainment are observed, with the current leadership generation being very well educated[37], pointing to potential stagnation in the future. In addition, the application of new technologies is observed as challenging by farm leadership (Welker et al., 2018). A study commissioned by the agricultural ministry (Welker et al., 2018) found that smaller farms report more difficulties in applying new technologies and identifying the economic added value, than their larger peers.

8.2.3. Expected developments

In this section, the expected developments of the labour market are presented discounting any interventions. These developments were investigated primarily via expert interviews. The observed timeframes are: short-term (one to five years), mid-term (five to ten years) and long-term (excess of ten years).

[37] Source: expert interviews.

Short term

In the short term (one to five years) no immediate changes are expected. Any negative impacts to the labour force are likely absorbed.

Mid term

In the mid-term (five to ten years) significantly more developments are expected.

- Concentration and out-sourcing of agricultural activities. In the case of capital intensive production, further concentration is expected, as barriers to entry increase.
- The recently approved "Brandenburger Höfeordnung" (Brandenburg farm holding legislation) eases the transfer of farm assets to the next generation. As such, the attractiveness of the sector should stabilise, especially for family small farm holders.
- Increased pressure to improve labour productivity to counteract loss of employment
- Potential increases in the seasonality of employment with corresponding declines in permanent labour requirements, as not enough local workers are available.

Long term

In the long-term (in excess of ten years) the following developments are expected:

- Potential decline in production standards due to out-sourcing and import of products from extra-EU regions, if the production base declines due to labour shortcomings
- Further pressures to increase labour productivity are expected. Further, changes in sectoral orientation may follow (shift away from livestock). Increased development measures to support young farmers are necessary to fill gap in leadership. Further professionalization of family-operated farms is also a possible development.

Policy and stakeholder initiatives

Projects and initiatives were undertaken in the field of agricultural education in Brandenburg (e.g. a 2005 project on education for generational renewal or a project aimed at easing succession processes among shepherds. For the latter, subsidised trainee systems could be beneficial: taking on and training the successor is costly and sometimes only carried with difficulties by the farm). Other ongoing initiatives are aimed at training farm successors (Brandenburgische Landwirtsakademie). The Germany-wide initiative "Hof sucht Bauer" is aimed at connecting farms lacking a successor with new entrants, via an internet platform.

Dual education ("Duales Studium") is also applied by tertiary education facilities (FH Neubrandenburg, Hochschule für Nachhaltige Entwicklung Eberswalde) for the agricultural sector. Students ("Azubis") and enterprises report relatively high satisfaction with that system. However, the cost and initial investment to/by participating companies can be high due to the student being absent for time periods (absence due to studying).

On state level, the above mentioned "Höfeordnung" helps small farms pass on property and assets to the next generation. EU requirements are difficult to navigate: the implementation of measures is sometimes hindered by the complexity of rules and the related administrative burden. This acts as a deterrent to the introduction of new measures.

Bottom-up initiatives are focussed on increasing the knowledge base of new entrants and young incumbents and on networking. These measures are supported by the Brandenburg famers' association.

- "Junglandwirtstammtische": networking events for young farmers to ease knowledge transfer and network creation amongst young farmers.
- The farmers' association supports courses on business and legal skills to improve the quality of farm leadership.
- General networking events among farmers to increase awareness.

Policy recommendations

In addition to the RDP measures aiming at improving the knowledge base of farmers (M01), measures to ease entry in the sector should be incorporated into the next programming period (RDP 2021-2027). These measures should mirror the ones found under M06 (specifically M06.1): start-up aid for young farmers in the shape of one-time payments. Start-up grants may help new entrants take over from incumbent farmers by addressing capital deficiencies of the sector.

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For interviews

- Landesbauernverband Brandenburg.
- Ministerium für Ländliche Entwicklung, Umwelt und Landwirtschaft des Landes Brandenburg.

This study outlines the current trends and patterns of farming employment in the EU and discusses possible development paths for the European agricultural labour force.

In particular, this study investigates the drivers of and structural changes within agricultural labour markets at regional, national and EU level, building on a range of quantitative and qualitative analysis methods.

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