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Agriculture and Rural Development

Culture and Education

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**Research for AGRI
Committee - The role of the
EU's Common Agricultural
Policy in creating rural jobs**

STUDY





DIRECTORATE GENERAL FOR INTERNAL POLICIES
POLICY DEPARTMENT B: STRUCTURAL AND COHESION POLICIES

AGRICULTURE AND RURAL DEVELOPMENT

Research for AGRI Committee -
The role of the EU's Common Agricultural
Policy in creating rural jobs

STUDY

This document was requested by the European Parliament's Committee on Agriculture and Rural Development.

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POLICY DEPARTMENT B: STRUCTURAL AND COHESION POLICIES

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Abstract

This study analysed the EU's Common Agricultural Policy's role in creating rural jobs. Starting at the EU level, a thorough systematic literature review and a statistical analysis prepare the ground for more detailed Member State reviews and Case studies. When discussing the findings the study concludes that the CAP supports the survival of small scale farms and contributes to sustain and develop rural economies. However, Pillar I payments have contradictory effects on employment and its ability in creating jobs appears to be limited. Pillar II is effective in supporting diversification, but concrete evidences of direct effects on employment are difficult to assess due to missing systematic reporting on job creation.

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LIST OF ABBREVIATIONS

- AWU** Annual working units
(work performed by one person on a full-time basis)
- CAP** Common Agriculture Policy
- CCRI** Countryside and Community Research Institute, University of Gloucestershire
- EC** European Commission
- ECA** European Court of Auditors
- EP** European Parliament
- ESIF** European Structural and Investment Funds
- GVA** Gross Value Added
- MEP** Member of the Parliament
- MS** Member State
- NUTS** Nomenclature of Territorial Units for Statistic
- ÖIR** Austrian Institute for Regional Studies and Spatial Planning
- SAC** Scottish Agricultural College
- SEGI RA** Study on Employment, Growth and Innovation in Rural Areas
- SERA** Study on Employment in Rural Areas
- SO** Standard Output
- ToR** Terms of Reference
- UAA** Utilized agricultural area (in ha)

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EXECUTIVE SUMMARY

The study at hand deals with “The Role of the European Union’s Common Agricultural Policy in Creating Rural Jobs”. This document was requested by the European Parliament’s Committee on Agriculture and Rural Development, which adopted in 2016 an initiative report on ‘How can the CAP improve job creation in rural areas?’ (Procedure 2015/2226(INI))¹. Thus, the report at hand outlines the potential of the CAP with regards to creating rural employment by using a systematic literature review, which is complemented by statistical analyses conducted at the EU level, as well as Member State reviews and case studies reported by national experts.

Based on the literature review findings, the reform of the CAP and decoupling has had a negative impact overall on employment within the agricultural sector. The evidence suggests that overall Pillar I is preventing out-migration of small and family farms from the sector, and is at best maintaining jobs in the agricultural sector but not creating new jobs. Further, Pillar I initiates more intensive and higher productivity thus gradually reduces the size of the agricultural workforce.

Pillar II can be successful in creating new jobs in other areas such as tourism, food processing and associated sectors but implementation is highly dependent on Member State and regional implementation approaches. Where resources are highly focused and integrated (e.g. through supply chain focus or linking training with grant support) Pillar II can be more effective. Where resources are spread thinly over wide areas the impacts are minimal and limited in the face of market and other driving forces. Evidence also suggests that there is a significant amount of deadweight associated with Pillar II programmes in some Member States, and doubt about the long-term sustainability of jobs beyond funding periods.

Statistical figures show that as a general trend the agricultural labour decreased all over Europe as well as the number of farm holdings. However, the employment rate in rural areas did not necessarily diminish, which hints to the fact that diversification of the rural economy helped to maintain jobs in the region, i.e. facilitated a shift from farm work to other fields of employment.

The results from the Member State review and the case studies emphasise this picture. There is a rather weak correlation between CAP and employment regarding Pillar I, but Rural Development is seen as having a positive effect on jobs. The diversification of agriculture and the regional niche markets are regarded as positive impulse for employment in the regions.

It is important to point out that the array of examined Member States reflects the diversity of Europeans agricultural systems and economies depending to different extent on CAP funding. The degree of dependency on agriculture as well as the absolute level of financial aid influence the leverage effect of CAP.

Further it has to be noted, that apart from EAGF and EAFRD, other policies and national schemes are directly and indirectly targeting employment in rural areas, thus it is difficult to trace newly created and safeguarded jobs back to CAP interventions. This holds especially true for the special cases of the New Member States, which have benefited from pre-accession programmes.

¹ The report is available at:
[http://www.europarl.europa.eu/oeil/popups/ficheprocedure.do?reference=2015/2226\(INI\)&l=en](http://www.europarl.europa.eu/oeil/popups/ficheprocedure.do?reference=2015/2226(INI)&l=en)

1. AIM AND STRUCTURE OF THE REPORT

The study at hand deals with “The Role of the European Union’s Common Agricultural Policy in Creating Rural Jobs”.

The study is based on a series of key questions guiding the analytical process:

- What is the overall net effect of the CAP in creating agricultural employment in different productive sectors (mainly agriculture, but also those sectors linked to agro industry, tourism and other activities)?
- What is the capacity of the CAP in reducing the off-farm employment of the farmer and his/her family, seeking for integrative income in other sectors?
- In which Member State(s)/region(s) has the CAP been more effective in creating jobs, and what are the reasons for their relative success?
- How does the 2014-2020 forecast of job creation look like and what are the elements for appropriate monitoring and evaluation?
- How does the CAP effect on employment differ across Pillar I and II, and across the different programmes? Where and under which conditions have programmes been more effective?

This report outlines the potential of the CAP with regards to creating rural employment by using a systematic literature review, which is complemented by statistical analyses conducted at the EU level, as well as Member State reviews and case studies reported by national experts.

2. OVERVIEW: CONTEXT AND AVENUES FOR REFLEXION

To which extent can the potential of the European Union's Common Agricultural Policy (CAP) in improving the employment situation in rural areas be harnessed? Although still largely under-explored, the nexus between employment in rural areas and the support provided by the CAP has been gaining a significant interest from policy-makers and the larger scientific community. The adverse economic conditions in numerous European Member States (MS) have indeed pushed job creation on top of the political agenda.

This greater attention is notably associated with the evolution of the agricultural sector impacting farming practices and an increasingly large array of actors, hence undeniably reshaping rural economies, arguably for better or for worse. In fact, the EU's rural areas and agricultural sector have been facing consecutive crisis hence transforming and weakening the social and economic fabric. The widely mediatized and most often bitter observations on the dramatic negative trends affecting the agricultural world are also occasionally depicted as the symptoms of a deeper disease.

The underlying reasons explaining the steady deterioration of the agricultural sector are multifactorial since reflecting the transformations and challenges affecting food productions from the local to the global level. For instance, the relatively strong exposure to price volatility and the rise of large agricultural superpowers, which influence the global commodities market maintaining low prices via environmental and social dumping practices are commonly stated global variables negatively impacting the European agricultural sector. The lack of fiscal and social harmonization (e.g. higher employment costs in the "older" EU MS such as France or Germany), has also reportedly contributed to the loss of competitiveness in the European agriculture. Additionally, at the local level, the agricultural sector is facing tremendous challenges linked to an increasing rural exodus dovetailing a growing disinterest of the new generations, deterred by the working conditions and low wages.

The evolution and various reforms of the Common Agricultural Policy (CAP) has precisely intended to counteract or rather smoothen the impact of those changes by providing a stable and safe food supply at affordable prices for consumers meanwhile ensuring a decent standard of living for farmers. Along those lines, elaborating tomorrow's CAP was meant to build the basis for a resilient future of farming in Europe.

A prime emphasis was accordingly placed on productivity as a central parameter for assessing the effectiveness of the CAP in order to boost resource-efficiency and sustainability in farming. In other words, this concretely entails producing more (food, feed, fuel etc.) with less (land, water, energy and labour). The objectives of the CAP have therefore concomitantly been adapted to a constantly changing context, for instance, to the necessity of protecting the environment in the light of, inter alia, increasingly scarce natural resources, biodiversity loss leading to a decrease in soil fertility.

When considering the objectives of the CAP and the successive reforms, in particular with regards to rural employment, the reforms appears to have, to a relatively large extent and until the last programming period, drawn very little attention to its potential in directly fostering job creation in rural areas. Indeed, whereas unemployment may be the number one preoccupation in most EU MS, agriculture and rural activities are only rarely considered for their job-creating potential. Moreover, as further detailed in the literature review, it seems that the gradual liberalization promoted by the CAP reforms has also exacerbated a negative

employment impact in rural areas which is unlikely to have been compensated by an increase in employment in other related sectors.

In the light of such pervasive trends (i.e. rural exodus, ecological crisis, job losses), further intensified by the patterns of strong market orientation, the CAP's efficiency, effectiveness and legitimacy are being questioned. Although the general criticisms towards a particular European model of agriculture are of utmost relevance, the present study more specifically examines the extent to which the CAP has contributed to creating rural employment.

3. LITERATURE REVIEW ON THE ROLE OF THE CAP IN CREATING AGRICULTURAL AND RURAL JOBS

The aim of this chapter is to review the available literature with a systematic approach, attempting to shed light and to put order in the heterogeneity of the findings of the literature. In doing so, this report derives conclusions based on condition-specific characteristics of the agricultural and rural system, such as MS or regional socio-economic characteristics.

A systematic literature review is applied to all the MS of the European Union (EU) and their regions, as well as to the CAP reforms since 1992. The primary research question of the systematic review is the following: "What is the role of the CAP in creating agricultural and rural jobs?". The research question is addressed through a protocol for literature reviews in a structured and scientific manner. The systematic review focuses on the impact (positive, negative or null) that the CAP and its reforms have on agricultural and rural employment, but also on structural change, inter-sectoral migration of workers and the decision of the farmer of allocating working hours on- and off-farm. Finally, the review assesses studies that have attempted to quantify the role of the CAP with respect agricultural and rural jobs.

The remainder of the report is organized as follows. The next section explains the methodology for the systematic review. Section 3 shows the results of the review by making comparisons between direct and indirect employment effects of the CAP and the diverse impact of the CAP reforms. Section 4 focuses on the quantification of the CAP role in creating jobs. Section 5 discusses the review results by comparing the impact of Pillar I with respect to Pillar II and by comparing the analytical nature of the publications: quantitative and qualitative approaches; ex-ante and ex-post analyses. Finally, Section 5 concludes.

3.1. Methods

It is important to note that the systematic review approach was initially designed for synthesizing experimental trials results and afterwards its use expanded also to the economic and social sciences. We have applied it here as the systematic review approach allows for greater robustness, reducing the research bias also in the case of economic and social sciences. For the purposes of this tender, and in general for policy evaluations, it is impossible to estimate the impact of the CAP on the creation of agricultural and rural jobs through experimentation. The studies that have estimated the employment effect of the CAP, either quantitatively or qualitatively, are inevitably based on economic/econometric models and assumptions. The effectiveness of the various approaches is addressed in the discussion of the results of the literature search.

3.1.1. Search Strategy

The literature search was carried out using:

- two literature databases for academic journals and books, namely the one of the University of Gloucestershire (DISCOVERY), and the one of the University of Bath (PRIMO search);
- resources of international institutions: European Commission repository, Joint Research Centre repository, OECD library;
- on-line electronic resources: Google Scholar, Agri-Europe, AgEcon Search.

In addition we have used a snowball approach, by screening the references included in the studies which met the inclusion and exclusion criteria (see Table 1).

In order to search the literature resources, two sets of keywords and search terms were adopted. The first set refers to the “employment” dimension and it is composed by the following key words: employment, labour, job, job creation, migration, work. The second set refers to the CAP using the key words: agriculture, rural, development, common agricultural policy, CAP, pillar, decoupling, reform, European Union, European Commission, European Parliament, and EU. Different combinations of these keywords were applied by associating the relevant keywords and search terms with the appropriate Boolean operators. Using the keywords combinations, the literature search was conducted between the 28th of January and 3rd of February 2016, obtaining a long list of 1370 publications composed as follows: 842 academic articles; 433 newspaper articles; 36 conference proceedings/working papers; 32 government documents; and 27 books.

3.1.2. Screening strategy

The first step of the literature screening was to eliminate duplicates and newspaper articles (newspaper articles were excluded in order to avoid potential ideological views). The remaining 211 publications were filed on a spreadsheet. The second step of the screening consisted in applying the inclusion/exclusion criteria to titles and abstracts. Table 1 below shows the inclusion/exclusion criteria used.

Table 1: Inclusion and exclusion criteria for the systematic literature search

Inclusion Criteria:	
Geographical coverage	Countries that are Member States of the European Union
	Region in the Member States of the European Union
Policy	All the measure and instruments of both Pillar I and II of the Common Agricultural Policy
	All the relevant CAP reforms since 1992
Outcome	The impact of the CAP on agricultural and rural employment
	The impact of the CAP on agricultural structural change (entry/exit)
	The impact of the CAP on the migration of workers from the agricultural sector to other sectors
	The impact of the CAP on time allocation decisions of the farm between on- and off-farm work
Study design	Ex-ante and ex-post analyses
	Quantitative and qualitative analyses
Exclusion Criteria:	
	Studies on countries that are not Member States of the European Union
	Studies on policies or regulations different from the CAP and its Pillars and Reforms
	Studies for which the full text is not available/accessible
	Studies published in a language different from English
	Studies published before 1999

Source: CCRI

Subsequently, for those studies for which abstract and title met the criteria the full text was obtained and the inclusion/exclusion criteria were re-applied to the full text. Those publications which full text did not meet the criteria have been excluded from the review. Due to time and budget constraints and in order to reduce the researcher bias, some further actions have been taken:

- In the first stage (screening of the title and abstract) a first researcher applied the inclusion/exclusion criteria and a second researcher independently reviewed the remaining studies.
- In the second stage (screening of the full text), a similar approach was taken.
- A total of 53 studies met all the inclusion/exclusion criteria and passed the double scrutiny by two researchers. The full text of these 53 studies was analysed and the main characteristics extrapolated, such as direct and indirect effects of the policy, how agricultural employment was measured, the methodology applied, Pillar and reform of the policy, and quantification of the impact of the policy.

The complete list of studies with the summary of their characteristics is provided in appendix A1. The next session presents the analyses of the literature based on the above mentioned grouping of studies.

3.2. Findings

The 53 studies collected through the literature search proved to be highly heterogeneous concerning different dimensions. Results of the studies suggest that the CAP had both direct and indirect effects, which affected agricultural employment and working time allocation both positively and negatively. Studies also tended to adopt either a quantitative or qualitative approach, and to conduct either ex-post or ex-ante analyses, address either Pillar I or Pillar II (or sometimes both), or focus on specific CAP reforms. In order to comprehensively discuss all the results of the literature search, this section presents a review in the form of comparisons between the different results, characteristics of the studies and policies analysed.

3.2.1. Direct employment effects of the CAP

The structured literature search yielded a total of 40 studies which estimated a "direct" effect of the CAP on agricultural and rural employment. There are studies showing a positive direct impact of the CAP on agricultural and rural employment, and others showing a negative or a mixed impact. In addition, 6 studies could not identify any sort of impact, suggesting that the CAP have no employment effects. However, it is important to note that many authors also found indirect CAP effects on agricultural and rural employment that act through a series of channels (this literature is discussed in the following section).

3.2.1.1. Negative impacts

A total of 16 studies estimating direct CAP effects on employment found a direct negative impact. This direct negative impact concerns both Pillar I and II of the CAP. According to Bournaris and Manos (2012), Manos et al. (2013 and 2011), Petrick and Zier (2011), Psaltopoulos et al. (2011) and Gohin and Latruffe (2006) the implementation of the CAP resulted in a reduction in total labour use, in family labour use and, especially, in external labour use. In addition there are suggestions that the decrease in female employment is much higher than for male employment (Manos et al., 2013), and also that the CAP resulted in an increase in the total number of hours worked off-farm (Hennessy and Rehman, 2008).

Increasing intensity of the CAP support has a strong employment effect. In regions where the average subsidy per worker is higher, farmers are more likely to leave the agricultural sector (Van Herck, 2009).

According to some of the authors, the gradual liberalisation promoted by the CAP reforms exacerbated the direct negative employment impact. Helming et al. (2008), Vereijken and Hermans (2010) and Manos et al. (2013) all agree that agricultural employment (total labour, part time, female and non-family employment) in the EU is decreasing due to further liberalisation and that it is unlikely that the decrease in agricultural employment has been compensated by an increase in the employment in other non-agricultural sectors.

A more selective impact is found in some of the new Member States that joined the EU after 2004. In Czech Republic, Latvia, Hungary, Poland, Slovakia and Romania the CAP directly and negatively affected family and subsistence farming, depending on the regional characteristics (Baum et al., 2006). The studies suggest that part-time and seasonal jobs are probably more affected; while only larger farms in Hungary are expected to increase the level of hired employment, especially of males (Elek et al., 2010).

Significant job losses are mainly expected for the primary and secondary sectors in rural areas, while the food industry is only marginally affected by the CAP, showing very modest but positive employment benefits. In rural areas the sector which probably achieve the highest employment gains from the CAP is the tertiary sector (Gohin and Latruffe, 2006; Psaltopoulos et al., 2011). It is worth noting that some of the studies mentioned above (Bournaris and Manos, 2012; Manos et al., 2011) found that immigrant labour could make a major contribution to economic survival of EU agriculture and create new opportunities for off-farm labour for local families.

3.2.1.2. Positive impacts

A total of nine studies showed a direct positive effect, i.e. that the CAP succeeded in its objective of keeping and/or increasing employment in agricultural and rural areas. The main argument supporting the direct positive impact of the CAP on employment is that in the case of a full removal of the policy support, about 30% of farms would stop their activities exiting the agricultural sector. This was one of the main findings from the FP7 European Project "CAP-IRE: Assessing the multiple impacts of the Common Agricultural Policies (CAP) on rural economies". Similarly, Peerlings et al. (2014) found that small family farms (which are more dependent on CAP support) would be forced to exit the agricultural sector if the CAP was abolished, while larger and more specialized farms would be less likely to exit.

An explanation of the importance of keeping the CAP came from the final results of the FP6 European Project "IDEMA – The Impact of Decoupling and Modulation in the European Union: a sectoral and farm level assessment". This study concluded that with policy support and under certain land management regimes, agricultural activity is more profitable than off-farm labour. In addition, the European Commission in its Communication to the Council and the European Parliament "Employment in rural areas: closing the jobs gap" (2006) states that the policies supporting on-farm investment, training, forestry, and the adaptation and development of rural areas are generally considered to be effective in creating employment. Moreover, rural diversification measures helped to maintain many agricultural jobs and to create temporary jobs in environmental and village renewal activities.

With respect to agricultural jobs, Olper et al. (2014) found that the overall CAP approach, and especially Pillar I payments, have played a role in keeping labour forces in agriculture, although the magnitude of the overall effect is not particularly high. Sieber et al. (2013)

found a decreasing agricultural unemployment rate and an efficient reallocation of factors among sectors, while the experts interviewed by Vincze and Kerekes (2009) see the future of agricultural employment in Romania connected to the CAP measures, as these sustain employment in agricultural production. Neuwirth et al (2010) and Nordin (2014) found that agricultural subsidies are an important instrument of agricultural job creation in Austria and Sweden.

Concerning employment in rural areas Balamou et al. (2008) predicted that a 30% decrease in coupled agricultural support can lead to a decrease in total rural employment. Salvioni and Sciulli (2011) found that in Italy the recipients of rural subsidies increased family labour units more than non-recipient ones, while in Greece Psaltopoulos et al. (2006) found that rural policies have a positive economic impact, although lower than expected.

As would be expected given the polarization of the literature between direct positive and negative effects, a number of studies (8 studies) found mixed direct effect of the CAP, depending on farm structure, regional characteristics, type of support, and policy implementation approach. Tocco et al. (2013) highlight that the heterogeneity across MS, due to different farm sectors as well as market and production structures, does not allow a common and simple generalisation upon the effect of the CAP on labour allocation. Total subsidies are found to be negatively associated with agricultural jobs loss in Hungary and Poland, suggesting that in these MS the CAP preserves jobs in the farm sector. On the other hand, however, non-significant effects are found in Italy and France.

In an example from Greece Kaditi (2013) reveals the diversified impact of different policy measures. He shows that subsidies for rural development can reduce both family and hired labour, while decoupled payments and subsidies on crops can increase both forms of labour. Other studies indicate potential for mixed effects on employment, as the following examples illustrate:

- Kristkova and Ratinger (2012) argue that an increase of rural development support can have large negative effects on employment in agriculture, but any reductions in direct payments might cause an outflow of labour from agriculture.
- Breustedt and Glauben (2007) concluded that the cut to the milk price support may have increased the exits from farming sector, but increasing direct payments had a stabilising impact on the structural development in agriculture, while decoupling the payments from production has a rather ambiguous effect.
- Dupraz and Latruffe (2015) explain that the effect of CAP subsidies is positive or negative, depending on the type of subsidy: the crop area payments and the single farm payments have reduced farm labour, while agri-environmental payments, LFA payments and investment subsidies have increased it.
- Petrick and Zier (2012), on the other hand, note that direct payments, measures for the development of rural areas, transfers to LFA, and agri-environmental measures have no employment effects, but decoupling was estimated to have reduced agricultural jobs.

The way the CAP is implemented at national level is also important in achieving positive results from the policy. The European Court of Auditors (2013) assessed whether the RDP measures audited achieved their objectives. Results showed that jobs were largely created in those MS (Poland, the Czech Republic and the United Kingdom) where the grant was made conditional upon job creation, and where targeted checks were carried out to ensure compliance with this condition. The impact on job creation was minor for projects audited in

France, Italy and Sweden, where this type of condition did not apply and targeted checks were not carried out.

Finally, it is important to mention that 6 studies found that the CAP, and several of its measures, has no effects on agricultural and rural employment. This null effect has been found for the 2003 Reform of the CAP by Genius (2013), Corsi and Salvioni (2012) and Douarin (2008); for Objective 1 funding by Becker et al. (2010); and for agri-environment programmes by Pufahl and Weiss (2009).

3.2.2. Indirect Effects

The CAP and each of its support instruments can also “indirectly” impact jobs in the agricultural sector and rural areas through a number of different channels, such as intensification, income and education. A number of studies from the literature search found “indirect” and negative employment effects of the CAP. Wier et al. (2002) explained that the CAP reduced the EU farmers’ incentives of producing large amounts of agricultural goods, reducing in turn the level of EU agricultural exports. This reduced production and export of agricultural goods provoking a lower demand for labour with the consequence of increasing unemployment.

According to Alexiadis et al. (2013), one crucial aspect of the CAP during recent years was incentivising a more intensive and productive mechanised agriculture. In some MS, especially in the Northern European regions, the CAP resulted in a more cost effective agriculture with labour productivity two times higher than regions in Southern and Eastern MS, and inducing a lower demand for agricultural labour. Similarly, Mattas et al. (2008) found that the intensification process of agriculture has indirect effects that negatively impact employment: the argument is that a more competitive and productive agricultural sector based on innovative technologies is less dependent on labour inputs.

Another important indirect effect of the CAP is the reduction of support prices. According to Hennessy and Rehman (2006) and Topp and Mitchell (2003) price reduction can accelerate the pace of the structural change leading farms to exit the sector. Manos et al. (2009) pointed out that decoupling provoked a severe reduction in farm labour inputs as a result of changes in crop plans. Farmers have incentives to introduce less profitable but less labour intensive crops in substitution for higher-value/higher labour-intensive crops such as tobacco. This can potentially be reflected through an increase in unemployment in some EU areas. Berlinschi et al (2011) underline the indirect impacts of the role of education. By increasing revenues, CAP subsidies allow farmers to increase the investment in their children’s education. Children with higher education levels then have access to better paid jobs in the industrial or services sectors with the result that second generation are therefore less likely to be willing to work in the agricultural sector, reducing the inter-generational succession.

Indirect positive effects of the CAP are found in the Agrosynergie (2011) study, which estimated that, on average, in the field crops, grazing livestock, and mixed sectors, the removal of direct payments would cause insufficient profitability for family labour at opportunity cost. This can be interpreted as meaning that direct payments are necessary to ensure the economic viability of family labour. Moreover, the European Commission (2015) stressed the importance of training, subsidized by Pillar II, in increasing the professional skills and adaptability of the labour force to enable diversification activities to take place.

3.2.3. The effect of the CAP on agricultural employment and on off-farm labour allocation

Among the 53 studies collected through the literature search, a difference can be distinguished between those studying the CAP impact on agricultural and rural employment, and those studying the impact on- and off-farm labour allocation. In the first case, the studies estimate the impact of the CAP on the creation, or destruction, of the number of jobs. Changes in employment level are accounted for in terms of employment growth (29 studies), structural change (6 studies) and reallocation or migration towards other sectors (5 studies).

The negative effects of CAP on employment can vary widely. Studies have identified a number of factors influencing or driving the form and extent of unemployment, including the following:

- regional characteristics²
- changes in production practices induced by the policy, such as higher mechanization and improvement of labour productivity³
- extensification and land use⁴
- the exit from the agricultural sector of small/family/subsistence farms⁵
- market liberalization⁶
- lack of alternative job opportunities in the rural areas⁷

The literature analysis suggests that positive effects of the CAP are found mainly through effects on wider rural employment, i.e. jobs located in rural areas but not necessarily involved with the production of agricultural goods. Positive effects on rural economies include the following:

- creation of alternative job opportunities for the farmer or family members⁸
- reduction in number of farm exits due to CAP support can benefit the wider rural economy⁹
- sustaining incomes in the local economy¹⁰
- labour migration to other sectors in the local rural economy¹¹

Concerning on- and off-farm labour, this is the time allocation decisions of the household between agricultural (on-farm) and non-agricultural (off-farm) labour. Off-farm labour is an income diversification strategy that supplements low agricultural incomes and also reduces the risks associated with relying on income solely from agricultural activity. There are nine studies analysing the impact of the CAP on off-farm labour decisions. Among these, some authors concluded that the CAP has a very limited, or even no, influence on farm decisions over allocation of labour (Corsi and Salvioni, 2012; Pufahl and Weiss, 2009; Douarin, 2008).

² Kaditi, 2013; Bournaris and Manos, 2012; Petrick and Zier, 2012; Psaltopoulos et al., 2011; Van Herck, 2009; Gohin and Latruffe, 2006; Topp and Mitechell, 2003

³ Alexiadis et al., 2013; Petrick and Zier, 2011

⁴ Manos et al., 2009; Mattas et al., 2008; Baum et al., 2006; Wier et al., 2002

⁵ Peerlings et al., 2014; Elek et al., 2010

⁶ Manos et al., 2013; Vereijken and Hermans, 2010; Helming et al., 2008; Tranter et al., 2007

⁷ Fragoso et al., 2011

⁸ European Commission 2015 and 2006; Manos et al., 2013; Kristkova and Ratering, 2012; Breusted and Glauben, 2007

⁹ Latruffe et al., 2013; Sieber et al., 2013

¹⁰ Nordin, 2014; Berlinschi et al., 2011; Neuwirth et al., 2010; Vincze and Kerekes, 2009; Balamou et al., 2008

¹¹ Olper et al., 2014; Tocco et al., 2013

Others see in the development of the rural economies through Pillar II a possibility for farmers of diversify the income among other off-farm work, such as tourism and the hospitality industry (Genius, 2013).

Some authors underline that the decoupling of CAP subsidies from the agricultural production can allow a larger amount of time to be spent on other non-farm activities (Kaditi, 2013; Hennessy and Rehman, 2008; Hennessy and Rehman, 2006), but it can also increase the profitability of land management therefore reducing incentives to work off-farm (Salvioni and Sciulli, 2011; IDEMA, 2007).

3.2.4. The CAP Reforms

There is heterogeneity regarding the different reforms of the CAP and the different policy instruments analysed across the studies collected through the literature search. A total of five studies analysed the impact of the 1992 CAP reform by using data for the years 1990-1999. Concerning the 1992 CAP reform, Psaltopoulos et al. (2006) found that the rural development funds in some rural towns of Greece during the 1990s supported the generation of rural income, reducing the pace of job migration from rural to urban areas. Breustedt and Glauben (2007) found that CAP subsidies have probably reduced the structural change in agriculture during the last decades of the last century. Dupraz and Latruffe (2015) found that crop subsidies had a negative impact on on-farm labour supply in the '90s, while agro-environmental measures had a positive impact. However, they also found that investment subsidies, which had a negative employment impact during the period '90-'94, turned out to have a positive impact in the period '95-'99.

The reform proposal "Agenda 2000" attracted the attention of five researchers. Starting from Wier et al. (2002), who studied the environmental and economic effects of the proposal, it is interesting to note that, since the beginning, the reform proposal was expected to have negative repercussions on national agricultural GDP, private consumption, exports and investments, with the consequent increase of agricultural and rural unemployment. Similar conclusions were achieved by Topp and Mitchell (2003), which forecast that the impact of changes in prices and policies would result in a significant reduction of agricultural and rural employment at regional level. A different angle was taken by IDEMA (2007), which looked at the changes in profitability of land management resulting from Agenda 2000, showing that land management would become more profitable than off-farm labour, therefore incentivising farmers to allocate their labour within agricultural activity rather than outside. However, according to Fragoso et al. (2011) in Portugal the losses in payments per area introduced by Agenda 2000 would cause a reduction of farms' competitiveness, therefore potentially accelerating the exit process.

The 2003 CAP reform has been the most studied policy change in the literature analysed in this report as it introduced many changes both in Pillar I (especially through the decoupling of direct payments, the cross-compliance and the modulation) and in Pillar II. Some authors concluded that the overall evaluation of this reform had either a negative impact on agricultural and rural employment (Gohin and Latruffe, 2006; Elek et al. 2011; Genius, 2013), or it had no significant impact (Corsi and Salvioni, 2012; Douarin, 2008). More specifically, many authors focused on the decoupling of direct payments from agricultural production. Agrosynergie (2011) made a comparison between coupled and decoupled direct payments. They concluded that despite the capacity for both types of payment to increase farmers' revenues, coupled payments, by being coupled to production, provide an incentive to increase the time spent working on the farm, especially on family farms.

On the contrary, decoupled payments lack this incentive, and by guaranteeing sufficient farm income without requiring more work for increasing the production, the farmer has more leisure or off-farm work time availability. The increased probability of off-farm employment and of idle farmland was confirmed also by Viaggi et al. (2011), Hennessy and Rehman (2008), Balamou et al. (2008), and Tranter et al. (2007). Some sector specific negative effects of decoupling were also found. Hennessy and Rehman (2006) found that in the beef and dairy sector, off-farm work and structural change would be accelerated after decoupling, while Manos et al. (2009) suggests that decoupling would lead to an increase in unemployment in the tobacco sector.

On a more positive note Breustedt and Glauben (2007) recognised that the overall effect of decoupling is rather ambiguous, and it may lead to a reduction in farm exits. Olper et al. (2014) found that both coupled and decoupled payments contributed to reduce the out-migration of labour force from the agricultural sector.

The cross-compliance (Pillar I) introduced by the 2003 CAP reform was also found to have a negative employment impact by Baum et al. (2006). The authors show that in many regions of the EU-15 the expected extensification of production (lower inputs rates and increase in set-aside) might induce a decrease in employment in both the agricultural sector and in the sectors serving agriculture.

According to Mattas et al. (2008) the effect of the 2003 CAP Reform can be better understood if both Pillar I and II are looked together. Pillar II measures are highly bureaucratic in nature, but they seem to improve farm business efficiency if combined with Pillar I reforms. The combination can result in stabilising the overall employment levels in the farming sector. However, according to Manos et al. (2011) total labour, family labour, and external labour are decreasing as a result of the implementation of the CAP reform and the changes it triggered have had a negative effect on social sustainability in rural areas. Similarly Kaditi (2013) stressed that both Pillar I and II do not favour on-farm labour use. On the contrary, Dupraz and Latruffe (2015) show a difference: crop area payments and the single farm payment (Pillar I) have reduced farm labour, while agri-environmental payments, LFA payments and investment subsidies (Pillar II) have increased it.

Also the new rural development policy of the 2003 CAP reform was a subject of investigation by several researchers, especially Axes 2 and 3 of the rural development programs. Petrick and Zier (2011) could not find any capacity for rural job creation under Pillar II. According to the authors, the farm investment aids and the transfers to Less Favoured Areas had no employment effect, while the measures aiming at the development of rural areas reduced agricultural employment. Psaltopoulos et al. (2011) found during the period of the reform some significant employment losses, both in the primary and secondary rural sectors. However, at the farm level Salvioni and Sciulli (2011) found that the recipients of rural development programs increased the use of family labour.

Concerning the more recent 2013 CAP reform, fewer studies have been conducted, but useful results have been obtained, especially with regard to geographical scope. The final report of the FP7 CAP-IRE project (2011) unequivocally states an important role of the CAP in maintaining and creating jobs in agricultural and rural areas. The authors state that in a hypothetical scenario of a complete removal of the CAP, the exit rate of farms would sharply increase, producing strong structural changes in the agricultural sector. In recognition of this the European Commission (2015) assigns to the new rural development programs the capacity for creating new non-agricultural jobs in rural areas, and a requirement to support training to help rural inhabitants develop skills for new and future jobs.

Some studies forecasting future possible policy scenarios are presented to conclude this section. Helming et al. (2008) analyse the sectoral employment developments due to CAP reforms in 2020, finding that agricultural employment in Europe decreases due to further liberalisation, and in the case of full liberalisation, it is unlikely that a decrease in agricultural employment would be compensated by an increase in the employment in non-agricultural sectors. Similar conclusions are found by Bournaris and Manos (2012), while Kristkova and Ratering (2012) speculates on possible further reallocation of funds from Pillar I to Pillar II, concluding that, based on previous observations, any reductions in direct payments, although compensated by larger investment subsidies, might cause an outflow of labour from agriculture. Finally, Manos et al. (2013) assessed the CAP impacts on social sustainability by measuring farm household behaviour in future scenarios (extended to 2020) according to EU CAP. They found that future liberalisation will reduce total, family and external labour, and that the decrease in female employment would be much higher than for males.

3.3. Quantification of the CAP impact on agricultural and rural jobs creation

Given the high heterogeneity of the agricultural and rural systems and of the socio-economic characteristics across the 28 EU MS and across their regions, quantifying the capacity of the CAP of creating jobs is quite a challenge.

Among the studies collected through the literature search, fourteen have quantified the jobs maintained or created by the CAP. These results are reported in Table 2. It is important to note that the values are based on the specific analytical framework (e.g. economic models assumptions) and geographical scope of each study, therefore the estimations cannot always be applied at EU level. Moreover, the great majority of the authors who have quantified the employment effect of the CAP are those finding positive impacts, while the large literature which identifies negative impacts did not provide sufficient quantitative figures of the effects.

Six of the studies considered in this section have quantified the job impact of the CAP as an elasticity or employment rate. Balamou et al. (2008) focused on two specific rural regions in Scotland and Greece, predicting that decoupling had a negative employment impact due to the decrease of the agricultural production that leads to a surplus of labour reallocated to other sectors. The authors predicted that a 30% decrease in coupled agricultural support would lead to a decrease in total rural employment, quantified at -0.21% for the Scottish region, and -2.65% for the Greek region.

Berlinschi et al., 2011 analysed the impact of farm subsidies on agricultural employment in Portugal, Spain, Italy and Ireland by focusing on education. According to the results of the study, the higher income from policy support can be used by farmers to make their children study, but higher education increases the probability of leaving the agricultural sector. By putting this in numbers, the authors suggest that a 10% increase in parents' income is associated with 1.5% increase in the probability of completing secondary education for the child. Completing secondary education increases the probability of leaving agriculture by 85%.

Table 2: Quantification of the CAP employment effect on employment rate, number of jobs created and cost for each job created

Source	Year	Policy proposal	Impact
Balamou et al	2008	Decoupling: 30% decrease in coupled support	2.65% decrease in employment in Greek rural areas; 0.21% decrease in employment in Scottish rural areas
Berlinschi et al	2011	Direct payments: 10% increase in farm income	1.5% increase in the probability of completing secondary education for the child. Completing secondary education increases the probability to leave agriculture by 85%.
Bournaris and Manos	2012	Pillar II: Alternative crops and Agri-environment schemes;	See Table 3
CAP-IRE	2011	Complete removal of the CAP	30% of farmers would to stop farming
European Commission	2015	Pillar II: 2014-2020 RDP programs	Launch of about 60,000 non-agricultural start-ups across all MS; The LEADER approach will cover 51% of the EU's rural population; 3.9 million training places to improve labour skills of rural inhabitants.
European Commission	2006	The LEADER II initiative	100,000 jobs created in Europe's rural areas; 50% of the jobs concerned women.
Gohin and Latruffe	2006	Decoupling	Employment decline of about 85,000 – 134,000 full-time on-farm workers; 3,000 jobs in the food industry.
Latruffe et al	2013	Complete removal of the CAP	21% of farmers would to stop farming.
Neuwirth et al	2010	Direct payments	40,000 to 50,000 AWUs were saved in Austria's primary sector; If an equal amount to that spent for agricultural subsidies were to be allocated to other sectors, 45,000 AWUs in the primary sector would be lost. Despite the increase of the employment rate in other sectors would increase, a total of 33,000 agricultural jobs would still be lost
SAC	2006	Scottish Rural Development Programme 2000-2006: forestry scheme	2,780 FTE jobs created in nurseries, contracting and in house staff.
Topp and Mitchell	2003	Agenda 2000	Total employment loss between 5,000-8,000
Olper at al	2014	Total CAP payments	Prevent about 27,000 agricultural workers to exit the farm sector each year; Reduce the rate of farm labour migration by around 14.3% year; 1% increase in total CAP payments decreases out-farm migration by 0.17-0.25%.

Source: CCRI

Bournaris and Manos (2012) simulated different policy scenarios of the 2013 CAP Reform in two Greek rural areas. According to the estimates, different CAP measures have a different impact on labour rates (see Table 3). The SFP scheme has a negative impact on all labour types, meaning that, on average, the SFP can reduce female farm labour by as much as

3.8%. The effect of the SFP scheme changes and becomes positive if, under the scheme, alternative crops are adopted. Agri-environmental schemes, on the other hand, have a positive impact in the case of organic farming (up to 1.9% increase of external labour), but the agri-environmental schemes for the protection of nitrates-sensitive areas have a negative effect, although rather small.

Latruffe et al. (2013) investigated how farmers in two French regions might react if the CAP were abolished. They found that if the CAP were removed it would induce a substantial share of farmers to exit farming (up to 21%), depending on farmer and farm characteristics (such as age, farm size and location). A similar result at EU level, was obtained by the FP7 project CAP-IRE (2011), which estimated that if the CAP is removed it would provoke the exit of 30% of farms from the sector. Olper et al. (2014) also provided results at EU level by making estimations on 150 regions of the EU-15 countries. The authors estimated that for each 1% increase of the total CAP payments (Pillar I plus Pillar II) the migration of agricultural labour to other sectors would be reduced by 0.17-0.25%. Olper et al. (2014) estimated also that, in the period 1990-2009, the CAP reduced the migration of agricultural labour by about 6-20%, which corresponds to the confidence interval of a 14.3% point of the estimates.

Table 3: Labour impact of different scenarios of the 2013 CAP Reform in two Greek rural areas

%	Single Farm Payment Scheme (SFP)	Adoption of alternative crops under SFP	Agrienvironmental schemes – organic farmers	Agrienvironmental schemes – protection of nitrates-sensitive areas
Total Labour	-0.5 to -2.7	1.2 to 2	0.2 to 1.2	-0.6 to -1.2
Family Labour	-0.4 to -2.4	1.1 to 1.8	0.2 to 0.8	-0.9 to 0.1
Men Labour	-0.5 to -2.4	2 to 3	0.2 to 1.6	-0.8 to 0.5
Women Labour	-0.8 to -3.8	0.5 to 0.8	0.2 to 0.4	-0.3 to -1.8
External Labour	-3.2 to 0.5	-1 to 1.1	0.4 to 1.9	-0.5 to -0.8

Source: Bournaris and Manos, 2012.

In order to obtain estimates of the number of agricultural and rural jobs created by the CAP, eight studies are particularly helpful (see Table 2). Recently the European Commission (2015) prepared a publication for the “EU Agricultural Outlook Conference” that took place in Brussels on 1-2 December 2015. According to this publication, the new RDPs are expected to help launching about 60,000 non-agricultural start-ups throughout the funding period, as well as supporting 3.9 million training activities that can help inhabitants in the rural areas develop new professional skills. In 2006, an official communication of the European Commission stated that during the course of the LEADER II initiative the rural diversification measures helped maintaining agricultural jobs, and in the same period temporary jobs were created through environmental and village renewal activities. The number of jobs maintained and/or created have been estimated to be in the region of 100,000 jobs, half of which were available to women.

Other studies have also found evidence that the CAP, overall, contributed to creating agricultural and rural jobs. SAC (2006) estimated that the 2000-2006 Scottish RDP generated about 2,780 full time equivalent jobs in the forestry sector, although it is not sure that these jobs were kept after the funding ended. Neuwirth et al. (2010) estimated that CAP subsidies saved 40,000 to 50,000 Annual Working Units in Austria’s primary sector and that if the money used for the subsidies were used in other sectors 45,000 AWUs would have been lost. At the same time, the employment rate in other sectors would slightly increase, but a

total of 33,000 agricultural jobs would still be lost. Olper et al. (2014) estimated that the CAP payments in 1990-2009 prevented the exit of 27,000 workers from the farming sector.

Any job created by the CAP comes with a cost. This cost was estimated in Sweden by Nordin (2014) at about EUR 27,500. At the EU level, the cost estimated by Petrick and Zier (2012) is much higher: EUR 50,000 are required every year to create one additional job. However, the literature shows that decoupling could have provoked an overall loss of agricultural jobs. Topp and Mitchell (2003) forecast that the 2003 CAP Reform is associated with a reduction in employment of between 4,900 and 7,800 in a single Scottish region. Gohin and Latruffe (2006) estimated that, depending on the level of decoupling, agriculture in the EU-15 may have lost 85,000 to 134,000 full-time on-farm workers. This loss is not compensated by the creation of 3,000 jobs in the food industry, which is too modest. Generally, food industries are only marginally affected by the 2003 CAP reform, the effects being mostly absorbed at the farm level.

3.4. Discussion

3.4.1. Comparison between Pillar I and Pillar II

It is worth noting that overall Pillar I of the CAP has been the object of a larger number of studies than Pillar II. More precisely, there are 75% more studies on Pillar I than on Pillar II. This could also be due to the larger amount of funding available to Pillar I with respect to Pillar II.

The literature search found a total of 33 studies on Pillar I, almost all of them (32 studies) making quantitative analyses of its impact on agricultural and rural employment. A total of 16 studies focused on the decoupling issue, and twelve of them broadly agree that decoupling had a negative impact on agricultural employment (e.g. Kaditi, 2013; Manos et al., 2009 and 2011; Hennessy and Rehman, 2006 and 2008; Tranter et al., 2007) (see Section 3.7 for more details). Only 3 studies suggested that decoupling could have a positive impact in creating or maintaining jobs in agriculture (Olper et al., 2014; Agrosynergie, 2011; IDEMA, 2007).

Eleven studies focused on direct payments, which, according to the authors, had a positive or a mixed impact (e.g. Breustedt and Glauben, 2007; Dupraz and Latruffe, 2015; European Commission, 2015; European Commission, 2006; Neuwirth et al., 2010; Nordin, 2014; Psaltopoulos et al., 2006; Vincze and Kerekes, 2009). However, the positive impact of Pillar I is often viewed as keeping the actual number of jobs in agriculture rather than obtaining the creation of new ones.

A total of 20 studies analyse Pillar II, of which fifteen are ex-post analyses, and the results are quite inconclusive or even completely opposed to each other. For example, while Bounaris and Manos (2012) found a negative impact of the agro-environmental schemes, Dupraz and Latruffe (2015) consider the agro-environmental scheme successful for the creation of new job opportunities. Both the direct payments supporting the producers, and the subsidies coming from Pillar II measures are shown to have positive impacts by Olper et al. (2014), Salvioni and Sciulli (2011), and the European Commission (2006), but the same policies are found to have negative impacts by Alexiadis et al. (2013), Kristkova and Ratering (2012), and Psaltopoulos et al. (2006 and 2011).

As pointed out by the European Court of Auditors (2013), the success of rural development measure can be strongly related to the way the individual MS implement the policy. Indeed, higher rates of success have been found in those MS where rural development grants were

conditional on target outputs, such as a target number of jobs created. However, it is important to note that the goal of Pillar II is the development of the rural areas as a whole, sustaining not only the jobs in the primary sector, but also creating new job opportunities that are not necessarily linked to the production of agricultural goods. In this sense, the policy can be considered successful in creating rural jobs, but these new opportunities can lead to a loss of agricultural jobs. This is clearly pointed out by Kaditi (2013), which underlines that subsidies for rural development do not favour on-farm labour use.

3.4.2. Nature of the analytical study

3.4.2.1. Ex-ante and ex-post analyses

An important distinction across the different studies collected through the literature search concerns ex-post estimations (conducted after the implementation of the policy or after a reform to observe the actual employment outcome) and ex-ante estimations (conducted before a reform implementation to obtain forecasts of the potential employment impact).

The literature search yielded a total of 30 studies undertaking ex-post analyses, the majority of them (17 studies) finding a negative or mixed impact of the CAP on agricultural and rural employment. In terms of methodology applied for ex-post analyses, econometric panel analyses are the most frequently used (18 studies), while other authors used mathematical programming (Fragoso et al., 2011; Manos et al., 2011; Manos et al., 2009) and mixed statistical methods (ECORYS, 2010; European Commission, 2006; European Court of Auditors, 2013).

Two studies using econometric panel analyses highlight negative indirect employment effects. Alexiadis et al. (2013), found that increased labour productivity induced by the policy required lower labour force units, while Berlinschi et al. (2011) found that educational improvements can lead farmers' sons to leave the agricultural sector for better paid jobs in the industrial or service sectors. On the contrary, two other studies found direct positive effects of the CAP on agricultural employment, mainly thanks to the increase of income provided by the policy (Agrosynergie, 2011; Olper et al., 2014).

Many of the ex-post econometric panel analyses found mixed impacts of the policy (Dupraz and Latruffe, 2015; Nordin, 2014; Kaditi, 2013; Tocco et al., 2013; Petrick and Zier, 2012; Petrick and Zier, 2011; Van Herck, 2009; Breustedt and Glauben, 2007). Negative impacts arise for those policy instruments that lead to further liberalisation of the agricultural sector, such as the reduction of price supports and decoupling, but positive or stabilizing impacts occur for increasing direct and LFA payments.

In terms of ex-ante analyses, a total of 22 studies were found, of which 10 used economic models. Six studies made use of econometric analysis. Four econometric ex-ante analyses found a negative impact of the CAP and its reforms, directly or indirectly, mainly due to the liberalization process (Peerlings et al., 2014; Elek et al., 2010; Hennessy and Rehman, 2006).

Eight out of the ten ex-ante studies making use of economic models and mathematical programming find a negative impact of the CAP on agricultural and rural employment. This negative impact is mainly associated with the implementation of decoupling (Balamou et al., 2008; Gohin and Latruffe, 2006; Topp and Mitchell, 2003) and expected further liberalisation (Helming et al., 2008; Manos et al., 2013), but also to agri-environmental schemes (Bournaris and Manos, 2012), and reduction in direct payments (Kristkova and Ratering, 2012).

3.4.2.2. Quantitative and qualitative analyses

Another important distinction concerns the methodology applied to identify potential impacts of the CAP on agricultural and rural labour. Broadly speaking, it is possible to distinguish quantitative and qualitative methods.

The majority of the studies applying quantitative methods rely on econometric estimations (24 studies). There are ten cross-sectional econometric analyses based on a single year of data and using large samples of hundreds of observations (Benjamin and Kimhi, 2006; Breustedt and Glauben, 2007; Douarin, 2008; Elek et al., 2010; Genius, 2013; Hennessy and Rehman, 2006 and 2008; Peerlings et al., 2014; Van Herck, 2009; Viaggi et al., 2011). Fourteen studies make use of more advanced econometric panel data models, based on multiple years and multiple observations (Agrosynergie, 2011; Berlinschi et al., 2011; Corsi and Salvioni, 2012; Dries et al., 2011; Dupraz and Latruffe, 2015; Kaditi, 2013; Landi et al., 2016; Nordin, 2014; Olper et al., 2014; Petrick and Zier, 2012; Pufahl and Weiss, 2009; Salvioni and Sciulli, 2011; Tocco et al., 2013).

A common feature of these studies is that the influence of the CAP on agricultural and rural jobs increases with increases in the amount of support received and it is linked not only to the income effect of the policy (Agrosynergie, 2011; Berlinschi et al., 2011; Genius, 2013; Tocco et al., 2013; Olper et al., 2014), but also to its capital (Petrick and Zier, 2011 and 2012), investment, and productivity effects (Alexiadis et al., 2013; Salvioni and Sciulli, 2009; Viaggi et al., 2011).

A second group of quantitative methods is composed by economic models, such as equilibrium models (Balamou et al., 2008; Gohin and Latruffe, 2006; Helming et al., 2008; Kristkova and Ratering, 2012; Psaltopoulos et al., 2011), multicriteria models (Bournaris and Manos, 2012; Manos et al., 2009, 2011 and 2013), mathematical programming (Fragoso et al., 2011; Topp and Mitchell, 2003) and other models (IDEMA, 2007; Psaltopoulos et al., 2006; Sieber et al., 2013; Wier et al., 2002). The studies applying these methods provide results on the variation of the agricultural employment growth and structural change as a response to changes in the policy.

The third group of quantitative studies applies a mix of statistical analyses and it is mainly composed by reports from consultant groups (ECORYS, 2010), the European Commission (2006 and 2011) and the European Court of Auditors (2013). Also the scientific community contributed with statistical analyses, through the works of Neuwirth et al. (2010), Swinnen and Knops (2013) and Vereijken and Hermans (2010) and case studies (Baum et al., 2006).

The qualitative methods applied in the literature to investigate the CAP impact on agricultural and rural employment use interviews with experts (Mattas et al., 2008; SAC, 2006; Vincze and Kerekes, 2009), and farmer's perceptions/opinions (Baum et al., 2006; Tranter et al., 2007). Among these studies, the SAC report (2006) is the most comprehensive regarding jobs in rural areas, although focusing only on Scotland. According to the authors, the CAP helped in maintaining the existing jobs but it did not contribute much in creating new ones. Other members of the rural communities can benefit, especially contractors supplying linear features such as hedgerows and fencing, but these non-farming jobs do not appear to be sustainable beyond the period of funding.

3.5. Conclusions

This report presents the results of a systematic review conducted to answer the question “What is the role of the CAP in creating agricultural and rural jobs?” and covering all the EU’s MS and regions. The literature search yielded a significant number of studies, composed of academic articles, conference papers, and institutional reports. This literature is characterized by high heterogeneity in terms of the direction of CAP impacts, CAP reforms and policy instruments, and in methodologies.

Quantitative studies find that the influence of the CAP on agricultural and rural jobs increases with the increase of the amount of support received, and this is linked to higher farm income, capital, investments and productivity induced by the policy. Historically, the CAP has supported farming that is intensive and highly mechanized, increasing the agricultural productivity per unit of labour.

The main positive impact of Pillar I is often viewed as maintaining the actual number of jobs in agriculture, but the capacity of Pillar I in creating new jobs appears to be quite limited.

The success of Pillar II seems to be related to the implementation at MS or regional level. Studies show that rural development policies have a higher rate of success when they are linked to a target number of jobs created. However, it is important to note that the goal of Pillar II is the development of the rural areas as a whole, sustaining not only the jobs in the primary sector, but also creating new job opportunities in the tourism and hospitality sectors. In this sense, the policy can be considered successful in creating rural jobs, but these new opportunities can lead to a loss of agricultural jobs.

Across the several reforms that have occurred since 1992, the 2003 CAP reform has been the most studied. The overall evaluation of this reform is negative, as it is shown that it had mainly negative or insignificant effects on agricultural and rural employment. One driver of the negative impact of the reform is the decoupling of direct payments. By keeping farmers subsidies but breaking the link between the subsidy and the level of agricultural production, farmers no longer have any incentive in putting extra labour units into agricultural activity. On the contrary, farmers have surplus time that can be used in off-farm activities.

By looking at future scenarios, the increasing liberalisation of the agricultural sector seems to decrease the agricultural employment in Europe, especially concerning family and external labour.

The quantification of the number of jobs created or maintained by the CAP in the last two decades is quite optimistic. Overall, the CAP subsidies seem to have contributed to keeping workers in the agricultural sector. However, questions on the sustainability of the policy have been raised by several authors. The cost of each job maintained and created is quite high and it is not sure whether these jobs will be kept after the funding period.

4. STATISTICAL ANALYSIS

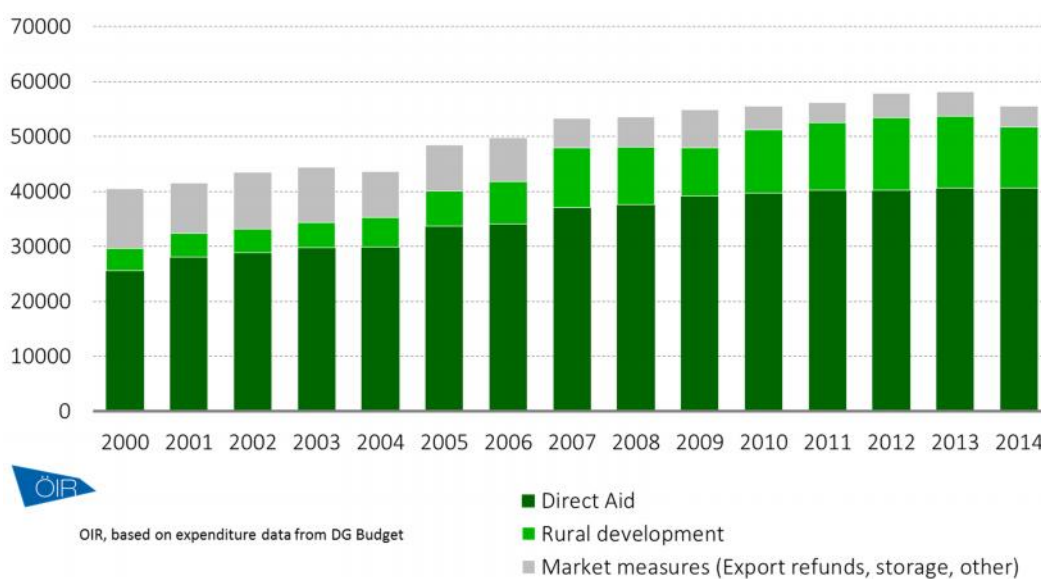
The objective of the analysis is on the one hand to analyse the expenditure of both CAP pillars by Member States and on the other hand the employment and growth development in rural areas and the various sectors, with particular attention to agriculture and the agri-food industry. To respond to the objectives an extensive trend analysis has been made of a set of indicators to provide an overview of the employment and growth development in rural areas as well as those that are associated with agriculture and the agri-food industry.

The analysis focuses on the changes in rural areas of the EU28 from 2007/2008 to 2013/2014 (using the most current data available from Eurostat). The level of analysis depending on data availability is the NUTS3 or NUTS2 level, which allows a thorough situational and trend analysis of the socio-economic situation in the EU28.

4.1. Analysis of EU expenditure

At present, data publicly available from EU-resources is only available at national level.¹² The following data analysis is thus based on EU expenditure published by DG Budget at national level. This fact limits the statements at regional level, i.e. NUTS-3 level and its attribution to rural, intermediate and urban regions to secondary literature sources, mainly Camaioni et. al. (2014)¹³, who analysed CAP expenditure of both Pillars for the years 2007 to 2011.

Figure 1: EU-Expenditure on agriculture markets and rural development 2000-2014 [EUR million, at current prices]



Source: ÖIR based on DG Budget

During the period of 2007-2013 about EUR 389 billion of EU-expenditure were spent on the agriculture market, direct payments and rural development. Although different mechanisms for re-structuring of CAP-expenditure were introduced, 70% of the CAP-expenditure was spent for direct payments over the past periods.

¹² The transparency of EU funding improved with (EU) No 1306/2013, leading to data availability from the year 2014 onwards. For the past period, data from 2012 onwards via public sources, e.g. gathered by "Farmsubsidy.org" is highly fragmented and thus not appropriate for the study at hand.

¹³ Camaioni, B., Esposti, R., Pagliacci, F., Sotte, F. (2014): WWWforEurope, Working Paper no 51. How much rural is the CAP?. Project under the 7th framework programme

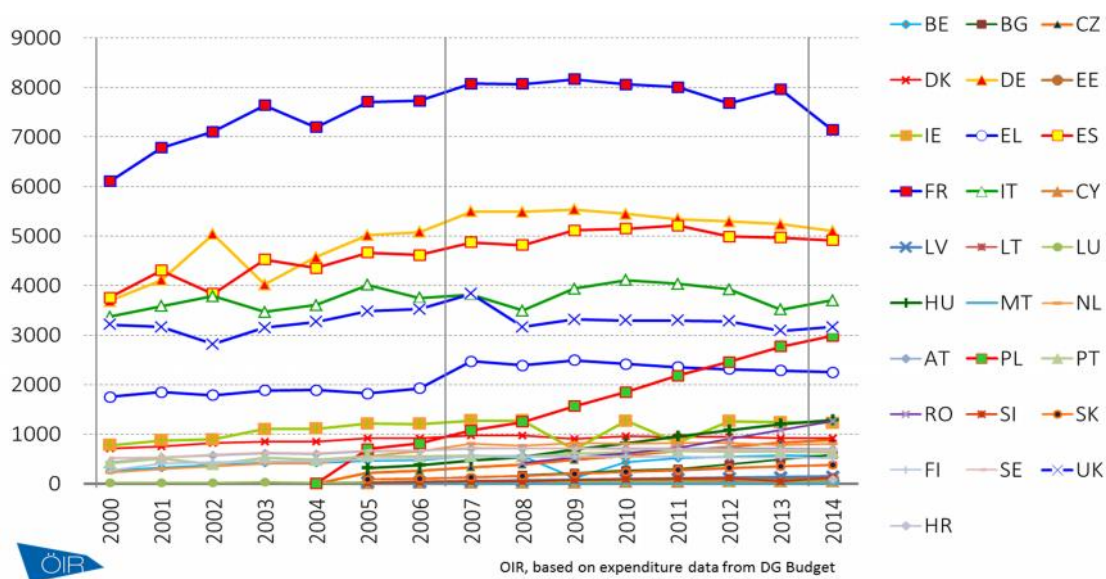
Nonetheless, EU-expenditure was shifted to rural development projects in the period of 2007-2013, accounting for about 21% during the period 2007-2013, opposing to 12% in the previous period (see Figure 1).

At national level, EU-expenditure within the EU-15 is rather stable over the years, as the main agricultural regions receiving a large share of CAP-expenditure quickly took up EAGF funding, while the agricultural regions around the urbanized areas, as well as the New Member States Bulgaria, Romania and Poland were slow in the uptake of EU funds.¹⁴ The level of EU direct payments for the New Member States is intended to progressively increase from 25% of the EU-15 level in 2004 to 100% in 2013 respectively 2017 for Romania and Bulgaria (phasing-in).¹⁵

Especially Poland shows a steep increase in absolute and relative direct payments to farmers, accounting for EUR 3 billion by the year 2014, see Figure 2 and Figure 3 below.

However the level of payment in the New Member States is still lower than in the EU-10 thus for the period 2014-2020 new rules were adopted aiming at distributing direct payments more equally and less historically among the Member States and regions.¹⁶

Figure 2: EU-Expenditure on Direct Aid by Member State 2000-2014 [EUR million]



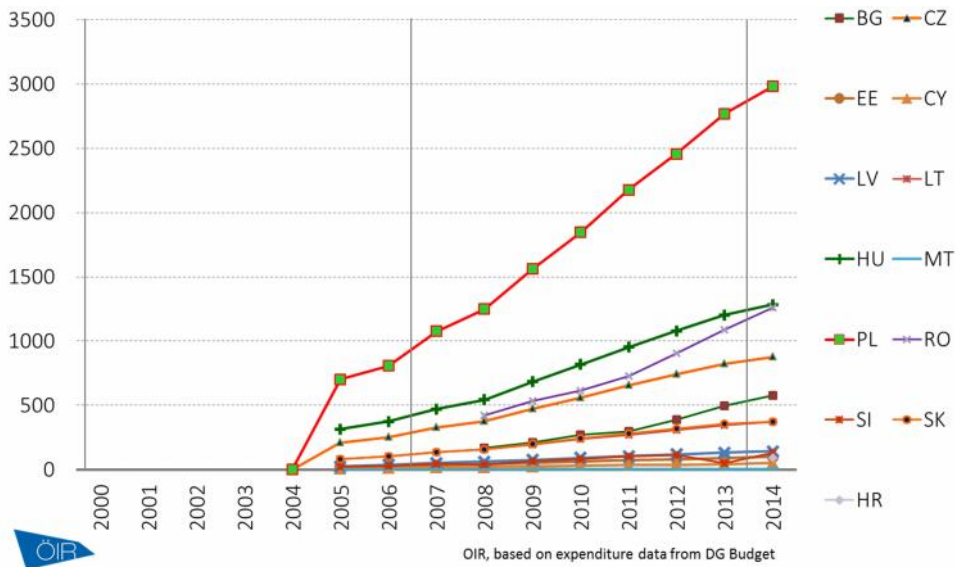
Source: ÖIR based on expenditure data from DG Budget

¹⁴ See ECORYS et al. (2010): Study on Employment, Growth and Innovation in Rural areas (SEGIRA)

¹⁵ DG AGRI (2008): Annex 2 Report on the distribution of direct payments to the producers (financial year 2007)

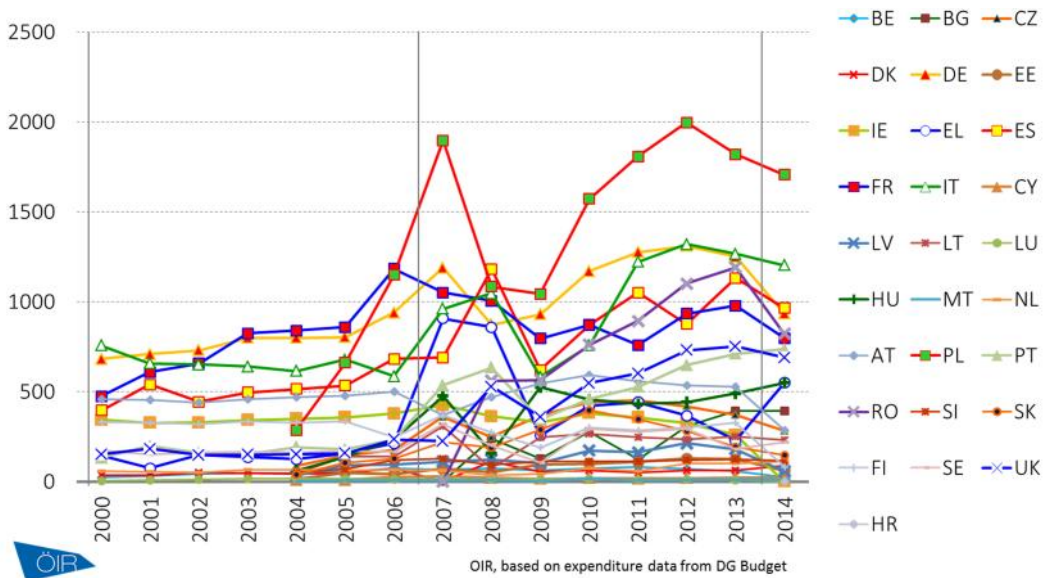
¹⁶ Ref. Ares(2015)5004686 – 11/11/2015

Figure 3: Focus New Member States: EU-Expenditure on Direct Aid by Member State 2000-2014 [EUR million]



Source: ÖIR based on expenditure data from DG Budget

Figure 4: EU-Expenditure on Rural Development by Member State 2000-2014 [EUR million]



Source: ÖIR based on expenditure data from DG Budget

4.1.1. CAP expenditure for Pillar I

In order to better understand CAP expenditure at the regional level, intensities of CAP pillar I expenditure per utilized agricultural area (UAA), agricultural labour force (AWU) and farm holding are presented. When looking at these figures one has to be aware that not all European farm holdings, thus neither the whole agricultural area nor the whole labour force were CAP beneficiaries in the past period. In consequence, the figures presented below must not be interpreted as expenditure per beneficiary.

Table 4 shows the average expenditure intensity for Pillar I. Direct payments broken down by hectare of utilized agricultural area (UAA) on average amount to EUR 1,550 within EU-28. Variations of payments per UAA vary greatly at the national level. EU-15 Member States on average receive EUR 1,900/UAA, while payments in EU-10 are on average EUR 900. This

misbalance is partly due to the fact that CAP implementation took some time in the EU-10, while in the EU-15 the administration as well as the beneficiaries were already experienced in CAP funding regulations.

Map 1 illustrates the expenditure intensity in terms of agricultural area per Member State. Agricultural land in Greece is supported most intensively, followed by the large Western agricultural Member States.

In terms of Direct Payments per agricultural labour (AWU), Denmark is most intensely supported, followed by Northern and Western EU-15 countries, see Map 2. A similar picture is evident for Direct payment intensity per farm holding, although this picture is biased by the different size structure of farms (e.g. large farms in terms of area in Czech Republic, see Map 3).

Table 4: Average Pillar I Expenditure intensity, total expenditure over the years 2007-2013 per average utilized agricultural area (UAA), agricultural labour force (AWU) and farm holding

Scope	EUR 2007-2013	EUR/ha UAA	EUR/AWU	EUR/farm holding ¹
EU 28	271,466	1,555	26,015	22,072
EU-15	237,332	1,898	47,032	46,675
EU-10	28,007	908	9,306	9,846
RO, BG	6,127	351	2,789	1,466

Source: ÖIR based on Eurostat (FSS) and DB Budget.

¹ please bear in mind that not all holdings within a country, are CAP beneficiaries

Camaioni et. al., analysing EU-expenditure (CAP expenditure by pillar and by measure) at NUTS3 level for the period 2007-2011, came to a similar conclusion. Due to the regional data available, they could also analyse data for rural regions. They state that in absolute figures Europe's predominantly rural regions received more support in terms of direct payments (as one measure of Pillar I). Considering Direct Payments per unit of agricultural labour (AWU), no significant differences between the regional types are observed. However, focusing on EUR per agricultural GVA, direct payments are more intensive in predominantly rural regions than in predominantly urban regions with statistical significance.

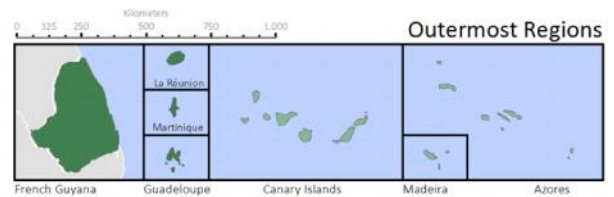
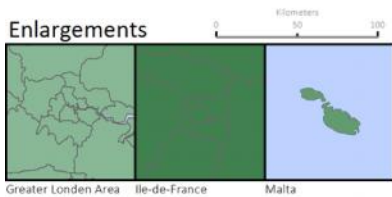
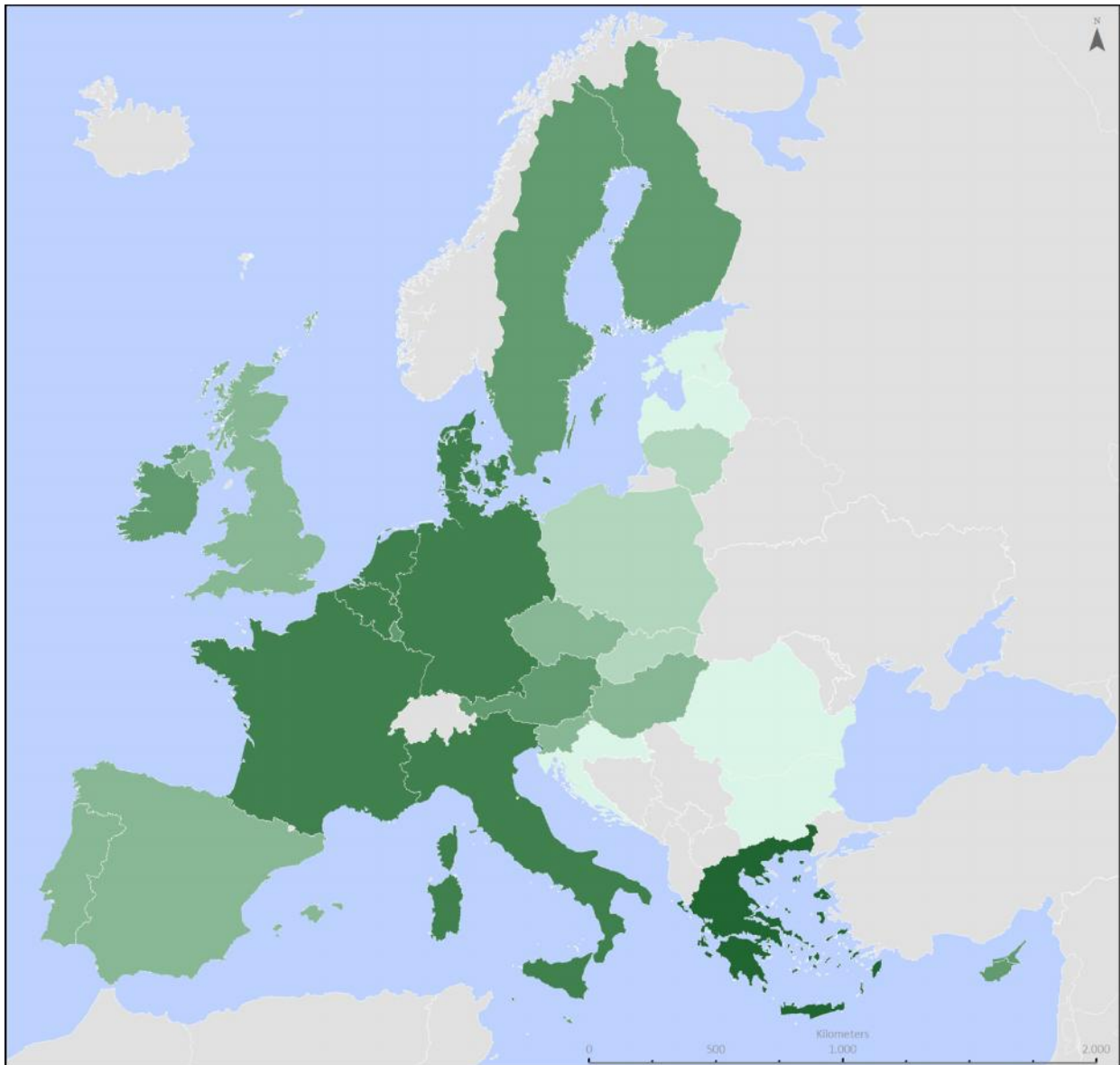
Further, CAP expenditures show a strong concentration in flatlands in North-Western EU. Conversely, the support intensity is lower in most of Eastern Europe's NUTS 3 regions. The Eastern European regions however, received a greater amount of Pillar II expenditure than Western Countries regions (Camaioni et. al, p. 90).

Table 5: Direct Payments of CAP Pillar I expenditure per urban-rural typology (2007-2011)

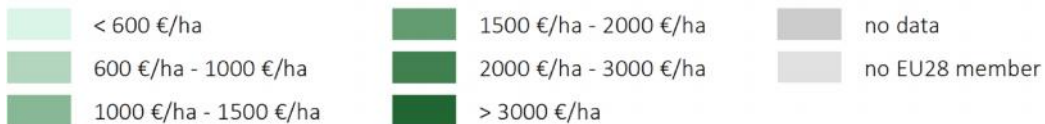
Direct Payments	Expenditure ('000 EUR)	Expenditure per UAA (EUR/UAA)	Expenditure per AWU (EUR/AWU)	Expenditure per GVA (EUR/'000 EUR)
Predominantly Rural regions (PR)	199,267.09	1,298.31	34,344.41	1,430.53
Intermediate regions (IR)	146,697.05	1,318.03	37,987.34	1,283.95
Predominantly Urban regions (PU)	69,751.71	1,396.49	38,029.74	1,157.70

Source: Camaioni et. al. (2014), p. 72

Map 1: EU-expenditure on Direct Aid (total over the years 2007-2014) per hectare utilized agricultural area (UAA) in EUR/ha



EU Expenditure on Direct Aid, total over the years 2007-2013 by hectar utilised agricultural area [EUR/ha]



Data availability: NUTS 0

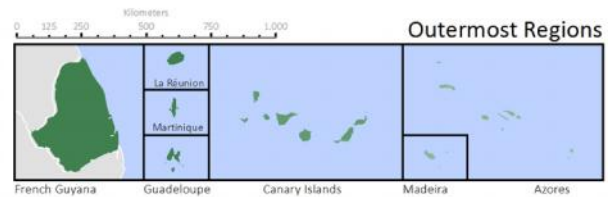
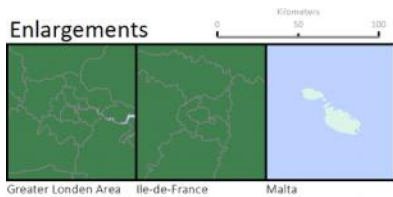
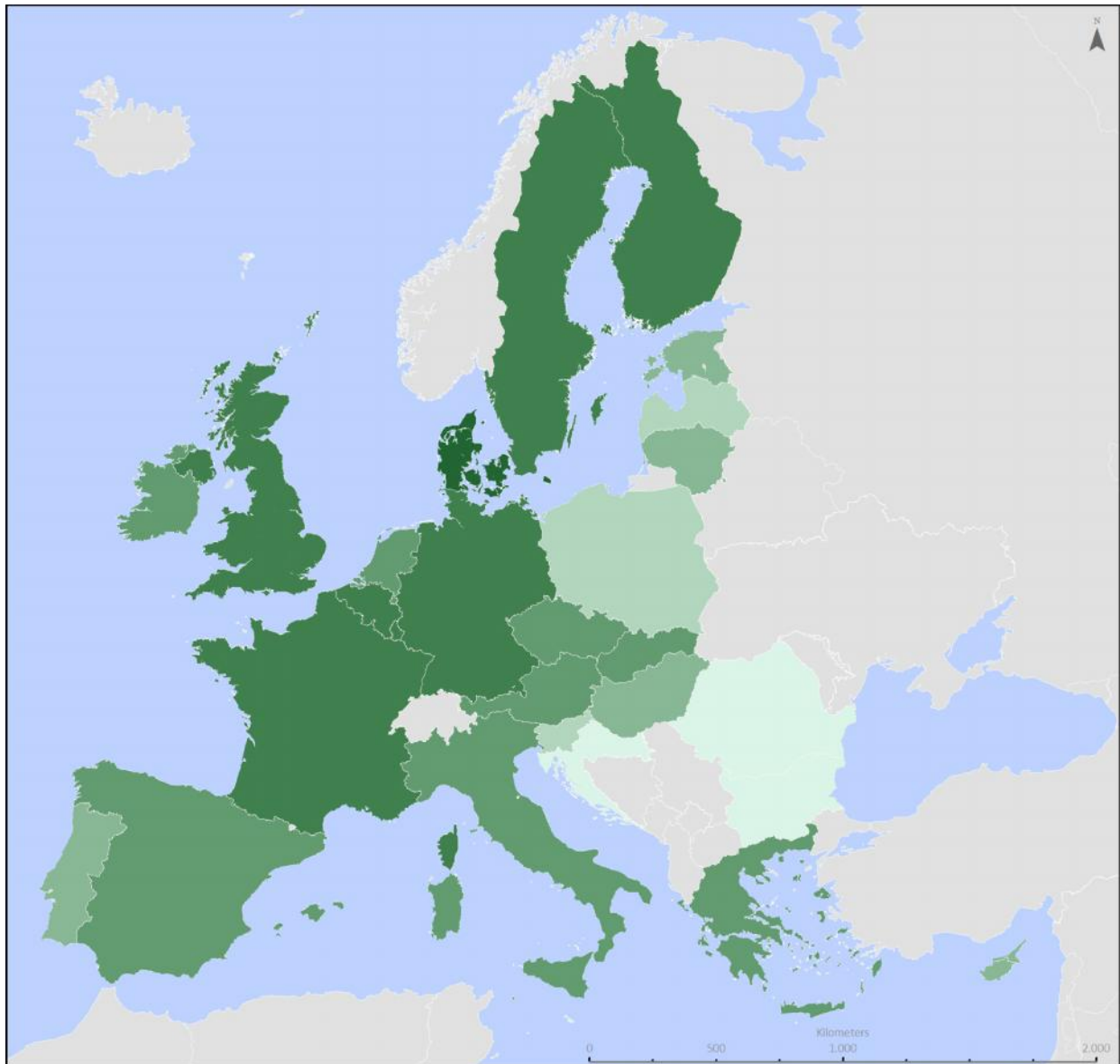
Source: OIR, based on Farm structure survey 2007-2014; DG Budget

March, 2016

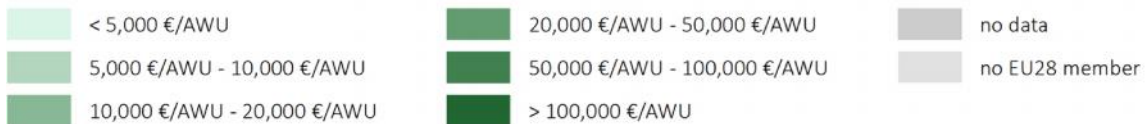


Source: OIR based on Eurostat (FSS) and DG Budget (EU expenditure at national level)

Map 2: EU-expenditure on Direct Aid (total over the years 2007-2014) per agricultural labour (AWU), [EUR/AWU]



Expenditure on Direct Aid, total over the years 2007-2013 by Annual Work Units (FTE) in agricultural holdings [EUR/AWU]

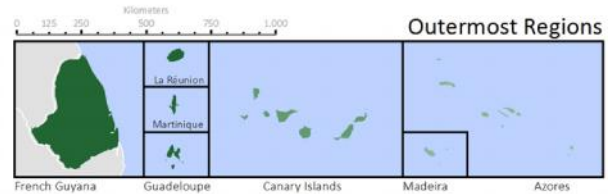
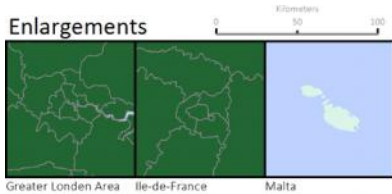
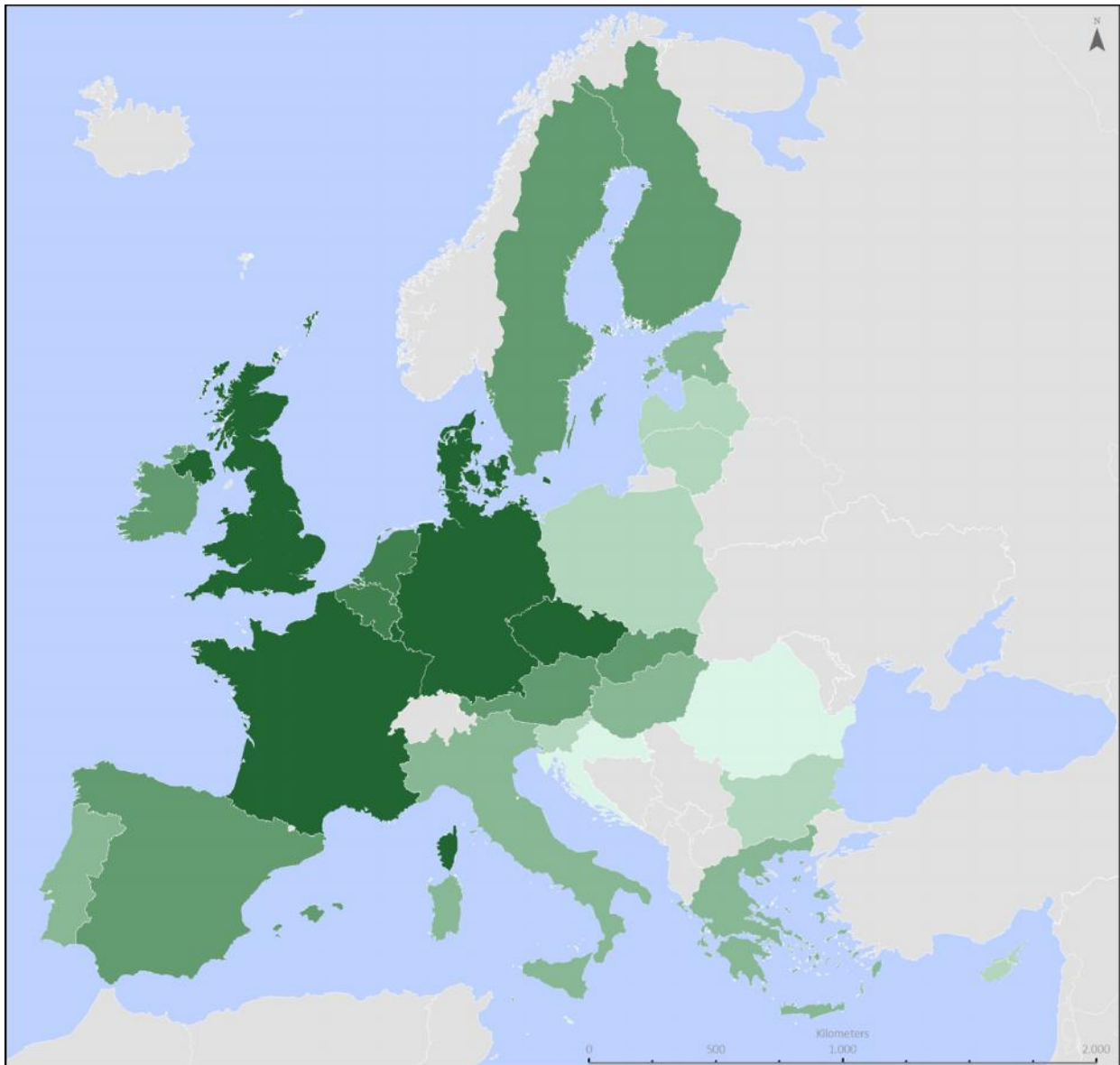


Data availability: NUTS 0
Source: OIR, based on Farm structure survey 2007-2014; DG Budget

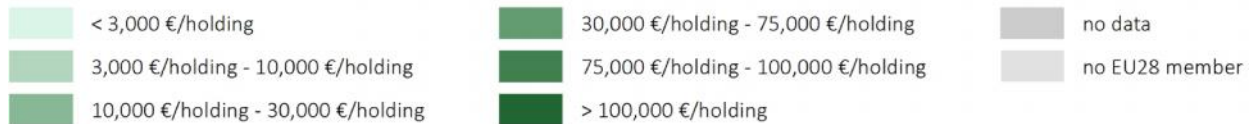
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Source: ÖIR based on Eurostat (FSS) and DG Budget (EU expenditure at national level)

Map 3: EU-expenditure on Direct Aid (total over the years 2007-2014) per farm holding



EU Expenditure on Direct Aid, total over the years 2007 - 2013 by total number of farm holdings [EUR/holding]



Data availability: NUTS 0

Source: OIR, based on Farm structure survey 2007-2014; DG Budget

March, 2016



Source: OIR based on Eurostat (FSS) and DG Budget (EU expenditure at national level)

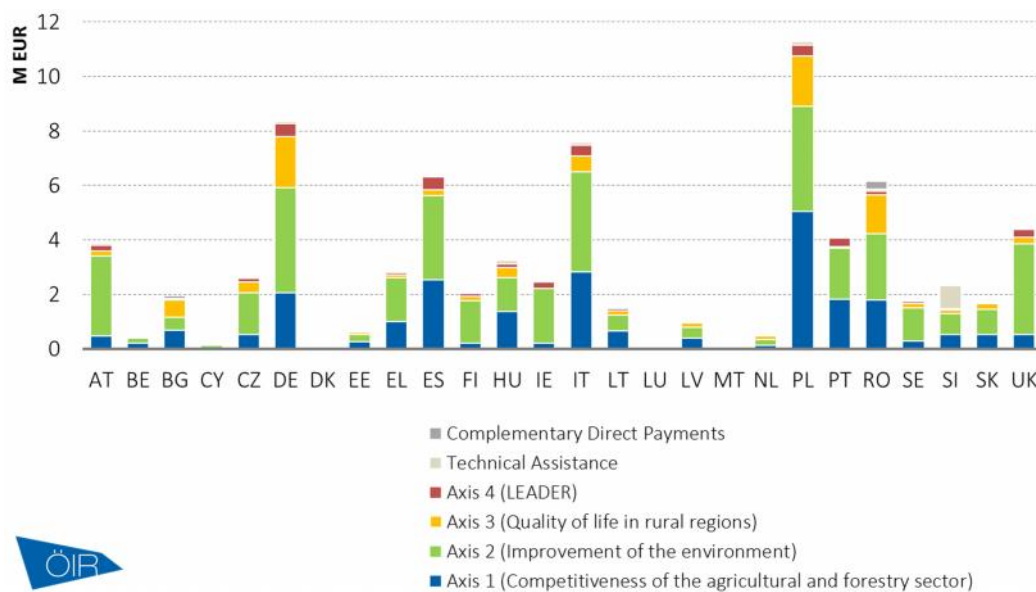
4.1.2. CAP expenditure for Pillar II

Policy priorities of rural development programmes during the period 2007-2013 were focusing on four axes: Competitiveness of the agricultural and forestry sector (axis 1), improvement of the environment (axis 2), quality of life in rural regions (axis 3) and LEADER (axis 4). The activities give support to different beneficiaries, even within the axis. For example, axis 1 supports the setting up of young farmers as well as early retirement. Due to this diversity of beneficiaries, calculating reasonable intensity figures for rural development is a sensitive issue and should be based on the number of beneficiaries rather than general statistical figures as total UAA, AWU or GVA.¹⁷

Thus, the current analysis falls back to showing the absolute expenditure per axis and member state.

Figure 5 illustrates the importance of axis 1 and 2, accounting for 30% (axis 1) and 50% (axis 2) of the overall EU-expenditures of the past period. In absolute figures EU expenditure for pillar II was highest in Poland, followed by Germany and Italy. Overall it is apparent that within pillar II, the new Member States are well represented along with EU-15.

Figure 5: EU-Expenditure on rural development, period 2007-2013 [EUR million, expenditure up to 01/15]



Source: ÖIR based on DG Budget

¹⁷ Camaioni et. al. (2014) calculated Rural Development expenditure intensities based on NUTS-3 data for the period of 2007-2011. They come to the conclusion that, predominantly rural region receive most of the expenditure in absolute figures and in terms of EUR per GVA. Considering the area of agricultural land, predominantly urban regions receive the highest share of rural development expenditure, but in terms of labour force, intermediate regions are highest funded. However, these figures do not consider the number of beneficiaries and might rather reflect structural issues, e.g. that farms in PU regions are comparably small.

CAP Rural Development (Pillar II) expenditure per urban-rural typology (2007-2011)

Urban-rural typology	Expenditure ('000 EUR)	Expenditure per UAA (EUR/UAA)	Expenditure per AWU (EUR/AWU)	Expenditure per GVA (EUR/'000 EUR)
Predominantly Rural (PR) regions	44,642.52	301.11	6,797.14	358.14
Intermediate (IR) regions	26,797.86	288.48	8,447.46	337.62
Predominantly Urban (PU) regions	13,275.26	334.94	5,849.01	233.97

Source: Camaioni et. al. (2014), p. 75

4.2. Analysis of employment and growth in rural areas

In order to have a clear view of the socio-economic developments in rural areas, data covering various employment and growth aspects have been collected and analysed. Data on economic growth and demography are available at NUTS3 level from Eurostat, data on employment, agriculture, farm structure and tourism are only available at NUTS2 level. To compare growth and employment trends in rural areas with other regions, the classification of DG AGRI/DG REGIO has been used, which is available at NUTS3 level.

For each indicator the absolute and relative evolution over time (2007-2014) has been analysed. Additionally, for indicators available at the level of NUTS3 regions, the distribution between predominantly rural, intermediate and predominantly urban regions is shown (further in this document referred to as "rural", "intermediate" and "urban"). Furthermore, the evolution of some indicators is compared between EU Member States.

As the study focuses on the rural dimension, the concept of rural areas needs to be carefully reviewed. The definition of "rural areas" has triggered an extensive debate due to the intrinsic complexity attached to the characterisation of rurality. Consequently, there is a large amount of literature available on this topic, largely due to the fact that these regions cover more than half of the total EU territory and are home to nearly a quarter of the EU population (amongst other reasons). The population distribution by regional type varies widely across MS and rural areas are most relevant for new EU MS, but also for Ireland, Finland and others (EC, 2014: 12).

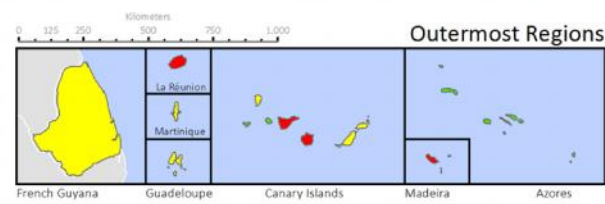
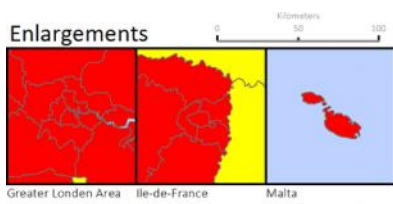
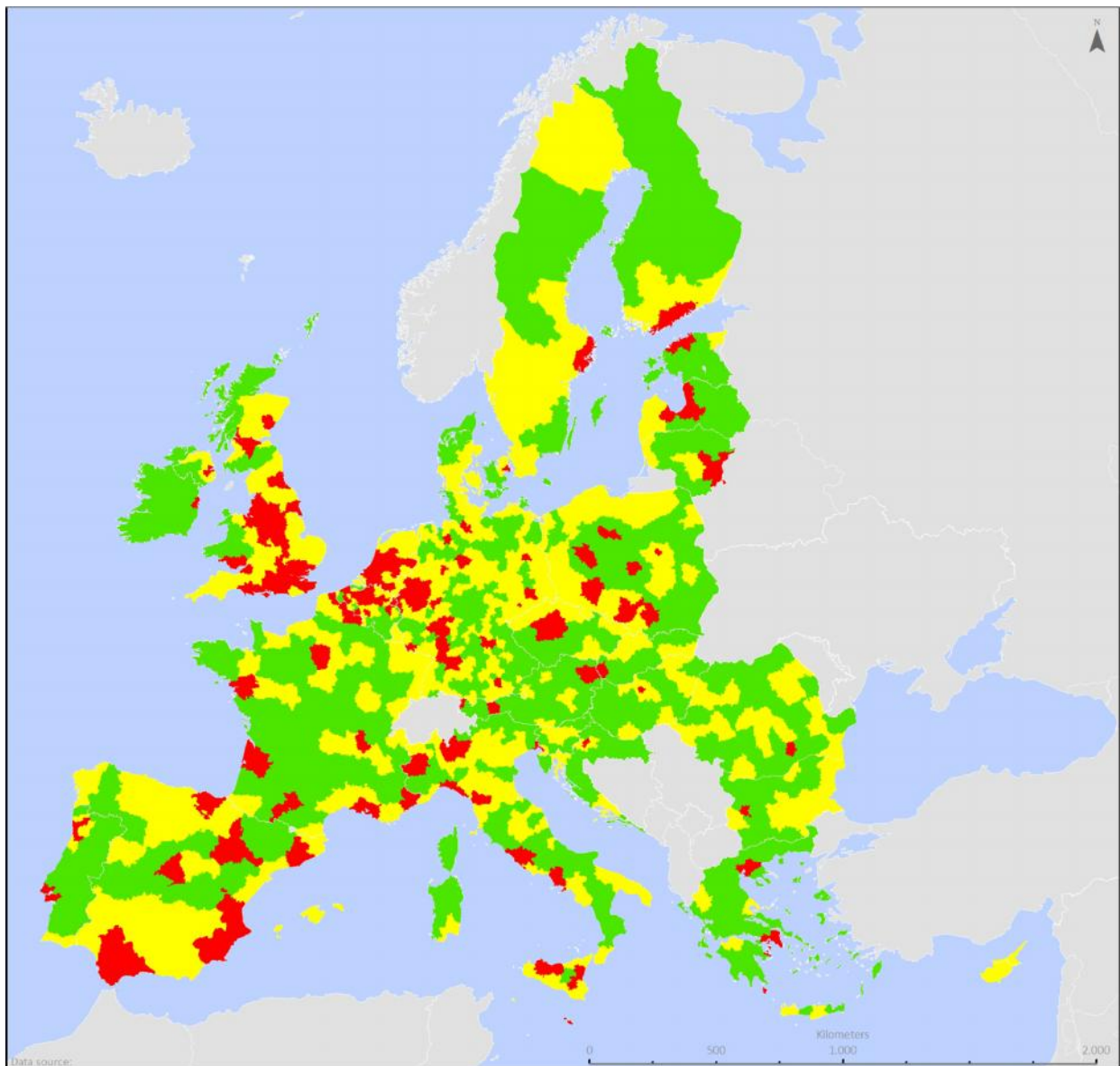
In an effort to find a compromise and establish a clear nomenclature, thus providing a rigorous basis for any comparative analysis, the European Commission established an Urban-rural typology. Building on the NUTS-3 classification, the methodology aimed at creating three different groups: predominantly rural, intermediate and predominantly urban.

The Urban-rural typology is based on a classification of grid cells of 1 km² as either urban or rural. To be considered as urban, grid cells should fulfil two conditions: a population density of at least 300 inhabitants per km² and a minimum population of 5,000 inhabitants in contiguous cells above the density threshold. The other cells are considered as rural. NUTS-3 regions are classified into three groups based on the classification of these grid cells:

- Predominantly urban regions/urban regions: the rural population is less than 20% of the total population.
- Intermediate regions: the rural population is between 20% and 50% of the total population.
- Predominantly rural regions/rural regions: the rural population is 50% or more of the total population.

In a last step, the size of the cities in the region is considered: A region classified as predominantly rural by the above criteria becomes intermediate if it contains a city of more than 200,000 inhabitants representing at least 25% of the regional population. A region classified as intermediate by the above criteria becomes predominantly urban if it contains a city of more than 500,000 inhabitants representing at least 25% of the regional population.

Map 4: Urban, rural and intermediate regions at NUTS3 level



Urban-rural typologie

- predominantly urban
- intermediate
- predominantly rural
- no data
- no EU28 member

Data availability: NUTS 3 | 2010
Source: Eurostat

March, 2016



Source: OIR based on DG AGRI /DG REGIO

In Map 4 the division of the NUTS3 regions in EU28 is indicated by regional typology as it has been used for the descriptive analysis. The classification of rural and urban areas according to the DG AGRI/DG REGIO definition shows a mixed picture, with rural, urban and

intermediate regions scattered throughout Europe. The European periphery can generally be titled as rural, especially Ireland, Portugal, Greece, great parts of Scandinavia and the Baltic States (excluding capital agglomerations). Predominantly rural are also great parts of Eastern and South-Eastern European countries. In contrast most urban areas can be found in the United Kingdom and the Benelux countries.

4.2.1. Economic growth

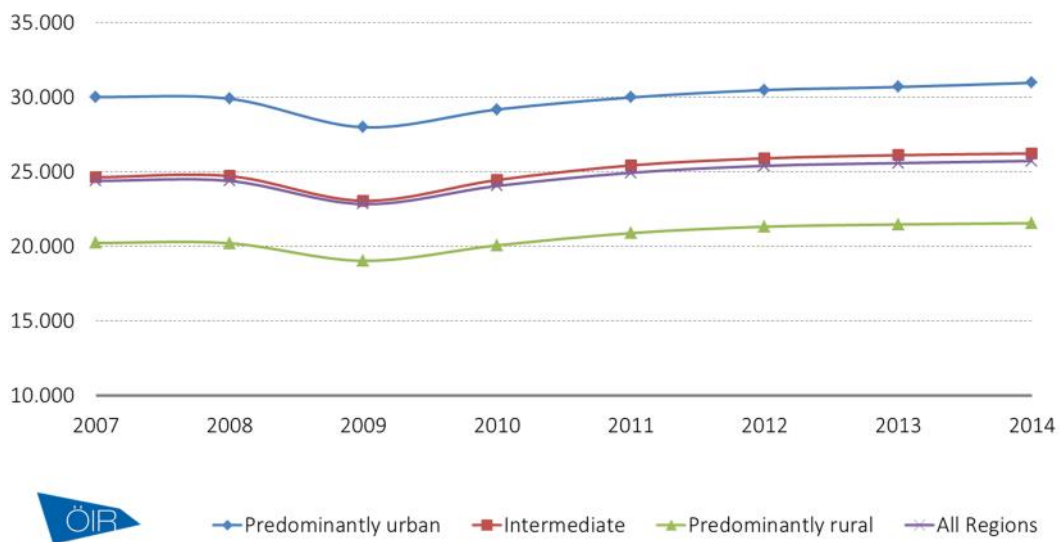
Economic growth can be measured by the indicator Gross domestic product at current market prices – Purchasing Power Standard per inhabitant (i.e., GDP in pps per capita).

GDP in pps per capita in 2014 amounted on average EUR 27,500 within EU28. In the “old” Member States (EU15) the average in 2014 was 33,200, while in the New Member States (EU10) it was 20,900 and in Romania and Bulgaria 14,000. In the period of 2007-2014, GDP rose by 6.5% in EU28, 3.2% in EU15, 12.8% in EU10 and 31.5% in Romania and Bulgaria.

Figure 6 provides a visual overview of the evolution of the regional GDP over time. Averages for all three regional types were calculated on the basis of the available data at NUTS3 level and the regional typology.

As a general trend, regional GDP in pps per capita on average has been quite steadily growing over time in all types of regions, with a dent in 2009. The total growth in the period 2007-2014 is 5.5% for all regions, with annual rates being negative in the years 2008 and 2009, a recovery phase with significant positive growth rates of 5.3% in 2010 and 3.7% in 2011 and low growth rates below 1% in the years 2013 and 2014.

Figure 6: GDP at current market prices (PPS/cap) in EU28, average by regional typology (NUTS3), 2007-2014



Source: ÖIR based on Eurostat

By type of region, rural regions appear to have consistently the lowest GDP/capita levels¹⁸. GDP is slightly higher in intermediate regions (+20% on average in 2014) and considerably higher in urban regions (+44% on average in 2014). However, growth rates in the period 2007-2014 are highest in rural regions with 6.6%, followed by intermediate regions with 6.5% and lowest in urban regions with only 3.2%.

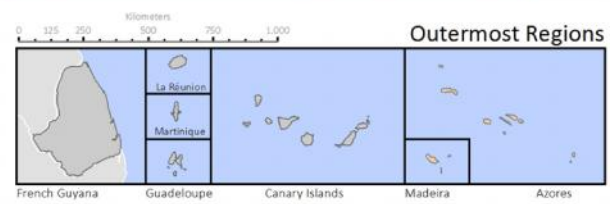
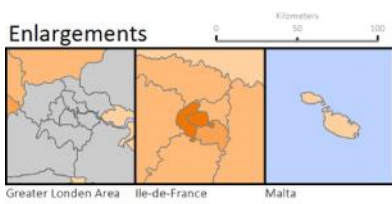
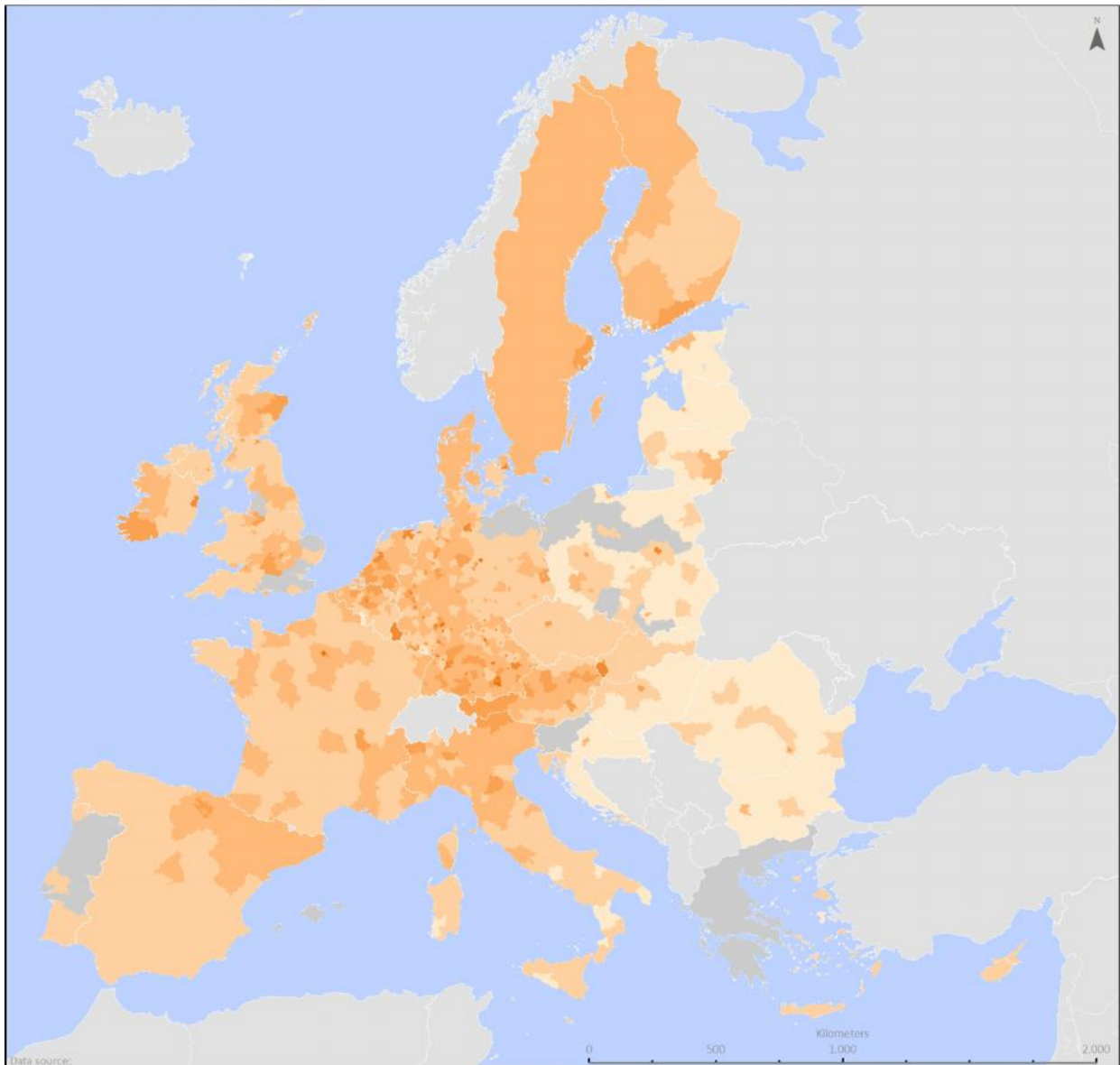
As for the situation of GDP in different types of regions it becomes clear that the variation between urban and rural regions is less distinctive than the East-West divide in Europe (see Map 5). The problem behind this phenomenon is the statistical collection of GDP data. GDP data is collected on the household level rather than the place where economic value is created (i.e. the place of work). As households are far more territorially dispersed than jobs (especially in urban hinterlands) the territorial distribution of economic performance “frays” along the settlement structures. If adjusting the GDP data to the work places the picture would be far more focused around the urban agglomerations, which host the European wealth creation to a large extent. However, rural areas around urban centres and along traffic corridors are also showing an increasing GDP per capita performance.

Looking at the territorial patterns of GDP growth in the period 2007-2014, the opposing trend is visible: Rural regions in the new Member States in the East (especially Bulgaria, Romania, Hungary, Slovakia and Poland) and Central European States Austria, Germany as well as Belgium and the Northern Member States Denmark, Sweden and Finland show highly positive growth rates between 2007-2014 (Map 6).

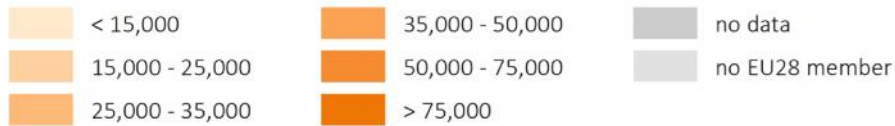
This may suggest that EU accession has contributed in general positively to the economic development in the New Member States and continues to do so. The lower starting (i.e. accession) levels in the New Member States, however, should also be taken into account as this affects the size of growth. Regions in the Southern Member States Italy, Spain, Greece and Cyprus, but also some regions in France, United Kingdom and most regions in Ireland display (highly) negative developments in GDP. Croatia as a New Member State since 2013 shows negative developments in regional GDP for the period of 2007-2013 (no data available for 2014), but also some high growth regions.

¹⁸ The GDP/capita is even overestimated, because the GDP data is collected on the household level rather than the place where economic value is created (i.e. the place of work).

Map 5: GDP (in PPP) per capita in the EU28, 2014, at NUTS3 level



Gross domestic product [EUR]

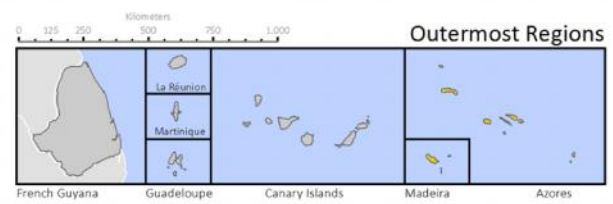
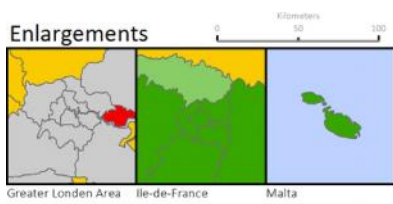
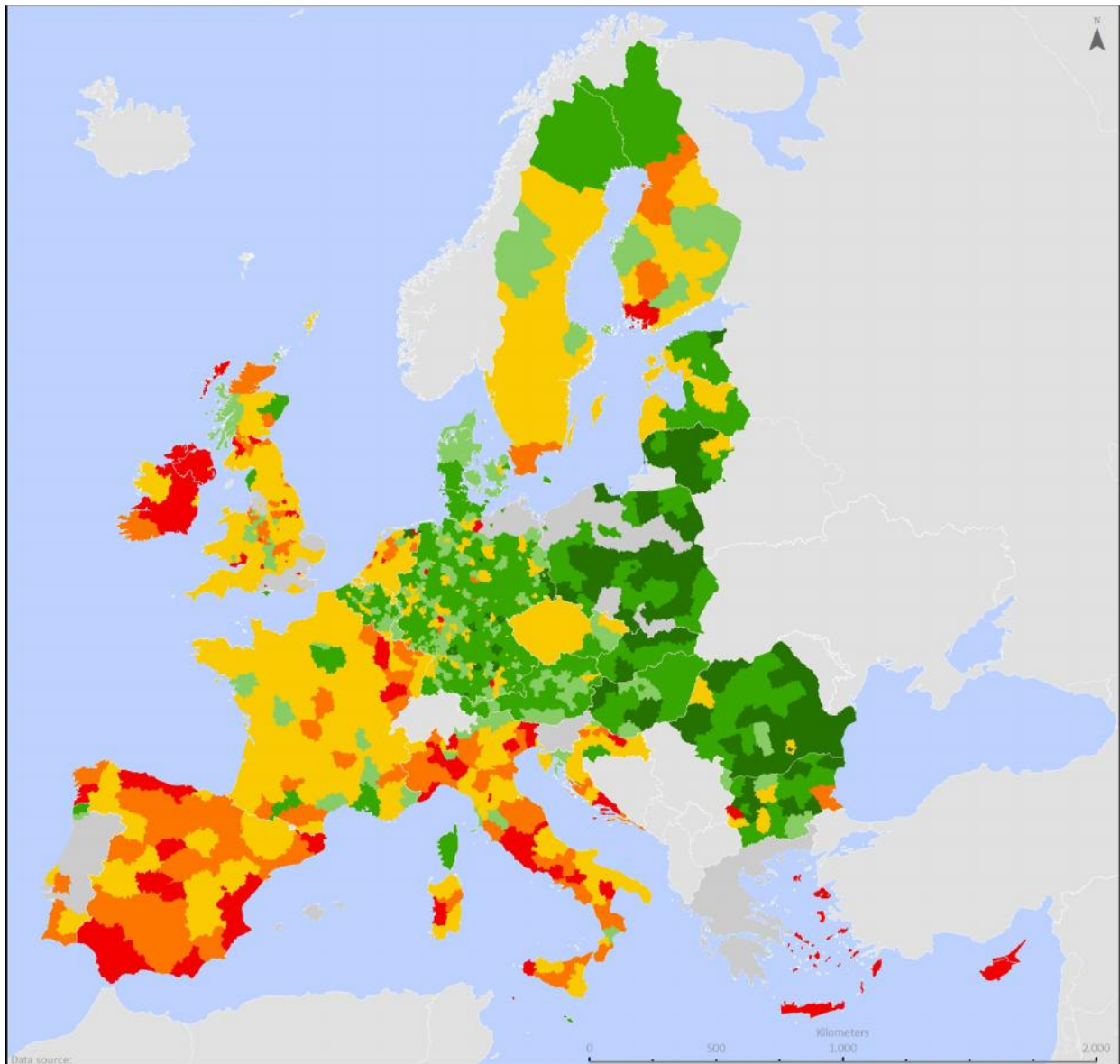


Data availability: NUTS 3 | 2007 - 2014
Source: Eurostat

March, 2016

Source: OIR based on Eurostat

Map 6: % change of GDP (in PPP) per capita in the EU28, 2007-14, at NUTS3 level



Data availability: NUTS 3 | 2007 - 2014
Source: Eurostat

March, 2016

Source: OIR based on Eurostat

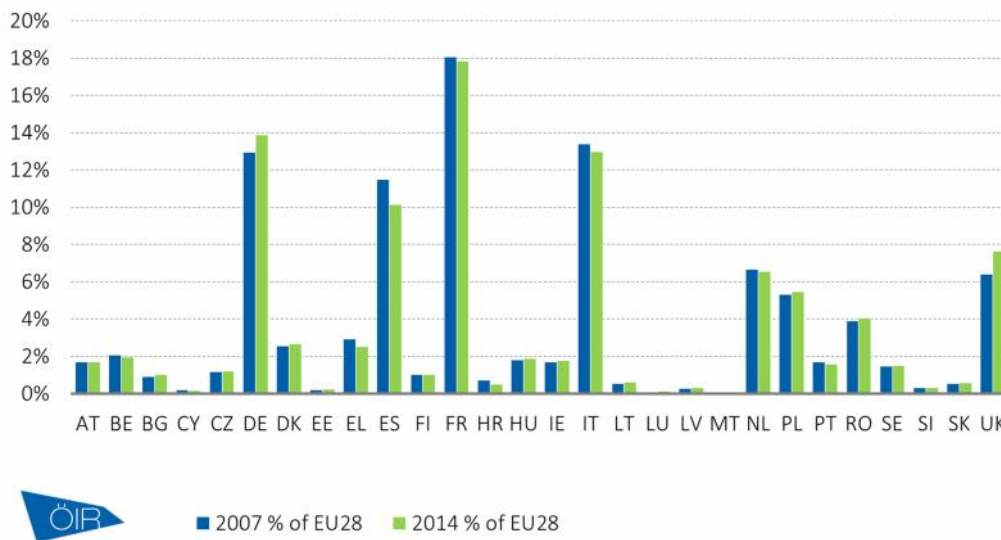
4.2.2. Economic accounts for agriculture

4.2.2.1. Agricultural output

The economic accounts for agriculture (EAA) taken from Eurostat show that the total output of the agricultural industry (comprising the output values of crops and animals, agricultural services and the goods and services produced from inseparable non-agricultural secondary activities) in the EU-28 in 2014 was an estimated EUR 415.1 billion at at producer prices (therefore excluding subsidies, but including taxes on products). France was the largest agricultural producer in the EU-28 (EUR 74.0 billion or 17.8% of the EU-28 total), followed by Germany (13.9%), Italy (13.0%) and Spain (10.1%); relative to its size, the Netherlands accounted for quite a high share of the EU-28's agricultural output (6.5%), see Figure 7.

Compared with 2007, the value of agricultural industry rose in 2014 in all of the EU Member States other than Greece (where output decreased by around -1%) and Croatia (- 22%). The highest increases in output value (in absolute terms) were recorded for the EU's larger producers, rising by EUR 11.3 billion in Germany, EUR 9.3 billion in France, EUR 8.7 billion in the United Kingdom and EUR 5.8 billion in Italy. There were also relatively large increases (over EUR 2 billion) in agricultural output in Romania, the Netherlands and Poland within the same period.

Figure 7: Output value of the agricultural industry at producer prices as % of EU28, 2007 and 2014

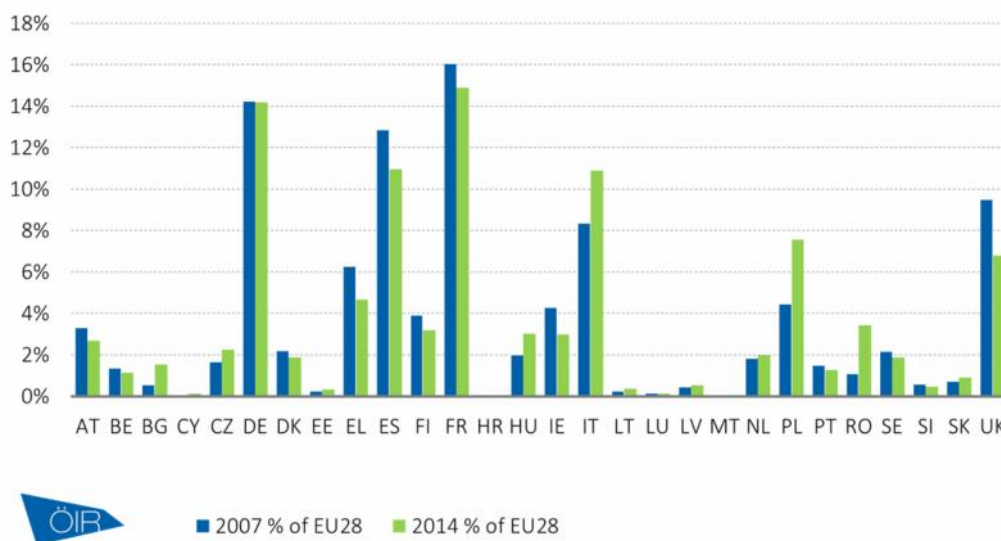


Source: ÖIR based on Eurostat

4.2.2.2. Gross value added and subsidies in agricultural industry

Gross value added at producer prices of the EU-28's agricultural industry in 2014 was an estimated EUR 162.8 billion. "Other subsidies on production", which resident producer units may receive as a consequence of engaging in production (e.g. subsidies on payroll or workforce or subsidies to reduce pollution) increased from EUR 45.2 billion in 2007 to EUR 53.8 billion by 2014. The highest subsidies were generally granted to those EU Member States with the highest levels of output (France, Germany, Spain and Italy), see Figure 8.

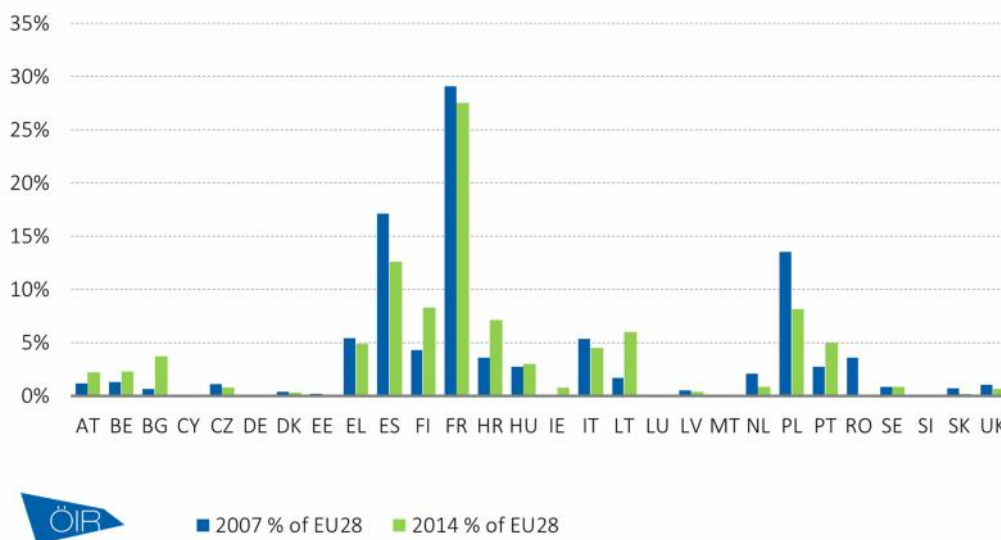
Figure 8: Other subsidies on production at basic prices as % of EU28, 2007 and 2014



Source: ÖIR based on Eurostat

The type of subsidies provided to the EU-28’s agricultural industry has changed over time as a result of successive reforms of the CAP, “decoupling” subsidies from particular crops and moving towards a system of single-farm payments. Subsidies on products, which are payable per unit of a good or service produced or imported in the EU-28 were valued at EUR 8.6 billion in 2007, which had fallen to EUR 3.8 billion by 2014. Figure 9 shows the amount of subsidies on products of the agricultural industry in the Member States as % of total EU28 subsidies on products.

Figure 9: Subsidies on products of the agricultural industry at basic prices as % of EU28, 2007 and 2014



Source: ÖIR based on Eurostat

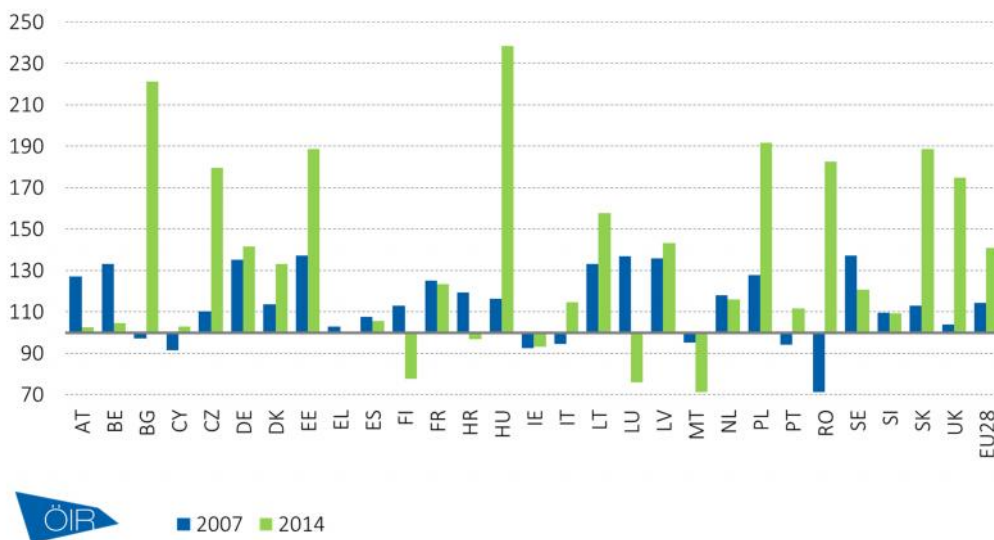
4.2.2.3. Agricultural income

Income is a key measure for determining the viability of the agricultural sector. The nominal factor income of the agricultural industry (the remuneration of all factors of production: land, capital, labour) in the EU-28 was valued at EUR 153.7 billion in basic price terms in 2014. Within agricultural accounts, income has traditionally been measured as an index, computed on the basis of the real factor income per AWU.

From the base year of 2005, the EU-28 index of agricultural income per AWU rose for two consecutive years, before falling back in 2008 and 2009 (at the height of the financial and economic crisis) to almost the same level as in 2005. Thereafter, the index of agricultural income per AWU rebounded, with relatively rapid growth in 2010 and 2011. Agricultural income per AWU in the EU-28 remained relatively high from 2012 to 2014, with values around the 2011 level.

Figure 10 shows the indicator for the Member States for the years 2007 and 2014, as an index on the base year of 2005. Especially high increases in 2014 are visible in the Eastern Member States Bulgaria, Estonia, Hungary, Poland, Romania, Czech Republic and Slovakia but also in the UK.

Figure 10: Agricultural income per AWU, 2007 and 2014 (2005 = 100)



Source: ÖIR based on Eurostat

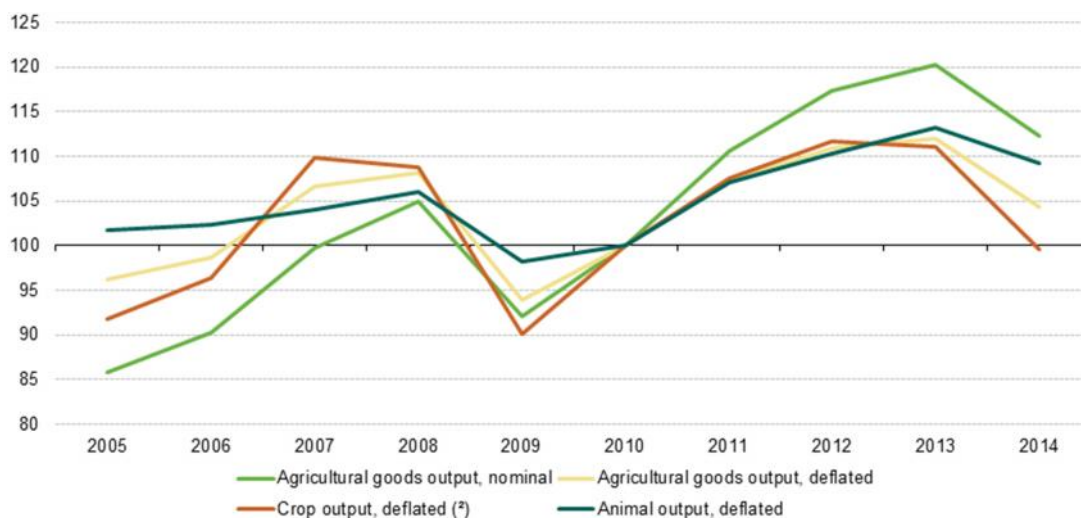
4.2.2.4. Price indices

EU-28 output prices for agricultural goods rose by 31.0% in nominal terms from 2005–14. Taking into account price inflation (based on the harmonised index of consumer prices, HICP), the real increase in (deflated) output prices for agricultural goods was 8.4%. After a period of successive increases from 2010 to 2013, in 2014 the output price indexes of agricultural goods showed a general decrease, reaching 112.3 in 2014 (2010 = 100) nominal prices.

Figure 11 shows that (deflated) output prices for agricultural goods in the EU-28 rose during the 2005–08 period by a total of 12.5%. This was followed by a sharp reduction in prices in 2009 (– 13.1%). Thereafter, output prices for agricultural goods in the EU-28 rose by just over 6% in real terms in both 2010 and 2011, before slowing down somewhat in 2012 (+

3.4%) and 2013 (+ 1.0%). In 2014, deflated output prices for agricultural goods decreased by 6.9%. Figure 11 also shows that prices tended to rise at a slightly faster pace for crop output (8.5% over the period 2005–14) than for animal output (an overall increase of 7.4%).

Figure 11: Output price indices, EU-28, 2005–14 (2010 = 100)



Source: Eurostat

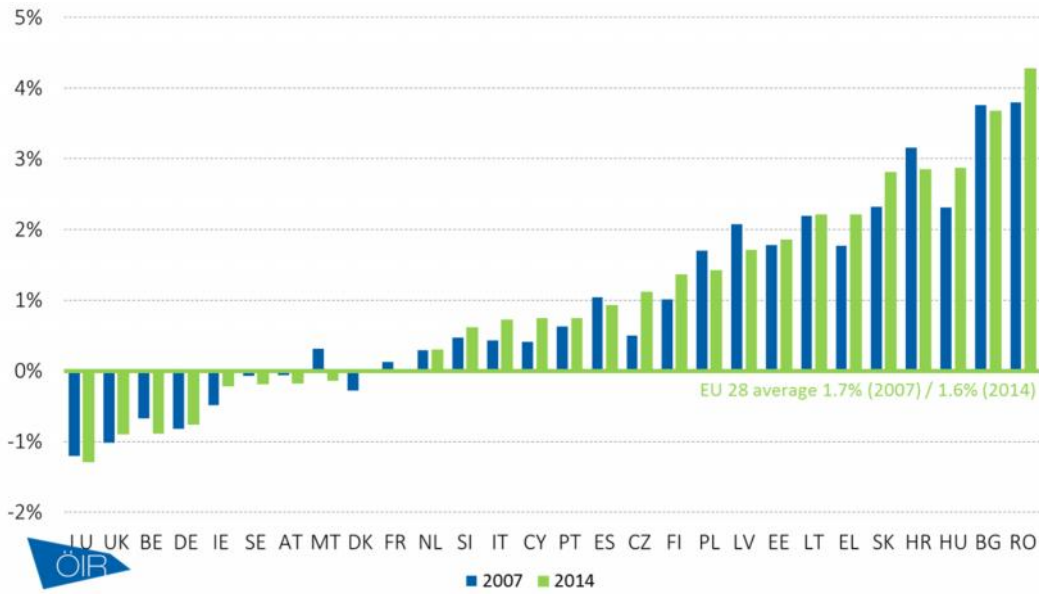
4.2.2.5. Share of agriculture, forestry and fishing on GVA

Gross value added at basic prices over all NACE activities in 2014 amounted on average EUR 9.3 billion within EU28. In the “old” Member States (EU15) the average in 2014 was 10.4 billion, while in the New Member States (EU10) it was 6 billion and in Romania and Bulgaria 2.3 billion. In the period of 2007-2014, total GVA rose by 8% in EU28, 7% in EU15, 21% in EU10 and 23% in Romania and Bulgaria. GVA of agriculture, forestry and fishing in the same period rose by 5.8% in EU28, 2.8% in EU15, 22% in EU10 and 28.7% in Romania and Bulgaria.

The share of gross value added in agriculture, forestry and fishing on total GVA in 2014 amounted 1.6% within EU28, 1.5% within EU15, 3.2% within EU10 and 5.7% within Romania and Bulgaria. It remained quite stable for all Member State groupings during the period of 2007-2014, with growth rates of below 0.1%. Only Romania and Bulgaria showed slightly higher, but still very low growth of the share of GVA in agriculture of 0.5% in 2007-2014. Figure 13 shows the % deviation of Member States from the EU28 average in the years 2007 and 2014.

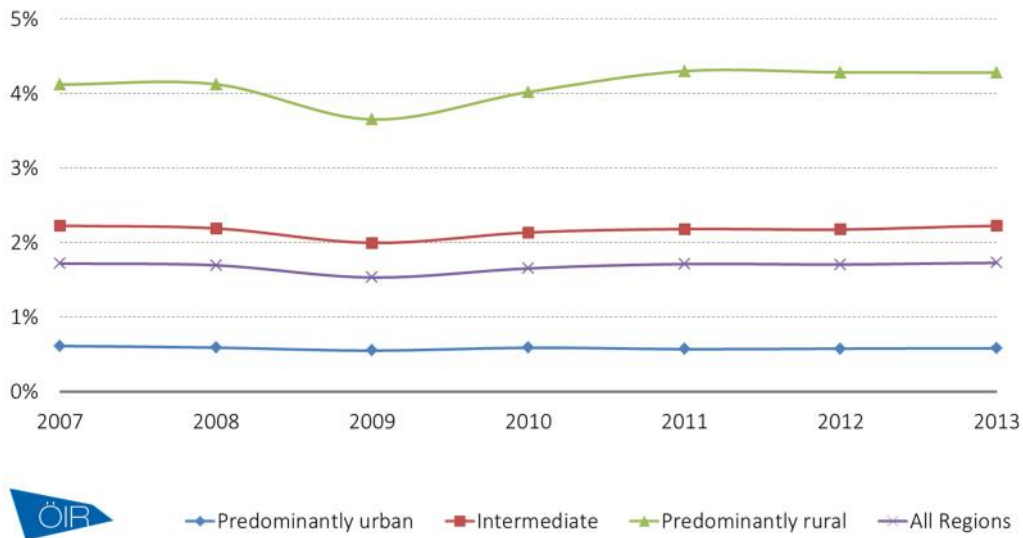
In rural regions agriculture still has a share of 4.3% on GVA, while in intermediate regions the share is 2.2% and in urban regions only 0.6% (see Figure 13). The development of the share of agriculture, forestry and fishing in GVA remained stable for all types of regions in the period 2007-2014.

Figure 12: Share of GVA in agriculture, forestry and fishing on total employment in Member States, % deviation of EU28 average 2007 & 2014



Source: ÖIR based on Eurostat

Figure 13: Share of Gross Value Added in Agriculture, forestry and fishing on total GVA in EU28, average by regional typology (NUTS3), 2007-2014

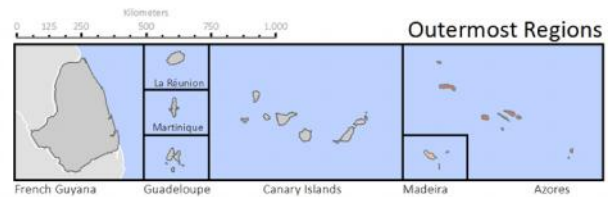
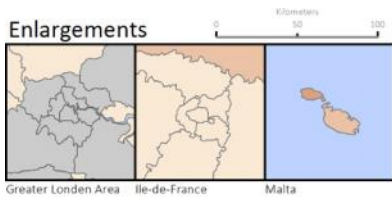
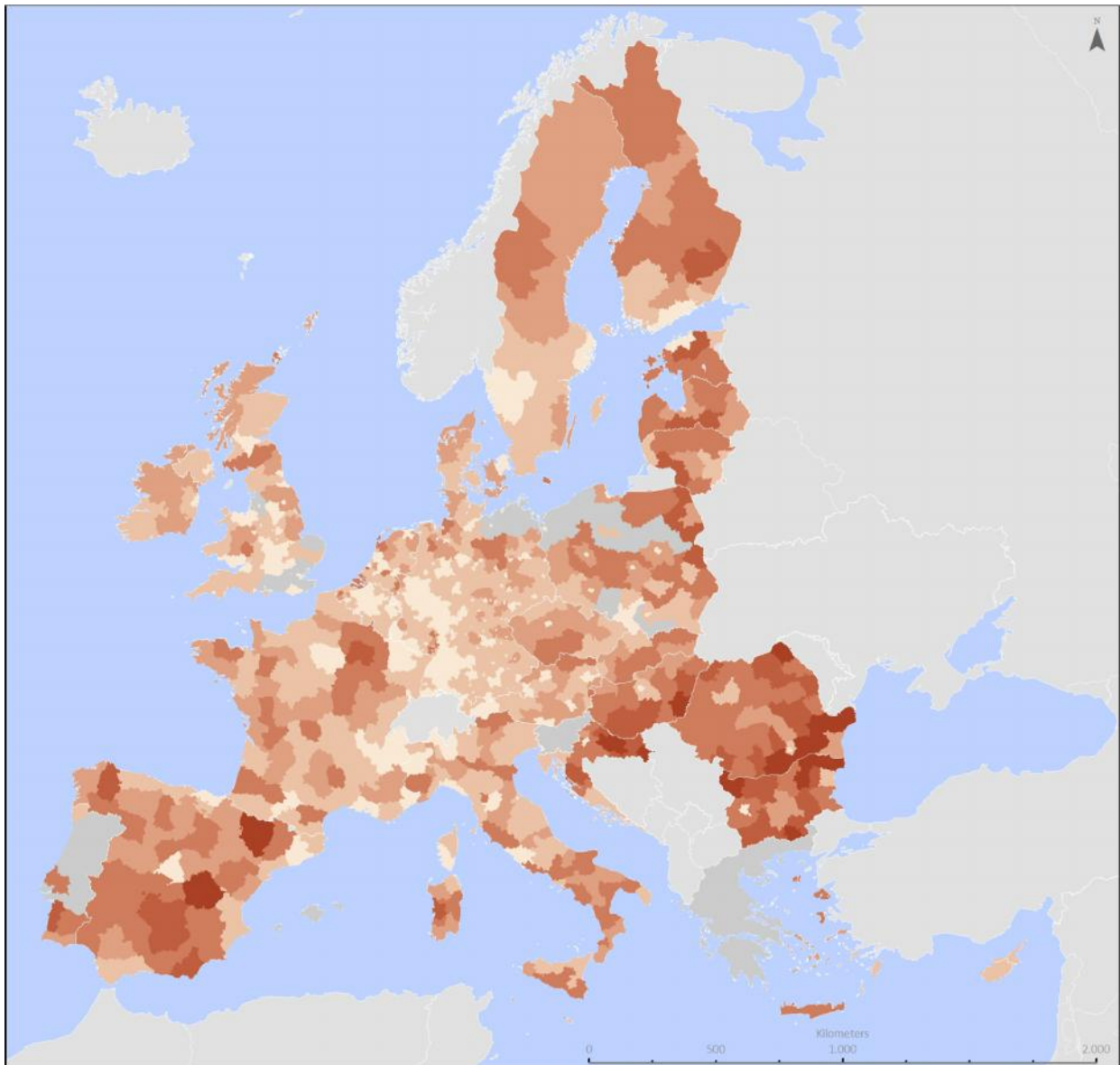


Source: ÖIR based on Eurostat

Map 7 shows that the share of gross value added in agriculture, forestry and fishing on total gross value added in 2014 generally was higher in NUTS3 regions of Eastern New Member States Bulgaria, Romania, Croatia, Hungary, the Baltics and also Spain. Lowest shares of GVA in agriculture are to be found in many German, Austrian, French and Northern Italian regions as well as regions in the UK.

The evolution of GVA in agriculture (see Map 8) in the period 2007-2014 shows great decreases in France, northern UK, northern regions of Ireland and Northern Spain. The biggest increases are to be observed in Bulgaria, Southern Romania, Slovakia, Czech Republic and also Denmark and Southern UK and Ireland.

Map 7: Share of gross value added in Agriculture, forestry and fishing on total gross value added, in the EU28 on NUTS3 level, 2014



Share of gross value added (GVA) in agriculture, forestry and fishing on total GVA 2014



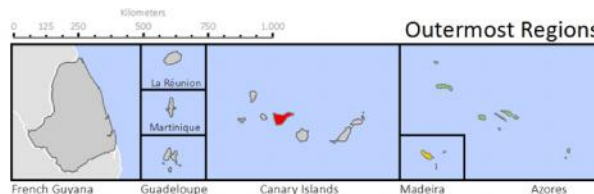
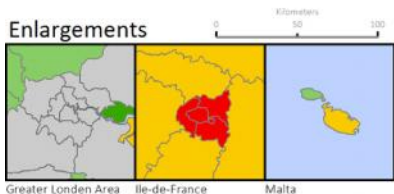
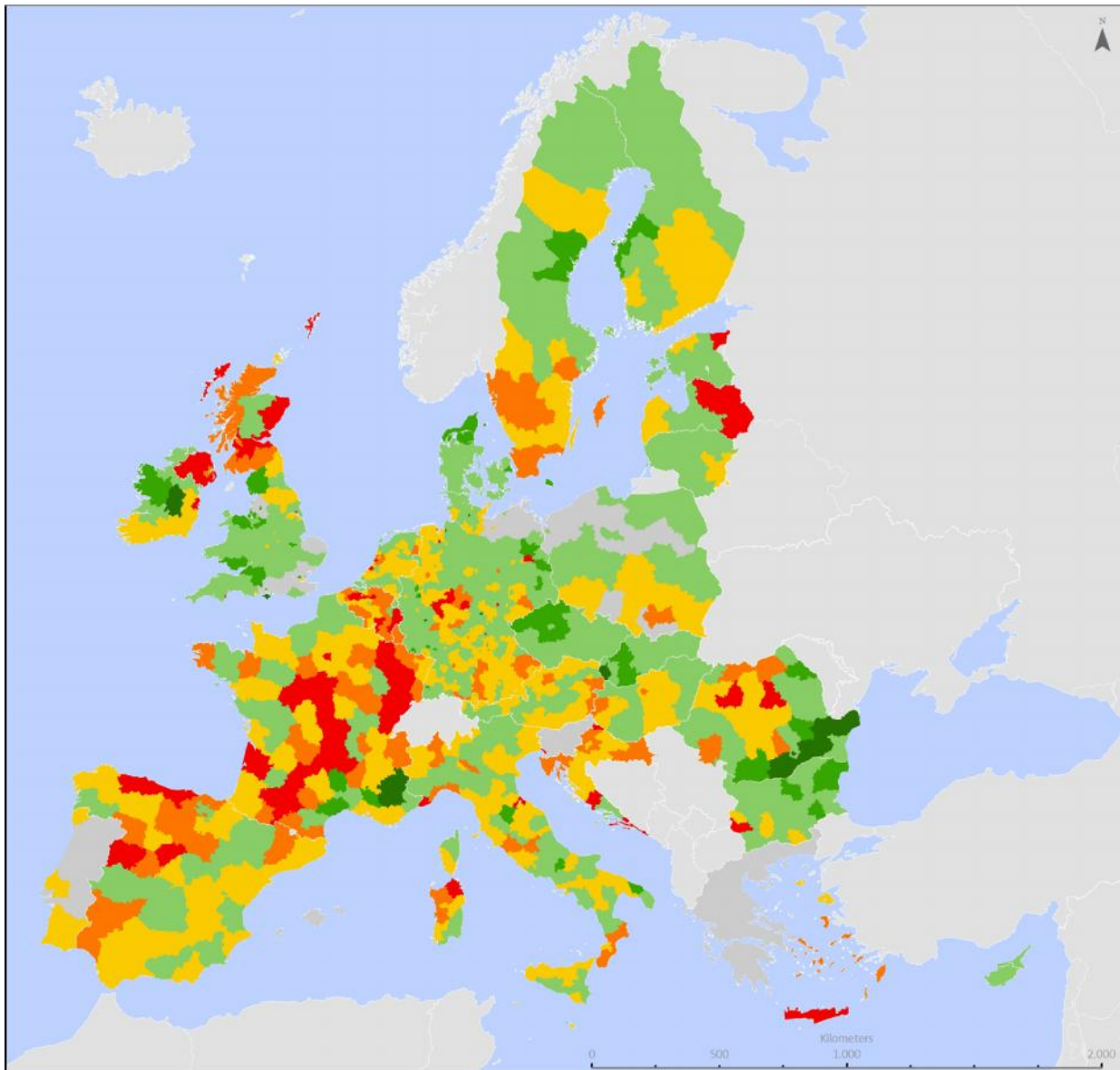
Data availability: NUTS 3 | 2014
Source: Eurostat

March, 2016

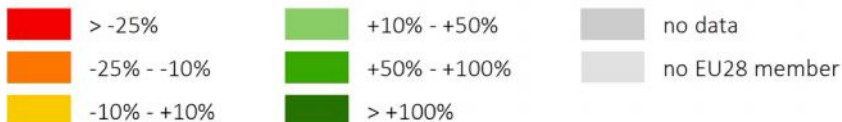


Source: OIR based on Eurostat

Map 8: Development of gross value added in Agriculture, forestry and fishing, in the EU28 on NUTS3 level, 2007-14



Development of share of gross value added (GVA) in Agriculture, forestry and fishing 2007-2014



Data availability: NUTS 3 | 2007 - 2014
Source: Eurostat

March, 2016



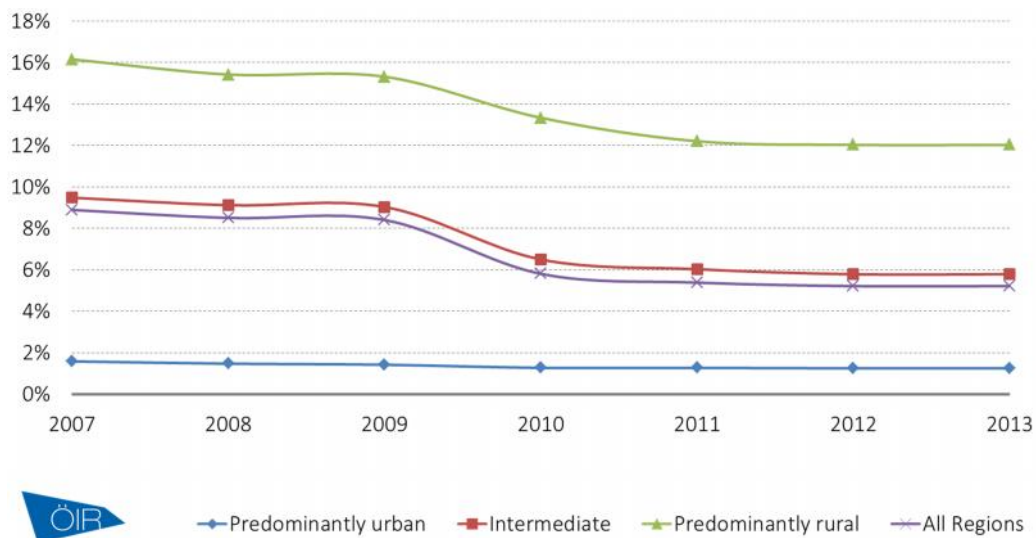
Source: OIR based on Eurostat

4.2.3. Labour Market

4.2.3.1. Share of agriculture, forestry and fishing on employment

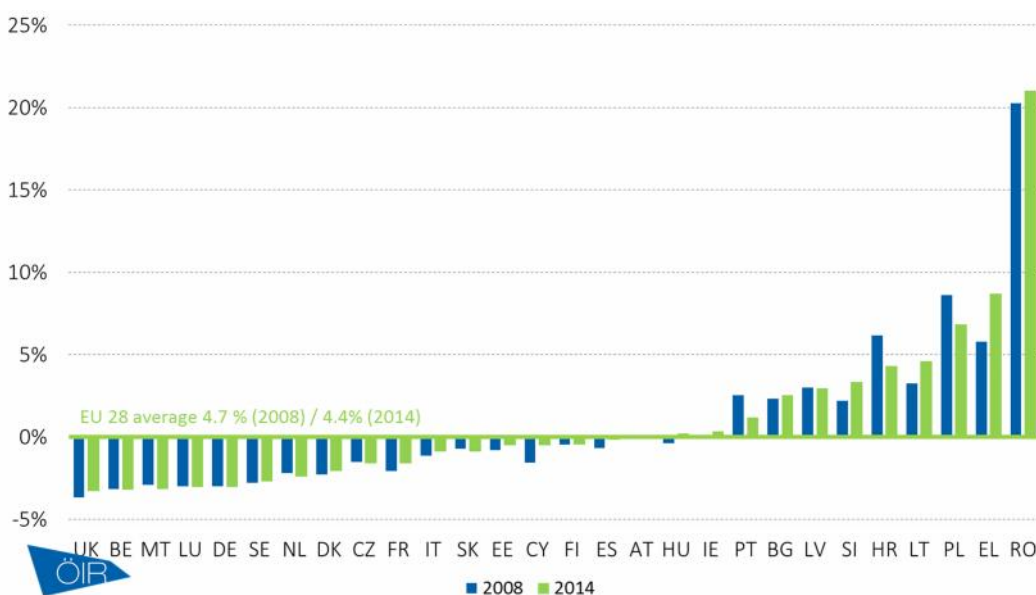
The share of employment in agriculture, forestry and fishing shows a different picture, with declining shares in rural regions from 16.2% in 2007 to 12% in 2014 and stable shares at a low level in urban regions (ranging from 1.2% – 1.6% in the period 2007-2014). Within EU28 the share of employment in agriculture on average decreased by 3.7% between 2007 and 2014 (see Figure 14).

Figure 14: Share of employment in agriculture, forestry and fishing on total employment in EU28, average by regional typology (NUTS3), 2007-2013



Source: ÖIR based on Eurostat

Figure 15: Share of employment in agriculture, forestry and fishing on total employment in Member States, % deviation of EU28 average 2008 & 2014



Source: ÖIR based on Eurostat

Based on calculations with available regional data, employment over all NACE activities in the period of 2008-2014 shrank by -2.8% in EU28, increased by +2.7% in EU15, shrank by -

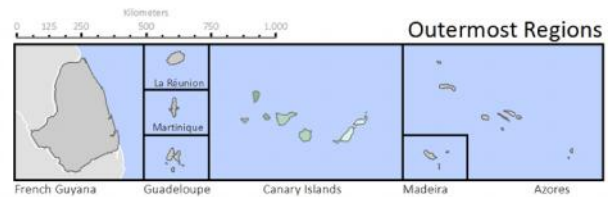
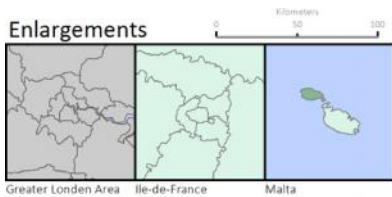
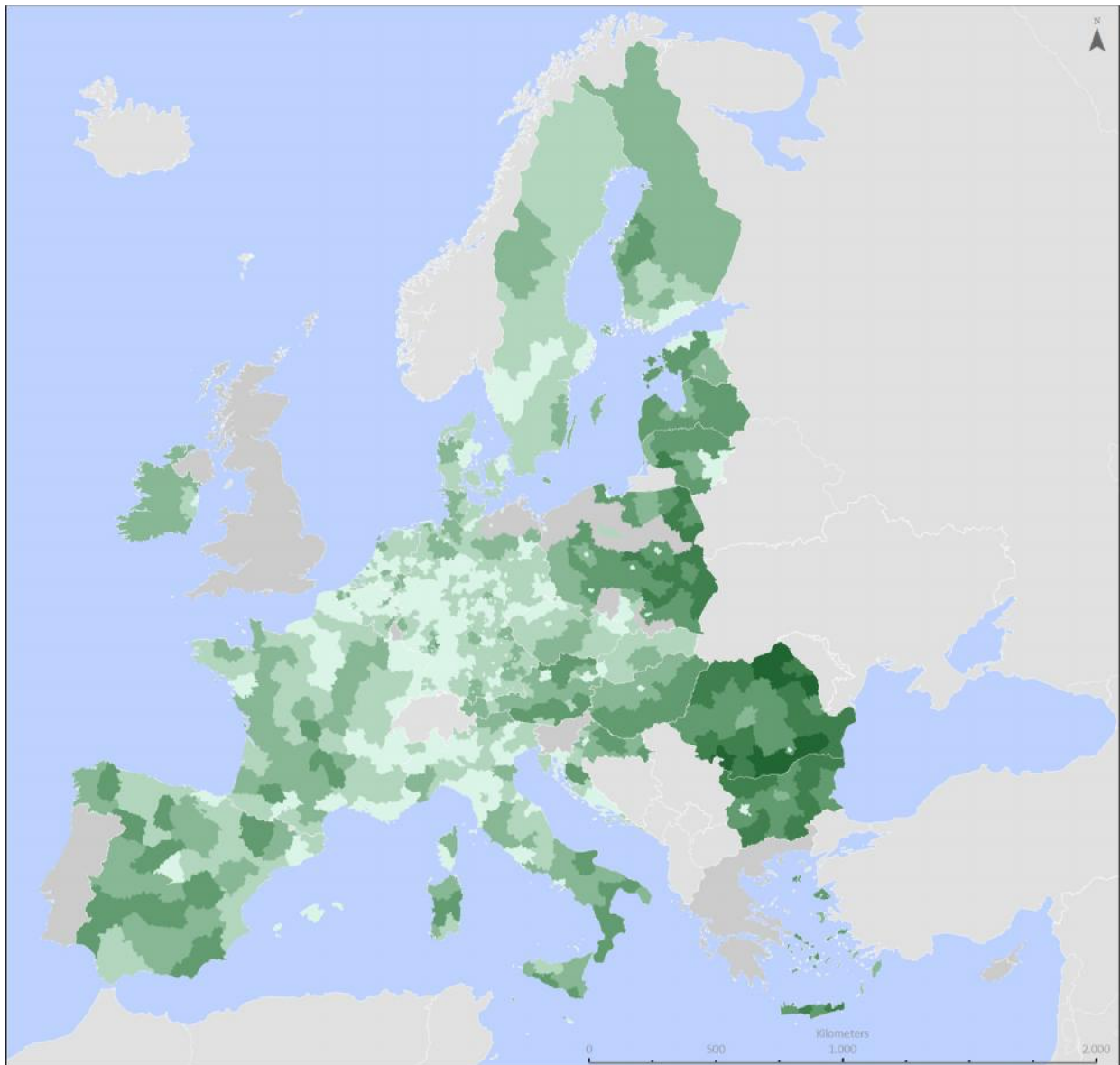
0.7% in EU10 and -8.3% in Romania and Bulgaria. Employment in agriculture, forestry and fishing in the same period shrank by -9.6% in EU28, -8.9% in EU15, -12.4% in EU10 and -6.3% in Romania and Bulgaria.

The share of employment in agriculture, forestry and fishing on total employment in 2013 amounted 4.4% within EU28, 2.6% within EU15, 8.1% within EU10 and 21% within Romania and Bulgaria. It shrank most in EU10 (-0.8%) and at a lower rate in EU15 (-0.1%) during the period of 2007-2013. In Romania and Bulgaria the share of employment in agriculture, forestry and fishing on total employment during 2007-2013 rose by 0.9%. Figure 15 shows the % deviation of Member States from the EU28 average in the years 2008 and 2014.

Map 9 shows the share of employment in agriculture, forestry and fishing on total employment in 2013 for NUTS3 regions. It is especially high in Romania and Bulgaria, where it amounts up to 27% on national average, many rural regions even exceeding 50% share of employment in agriculture.

The development of employment in agriculture, forestry and fishing between 2007 and 2013 at NUTS3 level is displayed in Map 10. Due to data scarcity for the whole period, data is missing for many Member States. There are great variations between regions within Member States, which indicates that there are influencing factors on exit or stay in agriculture at regional level.

Map 9: Share of employment in Agriculture, forestry and fishing on total employment, in the EU28 on NUTS3 level, 2013



Share of Employment in Agriculture, forestry and fishing on total employment, 2013



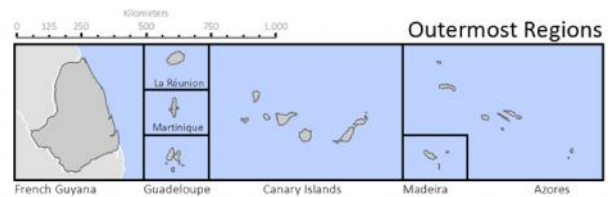
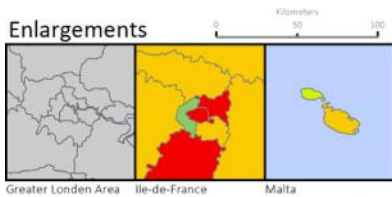
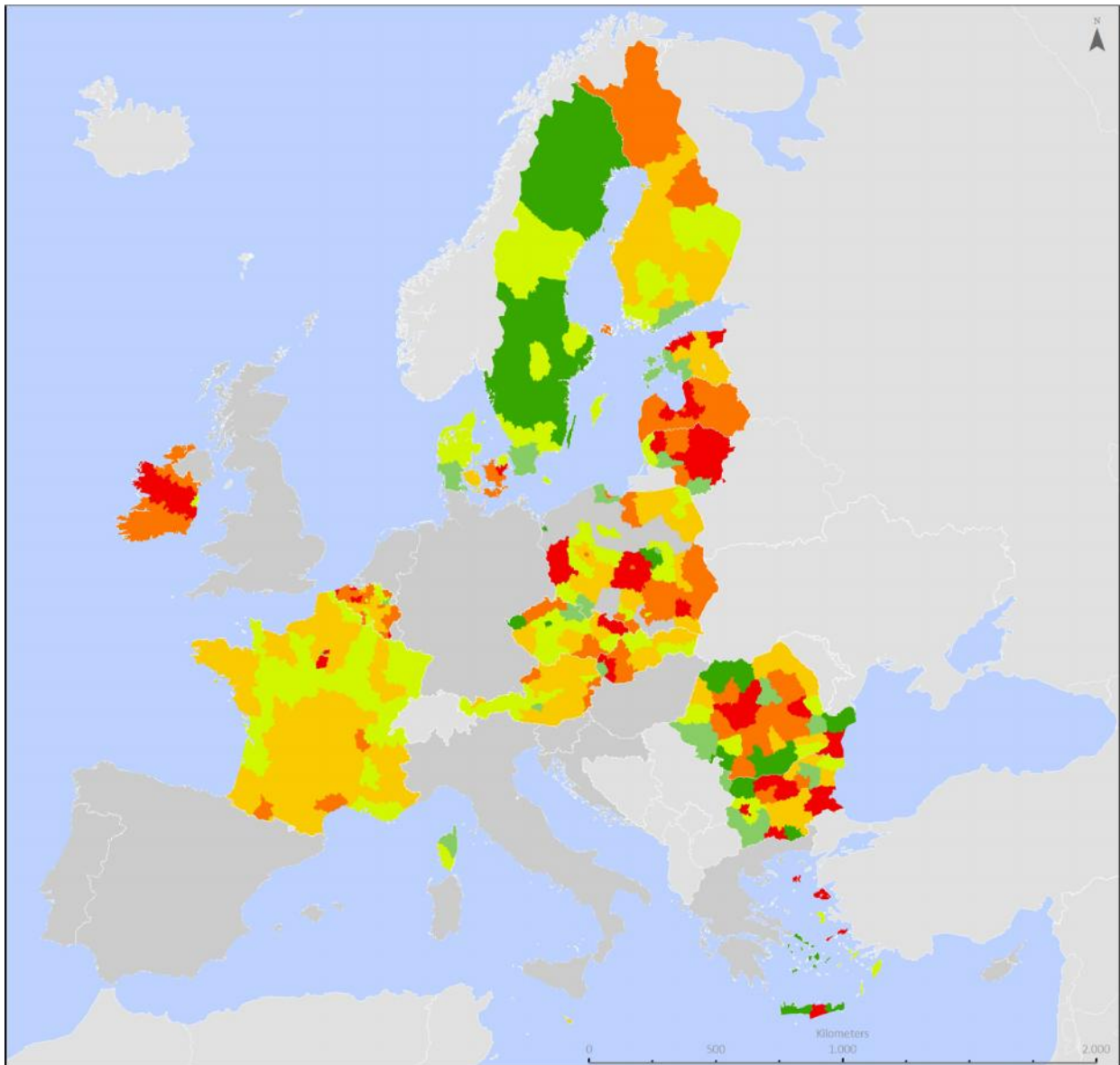
Data availability: NUTS 3 | 2013
Source: Eurostat

March, 2016



Source: OIR based on Eurostat

Map 10: Development of employment in Agriculture, forestry and fishing, in the EU28 on NUTS3 level, 2007-13



Development of employment in agriculture, forestry and fishing 2007-2013



Data availability: NUTS 3 | 2007 - 2013
Source: Eurostat

March, 2016



Source: OIR based on Eurostat

4.2.3.2. Share of food industry in Employment

According to DG Agri CAP Context Indicators, food industry is defined as a combination of the NACE divisions C10, C11 and C12, representing Manufacture of food products, Manufacture of beverages and Manufacture of tobacco products. Data is stemming from Eurostat Structural Business statistics, which are available at NUTS2 level only for the period of 2008-2013 with major data gaps. The share of employment in the food industry within EU28 on average lies at 2%. The variations between regions are rather low, ranging from 0.3% to 5% (see Map 11). In the period 2008-2013 no notable developments are visible, the share of food industry on total employment almost stayed the same (0.07%).

4.2.3.3. Share of wholesale and retail sale of food products in Employment

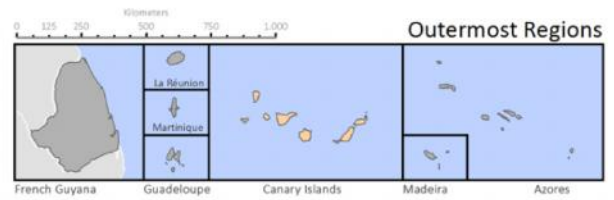
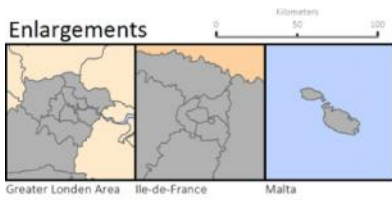
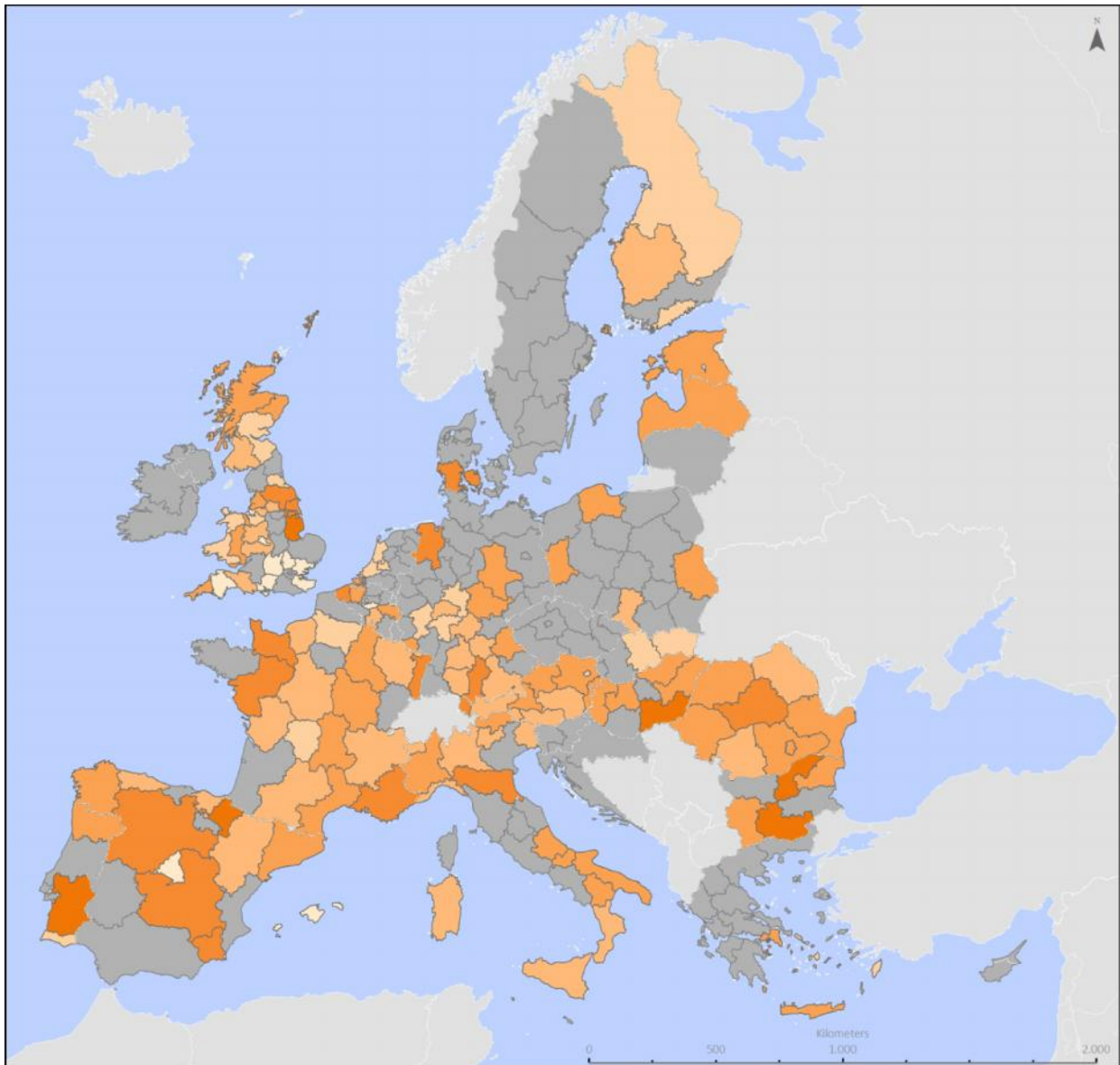
In order to capture the employment shares of wholesale and retail sale of food products, NACE divisions G462, G463 and G472 were combined, representing Wholesale of agricultural raw materials and live animals, Wholesale of food, beverages and tobacco and Retail sale of food, beverages and tobacco in specialised stores.

Data is stemming from Eurostat Structural Business statistics, which are available at NUTS2 level only for the period of 2008-2013 with major data gaps. The share of employment in wholesale and retail sale of food products within EU28 on average lies at 1.7%. The variations between regions are rather low, ranging from 0.5% to 6.3% (see Map 12). In the period 2008-2013 no notable developments are visible, the share of wholesale and retail sale of food products on total employment almost stayed the same (0.01%).

4.2.3.4. Share of accommodation and food and beverage service activities (Tourism) in Employment

According to DG Agri CAP Context Indicators, tourism is defined as a combination of the NACE divisions I55 and I56, representing accommodation and food and beverage service activities. Data is stemming from Eurostat Structural Business statistics, which are available at NUTS2 level only for the period of 2008-2013 with major data gaps. The share of employment in accommodation and food and beverage service activities within EU28 on average lies at 4.8%. The variations between regions are quite high, ranging from 0.8% to 20.2% (see Map 13). In the period 2008-2013 no notable developments are visible, the share of accommodation and food and beverage service activities on total employment almost stayed the same (0.4%).

Map 11: Share of employment in the food industry, 15-64 years, 2013 on NUTS2 level



Share of employment in food industry (NACE Rev. 2), 15-64 years, 2013



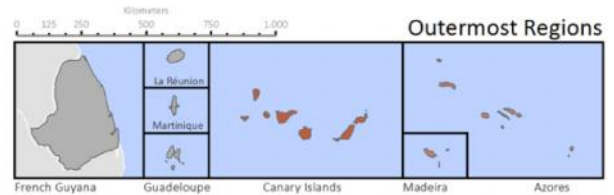
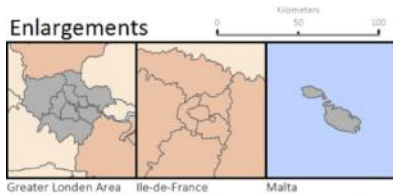
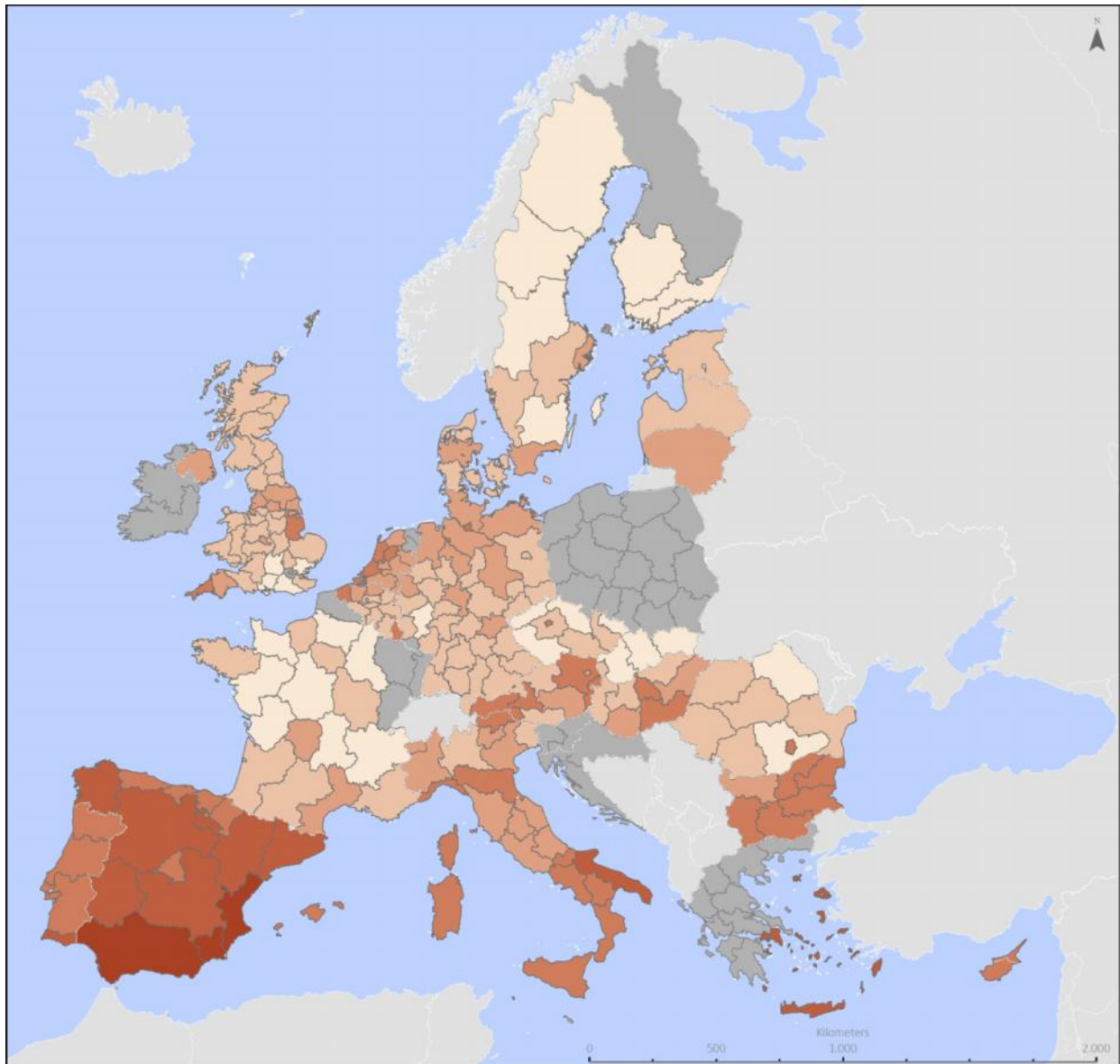
Data availability: NUTS 2 | 2013
Source: Eurostat

March, 2016



Source: OIR based on Eurostat

Map 12: Share of employment in wholesale and retail sale of food products, 15-64 years, 2013 on NUTS2 level



Share of employment in wholesale and retail sale of food products (NACE Rev. 2), 15-64 years, 2013



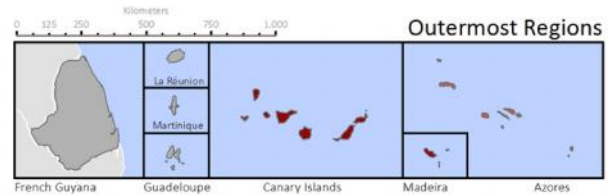
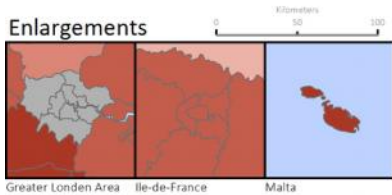
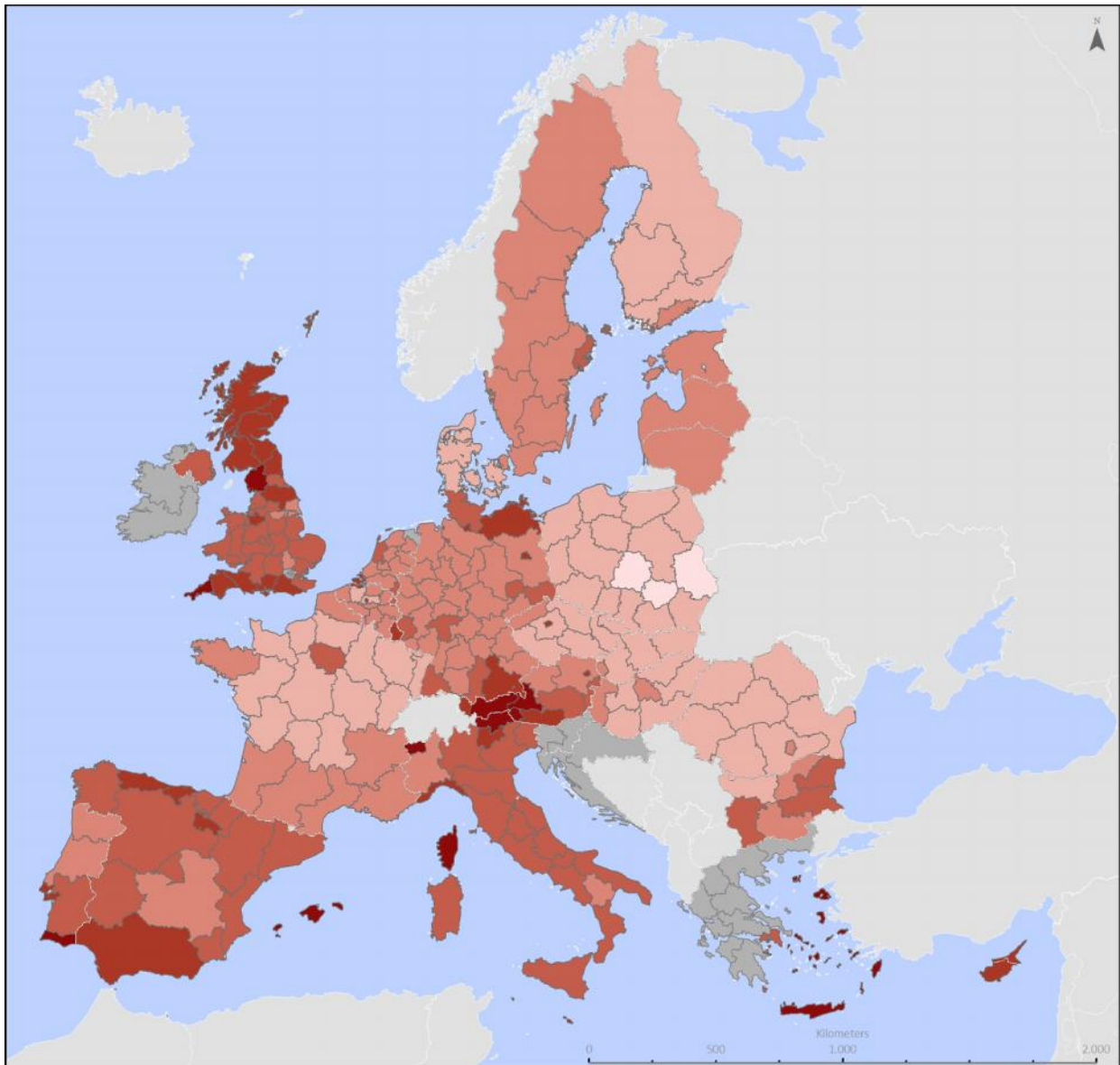
Data availability: NUTS 2 | 2013
Source: Eurostat

March, 2016



Source: OIR based on Eurostat

Map 13: Share of employment in accommodation and food and beverage service activities tourism, 15-64 years, 2013 on NUTS2 level



Share of employment in tourism (NACE Rev. 2), 15-64 years, 2013



Data availability: NUTS 2 | 2013
Source: Eurostat

March, 2016



Source: OIR based on Eurostat

4.2.4. Structure of agricultural holdings

The following data analysis is based on the Farm Structure Survey as provided by EUROSTAT. The available dataset contains Census data from the years 2005, 2007, 2010 and onwards. The information is provided at NUTS2 level. In the following the study focuses on the development within the period 2007-2013.

The interpretation of average values must bear in mind that data is missing for the years 2008 and 2009 and the average is calculated for the available years.

4.2.4.1. Labour force

The amount of employees working in agriculture holdings is stated in terms of Labour force directly employed by the holding expressed in Annual Work Units (AWU) at NUTS2 level.¹⁹ In general the annual hours spent for agricultural work decreased steadily during the years. The decrease is notable in EU-10 and EU-15 countries and was even stronger in Romania and Bulgaria.

Exceptions with an increasing employment of labour are Hungary, Ireland and Malta, as well as the NUTS-Regions Adriatic Croatia (HR), Alentejo (PT), East Wales (UK), Highlands and Islands (UK), Corsica (FR) as well as Nordjylland (DK).

At national level farm labour force in percentage fell by more than 30% in Slovakia, Italy, Cyprus, Bulgaria, Austria and Estonia.

At the regional level significant decreases in annual work efforts are reported in all regions of Slovakia, the South of Austria, a majority of Italian regions as well as the South East of Romania, the North of Bulgaria and the Regions West Wales and The Valleys (UK), Iona Nisia (EL) and Cyprus.

Table 6: Trend in the development of annual working units (AWU) per EU Member States, 2005-2013

Group	MS	Annual Working Hours (AWU)		Indices 2007 = 100			
		2007	2013	2005	2007	2010	2013
EU 28	Total	11,850,120	9,945,810	107	100	84	80
EU-15	Total	5,635,780	4,902,570	106	100	87	82
EU-10	Total	3,326,030	2,841,980	106	100	85	86
RO, BG	Total	2,699,730	2,016,780	119	100	75	69
EU Average (2005 excl. HR)		423,219	355,208	107	100	84	80

Source: ÖIR based on Farm Structure Survey (FSS)

¹⁹ An Annual Work Unit (AWU) is equivalent of the full-time employment. 1 AWU corresponds to the work performed by a person undertaking fulltime agricultural work on the holding over a 12 month period. The yearly working time of such worker is 1800 hours (225 working days of 8 hours per day), unless national provisions governing contracts of employment are specified.

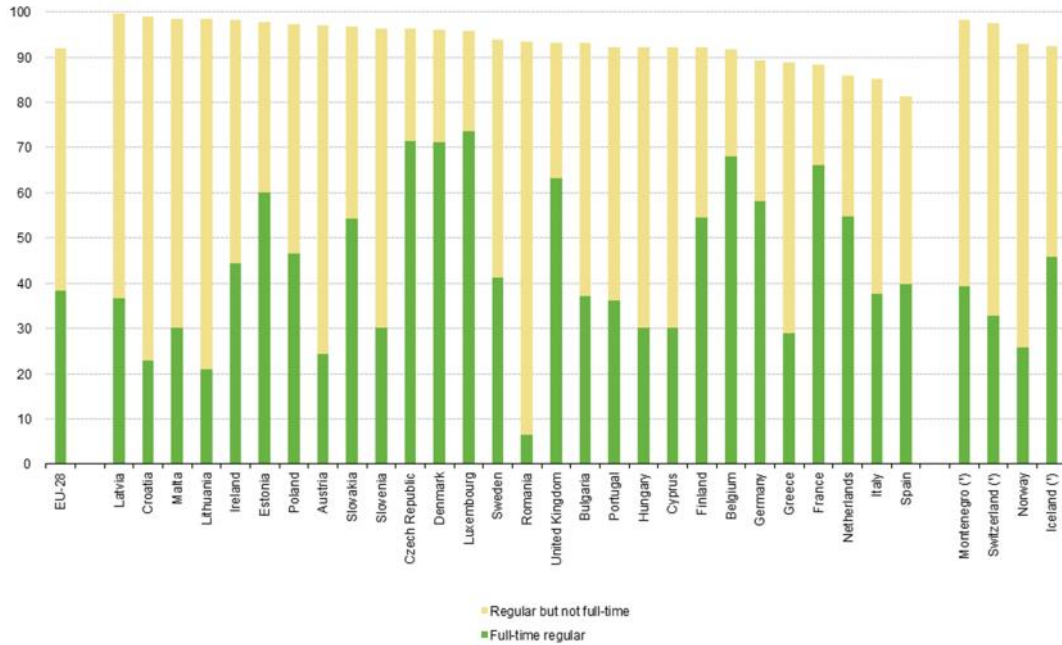
Countries where the yearly working time corresponding to 1 AWU follows national provisions:

Country	DE	GR	ES	FR	CY	LV	LT	LU	AT	PL	RO
Hours	1760	2200	1824	1824	2080	1840	2032	2200	2000	2120	1960
Days	220	275	228	228	260	230	254	275	250	265	245

As the volume of agricultural labour is being calculated on the basis of fulltime equivalent jobs, no one person can therefore represent more than one AWU. This constraint holds even if it is known that someone is working on agricultural activities for more than the number of hours defining full-time in the Member State concerned).

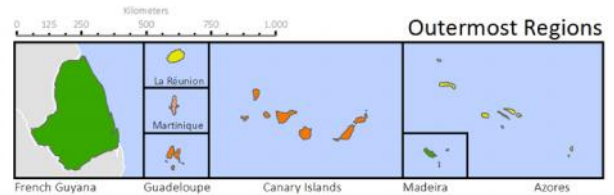
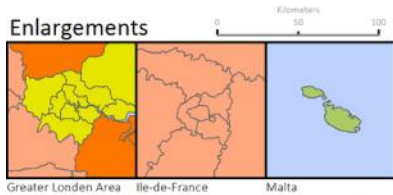
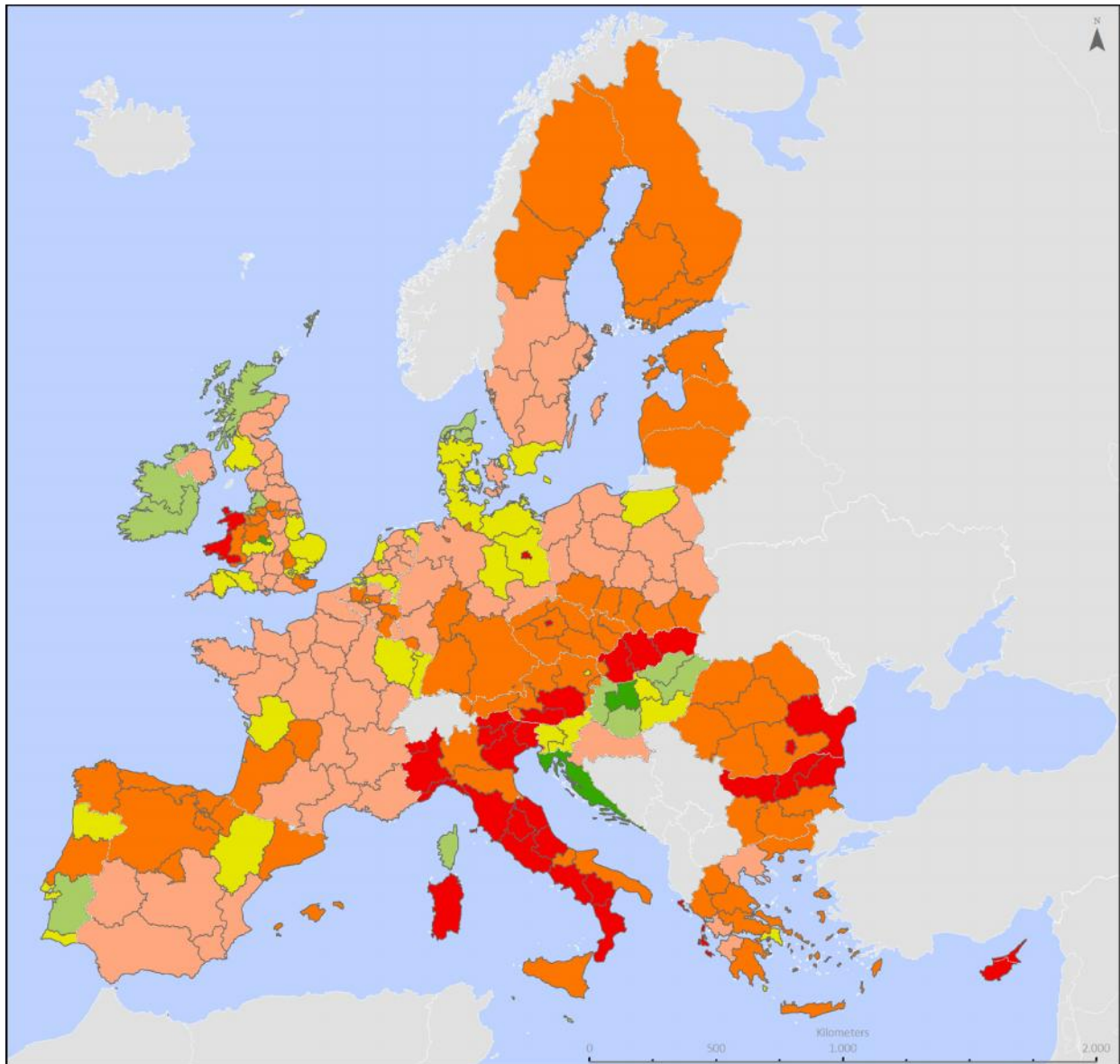
In average the share of regular workings in the farm labour force is above 90%, however in large agricultural countries like Spain, Italy and the Netherlands regular employment is below average (see Figure 16). Further, 60% of the regular workers in EU-average have seasonal engagements and do not work at a full time basis, i.e. might need to find other sources of income for the rest of the year.

Figure 16: Share of regular workers in the farm labour force and distribution by work intensity, 2013 (%)



Source: Eurostat (ef_lflegaa) and (ef_lfwtime); * data for 2010

Map 14: Development of Annual Work Units (AWU) in agricultural holdings between 2007 and 2013 [%]



Development of the Annual Work Units (FTE) in agricultural holdings between 2007 and 2013 in ha [%]



Data availability: NUTS 2 / DE in NUTS 1
 Source: OIR, based on Farm structure survey 2007-2014; DG Budget

March, 2016



Source: OIR based on Farm Structure Survey (FSS)

4.2.4.2. Utilized area for agriculture

At large the utilized area for agriculture stayed stable at the trans-national level over the period of 2007-2013. However, at the national level and even more at the NUTS2 level the development is quite heterogeneous.

Within the EU-15 the agricultural area stayed stable, with exception of some regions with large metropolitan agglomerations, which report strong decreases (more than 30%) in agricultural area. This is also the case for the Region of Bucharest in Romania, Budapest in Hungary and Prague in Czech Republic. Within the EU-15 decreases of UAA can be reported in several regions of Spain, Portugal, Italy and Belgium. Increases are evident in Ireland, several regions in UK and the South of France.

The EU-10 show an even more diverse picture. Very strong increases in agricultural area are apparent in the Adriatic region of Croatia and the South-West of Bulgaria. Further increases are reported in Hungary and the Baltic countries. In Poland, most regions show a decline in area utilized for agriculture, same is true for the South of Romania. The other regions stayed stable within +/- 5% of change in UAA.

Table 7: Development of area utilized for agriculture (in 1,000 ha) by Member State in EU28, 2005-2013

Group	Utilised agricultural area ['000 ha]		Indices 2007 = 100			
	2007	2013	2005	2007	2010	2013
EU 28	173,376	174,614	99	100	101	101
EU-15	124,459	124,574	100	100	101	100
EU-10	31,135	30,762	98	100	98	99
RO, BG	16,804	17,707	99	100	106	105
EU Average (2005 excl. HR)	6,192	6,236	99	100	101	101

Source: ÖIR based on Farm Structure Survey (FSS)

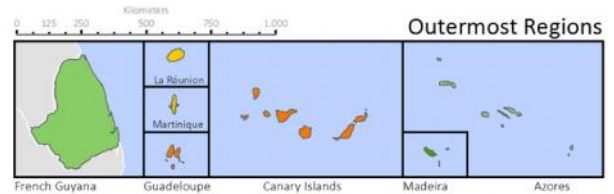
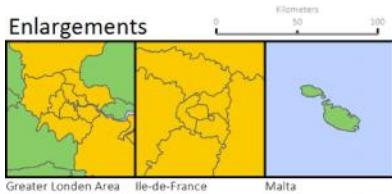
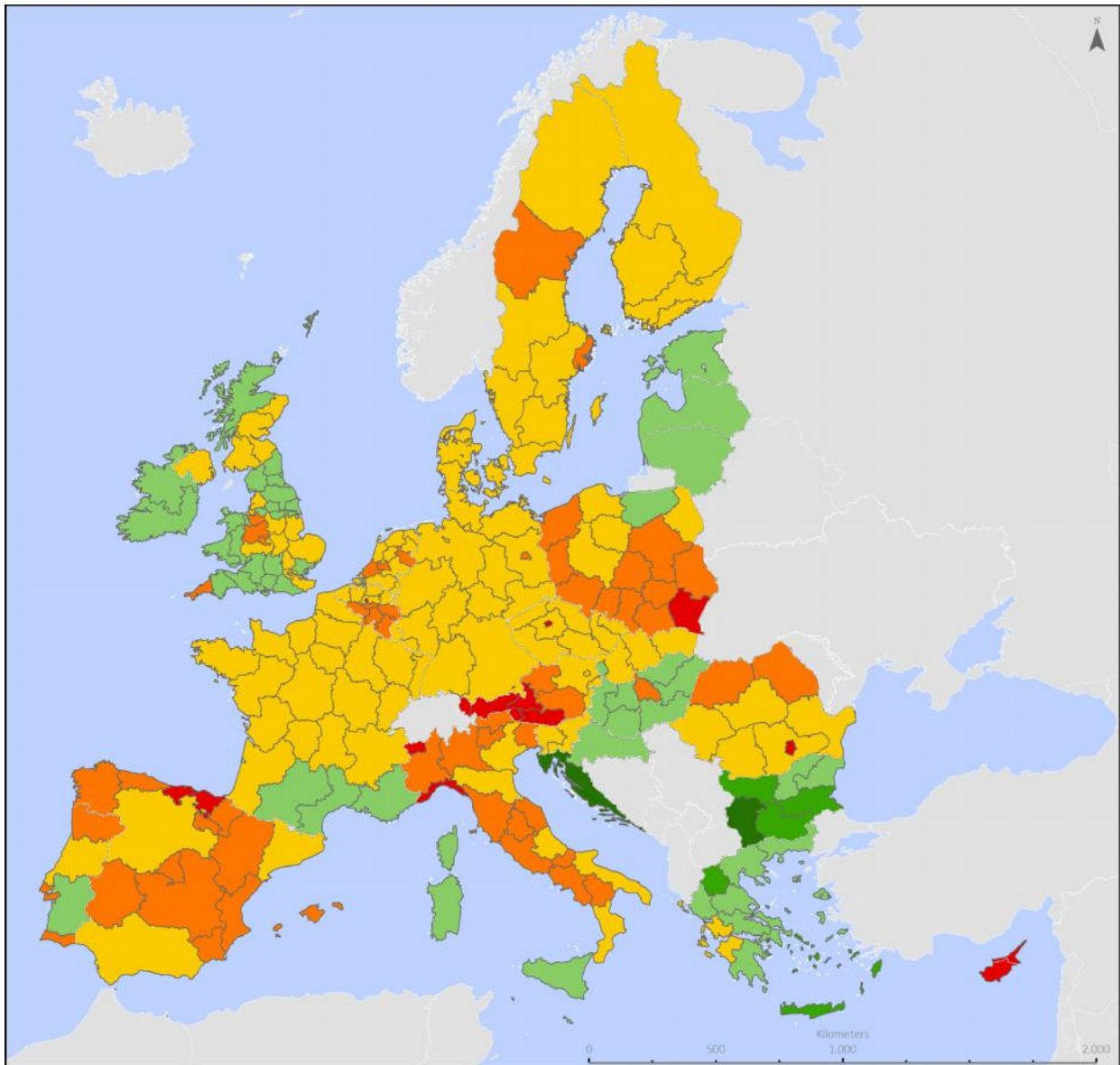
Dividing the area used for agriculture by the labour force dedicated to cultivate it gives an indication of how many hectares could be handled by a single full time worker, i.e. labour intensiveness. Overall the work in agriculture became less labour intensive, i.e. a large area of land could be handled by one FTE worker. This trend is strongest in Bulgaria and Romania, but also in some of the New Member States, i.e. Slovakia, Estonia.

Table 8: Area (ha) used for agriculture (UAA) by annual working units (AWU) in EU-28 2005-2013

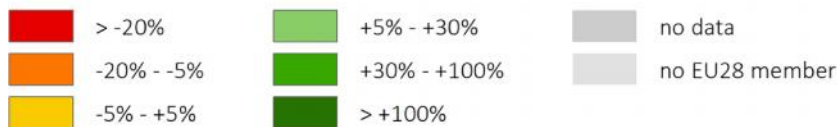
Group	Utilized agricultural area by annual working unit [ha UAA/AWU]		Indices 2007 = 100			
	2007	2013	2005	2007	2010	2013
EU 28	15	18	92	100	121	126
EU-15	22	27	95	100	116	123
EU-10	9	11	93	100	115	115
RO, BG	6	9	83	100	142	152
EU Average (2005 excl. HR)	0	0	92	100	121	126

Source: ÖIR based on Farm Structure Survey (FSS)

Map 15: Development of Utilized area for agriculture between 2007 and 2013 [%]



Development of the utilised agricultural area between 2007 and 2013 in ha [%]



Data availability: NUTS 0

Source: OIR, based on Farm structure survey 2007-2014; DG Budget

March, 2016

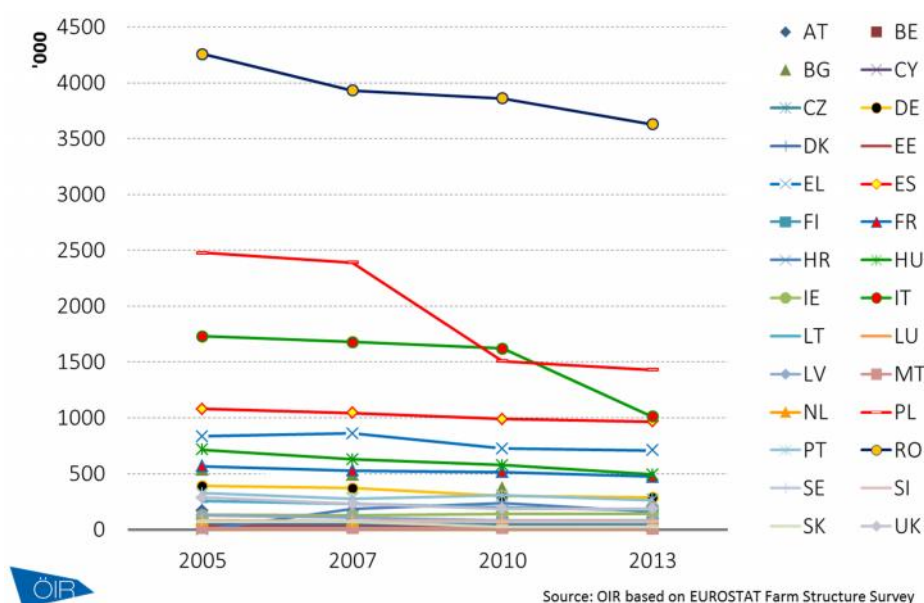


Source: OIR based on Farm Structure Survey (FSS)

4.2.4.3. Number of farms (Number of holdings) and average farm area size (ha/holding)

In the period of 2007-2013, the total number of farms decreased from 13.8 million to 10.8 million farm holdings (-21.5%). At national level all Member States show a decrease, except Ireland (+9%). Romania has by far the highest number of farms (3.6 Mio.), representing a third of EU28. Within EU-28, farms diminished by -7.7% during the period 2007-2013. The strongest restructuring is notable in Slovakia, Bulgaria, Poland, Italy and Greece.

Figure 17: Number of farm holdings from 2005 to 2013



Source: ÖIR based on Farm Structure Survey (FSS)

Table 9: Utilized agricultural area [ha], total number of farm holdings and average farm size (2007-2013)

	Utilized agricultural area		Total number of farm holdings		Average area farm size		Number of farm holdings					
							with less than 5 ha		with 5 ha – 50 ha		with more than 50 ha	
	2013	07-13	2013	07-13	2013	07-13	2013	07-13	2013	07-13	2013	07-13
	'000 ha	%	'000	%	ha/farm	%	'000	%	'000	%	'000	%
EU Total	174,600	0.7	10,840	-21.5	16	28.3	7,014	-26.1	2,928	-13.8	899	-2.5
EU-15	124,600	0.1	4,440	-20.6	28	26.0	2,033	-31.4	1,742	-11.0	665	-0.6
EU-10	30,800	-1.2	2,360	-34.7	13	51.5	1,379	-44.5	856	-13.9	125	-8.3
Examples												
BG	4,700	52.5	250	-48.4	19	197.2	211	-53.7	24	27.1	19	7.4
RO	13,100	-5.1	3,630	-7.7	4	2.8	3,281	-4.9	262	-32.1	86	-8.2
PL	14,400	-6.9	1,430	-40.2	10	55.3	770	-52.6	620	-15.1	39	13.1
IT	12,100	-5.1	1,010	-39.8	12	58.5	592	-51.8	372	-8.9	46	10.8
HU	4,700	10.1	490	-21.6	10	43.9	377	-24.5	62	14.0	52	-27.6
IE	5,000	19.8	140	8.9	36	13.2	10	19.3	105	7.8	25	9.7

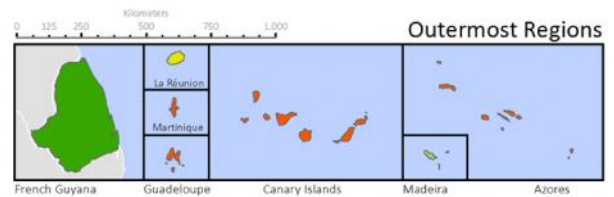
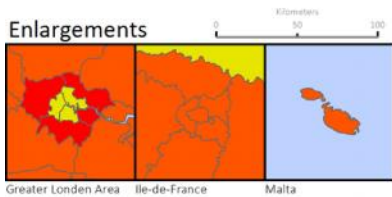
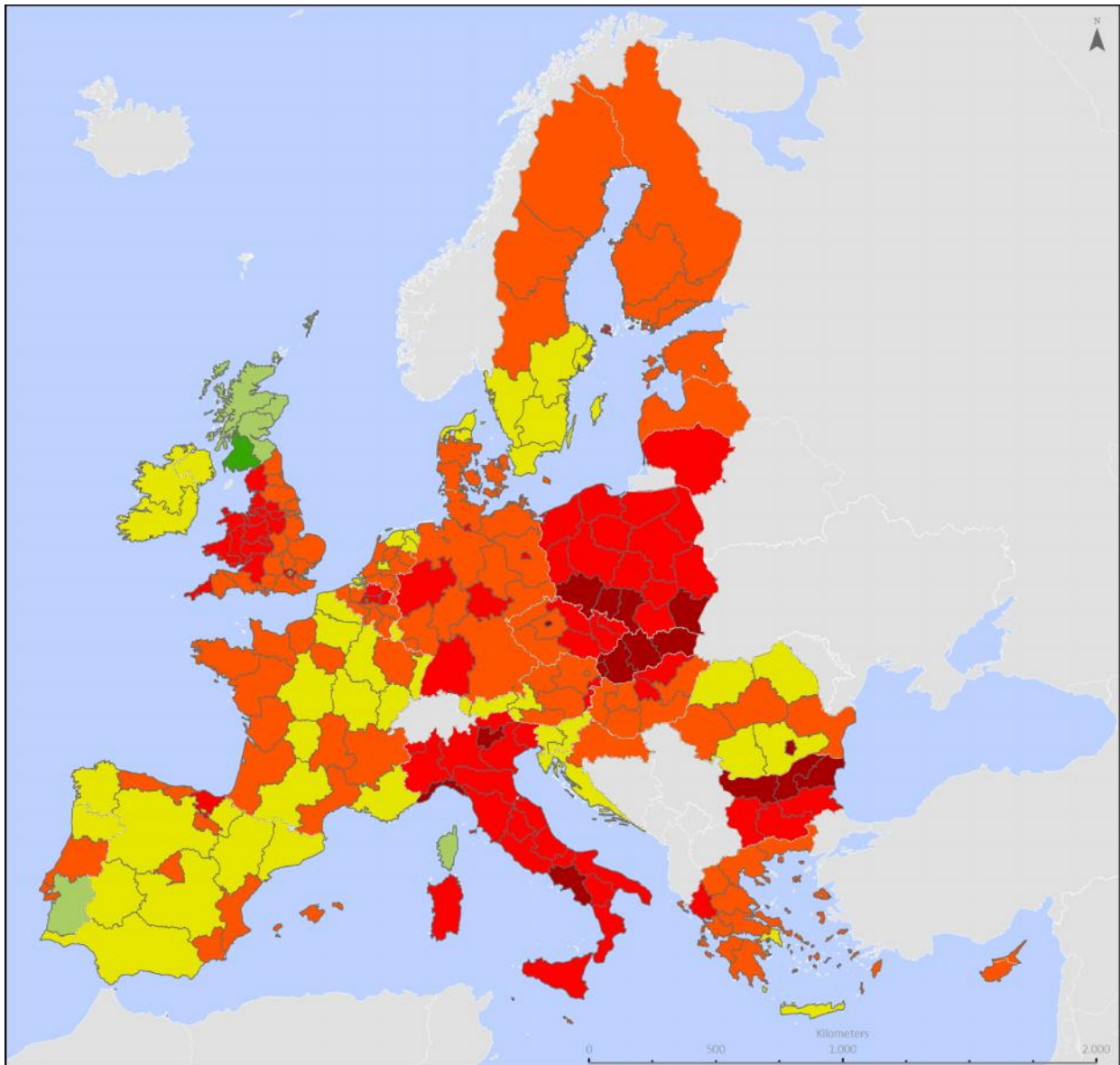
Source: ÖIR based on Farm Structure Survey (FSS)

At EU-level the utilized agricultural area stayed stable during 2007-2013, as opposing developments at Member State level neutralized the overall picture. In the large agricultural member states Spain, Poland, Romania and Italy UAA decreased by -5% to -7%). A sharp increase of UAA is notable in Bulgaria (+50%). Further UAA rose in Greece and Ireland (+19%) and Hungary (+10%). In Cyprus – a marginal agricultural player in size – the UAA decreased even by 25% to 110 ha in 2013.

Notably, the number of farm holdings decreased all over Europe (see Map 16), with -21.5% all over Europe. Especially the number of small farm holdings with less than 5 ha dropped, worst effected in EU-10 (-44.5) which are traditionally small structured. In general, the number of medium holdings with 5 ha – 50 ha declined all over Europe, but Hungary, Ireland, Czech Republic, Slovakia and Malta).

Ireland is generally bucking the negative trends with an increase UAA and the number of farm holdings of all sizes.

Map 16: Development of the total number of farm holdings at NUTS2-level between 2007 and 2013 [%]



Development of the total number of farm holdings between 2007 and 2013 in ha [%]



Data availability: NUTS 2 / DE in NUTS 1
 Source: OIR, based on Farm structure survey 2007-2014; DG Budget

March, 2016



Source: OIR based on Farm Structure Survey (FSS)

The number of farms with less than 5 ha declined in all Member States, except of Ireland (+19% to 9,770 small farms in 2013). Medium sized farms developed differently all over Europe. In the majority of Member States the number of medium sized farms dropped significantly, whereas a growing number of medium sized farms is to be observed in Bulgaria, the Czech Republic, Hungary, Ireland and Malta.

E.g. in Bulgaria the number of small farms shrank significantly, but medium sized farms could increase their market share. The number of large sized firms rose as well. Given the overall increase in UAA the re-structuring of the agricultural farming sector towards larger farms is evident.

A significant restructuring is notable in Poland, here both small and medium sized farms decreased as well as the overall UAA, while the number of large farm holdings increased by more than 30%.

4.2.4.4. Standard Output (SO)

"The standard output of an agricultural product (crop or livestock), abbreviated as SO, is the average monetary value of the agricultural output at farm-gate price, in euro per hectare or per head of livestock... The sum of all SO per hectare of crop and per head of livestock in a farm is a measure of its overall economic size, expressed in euro."²⁰ It does, however, not include the costs of production and consequently does not reflect the income of a farm holding.

The standard output developed positively within the last period. SO increased all over Europe (except of Cyprus with an decrease of 18%). In the EU-10 and Bulgari and Romania the increase was strongest with +27% in EU-10 and +23% in Bulgaria and Romania. EU-15 Member States noted lower rises with +16%.

Table 10: Standard Output in EUR in EU-28 2005-2013

Group	Standard Output [EUR]		Indices 2007 = 100			
	2007	2013	2005	2007	2010	2013
EU 28	285,597	331,044	100	100	108	116
EU-15	241,254	274,869	101	100	107	114
EU-10	30,536	38,821	99	100	112	127
RO, BG	12,434	15,325	103	100	104	123
EU Average (2005 excl. HR)	10,200	11,823	100	100	108	116

Source: ÖIR based on Farm Structure Survey (FSS)

Figure 18 shows the absolute EU expenditure on direct payments and rural development my country, while Figure 19 illustrates the development of utilized agricultural area, agricultural labour force, the number of farm holdings and the development of the standard output in the same period. The re-structuring of agricultural holdings is most visible in the New Member States and Italy. At the same time, in most New Member States the standard output rose strongly as well.

²⁰ EUROSTAT Glossary; http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Standard_output_%28SO%29 (19.04.2016)

Figure 18: EU-Expenditure for direct payments (DP) and rural development (RD) 2007-2013 in MEUR

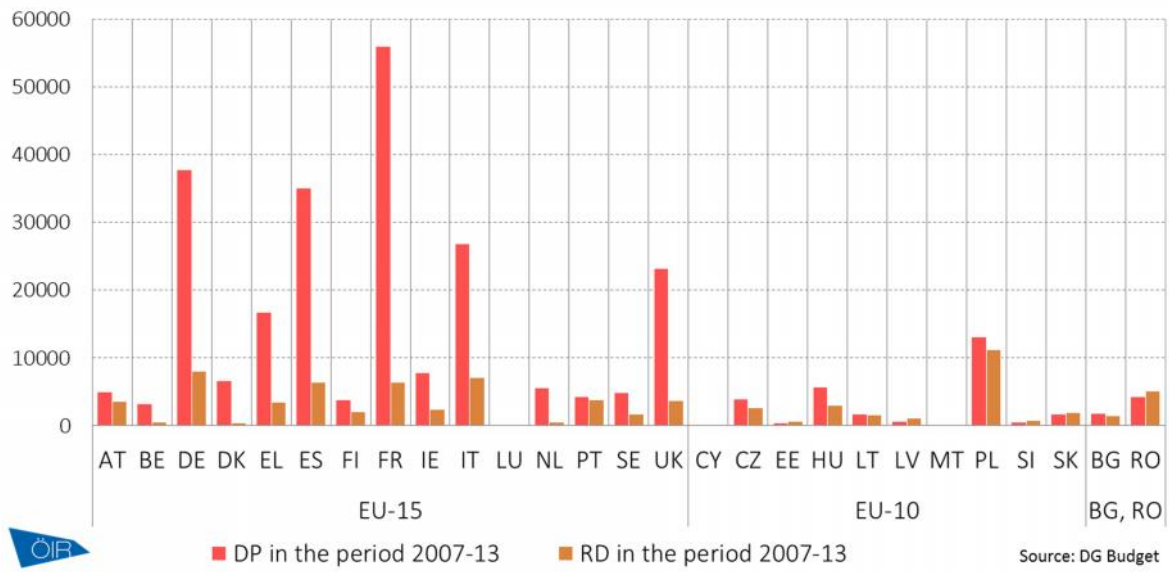
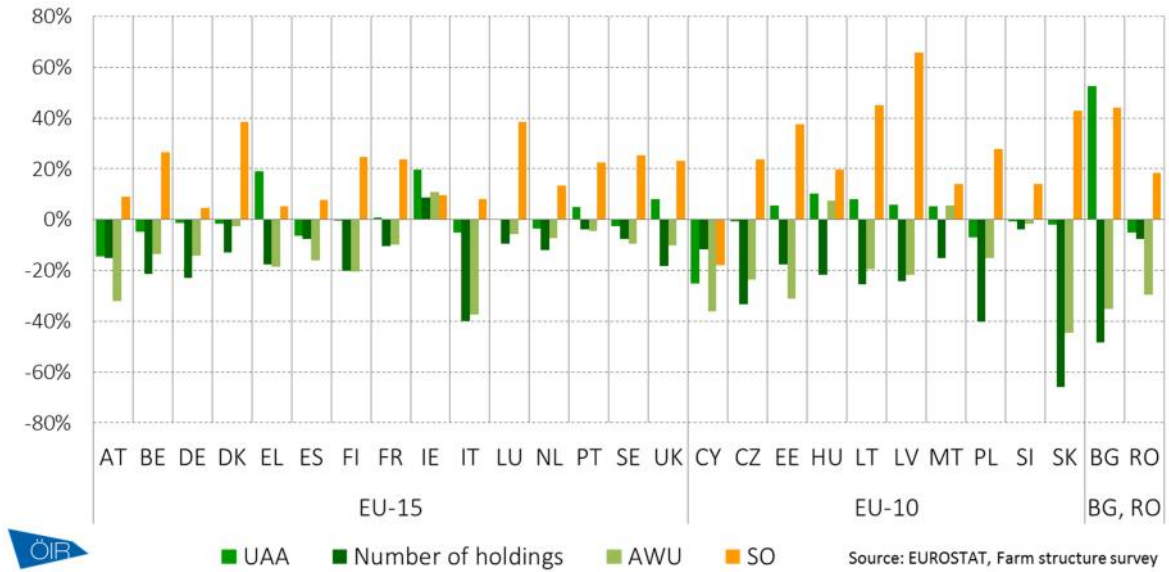


Figure 19: Development of UAA, AWU and the number of farm holdings from 2007-2013 in %



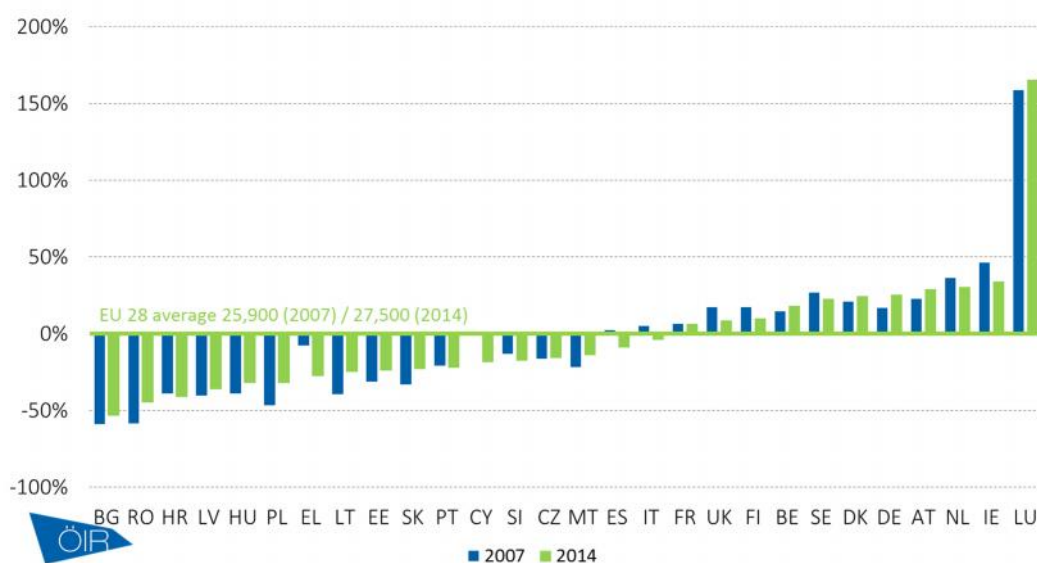
4.3. Summary and concluding remarks

The following paragraphs summarize the findings of this chapter and draw conclusions for the development of jobs in Europe during the period of 2007-2013.

Economic growth in the period 2007-2014 is highest in the New Member States, however starting from low absolute levels.

GDP in pps per capita in 2014 amounted on average EUR 27,500 within EU28. Still, the EU-15 have GDP values above average, but Economic growth in the period 2007-2014 is highest in the New Member States, however starting from low absolute levels. Figure 20 shows the %-deviation of GDP of the Member States compared to the EU28 average in the years 2007 and 2014.

Figure 20: GDP at current market prices (PPS/cap) in Member States, % deviation of EU28 average 2007 & 2014



Source: ÖIR based on Eurostat

By type of region, rural regions appear to have consistently the lowest GDP/capita levels. However, economic growth in the period 2007-2014 is highest in rural regions (+6.6% versus 6.5% in intermediate and 3.2% in urban regions), however starting at from lower absolute levels, see Figure 21.

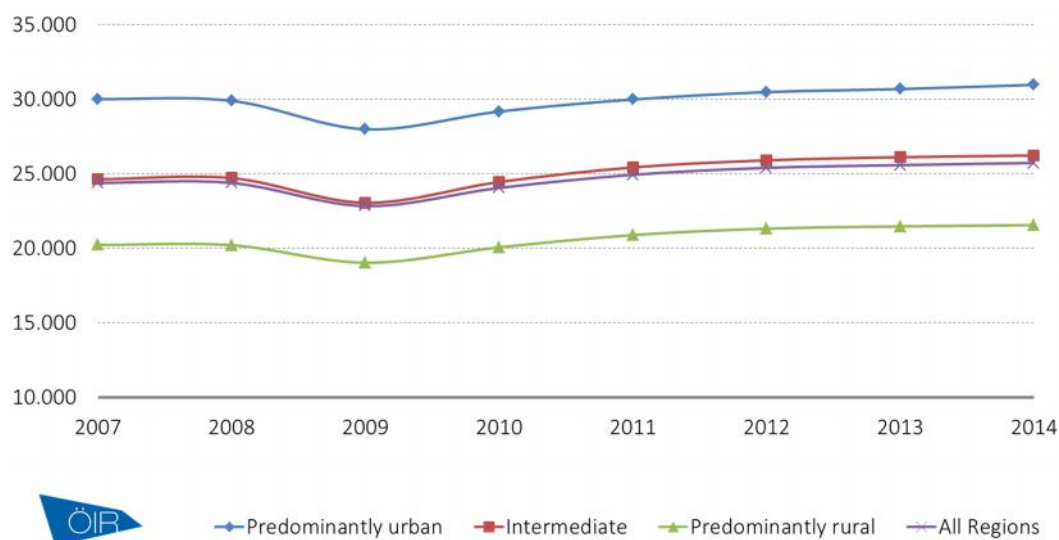
Gross value added in agriculture, forestry and fishing in EU28 rose by 8% between 2007 and 2014, while in EU10 it sharply rose by 21%.

The share of gross value added in agriculture, forestry and fishing is highest in New Member States and in EU28 remained stable at 1.7% between 2007 and 2014

Employment in EU28 overall declined by 2.8%. The employment in the sector of agriculture, forestry and fishing fell even sharper by 9.6% between 2007 and 2013, with smaller decreases in New Member States.

The share of employment in agriculture, forestry and fishing in EU28 declined by 3.7% between 2007 and 2014. In rural regions the declines in share of employment in agriculture, forestry and fishing are above average, from 16.2% in 2007 to 12% in 2014.

Figure 21: GDP at current market prices (PPS/cap) in EU28, average by regional typology (NUTS3), 2007-2014



Source: ÖIR based on Eurostat

The share of food industry in employment within EU28 averages 2%, shows low variations between NUTS2 regions and remained quite stable in the period 2008-13.

The share of wholesale and retail sale of food products in employment within EU28 averages 1.7%, shows low variations between NUTS2 regions and remained quite stable in the period 2008-13.

The share of accommodation and food and beverage service activities (tourism) in employment within EU28 averages 4.8%, shows high variations between NUTS2 regions but remained quite stable in the period 2008-13.

Direct payments reflect historic product orientation and productivity and not financial needs to safeguard/create jobs.

The highest share of EU CAP expenditure traditionally accounts for Pillar I payments, more concrete for direct payments (71% of the whole CAP expenditure in 2013)²¹. In absolute figures, both CAP direct payments (Pillar I) and rural development expenditure (Pillar II) are concentrating on rural regions, as absolute EU CAP expenditure for both pillars is higher in predominantly rural regions than in intermediate or predominantly urban regions.

Overall, EU-15 countries received higher EU direct payments than the New Members States (see Figure 26). One reason behind this is the stepwise increase of EU direct payments in EU-N13 to EU-15 levels from 25% in 2004 (2007 for Bulgaria and Romania) to 100% in 2013 (2017 for Bulgaria and Romania). Actually, in EU-N13 EU direct payments rose over the years to 23% of EU-28 total. However, the level of direct payments in all EU Member States trace back to historic support and production levels, as they were primarily meant to reimburse for production losses. As a result direct payments differ by Member State according to the product orientation and productivity during the (historic) reference period²²

²¹ Ref. Ares (2014)3550152 – 27/10/2014. Report on the distribution of direct aids to agricultural producers (financial year 2013)

²² ibidem

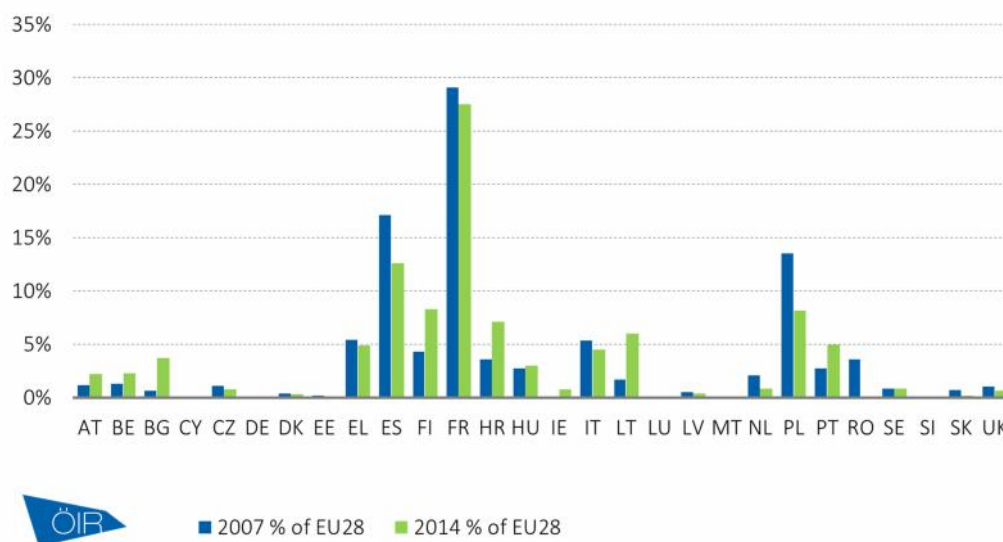
and depend on the payment model applied in a Member State (historic levels, regional averages, hybrid model).

Consequently, direct payments are not intended to directly safeguard or create new jobs, but to reimburse for income losses.

Subsidies in agricultural industry to MS with highest levels of output

The type of subsidies provided to the EU-28's agricultural industry has changed over time as a result of successive reforms of the CAP, "decoupling" subsidies from particular crops and moving towards a system of single-farm payments. Subsidies on products, which are payable per unit of a good or service produced or imported in the EU-28 were valued at EUR 8.6 billion in 2007, which had fallen to EUR 3.8 billion by 2014.

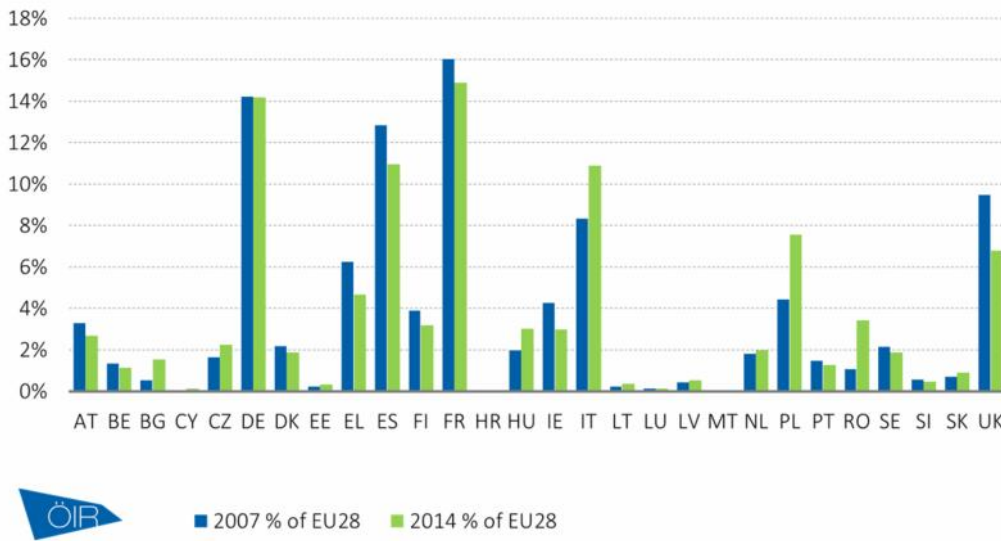
Figure 22: Subsidies on products of the agricultural industry at basic prices as % of EU28, 2007 and 2014



Source: ÖIR based on Eurostat

"Other subsidies on production", which resident producer units may receive as a consequence of engaging in production (e.g. subsidies on payroll or workforce or subsidies to reduce pollution) increased from EUR 45.2 billion in 2007 to EUR 53.8 billion by 2014. The highest subsidies were generally granted to those EU Member States with the highest levels of output (France, Germany, Spain and Italy).

Figure 23: Other subsidies on production at basic prices as % of EU28, 2007 and 2014

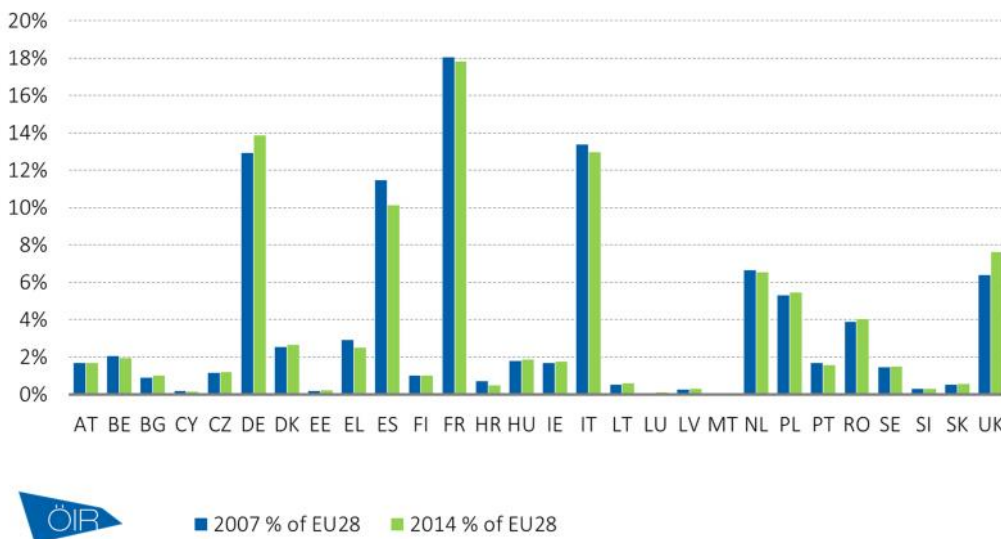


Source: ÖIR based on Eurostat

Total output of the agricultural industry rose between 2007-2014 in all MS except Greece and Croatia

Total output of the agricultural industry (comprising the output values of crops and animals, agricultural services and the goods and services produced from inseparable non-agricultural secondary activities) in the EU-28 in 2014 was an estimated EUR 415.1 billion at at producer prices (therefore excluding subsidies, but including taxes on products). France was the largest agricultural producer in the EU-28 (EUR 74.0 billion or 17.8% of the EU-28 total), followed by Germany (13.9%), Italy (13.0%) and Spain (10.1%); relative to its size, the Netherlands accounted for quite a high share of the EU-28's agricultural output (6.5%).

Figure 24: Output value of the agricultural industry at producer prices as % of EU28, 2007 and 2014



Source: ÖIR based on Eurostat

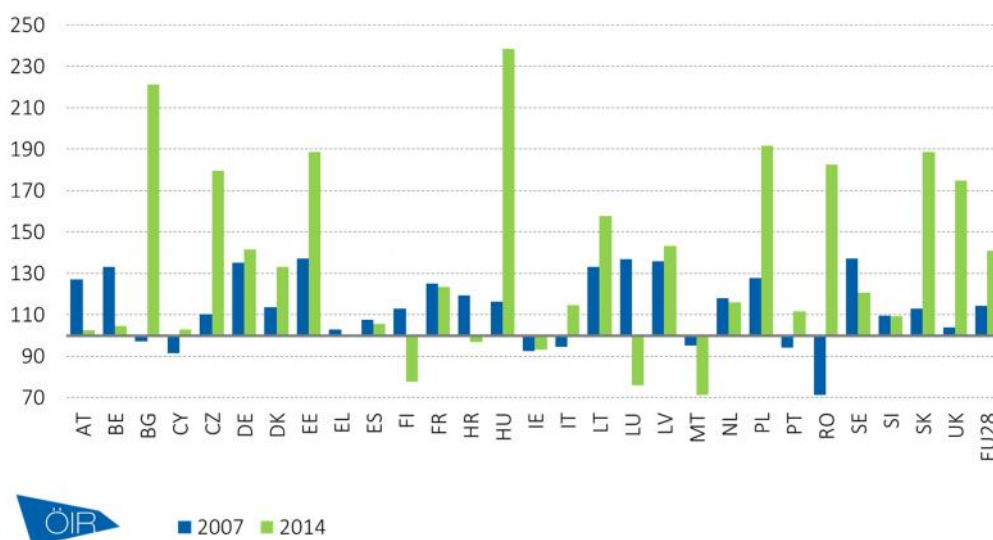
Compared with 2007, the value of agricultural industry rose in 2014 in all of the EU Member States other than Greece (where output decreased by around -1%) and Croatia (- 22%). The

highest increases in output value (in absolute terms) were recorded for the EU's larger producers, rising by EUR 11.3 billion in Germany, EUR 9.3 billion in France, EUR 8.7 billion in the United Kingdom and EUR 5.8 billion in Italy. There were also relatively large increases (over EUR 2 billion) in agricultural output in Romania, the Netherlands and Poland within the same period.

Agricultural income per AWU rose between 2007 (+14% compared to 2005) and 2014 (+41% compared to 2005)

From the base year of 2005, the EU-28 index of agricultural income per AWU rose for two consecutive years, before falling back in 2008 and 2009 (at the height of the financial and economic crisis) to almost the same level as in 2005. Thereafter, the index of agricultural income per AWU rebounded, with relatively rapid growth in 2010 and 2011. Agricultural income per AWU in the EU-28 remained relatively high from 2012 to 2014, with values around the 2011 level. Especially high increases in 2014 are visible in the Eastern Member States Bulgaria, Estonia, Hungary, Poland, Romania, Czech Republic and Slovakia but also in the UK.

Figure 25: Agricultural income per AWU, 2007 and 2014 (2005 = 100)



Source: ÖIR based on Eurostat

The overall pattern for the development of agricultural income per AWU in the EU-28 during the 2005–14 period can be linked to the development of the two underlying indicators that are used in the construction of the index. EU-28 real factor income per AWU for the agricultural industry fluctuated considerably but in broad terms rose relatively slowly. This higher factor income per AWU was nominally shared amongst a smaller workforce, resulting in stronger rises in average income per AWU per full-time labour equivalent.

The variations in real factor income per AWU can be linked to rising commodity prices (in 2007 and again in 2010 and 2011) and the downturn in agricultural activity resulting from the financial and economic crisis (in 2008 and 2009). Some of the biggest changes in EU-28 real factor income per AWU were recorded in 2009 and 2010, – 6.3% followed by + 18.5% and these were apparent in the overall development of the index for agricultural income per AWU. On the other hand, the relatively large declines in agricultural labour input recorded in 2007 and 2010 were also apparent as agricultural income per AWU increased in both years.

Utilized agricultural area, farm labour force and number of holdings declined

As a general trend all over Europe the utilized agricultural area (UAA) declined as well as the number of holdings and the farm labour force (AWU). Figure 27 illustrates this development. All in all, the agricultural sector saw a restructuring from small towards larger farms and a decrease in farm labour.

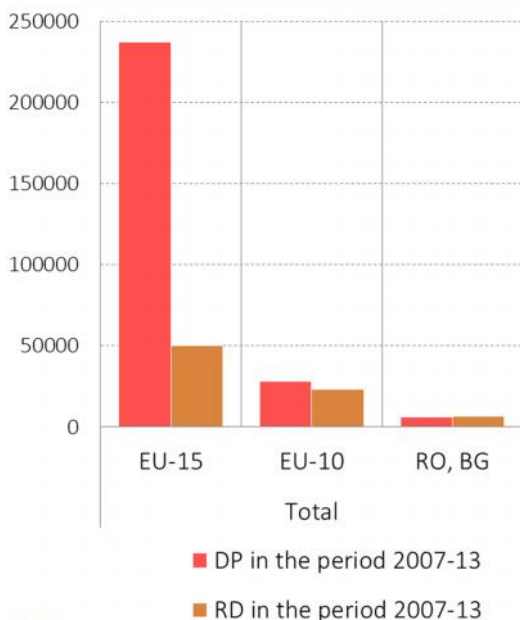
The EU-15 show a stable utilized agricultural area, but the number of holdings declined by -21% as well as the farm labour force -18%. In the EU-10, the decrease of farm holdings was even stronger and the labour force fell as well. Most notably, the farm labour force declined in Bulgaria and Romania., although CAP direct payments increased over the years.

Farm labour force in percentage fell by more than 30% in Slovakia, Italy, Cyprus, Bulgaria, Austria and Estonia. Thus, farm labour decreased notably in four of ten New Member States. Only Hungary (+8%), Malta (+5%) and Ireland (+11%) show a positive development of farm labour force.

In Poland, a Member state with notably increasing direct payments in the last period, the number of holdings decreased by -40%, the UAA by -7% and the farm labour force by -15%.

Even though the number of UAA did not change at EU level, opposed developments in the Member State levelled each other showing a different picture at Member State level. Notable negative changes of UAA by 19% and more are reported in Croatia, Bulgaria, Ireland and Greece. For the other EU countries the changes of UAA are within +/- 14%.

Figure 26: EU-Expenditure for direct payments (DP) and rural development (RD) 2007-2013 in MEUR



Source: DG Budget

Figure 27: Development of UAA, AWU and the number of farm holdings from 2007-2013 in %



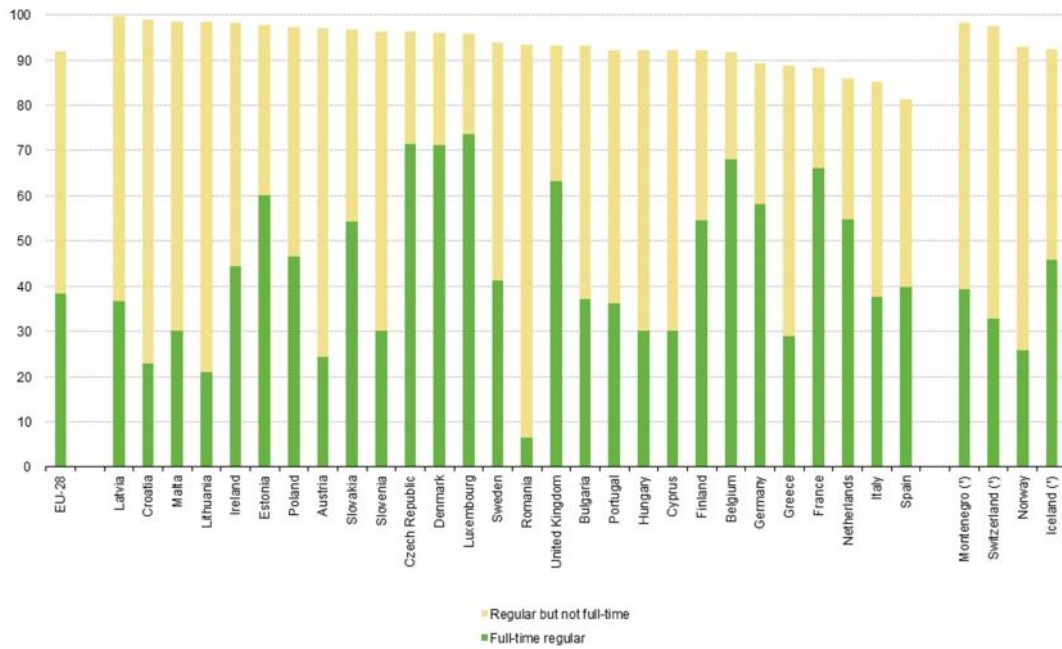
Source: EUROSTAT, Farm structure survey

The quality of jobs is very diverse over the Member States

The majority of employees (60%) regularly employed at farms are regular but not full-time worker (Figure 28). Especially in Romania, Lithuania, Croatia, Austria and Greece the share

full-time workers regularly employed is below 30%. Further there might be an unknown number of not regularly employed seasonal workers.

Figure 28: Share of regular workers in the farm labour force and distribution by work intensity, 2013 (%)



Source: Eurostat (ef>Iflegaa) and (ef>Ifwtime); * data for 2010

5. MAIN FINDINGS FROM THE CASE STUDIES

The case study analysis was designed to get in-depth knowledge on the CAP impacts on job creation on a regional level. Information on employment by sectors, by typology (direct or indirect, permanent or not, job maintenance or creation of new jobs), self-employment, entrepreneurship, etc. shall be gathered, differentiating by groups and areas.

Since the centre of attention of this present study deals with the employment situation in rural areas, the case study analysis aims at depicting the characteristics of the selected regions with regards to the impacts (positive, negative or null) that the CAP and its reforms have on agricultural and rural employment.

The cases selected have been chosen from the same clusters as the MS reviews. I.e. they are all stemming from different clusters of regional areas as identified in the SEGIRA study.

- Poland – wi tokrzyskiej region, which belongs to the “very remote rural regions” cluster according to the SEGIRA study. The region, in green below, is one of the poorest regions in Poland and the EU. In wi tokrzyskie there are 30 urban centres and 2,560 rural settlements. About 55% of the population lives in these rural settlements. The proportion between urban and rural population has stabilized at 45% urban – 55 rural % in recent years (Metis, 2009:5).
- Spain – Murcia, which belongs to the “Balanced rural areas with declining manufacturing sector” cluster within the SEGIRA classification. The region of Murcia is located in the South East of Spain. It covers an area of 11,313.00 km² (2.20% of the Spanish total area). The region is home of 1.50 million people with an average density of 130.40 people per Km², 32.98% of the population lives in sparsely populated areas: rural areas occupy 80.71% of the surface
- France – Nord-Pas de Calais region belongs to the “traditional intensive agricultural regions with urbans centres”. The region’s main asset is derived from agriculture, a key sector which accounts for 69% of the territory. The region also ranks 4th French agribusiness region (Région Nord-Pas-De-Calais, 2015: online).
- Sweden – Västra Götaland County, covers the Central and North European manufacturing regions. Agricultural land covers 24% of the territory. With changes in the agricultural and forestry sectors, other business opportunities in rural areas have become increasingly important in terms of employment. The rural economy is, nevertheless, still largely dependent on agriculture, forestry and related businesses (EC, 2015:2).



The diversity of European rural areas shows a wide range of strengths and opportunities to revitalize declining and fragile economic sectors, notably the agricultural sectors. Nonetheless, numerous challenges, external or structural, are slowing the implementation of innovative and disruptive endeavours. A comparative analysis of the national and more local contexts shall reveal how the Common Agricultural Policy and further, the European rural development programmes, contribute to the fostering of employment creation in rural areas.

Findings for all four case studies:

- **Very different degree of importance of the agricultural sector as well as food processing, non-food production and tourism in all four regions.**

For instance the weight of agriculture in the regions Nord-Pas-de Calais is essential to the regional economy, since the sector is the first driver of the economy (84,000 jobs). While the tourism sector is not well developed in Nord-Pas-de Calais, other regions like Murcia have been able to successfully establish tourism related activities with RDP funding. Consequently, Murcia has diversified its economy and can rely on another source of economic diversification.

Thus the potential of CAP in optimizing the strengths of a particular region may be limited in the light of its agricultural structure and overall regional economic fabric.

- **Overall trend of declining employment in agriculture**

Overall there has been a trend in declining employment in agriculture with the exception of the crisis years (2009-2011), where e.g. in Murcia the employment in agriculture increased significantly compared to the national average.

Especially in the more industrialized countries (France, Sweden) the decline in workforce in agriculture has been significant. In some cases the upswing in employment in the agricultural sector has been regarded as fall-back option especially for part-time farmers, when the general down-turn of the economy resulted in job losses in the secondary and tertiary sector.

Generally all case studies pointed at the same overall challenges of agricultural employment – i.e. ageing and marginalisation of rural areas. An increasingly well-educated young generation of farmers is leaving the sector due to better income opportunities in other sectors – thus lack of farm succession is increasing. In some Member States this situation is aggravated by high entry barriers into farming (e.g. through restrictions of ownership rights of land). The general brain drain of rural areas is enforcing the problem, as an increasingly better educated work force is not any longer interested in low-qualified jobs in agriculture.

- **Weak correlation between CAP and employment –Pillar I**

It is even emphasised that CAP direct payments were supporting in-competitive sub-sectors and keeping them alive whereas the employment generating sub-sectors, which were highly competitive in the European and international markets did not gain that much support. E.g. highly profitable and employment generating horticulture did receive comparably low CAP support than goat and sheep raising.

In general it was emphasised, that throughout the CAP reforms and its subsequent liberalisation and market orientation large scale, industrialized farming has been increased in all case study areas (especially Poland). However, it has been noted that this trend has its limitations in certain sub-sectors of agriculture (e.g. horticulture, vegetables), where some labour intensity will always prevail and thus job preservation will be safeguarded (see e.g.

Murcia). Still these jobs are to a large extent low skill, seasonal work and thus the question remains, what kind of jobs are created if employment in agriculture increases.

One further general observation is that agriculture is moving out of mass production in less favourable areas (crops, milk, life stock) and thus create a concentrations of mass production in certain European regions with high profitability, but largely negative environmental impacts.

Further, in some regions CAP Pillar I has been seen as market distortion and hindrance (Nord-Pas de Calais), which actually did not really generate jobs in agriculture. For instance the end of milk quotas in the region created higher price fluctuations. This uncertainty of market development linked to unstable income discouraged farmers to increase their labour force. The contrary has been said in Poland, where CAP support plays a significant role in income generation of farm households and thus at least keeps up a level of employment.

- **Positive effects of Rural Development**

In general the Pillar II of the CAP has been much more positively judged upon with respect to its employment generating effects. First this is simply due to the fact that employment generation is an expected result of the RDPs and thus is captured in indicators (ex-ante and ex-post). Second the diversification of agriculture and the regional niche markets are regarded as positive impulse for employment in the regions. This holds especially true for those regions with a comparably low level of agriculture (e.g. Sweden), but it is also acknowledged in peripheral regions like Poland and Spain.

An observation which holds true for all regions (except for the highly specialised case of Murcia) is the trend of diversification and specialisation in production and non-agricultural activities: Nord-Pas de Calais specialised in specific vegetable production (chicory), in Poland and Sweden diversification in non-agricultural activities were mentioned (e.g. energy production). This has led to an increase of value-added on the farms and thus a positive household income effect.

Still in all cases a quantification of this effect in terms of increased work force is missing. Some interviewees suggested that most of the labour market effects will be observable in up- and downstream sectors only (e.g. technology providers, distributors). All in all a work force preserving effect has still been suggested.

Further it was mentioned that the employment effects reported in the RDP are for some cases practically "assumed" by the projects' beneficiaries rather than actual employment effects in rural economy.

6. MAIN FINDINGS FROM THE MEMBER STATES REVIEW

Following the scrutiny of the direct and indirect employment effects of the CAP at the European level, this section aims providing a more specific description of the effects of the CAP in various MS, namely, Hungary, Italy, Lithuania, the Netherlands, Poland, Portugal, Romania, Spain, Sweden, and the United Kingdom. Moreover, each country profile includes relevant summarized information on the rural areas employment situation in the country. The emphasis of these country profiles comprises analyses of the CAP impacts with regards to the previous funding periods Pillar 1 and 2 along with the various funding periods (2000-2006, 2007-2013 as well as the current one when relevant information is available). Furthermore, besides a large range of different literature sources, experts were asked to draw attention to qualitative and quantitative studies. Although a larger amount of information has been collected with regards to pillar II, the final analysis will ensure a comprehensive analysis of the overall CAP impact. Likewise, please bear in mind that this section only succinctly presents raw information. The final report will encompass a much more in-depth assessment based on statistical data and cross-country differences or similarities.

It shall also be highlighted that the national experts have widely reported that the assessment of the measures under the CAP for creating jobs in rural areas is limited at the national level due to the lack of adequate statistical database and deficiency of literature taking up the problem of rural labour market. Therefore, information provided are often estimates or qualitative assessments.

6.1. Poland

The country was selected based on a cluster analysis conducted in the SEGIRA study (2010) categorizing Poland in the "traditional agricultural regions in transition" and "very remote rural regions".

- Rural employment

Rural areas cover approximately 93% of Poland's territory and are populated by 39% of the total population. Despite the development of new economic functions, rural areas are continually perceived through the prism of agriculture. Lands intended for agriculture occupy nearly 60% of the state and the level of employment in agriculture is as considerable as 12% of all employed (this comprises the highest value among EU member states after Romania). However, in recent years, one can observe an increase in the importance of other sectors of the economy, mainly trade and services as well as construction industry.

The overall employment rate in rural areas (citizens aged 15 and more) is about 50%, yet considering only the working-age population this rate is about 65%. Regarding gender, the employment rate is clearly higher in case of men.

The unemployment rate of rural residents is variable, but in the recent years, there has been registered a gradual decline. According to the Central Statistical Office in 2013 the unemployment rate was about 11.7%, in 2014 11.5% and in 2015 10.3%. A very important issue is the hidden unemployment in rural areas mainly related to households involved in agricultural activities. The excess of labor force is apparent in regions, which are characterized by small areas of farms. For a long time there has been observed an increase of entrepreneurship in rural areas, which is the most important factor in generating new jobs.

- CAP actions undertaken

A review of CAP actions in the context of job creation reveals that the RDP 2004-2006 measures were not directly aimed at creating non-agricultural jobs, as they primarily focused on the agricultural sector. One of the measures assumed: Support for low-commodity farms, contributing to enhancing the process of restructuring farms and creation of new jobs and concerned food sector. Other programmes were of greater significance for rural areas: Sectoral Operational Programme (SOP) – Improvement of entrepreneurship effectiveness and SOP – Development of human resources, which fostered job creation by providing investment funds and establishing new businesses in rural areas. The programmes were intended to increase the ability of transferring population involved in agriculture to work in other sectors of economy.

Within the RDP 2007-2013, the stimulation of economic activity in rural areas was implemented by the instruments under Axis 3 – Improvement of life quality in rural areas and diversification of rural economy. It was assumed that adopted measures will intensify agricultural production and result in transition of population involved in agriculture to labour in other sectors of the economy. This is also intended to reduce hidden unemployment. The rural labour resources should be shifted towards non-agricultural activities. From this point of view, it is particularly important to comprehensively support the process of creating non-agricultural jobs in rural areas and facilitate employment in local urban centres for rural population. In the processes of rural development a key role is played by small towns, as primary places of employment for rural population. It was presumed that 39% of funds under Axis 3 were designed to promote job creation. Axis 4 LEADER was also intended to increase employment and economic diversity of rural areas.

The main objective of the RDP 2014-2020 is to improve the competitiveness of agriculture, sustainable management of natural resources and climate-related actions as well as balanced territorial development of rural areas.

- CAP impact on employment

Taking a look at the impact of CAP on job creation, Poland presents an interesting profile as it benefited from pre-accession programmes. For instance, pre-accession programmes such as PHARE and SAPARD included in their assumptions objectives related to labour market. Nonetheless, due to relatively low financial outlay it is difficult to determine their impact on job creation in rural areas. For example, SAPARD implemented Action 4 – Diversification of economic activity in rural areas, in which majority of conducted projects involved establishing new jobs in rural areas by entrepreneurs (74.82% of allocated funds – approx. EUR 38 million).

When considering the post accession period, based on the RDP Ex-post evaluation report, the impact of CAP for the funding period 2004-2006 on employment in rural areas and other economic sectors related to agriculture and rural areas was small, but positive. The limited scale of this effect was not caused by lack of programme's effectiveness, but structure of carried actions. These, from the beginning were not focused at creating non-agricultural jobs. Moreover, the scale of provided aid related to employment was insufficient to solve such major issues as reduction of unemployment, where it comes to employing approximately 1 million people. However, it should be emphasized that the programme strengthened the general trend of increasing the employment rate in rural areas, especially among young people.

The following funding period, 2007-2013, showed positive impacts on employment. The RDP measures reportedly contributed to an increase in the overall employment rate at the state scale by an average of 0.15 percentage point above the level that would be hypothetically observed in the scenario not considering such support. Based on the obtained results one can ascertain a positive impact of CAP spending in years 2007-2013 on increasing employment in all Polish regions. A positive RDP impact on the employment rate is reflected in another indicator monitoring the condition of labour market, namely the unemployment rate.

- **Summary of the MS review for Poland**

The EU development strategies throughout all programming periods included actions assuming direct or indirect creating of new jobs. Experts assent with another concerning positive impact of the CAP measures on labor market. However, the level of such impact is usually small. According to the report "Polish village in 2014" (Nurzy ska, Poczta 2014), the growth rate of rural population employment has been rapid until 2008 and in subsequent years oscillated around the same level with a slight increasing trend. Yet, several studies also report that the EU support programmes play an upholding role in job creation, especially through implementation of targeted programmes aiding development of rural labor market.

Furthermore, it is also pointed out that by generating additional jobs, the RDP is expected to be contributing to the growth of employment and thus reducing unemployment. These effects have been apparent only in the recent period. These delayed impacts are noteworthy points when considering the numerous viewpoints and findings on the subject matter. The results of the actions could accordingly be considered indisputable after a certain time, whereas Poland has been benefiting from the support for only about 10 years.

The EU support has had an unquestionable impact upon job creation; however the dynamics of entire process is also affected by other factors, including in particular the economic situation of the country.

6.2. Hungary

Hungary is categorized under the cluster "balanced rural areas" which features predominantly rural areas with low population. The share of employment primary, secondary and tertiary sectors are relatively well balanced despite of a high proportion of tourism, which denotes a strong tertiary sector.

Similarly than the previously outlined country profile for Poland, Hungary's review covers pre and post accession period which hence provides good comparison and feedback of the sectoral state-of-the-arts before the CAP took effect.

- **Rural employment**

The population in rural areas is decreasing and the unfavourable age-structure characteristic has severe impact on productivity of the agricultural sector. 30.15% of the farmers were over 65 years old, while the ratio of population under 35 years old was only 5.96% (2013). Agricultural employment significantly declined in the period of 2000-2015 as the statistical data and Surveys from 2010 and 2013 suggested.

The number of employed people agricultural sector producing GDP (included forestry and fishery) increased in 2015 comparing other previous years (189,600) and exceeded 203,200 persons, the increase is 7.2%. Comparing 2014 and 2015, the change in employment traced the seasonality of the agriculture; the highest increase is figured out for the period of April-June and is 10.2%. Moreover, the number of regular salaried employees declined by 37.6%

while the total employment increased 0.06% (as in the system of national account). The total agricultural labour force in annual workforce unit (AWU) declined by 31.5%. The change was 11.6% in salaried workforce, while 36.8% in case of non-salaried workforce according to the ministerial annual report for 2014.

- CAP actions

The “New Hungary” Rural Development Programme 2004-2006 and Agricultural and Rural Development Operational Programme (as part of the National Development Plan 2014-2020) have uniformly mentioned ageing population, out migration and rural population decline as main obstacles that the programmes had to manage and slow down applying EU and national support schemes. Consequently, the Rural Development Programme and National Rural Development Plan aimed at improving efficiency of production through assisting a transition towards optimal utilisation of land (agri-environment issues, setting less favoured areas and stooping afforestation). Measures designed to improve the competitiveness of agriculture (Axis 1) had the second highest ratio in Hungary, among the New Member States (NMS). At the same time, the ratio of funds earmarked for improvements in the quality of rural life and for the diversification of the rural economy (Axis 3) exhibited the second lowest value, by 5.6% lower than the average of NMS.

For the allocation of direct EU funding (2007-2013), Hungary introduced the so-called area based system (SAPS – Single Area Payment Scheme), and taking into account the sectoral characteristics of agriculture, the country has developed a separate procedure for the related national top-ups. Since 2014, the national government has stated to plan the new sectoral subsidy programme which adopts the new CAP structure. The total CAP support in 2014 was EUR 1,273 billion.

- CAP impact on employment

Statistical data and the ex-post evaluation of the National RDP (2004-2006) suggest that investments and environmental development measures included a far higher proportion of agricultural and rural development payments than supports encouraging diversification and alternative sources of income in rural areas. The majority of the payments for investment allocated to rural development initiatives replaced manual labour and contributed to – directly or indirectly – the loss of jobs on sole holder holdings. Among the agricultural environment protection measures, the support of farming methods that required less manual labour had a similar effect.

Studies still reveal that both the positive and negative impacts of the application of the CAP axes are visible; however, this short period of time is not enough to make reliable conclusions (only NRDP evaluation is available so far). The negative impacts assumed mostly due to the fact, that Hungarian producers failed to realize that competition has been increasing not only at foreign, but also at the domestic market as well, and the majority of foreign competitors have been better organized due to their producers' associations and been more competitive. The decline in the number of jobs accessible in the rural regions is likewise aggravated by investment supports aimed at improving the competitiveness of holdings. Special attention should be given to the increasing ratio and total sum of machinery investment payments.

The modest level of resources earmarked for farm diversification and the diversification of the rural economy also plays a role in the unfavourable trend in farm employment.

6.3. Lithuania

Lithuania (along with Poland) falls in the cluster "traditional agricultural regions in transition" as well as the "dominant agriculture, rural and peripheral regions" category.

- **Rural employment**

According to the data provided by Statistics Lithuania, the total number of employed in rural areas was 384.1 thousand in 2015. The employment rate in rural areas remained relatively low in 2000-2015 and did not show considerable growth. Furthermore, the employment rate in rural areas was below the rate for urban areas. The activity rate for rural areas was 54.9 compared to 61.2 percent in urban areas in 2015.

The unemployment in rural areas had been decreasing significantly in 2000-2008. However, the unemployment has risen sharply and peaked to 22.7 percent in 2010 due to economic and financial crisis. Recently the unemployment rate in rural areas has been slowly decreasing, although high unemployment level still remains an important issue for rural economy. Furthermore, due to the persistent unemployment rate, at-poverty-risk rate for rural areas represent more than the double compared to urban areas since 2005. Nevertheless, the positive trend is noticed since at-risk-poverty rate in rural areas has been slowly decreasing in 2005-2014 and reached 25.5 percent in 2014.

- **CAP actions undertaken**

Lithuania receives significant amounts of funding under the CAP. Funding for rural development under the CAP Pillar 2 is provided for the country since 2004 under the rural development programmes. The total budget of EUR 611.88 million was provided for the RDP 2004-2006. A considerably larger amount was dedicated for RDP 2007-2013 (EUR 2.29 billion) of which 17 percent were provided under the Axis 3 and Axis 4 aimed especially at the rural development and rural jobs creation. Axis 1 is aimed at strengthening the competitiveness of agriculture and is not targeted directly at jobs creation. However, it is expected to have indirect impact on creating jobs as well. The RDP 2014-2020 will receive slightly lower budget (EUR 1.9 billion). A few measures will be targeted at rural jobs creation as well.

- **CAP impact on employment**

It is reported that jobs created or sustained by the beneficiaries under the RDP 2004-2006 were not monitored. The only available information on jobs created in agriculture is based on the survey of 327 beneficiaries carried out during the ex-post evaluation of the RDP 2004-2006 (ESTEP, 2008). The survey results showed that almost two thirds of beneficiaries sustained their jobs due to the investment. Furthermore, 17% of respondents created new jobs for hired workers due to the investment.

However, the impact of the CAP was mostly seen in less favoured areas where the greatest amounts of support were concentrated. As a result and from a general standpoint, the overall impact of the RDP for 2004-2006 on employment was assessed as positive. Nonetheless, there are no sound evidences of impact of RDP for 2004-2006 on creating or sustaining jobs outside the agricultural sector.

According to the monitoring data on the implementation of the RDP 2007-2013, 2678 jobs were created under the Axis 3 and Leader method as well thought the period 2007-2013. 474 of them were created while diversifying activities of agricultural subjects. However, there is no data on the indirect impact of the RDP interventions on employment yet. These

assessments will be based on econometric modelling and will be provided in ex-post evaluation of RDP 2007-2013 in the end of 2016.

Econometric modelling activities have been employed to assess the impact of RDP 2007-2013 on jobs creation during mid-term evaluation of RDP. The results revealed that 1097 new jobs were created or sustained due to the interventions implemented in 2007-2009. Almost two thirds of jobs were created or sustained in agriculture and forestry and the remaining in food sector. The effect was mostly created due to the significant financial amounts under Axis 1 and Axis 2, while the remaining Axis 3 and Axis 4 did not create statistically significant impact on rural development. However, the mid-term evaluation covered only three years of the implementation period of the RDP. Higher impact on employment might be expected while evaluating the whole period of RDP interventions.

The present RDP for 2014-2020 includes interventions for rural development and employment creation as well. It is planned that investments under the Priority 6 targeted at rural development will create 2055 new jobs. Nevertheless, there is no other information on expected impact of RDP 2014-2020 on employment.

6.4. Romania

The country is also part of the “dominant agriculture, rural, peripheral regions” but also includes “traditional regions in transition”.

- Rural employment

At the country level, the occupied population followed a decreasing trend in general figures for the Romanian economy until 2011 and the trend replicates after 2012. A possible interpretation could be that this evolution relates to the financial crisis impact if it is to extrapolate with the number of business operations and general employment. Yet, there is no clear link to support that statement. Interestingly enough, over the same time period, the occupied population in agriculture, forestry and fishery recorded slight increase with a peak in 2012 with a relative drop over the last two years of the period.

The occupation rate in rural areas dropped over the period 2008-2014 for all age groups and is even more pronounced for the younger categories (5% for 25-34 years old and over 7% for 15-24 years old). The number of employees in agriculture and forestry grew between 2010 and 2014 by 18,843 persons, representing a growth of almost 20% (19,84%). The most important positive evolution is recorded over the period 2010-2014. In fact, whereas data showed a 5% decrease of the total occupied population in agriculture, forestry and fishery, the category “owner” increases by ten times. A decrease of over 10% (during the same period) of the unpaid family workers and freelancers may also explain the increased number of employees (increase of nearly 20% of employees).

- CAP action and employment-related impacts

Following the figures collected by the monitoring instruments (see further Annex) set by the implementation system over the entire period 2008-2015 the European Fund for Agriculture and Rural Development via its national instrument the National Rural Development Programme have created an estimated number of 8,723 work places, accounted for the indicators targeting 54,288 work places. Aside from the specific impact and result indicators including the common and additional indicators, other 73,846 work places (mainly self-employment) bring the total to 82,569 new jobs. In total, the estimates represent 69.52% real jobs generated by National RDP instead of reported 16.06% reached for the targeted employment indicators alone. Agriculture and related activities therefore continue to be the

main employment generator in Romanian with regard to the rural employment and efforts to diversify the rural economy show positive return.

Rural labour surveys could further enrich these considerations but the scarcity of systematic surveys and statistical data only leaves room to estimates and qualitative assessments. The publicly available information sources and their content are exclusively the ones requested by the NRDP implementation, namely the monitoring and reporting instruments. Furthermore, in terms of employment, these instruments operate on estimates such as in the case of rural non-agricultural jobs created as minimum requested by the selection criteria and a number of them risk to be created exclusively formal in order to comply with the requirements. The recorded employment as reported is practically "assumed employment" by the projects' beneficiaries rather than active employment in rural economy.

Furthermore, no data is publicly available on the productivity of the new employment as well as all other relevant information regarding their qualifications and instruction/education level, needs of professional development, personal profile, age, etc. From the general statistics the exits of active and occupied rural population could be examined and data regarding their profiles could generate valuable information. Moreover, the author states that to it is technically impossible to ascertain which entrants are the result of the CAP generated employment. This task becomes impossible outside the NRDP frame as the employment of rural population also originates in other structural instruments' interventions. For instance, interventions such as the Sectorial Operational Programme for Human Resources Development include important inputs especially in terms of rural entrepreneurship and rural social economy support and development.

In Romania, the CAP support for rural development is described as "a success story" for the previous programming period considering that the NRDP overpassed all structural instruments and programmes.

6.5. Portugal

Portugal is categorized by the SEGIRA study in the "dominant agriculture, rural, peripheral regions", i.e. an area with special challenges due to their peripheral exposure in the South and North of Europe. The secondary and tertiary sectors are still underdeveloped and the level of agricultural training is lower than the EU average.

- Rural employment

The employment rate in rural areas (63%) is similar to the Portuguese average (62%). Nevertheless, the unemployment rate in the former case (13.2%) remained lower than in the general case (15.6%) in 2012, that is, in the trough of the deep recession that affect Portugal between 2011 and 2013 (recall that the GDP decreased 4% at constant prices in 2012). Nowadays (2014), the overall unemployment rate (12.2%) is lower but is still one of the highest in the EU.

In 2010, rural areas contributed to 27.4% of the Portuguese value-added but their employment still represented 32.4% of the total value-added. Thus, the productivity in rural areas was about 85% of the overall economy and their GDP per capita was much lower (only 65% of the EU-27 average) which could be related with a high rate of poverty (27.4% in rural areas for a Portuguese average of 24.4%). Nevertheless, the labour productivity is increasing in rural areas as a consequence of employment negative trends. Noting that about one quarter of the employment in rural areas are concerned with agriculture and forestry, massive work losses were observed since 2000 (29% in agriculture and 13% in forestry)

which were only partially compensated by employment creation in agribusiness and other dynamic activities such as rural tourism.

- CAP actions and employment-related impacts

The mid-term evaluation of the LEADER+ Programme 2000-2006, reported to be the most comprehensive assessment already made in Portugal, encompassed the impacts and results of CAP's pillar II interventions directly or indirectly related with job creation and the promotion of entrepreneurship, organizational fabric and endogenous development. The direct effects associated with job creation may be summarized as follow:

- The new jobs created was 952, that is, an average of 1.5 persons per project supported;
- Most (778 or 82%) of them was a non-permanent or temporary nature;
- The majority (57%) of the new jobs was for women, especially in the case of permanent jobs (71% of a total of 174 permanent jobs created);
- Only 322 of the 952 jobs created (34%) was for young people, that is, with less than 25 years-old; youngsters had more importance within temporary occupations (37%) than at permanent jobs (19%);
- The CAP's financing was even more important for the maintenance of temporary jobs created during the previous programming periods; in fact, 1,427 jobs were maintained for a total of 2,379 jobs (including the new ones) supported by the former European Agricultural Guidance and Guarantee Fund (EAGGF) in Portugal through LEADER approach till mid-2005.

Other studies assessed that CAP's indirect impact on job creation (and maintenance) and also stated that the multiplication of agro-industrial small and medium size enterprises relying on local and artisanal agricultural products may increase the number of directly CAP-induced jobs.

With regards to the pillar I, the mid-term evaluation of the RURIS — Rural Development Plan for Mainland Portugal 2000-2006 reinforced the importance of the promotion of farm multi-functionality in order to tackle the structural problems facing the Portuguese rural areas, namely the sub-employment (under-utilization of the labour factor). Unfortunately, job impacts related with measures such as early retirement, agri-environment payments or payments to areas facing natural or other specific constraints were not identified by the evaluators.

The Final Report of the On-going evaluation of the 2007-2013 Rural Development Plan (RDP) reiterated the importance of the CAP's measure promoting farm diversification to non-agricultural activities. Those measures were mainly directed towards the development of rural tourism facilities. The creation of 437 jobs by 355 projects (average of 1.2 jobs per project) was reported as the following second order effects.

The diversification of activities or the promotion of entrepreneurship and self-employment are second order effects connected with a measure supporting the development of companies (COM 312). Similar impacts were also reported for the measure concerned with the provision of basic services in rural areas (COM 321), namely the creation of 2 jobs per project on average. Likewise, it is noteworthy to stress the importance of payments to areas facing natural or other specific constraints complemented with others policies such as the CAP pillar I unique payment and the Social Integration Income (minimum state-guaranteed income to

poor people). Indeed, the mix of such policies proved to be effective for the maintenance of “some” agricultural activity and population in mountains and other less favoured areas despite their difficulty to promote full-time employment.

Now focusing on the current programming period, Portugal has directly aligned its objective of fostering job creation with the EU's priorities for rural development, namely with the focus areas 6A — Facilitating diversification, creation and development of small enterprises, as well as job creation and 6B — Fostering local development in rural areas.

Consequently, the CAP pillar II is expected to create at least 2800 new jobs until 2020, mainly through LEADER/Community-Led Local Development (CLLD) approach (approximately 2500). These expected results might be complemented by the effects that would be associated with either other pillar I measures (e.g. support to young farmers) or pillar I mechanisms (e.g. basic payment to farmers, greening, support to young farmers and small farmers, specific support to vineyards and beekeepers and other mechanisms related with the Common Organization of Agricultural Markets).

6.6. Spain

Spain is likewise comprised in the cluster “dominant agriculture, rural, peripheral regions”.

- Rural employment

In relation with the distribution of employment by type of region, in 2011, 7% of Spanish people were employed in rural regions, 13.3% points lower than the European average (EU-28). Rural employment and job allocation in the respective economic sectors (in particular, agriculture, forestry, food industry and tourism) is presented in the table below (2013):

Table 11: Employment rates according to the economic activities related to rural field in Spain

Country	Total	Agriculture		Forestry		Food industry		Tourism	
		1000 persons	% of total	1000 persons	% of total	1000 persons	% of total	1000 persons	% of total
Spain	17,139.0	676.0	3.9	23.3	0.1	451.1	2.6	1,332.6	7.8

Source: Data from DG Agri (ICC13 indicator), 2013.

The agricultural sector has undergone a restructuring process which resulted in a decrease in the number of holdings. Furthermore, this process is associated with a decrease in the number of people working in the agricultural field and has influenced the rural labour market as whole.

Considering the evolution of the agricultural employment, the data of affiliation to the Social Security – Special Agrarian Scheme, show a significant decrease in the number of affiliates (both wage-employment and self-employment). The agricultural activity still represents a relevant source of employment in most of the Spanish rural areas. Likewise, the number of agricultural holdings which diversify their activity is increasing. The complementary activities include for example, tourism or processing of agricultural products.

- CAP actions and employment-related impacts

On the basis of the analysis of the relative weight that the CAP subsidies have on the different crops and their evolution from 2003 to 2008; and the weight of each crop in the rural employment; several conclusions about the impact of the CAP in the creation and maintenance of employment can be outlined:

- The decoupling of CAP direct payments for crops, such as cotton or tobacco that have high requirements of labour, has resulted in a decrease in rural employment.
- The impact of the subsidies in the maintenance of rural employment in sectors (such as fruit and horticulture) that have a high relative weight when considering total rural employment is limited.
- Fruit and horticulture sectors are the most competitive. This has accordingly a large influence in terms of employment (particularly when considering temporary employment) but the sectors receive very little support.

The second pillar of rural development is deemed to have actions oriented in a specific manner to the employment creation (maintenance and creation of jobs in the agrarian sector, and in other possible sectors). It is correspondingly considered that if the financial weight of the second pillar increased, the impact in terms of job creation would be higher, at least in respect to other productive sectors in rural areas besides the agrarian one.

Apart from the limited budget related to the second pillar, it is necessary to mention other elements lead to numerous hurdles potentially hampering expected figures on job creation in rural areas. For instance, the high level of bureaucracy and the important complexity of creating new jobs in specific contexts (deprived communities and mountain areas, high level of depopulation, high level of ageing of population, etc.).

6.7. Italy

Along with Spain, Italy features “balanced rural areas”.

- **Rural employment**

With regards to the distribution of employment by type of region, in 2011, 19% of people were employed in rural regions, 1.3% points lower than the European average (EU-28). In relation with employment in the economic sectors in rural areas (in particular, agriculture, forestry, food industry and tourism), in 2013, were employed approximately 22,420,000 people, as presented in the table below:

Table 12: Employment rates according to the economic activities related to rural field in Italy

Country	Total	Agriculture		Forestry		Food industry		Tourism	
		1000 persons	% of total	1000 persons	% of total	1000 persons	% of total	1000 persons	% of total
Italy	22,420.3	740.7	3.3	48.2	0.2	447.7	2.0	1,246.9	5.6

Source: Data from DG Agri (ICC13 indicator), 2013.

- **CAP actions and employment-related impacts**

A first examination of the 2003 CAP reform, which introduced the decoupling of aid (pillar I) provides several relevant elements for understanding the CAP impact on farm-labour in Italy. The effect of decoupling on the decision taken by farmers on allocating hours to (off-) or to (on-) farm labour is indeed worth examining. Studies reveal that farmers who benefited from price support (before the introduction of decoupling) were more likely to increase production levels and to commit more working hours to farm labour. A cross-region comparison conversely demonstrates that the 2003 Pillar I reform created changes in the strategy adopted by farmers in terms of land use and attempts to maximize profit. This is reported to have had a negative impact on rural employment as it contributed to a decrease in all farm types. Another consequence is that traditional farms moved towards a more competitive

model of production. Less people were thus employed as agriculture becomes more sensitive to price signal from world markets.

Pillar I reforms may have had negative effects on the agricultural employment rate. However, Pillar II measures are said to supposedly mitigate these impacts. According to the Ex Post Evaluation of the Rural Development Programmes 2000-2006, it is confirmed that there was a positive impact on both the maintenance and creation of employment in rural areas. The diversification of economic activities, on and off the farm (investment on farms, processing and marketing as well as tourism and craft economic activities) are key elements contributing to the positive effect of pillar II in terms of job creation. Moreover, even measures more oriented to environmental objectives, which did not have the goal of employment, still contributed to job creation and maintenance.

Synergies between measures also appeared to be very effective for job creation. For instance, the combined implementation between investments on farms and use of the training as well as coaching increased the potential of employment generation. However, it is important to mention that, in the period 2000-2006, it was not always possible to distinguish whether the jobs created were directly due to the rural development measures or whether other factors played a more relevant role than the RDPs.

According to the Synthesis of Mid-Terms Evaluations of RDP 2007-2013, the impact of the nine assessed Italian RDPs on employment was moderate. However, many impacts were not calculated at the moment of the elaboration of the report cited above.

6.8. The Netherlands

The Netherlands is a country with an interesting agricultural and rural profile as it comprises "traditional intensive agricultural regions with centres".

- **Rural employment**

In 2009, 26.4% of the working population had a job in the rural area. Of these "rural workers", approximately 10% was active in the agricultural sector between 2007 and 2015. The central and southern provinces of the country have the most jobs in agriculture (mainly animal husbandry), whereas the urban provinces (North and South-Holland) as well as Limburg show the strongest decline in agricultural employment. Job losses in these provinces are mainly related to adverse developments in the horticultural sector (e.g. the Russian ban).

Related to the agricultural sector, there are several branches contributing to substantial employment in rural areas. Farm input and service supplies accounted for 32,555 jobs in rural areas in 2009. Another report shows that 241,000 additional jobs can be related to agriculture (input supplies, processing and distribution), but that includes the employment in urban areas as well. Overall, and despite the continuous decline in agricultural employment, it can be concluded that the agro-complex is an important economic and social driver for rural areas in The Netherlands.

- **CAP actions and employment-related impacts**

In the policy period 2007-2013 a total of over EUR 7.5 billion CAP subsidies have been made available for the Netherlands. The majority of these funds, EUR 6.9 billion was earmarked for Pillar I, while EUR 600 million was made available for rural development under Pillar II (EUR 1,975 million including national and regional funding). The total available CAP funding for The Netherlands during the period 2014-2020 amounts to EUR 6.6 billion. Of this, ca. 81% will be granted under Pillar I and the remaining 19% as regional development funds under Pillar II.

Payments under Pillar I aim at stabilising farm incomes and are thus likely to prevent the declining trend in the number of farmers. Several arguments can be developed: farmer incomes are higher and make it more attractive to stay in business, a base income is more or less guaranteed. At the other side, a share of the payments may end up with land owners or consumers as the farmer may expand his production under higher productivity (resulting in lower prices). Or the additional income will be used to replace labour with investments in technology. Furthermore, these patterns should also be related to the socio-economic context as under high economic growth, farmers' children may withdraw from farming whereas slow economic growth may keep them in. Research is also not conclusive as some indicate a preventive effect from farmer outflow, while others show the opposite (more farmer outflow). No modelling studies have been encountered on the relation between the CAP and employment in rural areas in The Netherlands for the coming 2014-2020 period.

Pillar II has the aim to improve the quality of living in rural areas. The focus of Pillar II is on the support of a vital, sustainable agricultural sector, the quality of nature and the environment and the quality of life in the countryside. The RDPs have supported some five thousand projects. Examples include the construction of sustainable animal housing, advisory services for farmers, providing support to young farmers for business investment and land consolidation through increased competitiveness. Agricultural nature is supported by, among others, hedgerow maintenance, meadow bird management and the construction of environmentally friendly river banks in agricultural areas. With the development of rural tourism and investment in cultural and rural heritage, the programme stimulated the countryside economy. Under the "Leader Approach" (LEADER) local action groups receive support in the preparation and implementation of a development strategy for their area. LEADER has an explicit goal to contribute to rural jobs.

The review for The Netherlands shows that there are multiple links between the CAP and employment, but that these links have not been made explicit due to a lack of policy goals to this end. Furthermore, although available research indicates a positive effect of Pillar I farm payments on employment (or rather, preventing a loss of employment), where the argument for such a correlation points at the higher elasticity of pillar I payments. With the flat rate hectare payments under the new CAP, this relation has become inelastic and the effect may be dampened. Further research is highly recommended.

Agriculture in The Netherlands is characterised by its highly intensive nature, meaning that the turnover per hectare is by far the highest in the EU. As a result, market and structural drivers have a higher impact on farm viability than hectare payments. On the other hand, Dutch farmers have one of the highest environmental costs on average, making support in agro-environmental investments increasingly important. Based on discussions among stakeholders in the agricultural sector in The Netherlands, it can be concluded that technological improvement drives further consolidation and scale enlargement in the agricultural sector. In combination with a greying farming population and a capitalised farm on the basis of robust land values, it is likely that the number of farms and farmers will continue to decline, both in The Netherlands as well as in other member states. Further research is definitely recommended, but it is not likely that CAP subsidies will curb or halt this trend.

6.9. Germany

When looking at Germany, still some structural differences are recognizable between the Western and the Eastern regions. While Western Germany falls in the category "Central and

North-European manufacturing region" in the SEGIRA study, Eastern Germany is classified "Rural region with significant industry", i.e. peripheral region facing transition.

At large and unlike Western Germany, the economy is performing below average the regions of Eastern Germany, with a positive slow but steady development. Nonetheless, the Eastern region shows a relatively high unemployment rate and the agricultural sector is at a comparatively low level.

- **Rural employment**

In 2014, 38% of the overall German territory is predominantly rural, populated with 16% of the population. Rural areas contribute with 14% to the national GVA and by 17.4% to the national employment. Most interestingly, the role of agriculture, forestry and fishing in rural regions is high as here 38% of the total GVA (for agriculture, forestry and fishing), but intermediate regions contribute even more to the total primary sector GVA (50%).

The employment rate in predominantly rural areas is high. It accounts for 75.8% and is thus above the German average of 73.8%. This is mirrored by the unemployment rate of 4.5% in rural regions, which is lower than the Germany average of 5.0%.

The GDP per capita in rural regions of Germany was at 108% of the EU average in 2012 and thus well above the EU average. In general the primary sector plays an minor role in Germany, accounting for 0.9% of the total German GVA and for 1.6% of total employment.

Table 13: Employment rates according to the economic activities related to rural field in Germany

Country	Total (1000 persons)	Agriculture		Forestry		Food industry		Tourism	
		1000 persons	% of total	1000 persons	% of total	1000 persons	% of total	1000 persons	% of total
Germany	39,879	528	1.3	35	0.1	950	2.4	1527	3.8
Eastern Germany	5,960	97	8.7	9.4	0.9	139	12.0	230	19.8
Eastern Germany%	14.9%	18.3%		26.7%		14.6%		15.0%	

Source: Data from DG Agri (ICC13 indicator), 2014.

- **CAP actions and employment-related impacts**

Petrack and Zierl, 2010²³ analysed the period of 1999-2006 for the three East German States Brandenburg, Saxony, and Saxony-Anhalt. About two thirds of the CAP budget was devoted to direct payments, implementing the Single Farm Payment (SFP) in 2005.

Answering the needs of the Eastern German regions, the emphasis of Second Pillar measures was on the "development of rural areas". The measures focussed on infrastructure investments like the construction and improvement of roads and agro-environmental measures, e.g. maintenance of extensive grassland and conversion to organic farming. Further compensatory allowances for less favoured areas (LFA), as well as on investment aids and processing and marketing support were part of the measure-mix.

²³ M. Petrick, P. Zierl (2010): CAP impacts on labour use in East German agriculture.

While the means for infrastructure is disbursed to local municipalities, the latter measures are more directly channelling money to the farmers themselves.

Petrick and Zierl, 2010 came to the conclusion that CAP (Direct payments for crops and livestock, measures for the development of rural areas, transfers to less favoured areas and agro-environmental measures) had no employment effect at all. They claim that “potentially positive effects due to capital subsidies were counteracted by the recent decoupling of direct payments.” They argue further, that the ongoing decoupling will lead to job losses – as significant job losses were noted in 2005 and 2006.

Another source on the job effects of the period 2000-2006 is the ex-post evaluation of RDPs 2000-2006²⁴. One of the case studies focusses on Thüringen, Eastern Germany. There it is stated, that e.g. measures improving the processing and marketing of agricultural products contributed positively to all priority objectives and working conditions improved, but at the same time jobs were reduced by rationalisation. On the other hand, measures in the forestry field secured jobs, particularly in the processing and marketing of timber (as fuel wood).

6.10. United Kingdom

The regions in the United Kingdom falls in several classifications. There are coastal and mountain areas, semi-urban areas with land use pressure, regions of the Southern and Northern periphery and mountain regions, as well as rural areas with strong rural development.

- **Employment in the agricultural sector and in rural areas**

The national context has been one where farming has been in decline over the last few decades. From 2000-2014, labour force in England (Farm business, 2015) emphasises this trend. Total agricultural labour force declined by 9%, the total number of registered workers decreased even by 20% (full time by 26%, part time by 8%) as well as the number of seasonal workers (-5%).

The situation is similar in the other key regions (Wales, Scotland, and Northern Ireland). The driving forces are largely increased mechanization and improvements in efficiency, both of which are leading towards reduction in the farm labour force.

Recent data also indicate a decline in farm incomes, which inevitably has an effect on the wider rural economy (The Office of National Statistics (ONS) Farm Business Survey for 2014/15). At the same time some data suggest that for England, the rural economy, in terms of employment, is relatively healthy compared to urban areas (Source: Defra (2013) Statistical Digest of Rural England 2013. Defra):

- The percentage of working age people in employment (employment rate) in 2011 was estimated to be 69.2% in urban areas and 74.6% in rural areas.
- The percentage of working age people in employment who were working full time (as opposed to part time) in 2011 was 74.7% for those living in urban areas and 72.6% for those living in rural areas

However, for England these statistics may hide rural poverty and low wages as well as a large proportion of the rural population commuting to urban areas for work. The situation is worse in Scotland and Wales with higher unemployment in rural areas.

²⁴ Kantor (2012): Ex-post evaluation of Rural Development Programmes 2000-2006.

- CAP actions and employment-related impacts

Given the changing nature of the rural economy, and decline in both agricultural employment and farm business income, the CAP funding clearly plays a role in terms of both farm support and rural economic development. Pillar 1 funding is providing a baseline of financial support to smaller farms and Pillar 2 is contributing to wider rural economic development, although the extent to which this is due to CAP support is not clear. A major focus of UK funding under Pillar 2 has been the emphasis on support for agri-environment agreements in order to improve ecological quality and biodiversity across the country.

The report from the Ex-post evaluation of the England RDP (Defra, 2008) suggests that the "...evidence for the wider effectiveness of the socio-economic aspects of ERDP is weak" although this is blamed on lack of sufficient evaluation evidence rather than "...weaknesses in performance".

The report also suggests that although scheme performance "appears" positive, based on simple output indicators and stakeholder opinions, the scale of socio-economic support is small in comparison to the size of the rural economy and as a result of "wider policy and market developments" is unlikely to have a significant impact at the macro level.

While the evidence is clear that a large number of diversified business activity is occurring on farms across the UK, and diversification at the farm level is clearly vital for business survival, the number of jobs created and the extent to which CAP is responsible for these activities, is not entirely clear. A total of 61% of farm businesses in England had some diversified activity in 2014/15, (3% higher than the previous year 2013/14 and continuing an upward trend). (Office of National Statistics (ONS), 2015) The main activity for one third of farms that engage in diversification is letting out buildings, while the proportion of farms with some other form of diversification activity was 41%, thereof 18% of farms in the field of renewable energy, in 2014/15. Neither of these two main activities, will create jobs directly (although such activities may help sustain farm employment). They may create or sustain jobs indirectly, for example through restoration of buildings, or construction and maintenance of renewable energy infrastructure, but these are likely to be limited, and mostly short term.

Large scale modelling studies suggest changes to the CAP over the last 15 years have had minimal impacts on overall GDP, incomes and employment. Modelling studies have tended to focus on significant shifts in CAP policy rather than relatively minor changes in the nature of support. These changes include switching from product support to decoupled farm payments (2003), and a reduction in the overall CAP budget. It is worth noting that the UK was not a great supporter of coupled payments and has consistently maximized the amount of funding transferred to Pillar 2 under modulation.

Identification of job-related impacts of the CAP

There is very limited information on the employment effects of the CAP in the UK. What information exists is drawn largely from evaluation studies, surveys and a small number of regional models. The modelling data suggest weak linkages between CAP and regional/national economic indicators, with potentially slight reductions in employment as a result of changes in CAP policy (specifically decoupling of support from agricultural production). It is suggested that the strong service sector in the UK economy has capacity for absorbing labour moving out of agriculture.

The evidence suggests that Pillar 1 support maintains the status quo, particularly in relation to small farms relying mostly on family members for labour. Reductions in Pillar 1 support

are likely to lead to limited reductions in jobs, as labour efficiency is high and reductions on small farms can be absorbed by family members. Where employment does decline it is likely to be based on smaller farms exiting from the sector. This is more likely to occur in the marginal upland areas of Wales and Scotland, where reductions in farming are likely to have indirect effects on employment in the local economy through reduced spending. There are conflicts within CAP as evidence suggests the drive for more efficiency under Pillar 1 reduces on-farm employment, while Pillar 2 concentrates on increasing off-farm employment in the wider rural economy.

Effectiveness of the CAP

The CAP undoubtedly supports the survival of small scale farms and helps to maintain rural populations. Pillar 1 is not targeted at job creation, and in the UK the continued drive for efficiency is gradually increasing farm size and reducing the level of employment (although the change is gradual). Pillar 2 is effective at supporting diversification. It can benefit those who directly receiving grant support, and contribute to developing the wider rural economy, but limited funds are directed towards measures that generate employment, or support rural populations through improving the quality of life in rural communities. The result is limited and half-hearted rural development that struggles to make an impact on the larger rural economy.

7. CONCLUDING REMARKS

In our conclusions we come back to the research questions initially raised and answer them – to the extent possible.

- What is the overall net effect of the CAP in creating agricultural employment in different productive sectors (mainly agriculture, but also those sectors linked to agro industry, tourism and other activities)?

Reform of the CAP and decoupling has had a negative impact overall on employment within the agricultural sector. The evidence suggests that overall Pillar I is preventing out-migration of small and family farms from the sector, and maintaining jobs in the agricultural sector but not creating new jobs.

Pillar II can be successful in creating new jobs in other areas such as tourism, food processing and associated sectors but implementation is highly dependent on Member State and regional implementation approaches. Where resources are highly focused and integrated (e.g. through supply chain focus or linking training with grant support) Pillar II can be more effective. Where resources are spread thinly over wide areas the impacts are minimal and limited in the face of market and other driving forces. Evidence also suggests that there is a significant amount of deadweight associated with Pillar II programmes in some member states, and doubt about the long-term sustainability of jobs beyond funding periods.

- What is the capacity of the CAP in reducing the off-farm employment of the farmer and his/her family, seeking for integrative income in other sectors?

The evidence suggests that Pillar I at best maintains labour on the farm, although the overall drive for more intensive and higher productivity will gradually reduce the size of the agricultural workforce. There is thus a drive to move labour off-farm, exacerbated to a certain extent by decoupling which provides scope for farmers to engage in more off-farm activities. Further, there is a trend suggesting that increased farm income used for secondary education of the farmer's children, rather leads to them working off-farm.

Pillar II is more focused on creating off-farm jobs and diversification of farm incomes. However, funding support is low and rather thinly spread meaning it has little impact in the wider rural economy, or even in terms of overall farm incomes. In addition the start-stop nature of rural development programmes and funding streams diminish the potential for Pillar II funding to build on opportunities, and to deal with deeper structural problems that require sustained effort over multiple years to have a positive impact.

Still in all case studies a quantification of this effect in terms of increased work force is missing. Some interviewees suggested that most of the labour market effects will be observable in up- and downstream sectors only (e.g. technology providers, distributors). All in all a work force preserving effect has still been suggested.

- In which Member State(s)/region(s) has the CAP been more effective in creating jobs, and what are the reasons for their relative success?

Due to the very complex relationships, Member States with an overall positive net effect in creating jobs cannot be named. Where jobs have been quantified it is important to note that the values are based on the specific analytical framework (e.g. economic models assumptions) and geographical scope of each study, therefore the estimations cannot always be applied at EU level.

Moreover, the majority of the authors who have quantified the employment effects of the CAP are those finding positive impacts, while the large literature which identifies negative impacts did not provide sufficient quantitative figures of the effects.

In general the Pillar II of the CAP is more positively judged upon with respect to its employment generating effects. First this is simply due to the fact that employment generation is an expected result of the RDPs and thus is captured in indicators (ex-ante and ex-post). Second the diversification of agriculture and the regional niche markets are regarded as positive impulse for employment in the regions. Judging from the case studies, this holds especially true for those regions with a comparably low level of agriculture (e.g. Sweden), but it is also acknowledged in peripheral regions like Poland and Spain.

- How does the 2014-2020 forecast of job creation look like and what are the elements for appropriate monitoring and evaluation?

Some studies forecasting future possible policy scenarios suggest that agricultural employment in Europe will decrease due to further liberalisation, and in the case of full liberalisation, it is unlikely that a decrease in agricultural employment would be compensated by an increase in the employment in non-agricultural sectors.

Further reallocation of funds from Pillar I to Pillar II resulting in reductions in direct payments, although compensated by larger investment subsidies, might cause an outflow of labour from agriculture. It is expected that future liberalisation will reduce total, family and external labour, and that the decrease in female employment would be much higher than for males.

GEOGRAPHICAL EXPERTS

The Member State reviews and case studies were elaborated by a team declared CAP experts covering a specific Member State each.

Table 14: Geographical Experts

Country	Expert
France	Helene Gorny
Germany	Stephanie Kirchmayr-Novak
Hungary	Istvan Ferencsik
Italy	Chiara Assirelli Pandolfi
Lithuania	Edvinas Bulevicius
Netherlands	Liesbeth de Schutter
Poland	Jerzy Banski
Portugal	Pedro Afonso Fernandes
Romania	Cosmin Salasan
Spain	María Coto, Blanca Martín, Paloma Nieto
Sweden	Alexandre Dubois
United Kingdom	John Powell, Janet Dwyer, Mauro Vigani

Source: Project team

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Regulation (EU) No 1303/2013 laying down common provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund (OJ L 347, 20.12.2013, p. 320).

Regulation (EU) No 1305/2013 on support for rural development by the EAFRD (European Agricultural Fund for Rural Development) (OJ L 347, 20.12.2013, p. 487).

Regulation (EU) No 1306/2013 on the financing, management and monitoring of the common agricultural policy (OJ L 347, 20.12.2013, p. 549).

Regulation (EU) No 1307/2013 establishing rules for direct payments to farmers under support schemes within the framework of the common agricultural policy (OJ L 347, 20.12.2013, p. 608).

Regulation (EU) No 1308/2013 establishing a common organisation of the markets in agricultural products (OJ L 347, 20.12.2013, p. 671).

Regulation (EU) No 1310/2013 laying down certain transitional provisions on support for rural development by the EAFRD and direct payments as regards as their distribution in the 2014 financial year (OJ L 347, 20.12.2013, p. 865).

Council Regulation (EU) No 1370/2013 determining measures on fixing certain aids and refunds related to the common organisation of the markets in agricultural products (OJ L 346, 20.12.2013, p. 12).

ANNEX

A.1 Annex I

Table A.1: List of publication and main characteristics screened during literature review
(n.a. – not applicable) 6 pages

The literature references are listed in the section "References" of the report at hand.

<i>Author</i>	<i>Year</i>	<i>Publication</i>	<i>MS / Region</i>	<i>Reform</i>	<i>Policy / Measure</i>	<i>Type of analysis</i>	<i>Ex-ante/Ex-post</i>	<i>Methodology</i>	<i>Type of effect</i>	<i>Net effect</i>	<i>Objective of the analysis</i>
Agrosynergie	2011	Report	EU-27	2003	Pillar I: Direct payments; Decoupling	Quantitative	Ex-post	Econometric model	Indirect	Positive	To examine the effects of the direct support schemes on the income of farmers.
Alexiadis et al	2013	Journal Article	EU-27	1992 and 2003	Pillar I and II	Quantitative	Ex-post	Econometric model	Indirect	Negative	To study whether, during the period 1995–2004, the NUTS-2 regions of EU-27 exhibited a tendency to converge in terms of agricultural labour productivity.
Balamou et al	2008	Conference Paper	The East Highlands, Scotland; Archanes-Heraklion, Crete, Greece	2003	Pillar I: Price support; Decoupling	Quantitative	Ex-ante	CGE model	Direct	Negative	Analyse the rural-urban effects of changes in the CAP in two EU regions.
Baum et al	2006	Conference Paper	EU-15	2003	Pillar I: Decoupling	Qualitative	Ex-ante	Farmers' interviews	Direct	Negative	To study the effect that the 2003 reform had on agricultural employment in new and old MS.
Becker et al	2010	Journal Article	285 NUTS-2 regions	n.a.	EU Structural Funds; Objective 1 regions;	Quantitative	Ex-post	Econometric model	Direct	Null	To assess the causal effect of Objective 1 status on regional economic performance.
Berlinschi et al	2011	Conference Paper	Portugal, Spain, Italy, Ireland	n.a.	Pillar I and II	Quantitative	Ex-post	Econometric model	Direct	Negative	To analyze the impact of farm subsidies on agricultural employment by focusing on the education channel.
Bourmaris and Manos	2012	Journal Article	Greece	Towards 2020	Pillar II: Alternative crops; Agrienvironment schemes;	Quantitative	Ex-ante	Scenario analysis	Direct	Positive and negative	To assess the impact of different policy scenario household behavior.
Breustedt and Glauben	2007	Journal Article	EU-15	1992 and 2003	Pillar I: Subsidies; Price support; Decoupling	Quantitative	Ex-post	Econometric model	Direct	Positive and negative	To study the regional net farm exits in 12 EU MS.
CAP-IRE	2011	Report	9 EU MS	2013	Pillar I and II	Mixed methods	Ex-ante	Mixed methods	Direct	Positive	To support future CAP design by understanding the long-term socio-economic mechanisms of change in rural areas.
Corsi and Salvioni	2012	Conference Paper	Italy	2003	Pillar I: Decoupling	Quantitative	Ex-post	Econometric model	Direct	Null	To study the effects of the 2003 CAP reform on off-farm labour participation of family farms.

Author	Year	Publication	MS / Region	Reform	Policy / Measure	Type of analysis	Ex-ante/Ex-post	Methodology	Type of effect	Net effect	Objective of the analysis
Douarin	2008	Conference Paper	France	2003	Pillar I: Decoupling	Quantitative	Ex-post	Econometric model	Direct	Null	To identify potential barriers to labour allocation adjustment.
Dupraz and Latruffe	2015	Journal Article	France	1992 and 2003 s	Pillar I: Direct payments; Decoupling. Pillar II: Agrienvironmental measures; Less Favoured Areas; Investment payments	Quantitative	Ex-post	Econometric model	Direct	Positive and negative	To study the determinants of hired and contract labour demands and of on-farm family labour supply.
ECORYS	2010	Report	EU-27	n.a.	Pillar II	Quantitative	Ex-post	Statistical data analysis	Direct	n.a.	To analyse employment and growth development in rural areas and the various sectors that are located there, with particular attention to women and young people, agriculture and the agri-food industry
Elek et al	2010	Journal Article	Southern Great Plain, Hungary	2013	Pillar II: Less Favoured Areas	Quantitative	Ex-ante	Econometric model	Direct	Negative	To investigate the possible effects of the CAP reform on-farm employment in one region of Hungary.
European Commission	2015	Brochure	EU-27	2013	Pillar I: Direct payments; Market instruments. Pillar II: RDPs; Financial instruments	Quantitative	Ex-ante	Statistical data analysis	Indirect	Positive	Report on job and growth in the food and agricultural sectors
European Commission	2006	Report	EU-25	2007	Pillar I: producer support. Pillar II: rural development.	Quantitative	Ex-post	Statistical data analysis	Direct	Positive	An assessment of employment prospects in rural areas.
European Court of Auditors	2013	Report	Czech Republic, France, Italy, Poland, Sweden, UK	2007	Pillar II	Quantitative	Ex-post	Statistical data analysis	Direct	Negative/None	To assess whether the measures were designed and implemented in a way that provided value for money.
European Parliament	2015	Report	EU-27	n.a.	Pillar I and II	Quantitative	Ex-post	Statistical data analysis, expert interviews	Direct	Positive	To inform about jobs and growth in the EU food and farming sectors.

<i>Author</i>	<i>Year</i>	<i>Publication</i>	<i>MS / Region</i>	<i>Reform</i>	<i>Policy / Measure</i>	<i>Type of analysis</i>	<i>Ex-ante/Ex-post</i>	<i>Methodology</i>	<i>Type of effect</i>	<i>Net effect</i>	<i>Objective of the analysis</i>
Fragoso et al	2011	Journal Article	Alentejo, Portugal	Agenda 2000, 2003 and 2009	Pillar I: Decoupling	Quantitative	Ex-post	Mathematical programming	Indirect	Negative	To assess the effects of CAP on farm income, land, labour and capital.
Genius	2013	Journal Article	Hungary and Greece	2003	Pillar II	Quantitative	Ex-post	Econometric model	Direct	Null	To study the effects of the CAP reform and rural development measures on farming restructuring and employment opportunities.
Gohin and Latruffe	2006	Journal Article	EU-15	2003	Pillar I: Decoupling	Quantitative	Ex-ante	Equilibrium model	Direct	Negative	To analyze the impacts of the 2003 reform on food industries.
Helming et al	2008	Conference Paper	EU-25	Towards 2020	Pillar I and II	Quantitative	Ex-ante	Equilibrium model	Direct	Negative	To analyse the sectorial employment developments at the regional level in the EU25 due to CAP reforms in 2020.
Hennessy and Rehman	2008	Journal Article	Ireland	2003	Pillar I: Decoupling	Quantitative	Ex-ante	Econometric model	Direct	Negative	To analyse the substitution and wealth effects of decoupled payments on off-farm labour participation and supply decisions.
Hennessy and Rehman	2006	Conference Paper	Ireland	2003	Pillar I: Decoupling	Quantitative	Ex-ante	Econometric model	Indirect	Negative	To analyse the impact of decoupling on farms' structural change.
IDEMA	2007	Report	EU-25	Agenda 2000 and 2003	Pillar I: Decoupling	Quantitative	Ex-ante	Agent based model	Direct	Positive	To assess the impact of integrating direct payments into a decoupled income support.
Kaditi	2013	Working Paper	Greece	2003	Pillar I: Decoupling, subsidies on crops; Pillar II	Quantitative	Ex-post	Econometric model	Direct	Negative	To analyse the on-farm labour structure and to assess the factors driving its evolution in Greece over the period 1990-2008.
Kristkova and Ratering	2012	Journal Article	Czech Republic	n.a.	Pillar I and II	Quantitative	Ex-ante	Equilibrium model	Direct	Negative	To analyse the impact of different scenarios on agriculture towards 2020.
Latruffe et al	2013	Journal Article	2 French regions	n.a.	Pillar I and II	Quantitative	Ex-ante	Econometric model	Direct	Positive	To estimate the impact of a complete abolition of the CAP.
Manos et al	2013	Journal Article	Greece, Spain, Bulgaria	n.a.	Pillar II	Quantitative	Ex-ante	MCDM model	Direct	Negative	To assess the CAP impacts on social sustainability in future scenarios (extended to 2020).

Author	Year	Publication	MS / Region	Reform	Policy / Measure	Type of analysis	Ex-ante/Ex-post	Methodology	Type of effect	Net effect	Objective of the analysis
Manos et al	2011	Journal Article	Northern Greece	2003	Pillar I: Decoupling	Quantitative	Ex-post	MCDM model	Direct	Negative	To assess the impact of the 2003 CAP reform on social sustainability in rural areas.
Manos et al	2009	Journal Article	2 Greek regions: Central Macedonia and Thessaly	2003	Pillar I: Decoupling	Quantitative	Ex-post	MCDM model	Indirect	Negative	To study the impact of tobacco decoupling on income, employment and environment.
Mattas et al	2008	Conference Paper	Italy, UK, Greece, Sweden, Germany	2003	Pillar I and II	Quantitative	Ex-post	Mathematical programming	Indirect	Negative	To analyse the relation between CAP and rural employment.
Neuwirth et al	2010	Book section	Austria	n.a.	Pillar I: Agricultural subsidies; Pillar II	Quantitative	Ex-post	Statistical data analysis	Direct	Positive	To estimate the employment effects of the CAP in Austria.
Nordin	2014	Journal Article	Sweden	2003	Pillar I: Decoupling	Quantitative	Ex-post	Econometric model	Direct	Positive and negative	To estimate whether the regional redistribution of the direct payments in 2005 affected agricultural employment in Sweden.
Olper et al	2014	Journal Article	150 EU regions	1992 and 2003	Pillar I: Coupled, decoupled payments; Pillar II: Investments aid, LFA, Agrienvironmental payment	Quantitative	Ex-post	Econometric model	Direct	Positive	To estimate the effect of CAP payments on inter-sectoral labour reallocation.
Peerlings et al	2014	Journal Article	9 MS	n.a.	Pillar I and II	Quantitative	Ex-ante	Econometric model	Indirect	Positive and negative	To investigate the CAP impact on farms' resilience.
Petrick and Zier	2012	Journal Article	East Germany	n.a.	Pillar I: Direct payments; Pillar II	Quantitative	Ex-post	Econometric model	Direct	Positive / Ineffective	To investigate the effects of direct payments and rural development measures on employment in agriculture.
Petrick and Zier	2011	Journal Article	East Germany	2003	Pillar I: Coupled, decoupled payments, livestock payments; Pillar II: Investments aid, LFA, Agrienvironmental payments.	Quantitative	Ex-post	Econometric model	Direct	Negative	To analyze the employment effects of the entire portfolio of CAP measures simultaneously.

<i>Author</i>	<i>Year</i>	<i>Publication</i>	<i>MS / Region</i>	<i>Reform</i>	<i>Policy / Measure</i>	<i>Type of analysis</i>	<i>Ex-ante/Ex-post</i>	<i>Methodology</i>	<i>Type of effect</i>	<i>Net effect</i>	<i>Objective of the analysis</i>
Psaltopoulos et al	2011	Journal Article	Greece and Czech Republic	2003	Pillar I; Pillar II: Axis 3.	Quantitative	Ex-post	Equilibrium model	Direct	Negative	To assess the impacts of CAP Pillar 1 and 2 local economies.
Psaltopoulos et al	2006	Journal Article	Greece	1992	Pillar I: Farm income support; Pillar II: Agricultural productivity and economic diversification aids, LFA payments.	Quantitative	Ex-post	SAM model	Indirect	Positive and negative	To evaluate the inter-regional impacts of CAP measures during the 1990s.
Pufahl and Weiss	2009	Journal Article	Germany	n.a.	Pillar II: Agri-environment programs	Quantitative	Ex-post	Econometric model	Direct	Null	To evaluate the effects of agri-environment programmes on farm size, land use, output, labour supply, productivity.
SAC	2006	Report	EU-25	2003	Pillar I and II	Qualitative	Ex-ante	Expert interviews, farmer perception	Direct	Positive	To analyse the agricultural employment development in 15 selected NUTS-3 regions.
Salvioni and Sculli	2011	Conference Paper	Italy	Agenda 2000	Pillar II: LFA	Quantitative	Ex-post	Econometric model	Direct	Null	To estimate the impact of RDP on structural characteristics and economic performance of Italian farms.
Sieber et al	2013	Journal Article	Germany, Spain, Hungary, Romania, Scotland	n.a.	Pillar I: Direct payments	Quantitative	Ex-ante	SIAT meta-model	Direct	Positive	To analyse the impacts of discontinuing direct financial support to farmers under the CAP.
Swinnen and Knops (eds)	2013	Book	EU-25	n.a.	Pillar I and II	Quantitative	Mixed	Mixed methods	n.a.	n.a.	Final results of the FP7 project "Comparative Analysis of Factor Markets for Agriculture across the Member States"
Tocco et al	2013	Working Paper	France, Hungary, Italy, Poland	2003	Pillar I and II	Quantitative	Ex-post	Econometric model	Direct	Positive and negative	To assess the role of farm subsidies on labour allocation and on exit from agriculture.
Topp and Mitchell	2003	Journal Article	Dumfries and Galloway, Scotland	Agenda 2000	Pillar I and II	Quantitative	Ex-ante	Mathematical programming	Indirect	Negative	To assess the impact of changes in prices and policies on the farm structure, the environment, income and employment.

Author	Year	Publication	MS / Region	Reform	Policy / Measure	Type of analysis	Ex-ante/Ex-post	Methodology	Type of effect	Net effect	Objective of the analysis
Tranter et al	2007	Journal Article	Germany, Portugal, UK	2003	Pillar I: Single Farm Payment, decoupling;	Qualitative	Ex-ante	Farmer perception	Indirect	Negative	To estimate the impact of decoupling on farmers activities.
Van Herck	2009	Report	18 EU MS	n.a.	Pillar I	Quantitative	Ex-post	Econometric model	Direct	Negative	To examine the driving forces of labour adjustment out of EU agriculture in the period 2005-2006.
Vereijken and Hermans	2010	Journal Article	EU-25	n.a.	Pillar I and II	Quantitative	Ex-ante	Statistical data analysis; Expert interviews	Direct	Negative	To estimate the economic, employment and environmental effects of liberalisation.
Viaggi et al	2011	Journal Article	France, Germany, Greece, Hungary, Italy, Poland, Spain, the Netherlands	2003	Pillar I: Decoupling	Quantitative	Ex-ante	Econometric model	Indirect	Negative	To identify the reactions of farm households to decoupling.
Vincze and Kerekes	2009	Conference Paper	Romania	2007	Pillar I: direct payments; Pillar II	Mixed methods	Ex-post	Statistical data analysis, expert interviews	Direct	Positive and negative	To analyse the impact of the introduction of the CAP on rural employment.
Wier et al	2002	Journal Article	Denmark	Agenda 2000	Pillar I and II	Quantitative	Ex-ante	DIAS model system	Direct	Negative	To assess the effects on the environment and the national economy of Agenda 2000.

A.2 Annex II

Table A.2: Change in quantification of indicators between first and last version of NRDP Romania

Axes and Measures	Type of Indicator	NRDP 02.2008	NRDP 09.2014
Settlement of young farmers – Measure code 112 (self-employment)	Result Indicator – number of supported young farmers	13,631	13,631
Support for semi-subsistence farms – Measure code 141 (self-employment)	Result Indicator – farms entering market	60,938	50,836
Support for creation and development of micro-enterprises – Measure code 312	Result Indicator – brut employment created	28,924	29,494
Support for creation and development of micro-enterprises – Measure code 312	Additional Indicator – supplementary employment in secondary and tertiary sectors	1.90%	1,90%
Encouragement of touristic activities – Measure code 313	Result Indicator – brut employment created	38,327	13,783
Encouragement of touristic activities – Measure code 313	Additional Indicator – supplementary employment in secondary and tertiary sectors	2.52%	1.00%
Axis 3 Quality of life in rural areas and diversification of rural economy	Impact Indicator – brut employment created	58,117	38,843
Of which			
312	Impact Indicator	23,139	23,139
313	Impact Indicator	30,662	11,027
322 (Improvement of life quality in rural areas)	Impact Indicator	4,317	4,677
	Additional Indicator – supplementary employment in secondary and tertiary sectors	4.42%	2.90%
Axis 4 LEADER RI	Result Indicator – brut employment created	10,012	19,306
Axis 4 LEADER II	Impact Indicator – equivalent full time employment	8,010	15,445
Total Common Impact Indicators at NRDP level	Impact Indicator	70,000 (66,128 accounted as total)	54,288
Corroborated with Axis I self-employment		144,569 (140,697 accounted as total)	118,755

Source: NRDP Romania version 02.2008, NRDP Romania version 09.2014 and own calculations

A.3 Annex III

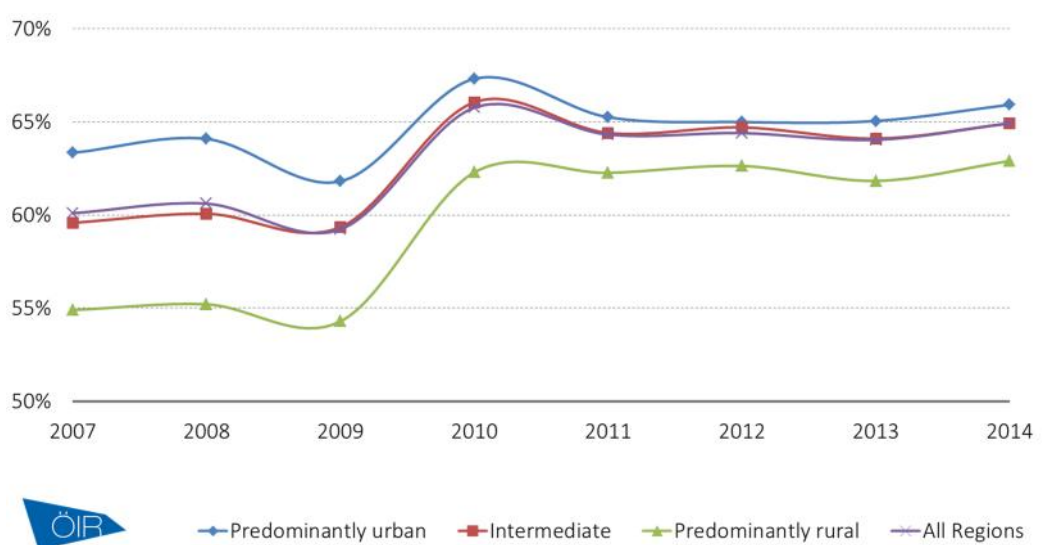
A.3.1 Additional analysis of employment and growth in rural areas

A.3.1.1 Labour Market

Employment rate

For the analysis on employment the employment rate is used as a basic indicator. The employment rate is measured as the total number of employed people aged 15-64 years divided by the total working age population 15-64. To compare between predominantly urban, intermediate and predominantly rural regions, regional statistics by regional typology from Eurostat were analysed, which are available at NUTSO level. Averages for all three regional types were calculated on the basis of the available data at NUTSO level.

Figure A.1: Employment rate (%) in EU28, average by regional typology (NUTSO), 2007-2014



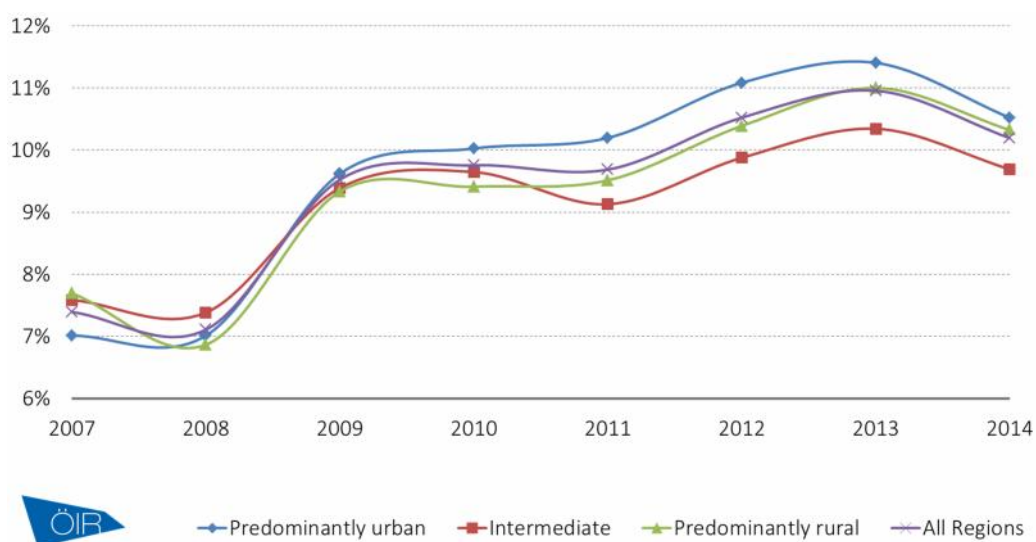
Source: ÖIR based on Eurostat

Calculations show that urban regions have a higher employment rate than other regions, but since 2010, the difference between urban regions and intermediate, and especially rural regions, has decreased. This data suggests that the Rural Jobs Gap, as already described in the literature review, has diminished in recent years. However, this is mostly due to the fact, that rural regions saw stable or slightly increasing employment rates, while urban and intermediate regions showed higher decreases in employment since 2010. Between 2008 and 2009, the employment rate decreased by 1.4% in all regions. Urban regions showed the highest decreases with 2.3%. In 2010 employment in EU28 rose again by 6.5% to reach 66%, with highest increases in rural regions (+8%) and recovery in urban regions lagging behind with 5.5%. From 2011 to 2014, employment rates stabilized, but employment gains were minimal in all regions (0.6% in the period).

Unemployment rate 15+

The unemployment rate represents unemployed persons aged 15+ as a percentage of the economically active population aged 15+. To compare between predominantly urban, intermediate and predominantly rural regions, regional statistics by regional typology from Eurostat were analysed, which are available at NUTSO level. Averages for all three regional types were calculated on the basis of the available data at NUTSO level.

Figure A.2: Unemployment rate 15+ years in EU28, average by regional typology (NUTSO), 2007-2014



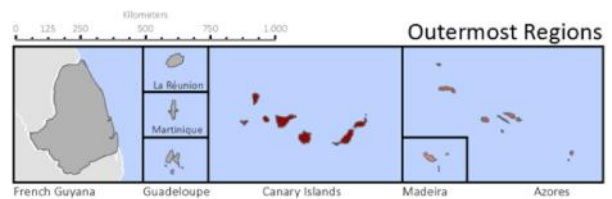
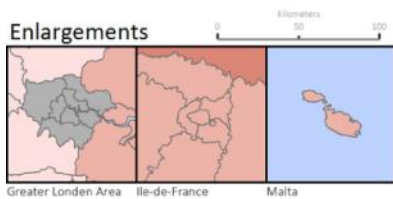
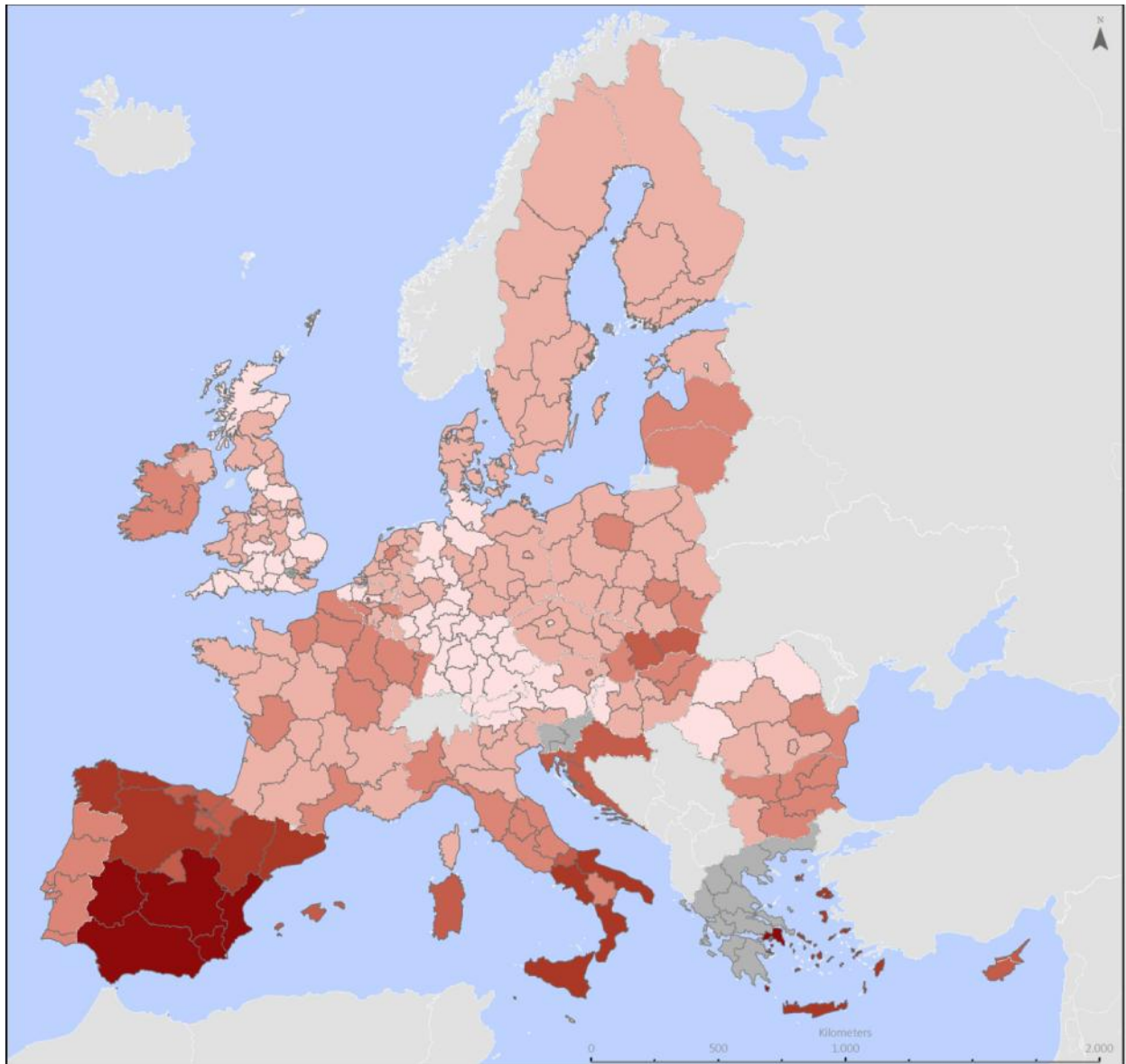
Source: ÖIR based on Eurostat

Contrary to the steady growth of GDP per capita, unemployment rates have fluctuated more over time (see Figure A.2). Between 2007 and 2008 the unemployment rate 15+ remained fairly stable in all regions, but increased dramatically from 2008 to 2013.

Since 2008, unemployment rates are generally higher in urban than in rural and intermediate regions. It appears that the labour markets in urban regions were hit harder by the crisis than in rural regions. Since 2013, unemployment rates have again decreased in all regions, with intermediate regions performing best and the difference between urban and rural regions again narrowing slightly.

The territorial patterns of unemployment rates indicate an additional national overprint of regional variations (see Map A.1). Like for GDP the territorial patterns of unemployment seem to be connected with regional as well as national characteristics. In other words, unemployment is not only an "urban" or "rural" phenomenon but a phenomenon additionally influenced by national economic structures and favourable conditions for economic activity. Unemployment rates in 2014 are highest in regions of Southern Spain, Southern Italy, Greece and Cyprus and lowest in regions of Southern and Western Germany, Austria, the UK and Denmark.

Map A.1: Unemployment rate in the EU28 in 2014 on NUTS2 level (%)



Unemployment rate for the population 15 years and older, 2014



Data availability: NUTS 2
Source: Eurostat

March, 2016

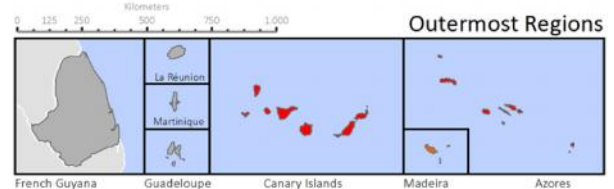
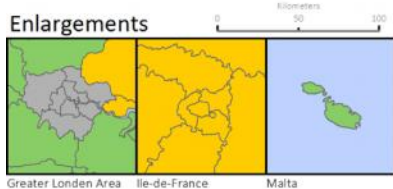
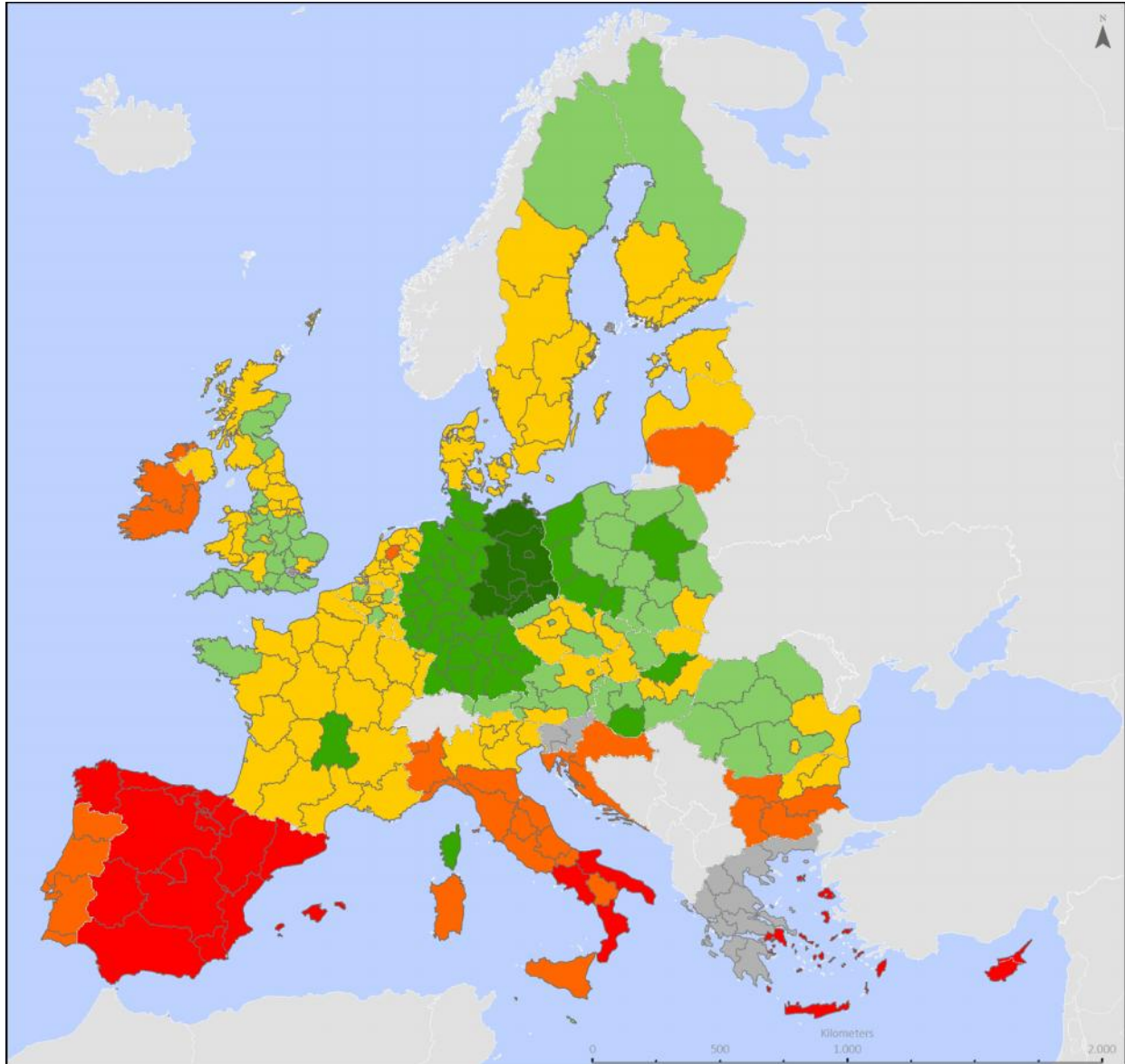


Source: OIR based on Eurostat

The change of unemployment rates in the period 2007-2014 even more shows a nationally influenced picture of unemployment growth or decline. National economic stimulus programmes show positive effects in regions of Eastern Germany, Poland and Romania.

Highly negative developments of unemployment in the period are visible in Spain, Italy, Greece and Cyprus. While the average increase of the unemployment rate in EU28 was 3% in the period of 2007-2014, it amounted 10-20% in those latter regions.

Map A.2: % change of Unemployment rate in the EU28 2007-2014 on NUTS2 level



Development of the unemployment rate from 2007 - 2014 for the population 15 years and older



Data availability: NUTS 2
Source: Eurostat

March, 2016

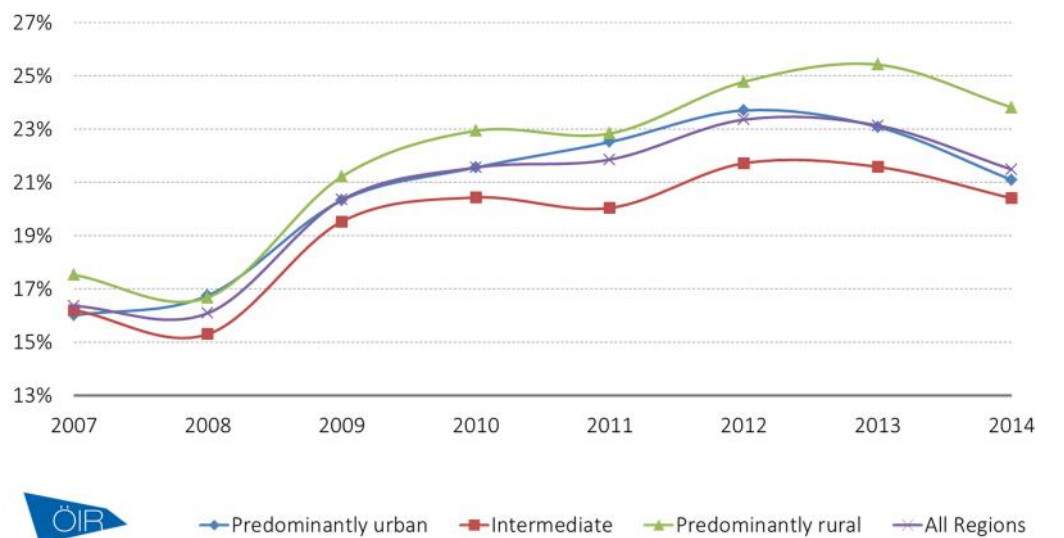


Source: OIR based on Eurostat

Youth unemployment

To understand the differing unemployment rates for people of different ages, the analysis compares the unemployment rates for people aged 15-24 years for the three regional types with the previously mentioned unemployment rate 15+, as shown by Figure A.3. Again, regional statistics by regional typology from Eurostat were analysed, which are available at NUTSO level. Averages for all three regional types were calculated on the basis of the available data at NUTSO level.

Figure A.3: Unemployment rate 15-24 years in EU28, average by regional typology (NUTSO), 2007-2014



Source: ÖIR based on Eurostat

Regarding its evolution, the youth unemployment rate resembles the overall unemployment rate, but with a much higher degree of severity. Starting at 16.4% in 2007 it increased dramatically to 21.5% in 2014. Youth unemployment is highest in rural regions reaching its peak with 25.4% in 2013 and lowest in intermediate regions with around 20% in 2014. This is diametric to the unemployment rate of people aged 15 years and older, where urban regions display the highest rates.

Regional Business Demography

Regional Business demography statistics by Eurostat present data on the active population of enterprises, their birth, survival (followed up to five years after birth) and death. Business demography data can be used to analyse the dynamics and innovation of different markets, for example entrepreneurship in terms of the propensity to start a new business or the contribution of newly-born enterprises to the creation of jobs.

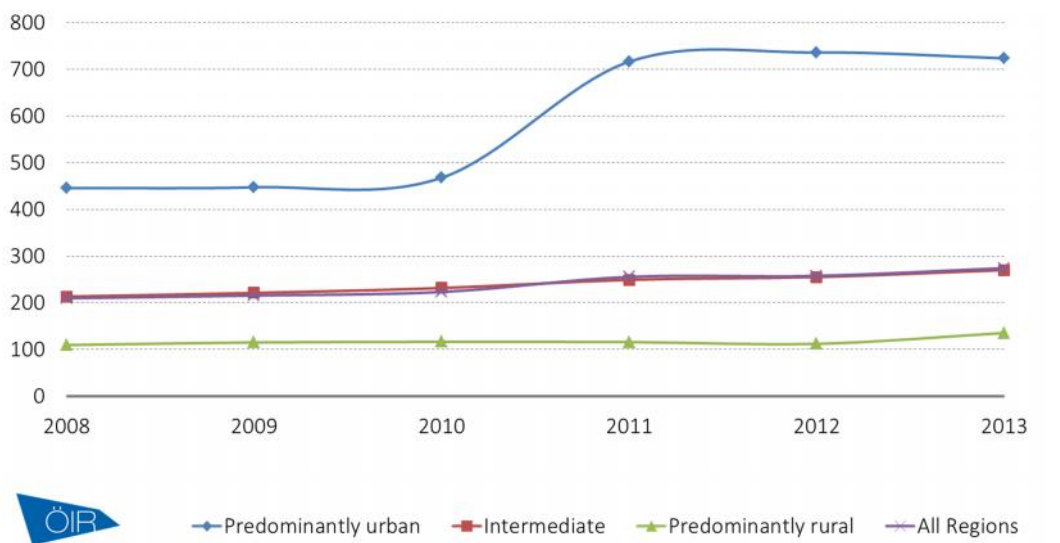
The economic activities covered with business demography indicators are NACE Rev 2 sections B to N, excluding group 64.2 (management activities of holding companies), and voluntarily sections P to S. Thus, activities relating to industry, construction, distributive trades and services are covered, but agriculture, public administration, non-market activities of households, and extra-territorial agencies are not.

This is mainly due to the current coverage of statistical business registers. At present, indicators include market oriented legal forms (e.g. limited liability companies, sole proprietors, partnerships, and public corporations) but exclude units in the central and local government sectors.

Regional Business demography statistics have many geographical data gaps (some Member States not reporting data) and also missing data in the time series 2007-2014.

Figure A.4 shows the number of births of enterprises in accommodation and food service activities during the period 2008-2013 per type of region, which can give an indication of job diversification in rural areas. Based on available data on NUTS3 level for the period 2008-13, the average amount of births per year for this section is 590 in urban regions, 240 in intermediate and 120 in rural regions. Only urban regions display a significant increase in births of enterprises during the evaluation period, intermediate and rural regions have quite constant yearly values. EU15 show higher average amounts of births with 300 than EU10 with 180 and Romania and Bulgaria with 120.

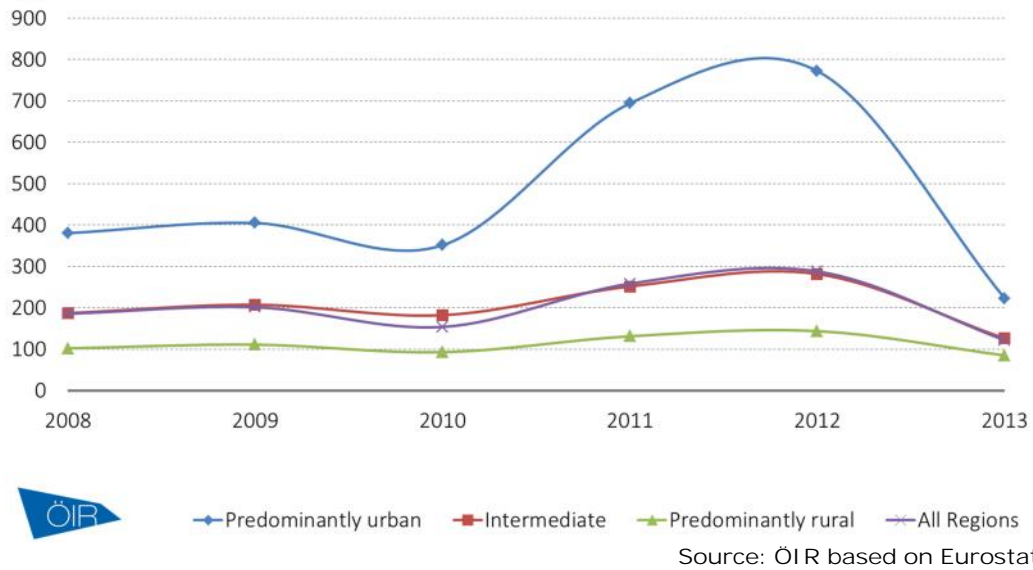
Figure A.4: Number of births of enterprises in accommodation and food service activities (I) in EU28 per year, average by regional typology (NUTS3), 2008-2013



Source: ÖIR based on Eurostat

Figure A.5 shows the number of deaths of enterprises in accommodation and food service activities during the period 2008-2013 per type of region, which is almost a mirror image of the number of births in the same section, but with different regional variations. Based on available data on NUTS3 level for the period 2008-13, the average amount of deaths per year for this section is 350 in urban regions, 160 in intermediate and 80 in rural regions. Urban regions display a dramatic increase in deaths of enterprises from 2010 to 2012, with again decreasing deaths in 2013. Intermediate and rural regions again show quite constant yearly values, indicating on the one hand lower levels of births of enterprises and on the other hand lower levels of volatility in the market as well. EU15 show higher average amounts of deaths with 180 than EU10 with 140 and Romania and Bulgaria with 70.

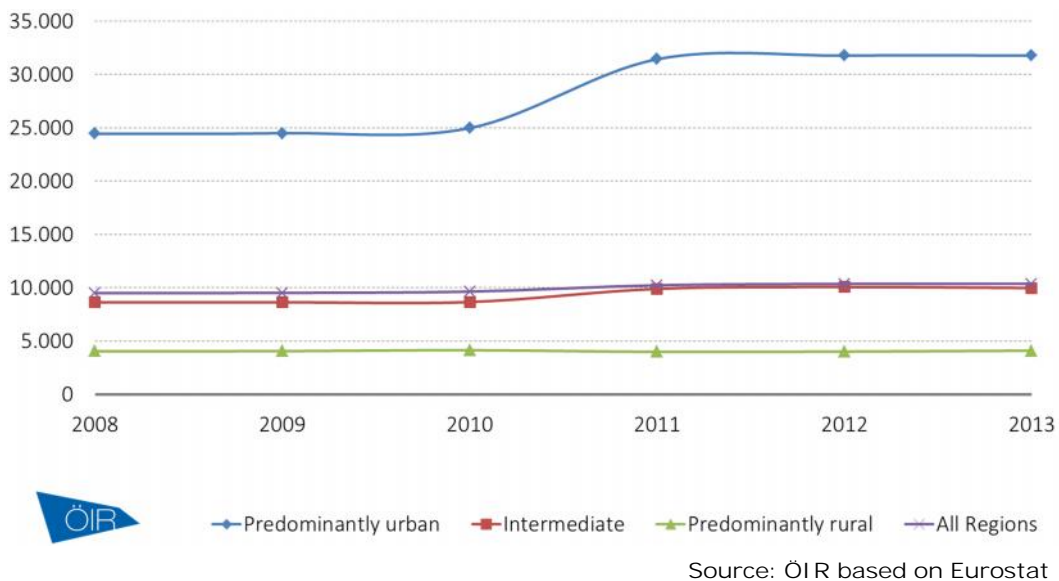
Figure A.5: Number of deaths of enterprises in accommodation and food service activities (I) in EU28 per year, average by regional typology (NUTS3), 2008-2013



This comparison clearly shows that births and deaths of enterprises in accommodation and food service activities are closely connected and that the market in this section is very volatile.

Figure A.6 shows the Number of persons employed in the population of active enterprises in accommodation and food service activities. Here it becomes evident, that only in urban regions an increase in this section took place in the period 2008-2013. Employment in this section was stable at a lower level in rural and intermediate regions.

Figure A.6: Number of persons employed in the population of active enterprises in accommodation and food service activities (I) in EU28 per year, average by regional typology (NUTS3), 2008-13



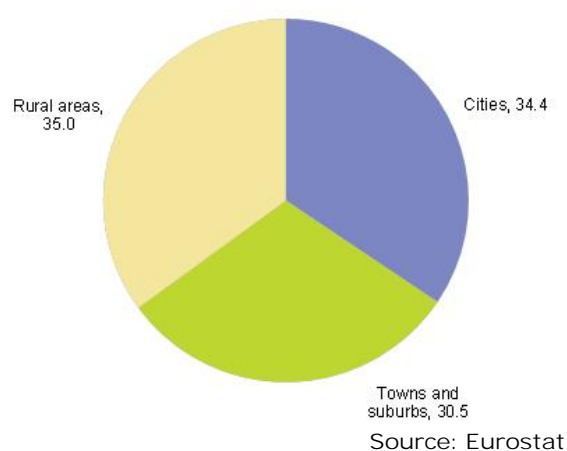
Rural tourism – number of overnight stays and number of bed places

The number of overnight stays in tourist accommodation, which reflects both the length of stay and the number of visitors, is considered a key indicator for tourism statistics. In 2013,

there were 2.64 billion nights spent in EU-28 tourist accommodation. This figure marked a 2.4% increase when compared with 2012, although it was unevenly distributed between residents (where there was a small contraction in the number of nights spent) and non-residents (where there was growth of 5.3%).

Figure A.7 presents an alternative analysis, providing information for 2013 on overnight stays in tourist accommodation; it is based on the degree of urbanisation (defined in terms of rural areas, towns and suburbs, and cities). The figure shows that the total number of nights spent (by domestic tourists and inbound tourists) in EU-28 tourist accommodation was relatively evenly spread according to the degree of urbanisation, as slightly more than one third of all overnight stays were in rural areas (35.0%) and in cities (34.4%), while towns and suburbs accounted for a somewhat lower share (30.5%).²⁵

Figure A.7: Nights spent in tourist accommodation establishments, by degree of urbanisation, EU-28, 2013 (%)

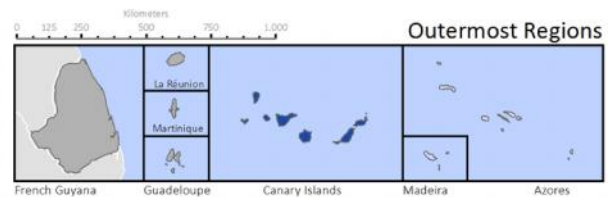
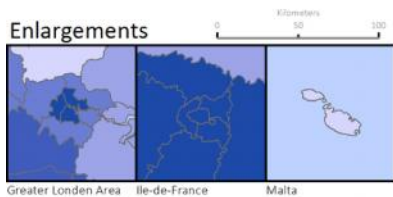
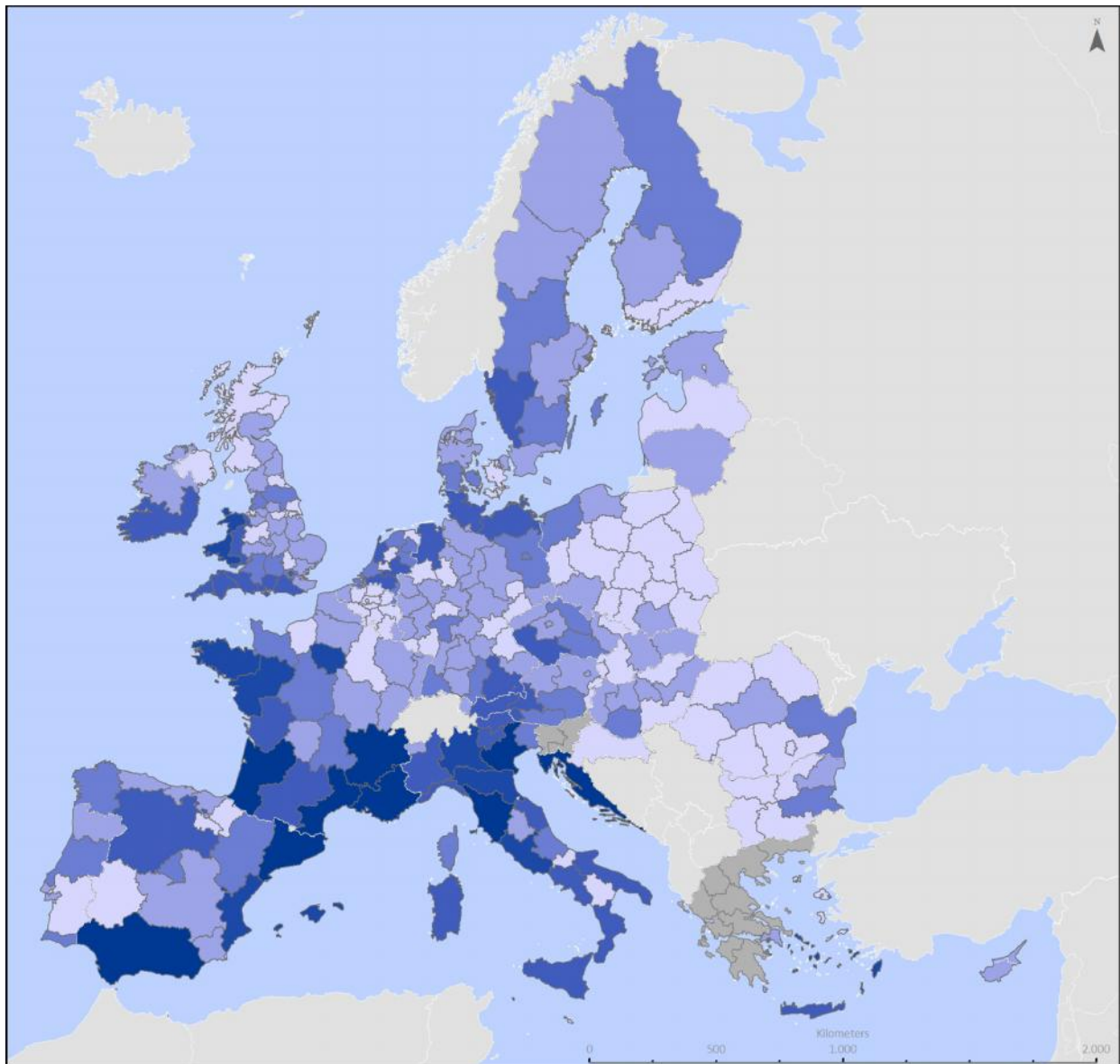


Map A.3 shows the count of the total number of bed places for the year 2014 at NUTS2 level, which may be of interest in relation to the capacity of different regions to respond to tourism demand. Regions with high absolute bed capacities are situated in the coastal areas of Croatia, Italy, France, Spain and the United Kingdom, as well as Ireland.

Map A.4 shows the % change in number of bed-places in the period 2007-2014 at NUTS2 level. Increases can be observed in NUTS2 regions of Eastern New Member States, coastal areas of Italy, almost all regions of Spain and Portugal, southern UK and Finland. Significant decreases in tourism capacity were in regions of France, Belgium, and northern UK.

²⁵ See: http://ec.europa.eu/eurostat/statistics-explained/index.php/Tourism_statistics_at_regional_level

Map A.3: Number of bed-places in Hotels; holiday and other short-stay accommodation; camping grounds, recreational vehicle parks and trailer parks in the EU28, 2014, at NUTS2 level



Number of bed-places



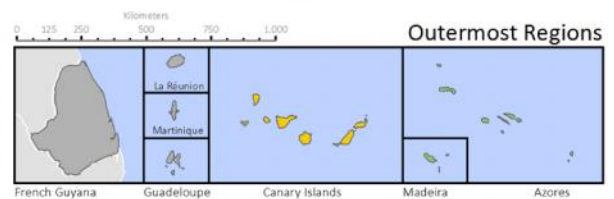
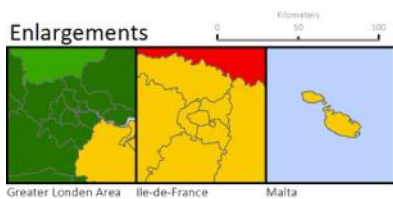
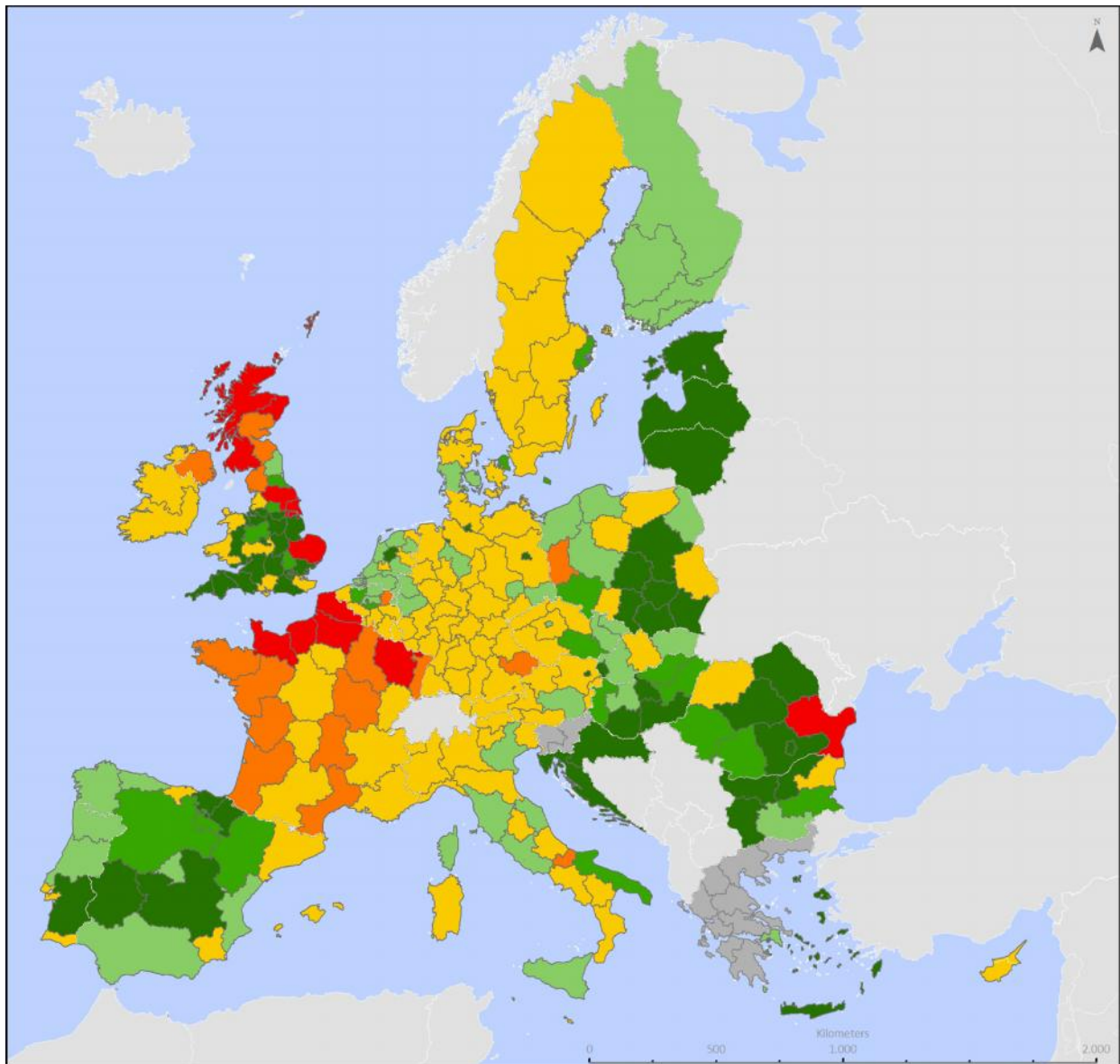
Data availability: NUTS 2 | 2014
Source: Eurostat

March, 2016



Source: OIR based on Eurostat

Map A.4: Change in number of bed-places in Hotels; holiday and other short-stay accommodation; camping grounds, recreational vehicle parks and trailer parks in the EU28, 2007-2014, at NUTS2 level



Development of bed-places



Data availability: NUTS 2 | 2014
Source: Eurostat

March, 2016



Source: OIR based on Eurostat

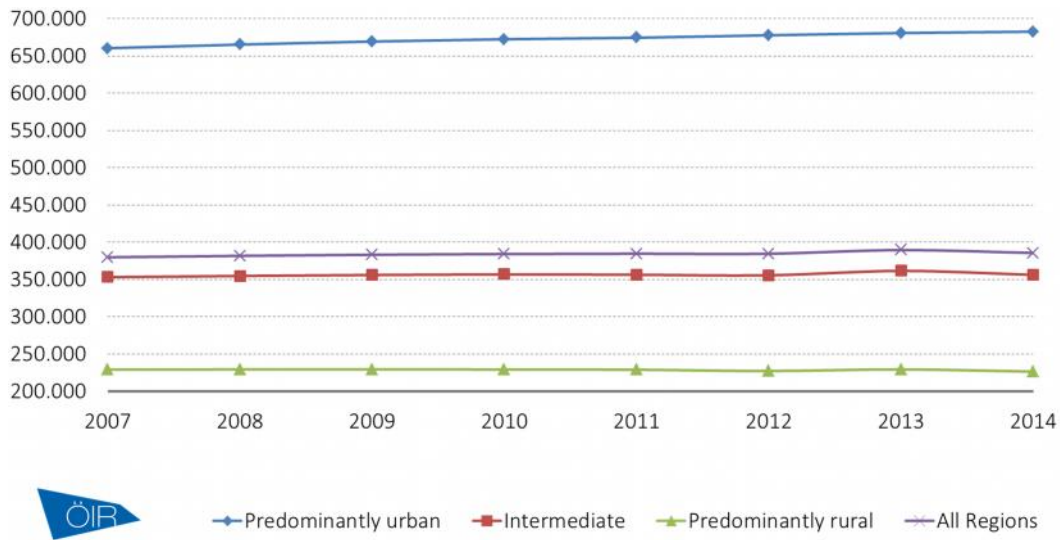
A.3.1.2 Demography

Population growth

Population within EU28 increased by 2.4% during the period 2007-2014, to reach 507 Million in 2014. In the "old" Member States (EU15) population growth in the period of 2007-2014 amounted 3.7%, in EU10 it was -0.4% and -6.7% in Romania and Bulgaria.

In rural regions population decreased by -1.2% from 2007 to 2014, while in intermediate regions there was a slight increase by 0.9% and in urban regions population grew by 3.4% on average.

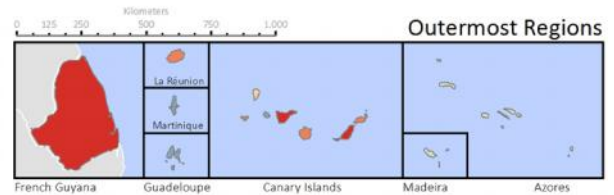
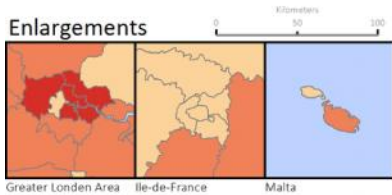
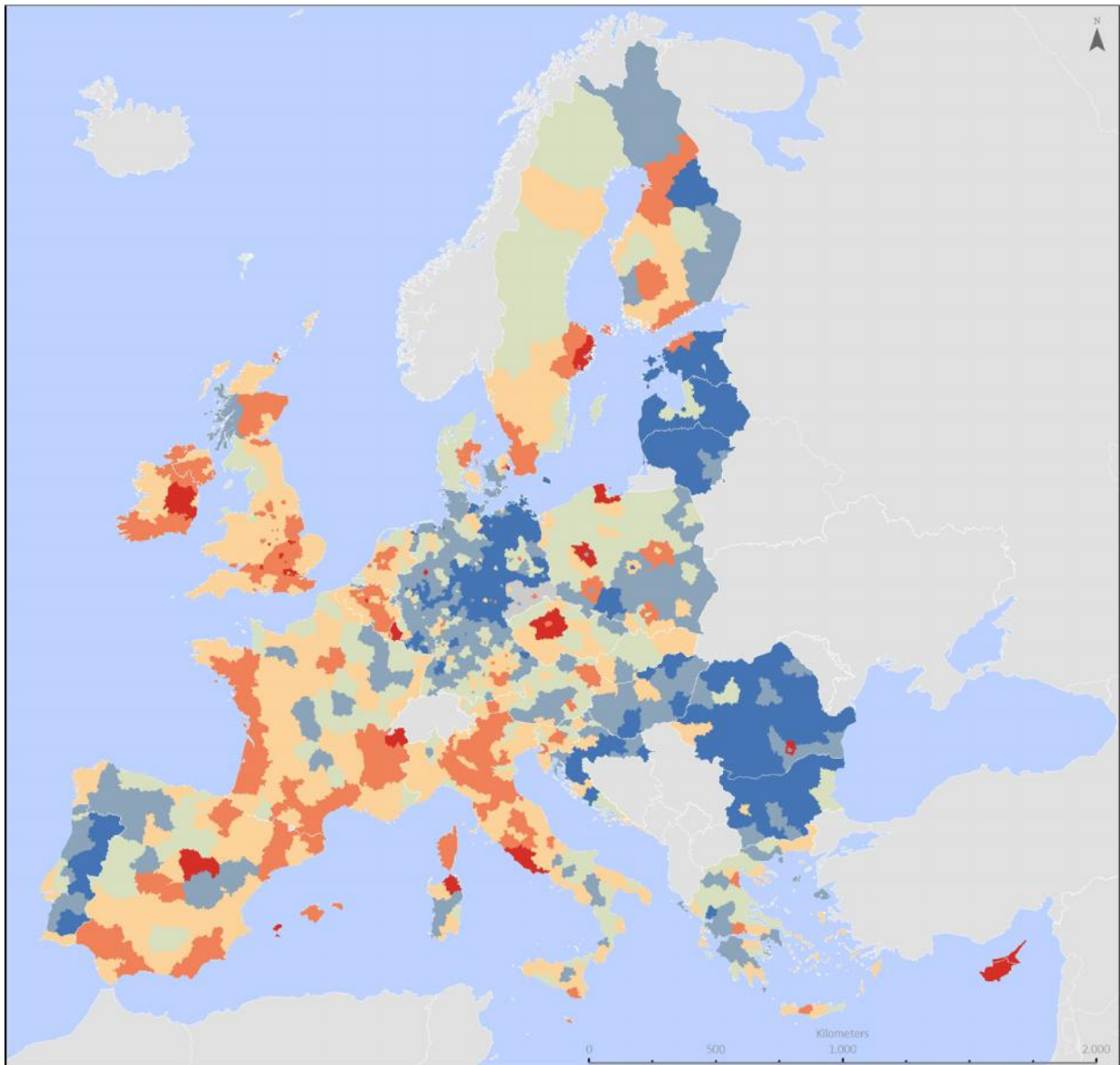
Figure A.8: Population on 1 January in EU28, average by regional typology (NUTS3), 2007-2014



Source: ÖIR based on Eurostat

Map A.5 shows the territorial patterns of population growth or shrinkage in NUTS3 regions in the period 2007-2014. A clear East-West divide gets visible, with regions in EU10 countries showing highest decreases in population. However, also regions in Germany (East and West), Portugal and Finland show significant losses in population. Regions with significant population gains are on the one hand capital city regions and their surroundings all over Europe and on the other hand especially regions in Northern Italy, the UK and Ireland, Coastal regions in Spain and France.

Map A.5: Development of population on 1 January – total in the EU28, 2007-2014, at NUTS3 level



Development of population 2007 - 2014



Data availability: NUTS 3 | 2007 - 2014
Source: Eurostat

March, 2016



Source: OIR based on Eurostat

Net migration

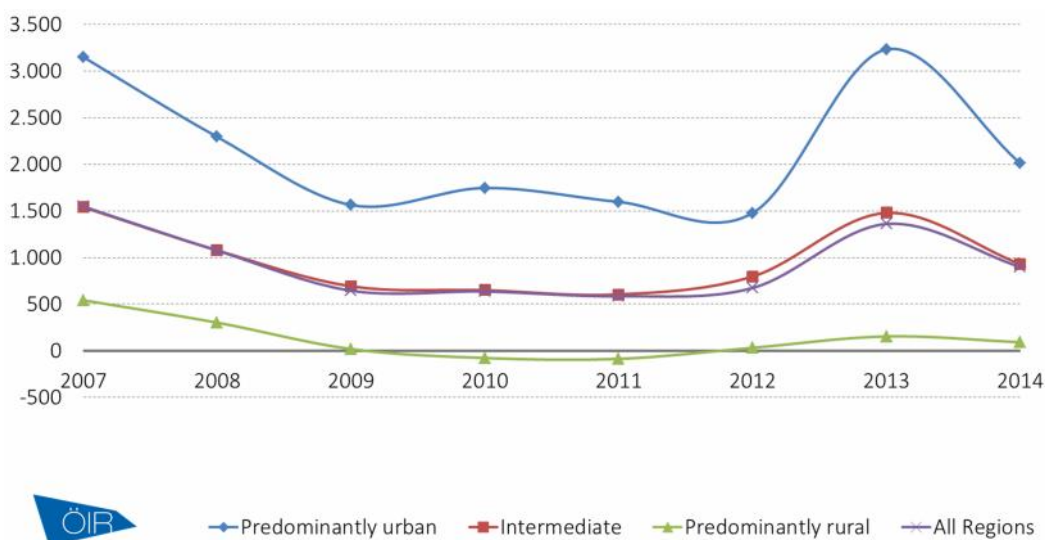
There are two components of population change: natural population change and net migration plus statistical adjustment. In 2014, natural population increase (the positive difference between live births and deaths) contributed 14.5% (0.2 million persons) to population growth in the EU-28. Some 85.5% of the overall change in population therefore came from net migration plus statistical adjustment, which continued to be the main determinant of population growth in the EU, accounting for an increase of nearly 1.0 million persons in 2014.

The contribution of net migration plus statistical adjustment to total population growth in the EU-28 has exceeded the share of natural increase since 1992, peaking in 2003 (95% of the total population growth), decreasing to 58% in 2009 and returning to its peak of 95% again in 2013.

The relatively low contribution of natural change to total population growth is the result of two factors: net migration in the EU-28 increased considerably from the mid-1980s onwards; secondly, the number of live births fell, while the number of deaths increased.

Figure A.9 shows the average annual net migration in EU28 by regional typology from 2007-2014. The average net migration is highest in urban regions with 2,100, followed by intermediate regions with 970 and shows significantly lower values in rural regions with only 120. In some years, the average net migration in rural regions was even negative, but viewed from a European perspective, net migration is still slightly positive for rural regions. There are however very high variations between regions: The highest negative net migration in 2014 was -21,000 in Paris, the highest positive net migration was 43,000 in Berlin.

Figure A.9: Average annual net migration in EU28, average by regional typology (NUTS3), 2007-2014

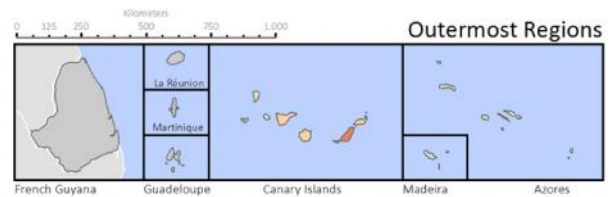
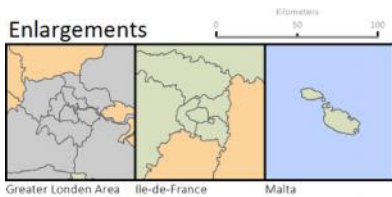
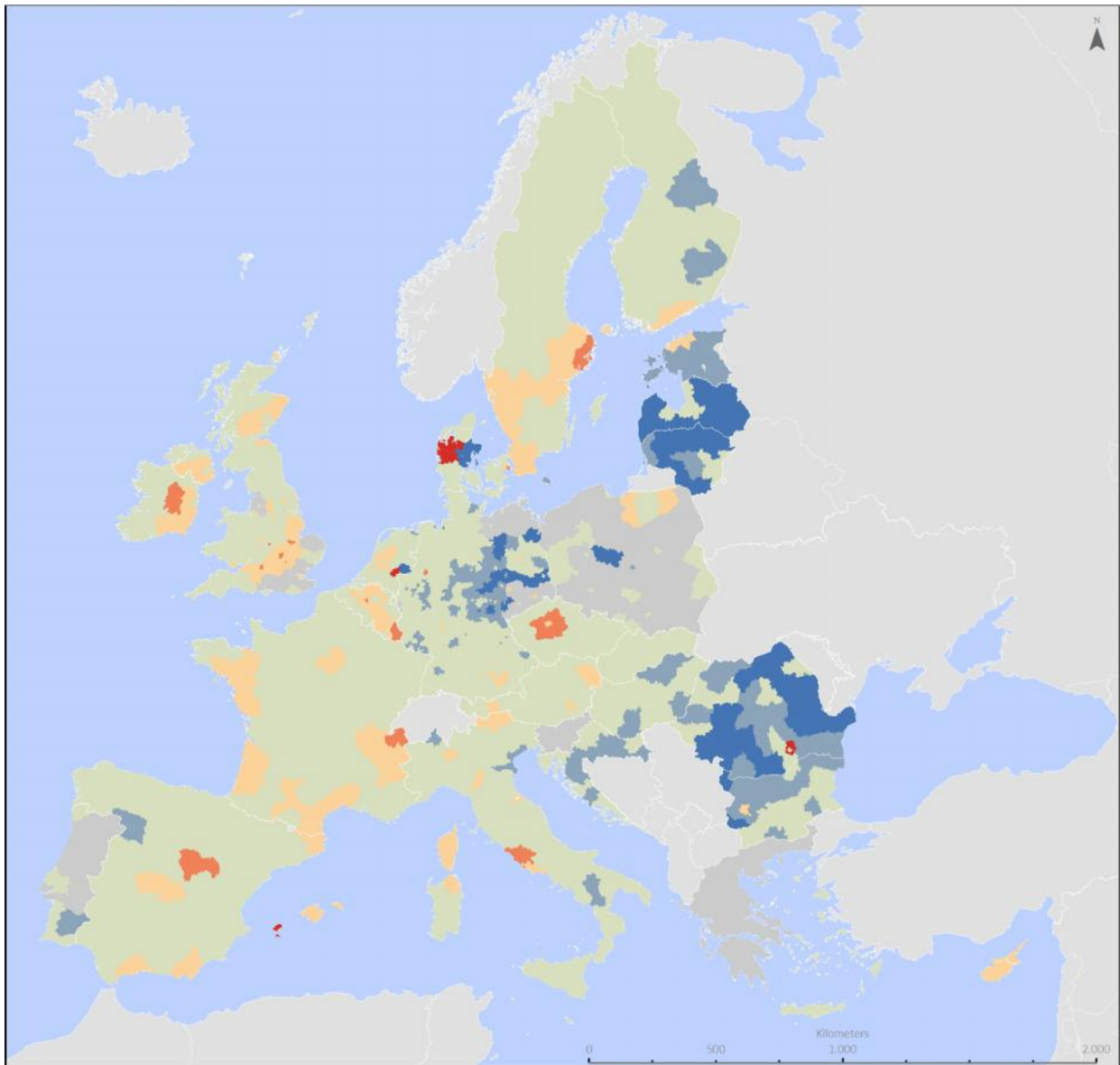


Source: ÖIR based on Eurostat

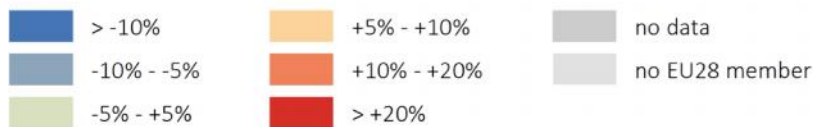
Population density

Population density measured as average population per square kilometre is highest in urban regions with 1,377 persons/km², followed by intermediate regions with 278 persons/km² and rural regions with 89 persons/km².

Map A.6: Development of population density in the EU28, 2007-2014, at NUTS3 level



Development of population density 2007 - 2014



Data availability: NUTS 3 | 2007 - 2014
Source: Eurostat

March, 2016



Source: OIR based on Eurostat

Population density decreased in urban regions in the period 2007-2014 by -2.8%, while it was stable in intermediate regions and increased by 2% in rural regions. In regions of EU15 population density increased by 1.6%, the increase was stronger in EU10 (4%) and Romania and Bulgaria saw a decrease in population density by -4% in the period 2007-2014.

Map A.6 shows the development of population density at NUTS3 level, confirming the above mentioned decreases in Romania and Bulgaria, but also giving insight into inner-State regional differences, e.g. Eastern Germany, continental Croatia and Inland Portugal showing major decreases in population density as opposed to other regions of those Member States.

Age structure

Looking at population development by broad age groups 0-15, 15-64 and 65+, the effects of demographic change get visible. In the period 2007-2014, the population less than 15 years old decreased by -0.2% in EU28. Population from 15 to 64 years also decreased by -0.5%, while the population aged 65+ increased by 11.3%.

By Member State groups geographical variations are apparent in the period 2007-2014. The development of young population (less than 15 years) is slightly positive in EU15 (+0.9%) and negative in EU10 (-3.8%) and even more in Romania and Bulgaria (-5.3%). The development of people in working age (15-64 years) is again slightly positive in EU15 (+0.5%), negative in EU10 (-2%) and even more in Romania and Bulgaria (-9.3%). The development of the elderly population (65+ years) is positive in all Member State groups, amounting 11.9% in EU15 and 11.5% in EU10, and a delayed increase in Romania and Bulgaria by only 3.9% in the same period.

The share of the three broad age groups on total population is almost the same in EU10, EU15 and RO, BG, amounting 15% for the age group 0-15, 65-69% for the age group 15-64 and 17-19% for the age group 65+. Therefore, the evolution of population by age groups over time follows the overall evolution of population in the Member States.

Figure A.10 to Figure A.12 show the shares of the three broad age groups on total population by regional typology in the period 2007-2014. The share of young population is highest in urban regions. Also, it is slightly increasing in urban regions, while there are decreases in intermediate and rural regions. The share of population aged 15-64 is also highest in urban regions. It is however decreasing in all types of regions at almost the same rate, with higher temporal fluctuations in intermediate and rural regions. The share of elderly population on the other hand is highest in rural regions and shows increases in all types of regions at similar rates.

Figure A.10: Share of population aged less than 15 years on total population in EU28 by regional typology (NUTS3), 2007-2014

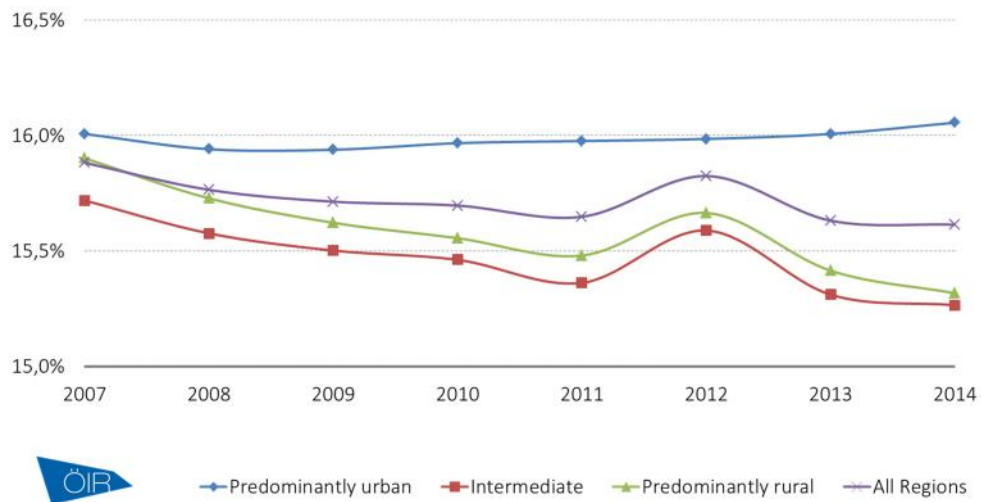


Figure A.11: Share of population from 15 to 64 years on total population in EU28 by regional typology (NUTS3), 2007-2014

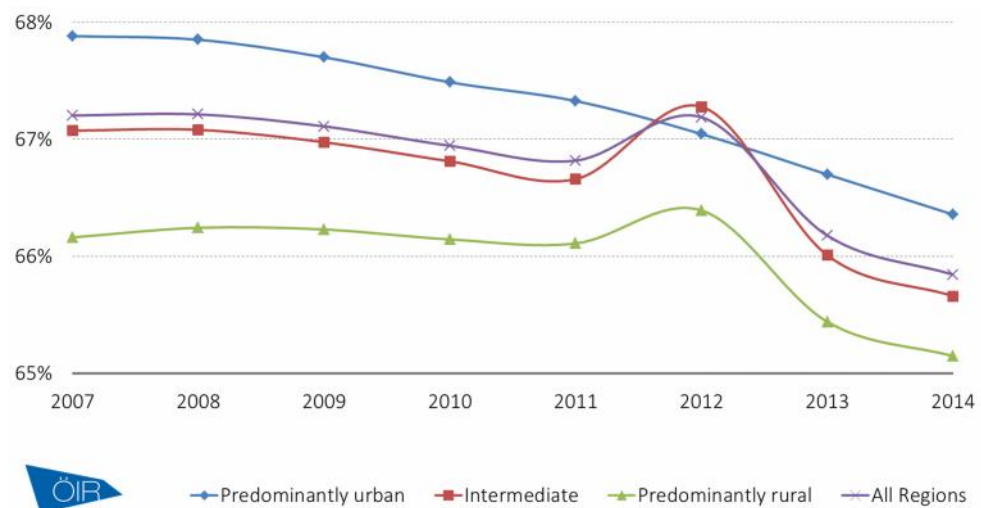
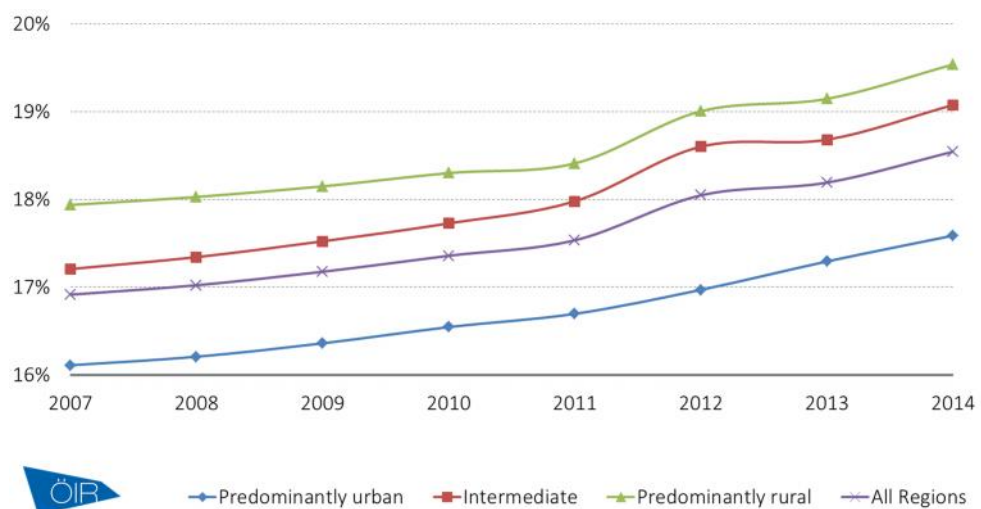


Figure A.12: Share of population 65 years or over on total population in EU28 by regional typology (NUTS3), 2007-2014



Source (A.10-A.12): ÖIR based on Eurostat

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