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Vigani, Mauro ORCID logoORCID: https://orcid.org/0000-0003-2442-7976, Powell, John R ORCID logoORCID: https://orcid.org/0000-0001-8464-4521 and Dwyer, Janet C ORCID logoORCID: https://orcid.org/0000-0002-2332-9832 (2019) CAP and Rural Jobs: Analysis of Studies. In: Rural Policies and Employment: TransAtlantic Experiences. World Scientific Euope, London, pp. 111-129. ISBN 9781786347084

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Chapter 7: CAP and Rural Jobs: Analysis of Studies

Mauro Vigani, John Powell and Janet Dwyer

Countryside and Community Research Institute, University of Gloucestershire mvigani@glos.ac.uk

This chapter summarizes understanding of the impact of the European Union's Common Agricultural Policy (CAP) upon rural and agricultural jobs by reviewing the published literature on this topic over the past 30 years. It considers policy modifications over the period in which these studies were conducted, and how these changes are likely to have affected the overall pattern and balance of CAP impacts upon rural jobs, within and beyond the farm sector. This chapter starts by summarizing the intervention logic of CAP instruments in order to anticipate the kinds of impact that such policies might generate, and to consider how they would vary in time and space. After describing the methodological approach for the literature review, some patterns that emerged in the literature are discussed in order to illustrate the link between predicted theoretical outcomes and actual employment outcomes.

7.1 The Intervention Logic of the CAP and its Implications for Employment Impacts

The likely impact of the Common Agricultural Policy (CAP) upon rural employment can be considered from a number of different perspectives. First, economic theory can be explored for suggestions concerning the implications of policy intervention in the agricultural sector at a strategic level. Second, at a more detailed level, the employment impacts of the mix and overall balance of different types of policy lever applied under the CAP can be examined. Third, the recorded or demonstrated changes in employment that appear to be connected to the CAP and its changes over time, within specific geographical and socio-economic contexts around Europe, can be explored. It is only when the findings of all three of these kinds of analysis are combined that it is possible to draw reasoned, detailed

and relatively robust conclusions concerning the impact of the policy upon agricultural and rural employment.

The economic theory of competitive markets suggests that, when policymakers decide to intervene in markets to provide additional resources, or to improve the economic conditions within a particular sector of the economy, they are likely to create a situation in which that sector attracts and retains more resources than it might have done without the policy intervention. It might therefore be anticipated that a policy such as the CAP, with objectives to stabilize prices and/or to support farm incomes, inter alia, would encourage the retention of capital, labor and land in farming which might otherwise have left the sector as it develops over time. However, the relative strength of this effect will be influenced by market conditions, and by policies targeting other sectors of the economy. If other sectors are more attractive economically than agriculture, even when it has additional government support, then labor and other resources will flow out of agriculture, subject to conditions such as elasticities of substitution and labor mobility. Thus, although the impact of the CAP relative to the counterfactual might be to retain jobs in farming, the overall trend may still be a movement of employment from agriculture to other areas.

The CAP consists of a wide variety of policy instruments; some act as general support to the sector in a relatively untargeted way, while others have specific goals and targets for which they are carefully designed and implemented. The relatively untargeted measures in the current CAP, for example, include decoupled support under Pillar 1, which pays a standard payment per hectare to keep land in good agricultural condition and to provide an element of income support and stability to farming businesses. When it comes to targeted support there are at least 3 main types:

- those which encourage investment in the agricultural sector to improve its productivity and profitability;
- those which support disadvantaged territories where without aid agricultural land might be abandoned; and,
- those which focus upon investment in the wider rural economy beyond agriculture (e.g. support for tourism or craft activities, renewable energy generation, and business diversification).

The anticipated impact upon rural employment would be different for each kind of targeted support. Aid designed to stimulate improved productivity would be likely to lead to declining use of labor in existing farm businesses. On the other hand, aid which targets support to areas facing constraints would tend to encourage the retention of labor within farming, and this might also be done in such a way as to stimulate other rural economic activities, particularly in areas that are relatively spatially remote from other types of economic influence. Thus, in theory it might be possible to understand the impact of the CAP upon rural employment by considering the balance of funding between these different kinds of targeted and untargeted policy instrument, whereas in practice it is very difficult. The wide range of expected impacts must be tempered by a consideration of local context, and the dynamic interplay of agricultural and rural economic drivers with trends occurring in the wider economy. Furthermore, impact will depend upon policy performance and evaluation over many years has revealed plentiful examples where policies fail to deliver, for a variety of reasons. There are thus limitations to what can be predicted from theory and *a priori* expectations concerning the impact of the CAP on rural employment across the varied territory of the European Union.

7.2 Methods and Results

Methodological approach

Over the past 30 years, a variety of studies have researched the impact of the CAP on agricultural and rural employment. In order to compile an exhaustive collection of these studies, a systematic literature review was conducted, covering literature pertaining to all Member States of the EU and their regions for the period from the 1992 CAP reform up to March 2018.

The literature search utilized several different sources: the library databases of the University of Gloucestershire (DISCOVERY), the University of Bath (PRIMO search) and University of East Anglia (UEA Library Search). In addition, the resources of international institutions, such as the European Commission repository, the Joint Research Centre

repository and the OECD library, were incorporated, along with on-line resources identified using Google Scholar, Agra-Europe and AgEcon Search. A snowball approach was applied by screening the reference lists in each identified source and working backwards from these to find further relevant articles.

Different keywords and search terms were applied. Keywords were related to jobs (employment, labor, job, job creation, migration, work) and to the CAP (agriculture, rural, development, Common Agricultural Policy, CAP, pillar, decoupling, reform, European Union, European Commission, European Parliament, EU). Different combinations of these keywords were applied to the databases with appropriate Boolean operators in two different time-periods, between 28 January and 3 February 2016 [Schuh *et al.*, 2016], and then updated between 12 and 14 March 2018.

The initial searches identified more than 1,500 records, which were then narrowed down to relevant studies using a screening strategy based on a set of exclusion and inclusion criteria. First, the literature was screened to eliminate duplicates and newspaper articles to avoid potential strong ideological bias. Second, the following inclusion and exclusion criteria were applied to titles and abstracts:

- Inclusion criteria: countries and regions in EU Member States; all measures and instruments of Pillar 1 and 2 of the CAP and its reforms since 1992; the impact of the CAP on agricultural and rural employment, structural change (entry/exit), migration of workers across sectors, farmers' time allocation decisions between on- and offfarm work; *ex ante* and *ex post* analyses; quantitative and qualitative analyses.
- Exclusion criteria: countries that are not EU Member States; 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 and/or before 1999.

For all those studies for which both abstract and title met the criteria, the full text was obtained and the inclusion/ exclusion criteria were reapplied to the full text. At the end of this systematic process, a total of 58 studies were retained for the literature review (academic articles, conference proceedings/working papers, government documents and reports, books).

Results of the literature review

The results of the systematic literature review were organized with reference to the main periods of reform of the CAP and also by differences between Pillar 1 and 2. Initial analysis of the studies revealed a wide focus of attention in terms of time, policy area, methodology applied, and whether the study was *ex ante* (i.e. forecasting impacts) or *ex post* (evaluating what had happened). Table 7.1 provides an overview of the breakdown of studies across policy reform periods, focus of analysis and net effect reports (i.e. positive or negative).

Overall, some authors highlighted that the progressive liberalization promoted by the CAP reforms over time had led to a reduction of the number of agricultural and rural jobs [e.g. Baum et al., 2006; Helming et al., 2008; Elek et al., 2010; Vereijken and Hermans, 2010; Manos et al., 2013]. However, because of the heterogeneity across Member States and regions in terms of farming systems and market structures, it is difficult to make simple generalizations concerning the effect of the CAP on agricultural and rural employment. The policy supports for farm income, investment and training appear to have helped maintain agricultural jobs and create temporary employment opportunities in some rural areas [e.g. EC, 2006; Breustedt and Glauben, 2007; Křístková and Ratinger, 2012; Kaditi, 2013; Olper et al., 2014], but not all studies supported this. Therefore, it is probably correct to say that the effect of CAP subsidies on employment can be either positive or negative, depending on the type of policy instrument and the way that the CAP is implemented at national or regional level [e.g. Petrick and Zier, 2012; European Court of Auditors, 2013; Dupraz and Latruffe, 2015]. At a strategic level, however, the CAP may have promoted a more intensive and mechanized agriculture, which would suggest a net negative impact upon farm employment [e.g. Alexiadis et al., 2013].

Table 7.1: Results of systematic literature review

No. of studies	Reform	Method	Ex ante/Ex post	Net effect
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5	1992	Quantitative	Ex post	Positive
5	Agenda 2000	Quantitative	Ex post and ex ante	Positive and negative
27	2003	Quantitative	Ex post and ex ante	Positive and negative
5	"Health Check"	Mixed	Ex post	Positive and negative
3	2013	Mixed	<i>Ex ante</i>	Positive and negative
3	Towards 2020	Quantitative	Ex ante	Positive and negative
16	Not specified	Mixed	Ex post and ex ante	Positive and negative

Notes: the total sum of studies in column one exceeds 58, which is the number of articles/papers/books collected with the systematic literature review, because some of the authors have analyzed more reforms in a single publication. "Not specified" means that the studies are assessing the CAP employment impact without focusing on specific reforms.

Expectations and outcomes: a comparison

Table 7.2 compares the theoretically informed expected outcomes of the CAP focus in relation to jobs (in both the agricultural sector and rural areas more widely), with predicted and actual outcomes from the 1960s to the present. It summarizes the main policy changes over the period enabling an overview of how key changes in direction have altered the relationship between CAP support and employment.

Table 7.2 suggests that in the early period (1960s and 1970s) the price support focus of the CAP would maintain labor in the agricultural sector, although restructuring and capital investment would be likely to decrease labor requirements in some Member States. During that period the European Community was small (only six countries, increasing to nine after the first enlargement in 1973), and agricultural policy was driven by notions of the need for a high level of self-sufficiency following the Second World War rationing, which had continued into the 1950s in some countries.

Starting in the 1990s, there was a move towards reducing the link between production and subsidy, with the realization that this would be likely to involve a reduction in agricultural labor. The key change was the 1992 CAP reform, which involved a move away from production support

(i.e. a limited level of decoupling), wider use of targeted aid to deliver nonproduction outcomes, and the beginnings of broader rural development support under Structural Fund programs. The literature survey identified five studies that analyzed the impact of the reformed CAP from 1992, using data for the years 1990-1999. Specific studies found that rural development funds in some areas (such as Greece) reduced the rate of job migration from rural to urban areas and retained people in agriculture [Psaltopoulos et al., 2006], or reduced the impact of structural change in agriculture [Breustedt and Glauben, 2007]. In addition, one study [Dupraz and Latruffe, 2015] noted that CAP crop subsidies had a negative impact upon on-farm labor in the 1990s, while agri-environmental measures had a positive impact. The limited focus of the five studies supports the anticipated policy outcomes, with various elements of the CAP starting to pull in different directions. Broader rural development funding tended to slow the rate of rural to urban migration, and while agri-environmental agreements enhanced the demand for on-farm labor. The far larger proportion of funding going to subsidize production worked in the opposite direction as capital investment and restructuring increased.

The decade after 2000 saw the formation of the two-Pillar CAP and EU enlargement through the addition of 10 new member states in 2004. The period was dominated by the 2003 CAP reform, which decoupled farm payments from production. With an increase in rural development (Pillar 2) funding, additional jobs could be expected, especially in the new Member States, where Pillar 2 spending for the first 4 years after accession was commonly more significant than Pillar 1 aid.

Time	Policy focus	Expected employment impacts	Outcomes of studies
1960s-70s	 Guaranteed prices to producers of some of the main European agricultural commodities including: dairy products beef and sheep meat wheat, barley, other arable crops selected permanent crops, fruits and vegetables 	Promote overall retention of resources in the farm sector and restructuring, which would substitute labor by capital, particularly in Member States where land tenure and inheritance laws facilitated structural change. Less Favored Area (LFA) support likely to promote labor retention in areas where support was at a significant scale and targeted to active farmers. In some Member States LFA payments made to absentee land-owners and/or offered at low levels, thus employment impacts would be negligible.	No studies identified
1980s-90s	Policy shift away from production support towards partial decoupling. More use of aid to target specific non- production outcomes. Aids for environmental management and set-aside more important. Broader rural development support under the EC Structural Fund programs.	Partially decoupled direct payments (largest element in CAP spending) might maintain production, but not necessarily support labor use. Continuing structural investment aids would stimulate the replacement of labor by capital in many situations. Growth of decoupled and environmental aid might weaken links between public funding and the retention of labor, particularly where agri-environment measures promoted extensification, and aid required only minimal retention of land in 'good agricultural and environmental condition'.	Rural development support (Greece): decreased rural-urban job migration; maintained agricultural jobs. Support reduced impacts of structural change in agriculture more generally. Crop subsidies decreased on-farm labor. Agri-environmental support increased on-farm labor.
2000-10	'Agenda 2000' package, created the two- Pillar CAP	Anticipated creation of new jobs in rural areas, both on-and off-farm Relatively more significant in the New Member States, where Pillar 2 spending	Slightly negative or no impact on agricultural and rural employment.

Table 7.2. Comparison of expected employment impacts arising from CAP changes with study outcomes

	EU enlargement in 2004 to embrace 10 New Member States Overall balance of spending in the policy shifted more towards rural development	for the first 4 years after accession was commonly more significant than Pillar 1 aid.	Decoupling removed incentives to maintain production; labor could be diverted to other activities; reduced rate of farmers leaving the sector. Varied response by sector and Member State. Pillar 1 cross-compliance conditions could decrease on-farm employment in regions of the EU-15 where extensification of production takes place, with wider impacts on supply chains. Decrease in recorded farm
2010	More mixed and more spatially disparate	Anticipated to induce the shedding of labor from farms in cases where structural	employment. Wide variation in balance between
onwards	focus. New Member States increasingly received more decoupled Pillar 1 aid. Balance of Pillar 1 and Pillar 2 spent across the Member States varies considerably	 change develops relatively easily, but patterns of impact upon employment will vary across Member State. Pillar 2 variability will induce local variation in employment effects as there is a wide range of choices for Managing Authorities regarding balance and targeting of resources (e.g. agri-environmental management, farm modernization, support for economic diversification). 	 Pillar 1 and Pillar 2 funding across Member States, affects employment outcomes. New Member States received more decoupled Pillar 1 aid. <i>Ex ante</i> study suggests an agricultural labor subsidy could magningly ingrases labor.

Table 7.1 illustrates the significance of this major change in policy in that almost half of the studies from the literature survey focus on the 2003 reform period and a further five studies examined the 'Agenda 2000' reform. This was the most studied period of policy change in the research literature as it introduced many changes to Pillar 1 (especially through the decoupling of direct payments, compulsory cross-compliance and optional modulation^a), and significantly increased support for wider rural development.

Among the 27 studies (including both ex ante and ex post analyses) focusing on the 2003 CAP reform, there are some differences of opinion among the authors. The majority concluded that overall the 2003 reform had either a negative impact on agricultural and rural employment [Gohin and Latruffe, 2006; Elek et al. 2011; Genius, 2013], or had no significant impact [Corsi and Salvioni, 2012; Douarin, 2008] in rural employment terms. The main channel of impact was through the effects of decoupling of subsidies from agricultural production. Whereas previously subsidized production had acted as a support for rural employment, once the link was broken there was no incentive to maintain production, and labor could be freed to undertake other forms of activities (diversification). Several authors suggested that coupled payments, by being linked to production, provided an incentive to increase the time spent working on the farm, especially on family farms. In contrast, decoupled payments, by guaranteeing sufficient farm income without requiring more work, provided farmers with more time either for leisure or for off-farm work. The outcomes suggest a decrease in recorded farm employment [Agrosynergie 2011; Viaggi et al., 2011; Hennessy and Rehman, 2008; Balamou et al., 2008; Tranter et al., 2007].

However, the picture is a complex one, varying by both agricultural sector and Member State, and complicated by the addition of 10 new EU Member States in 2004 with very different socio-economic conditions. In the livestock sector (beef and dairy), for example, some authors undertaking *ex ante* studies [Hennessy and Rehman, 2006] suggested that off-farm work and structural change would be accelerated after

^a Modulation is the reduction of direct payment awards and the transfer of the money thus 'saved' from Pillar 1. Subsequent CAP reforms have involved 'degressivity' (reductions in higher awards), 'capping' (upper limits to such awards), and direct budget transfers between Pillar 1 and Pillar 2.

decoupling, while in the tobacco sector Manos *et al.* [2009] indicated that decoupling would lead to an increase in unemployment. An alternative explanation [Breustedt and Glauben, 2007] recognized that the overall effect of decoupling is ambiguous, as it enables farmers to cut back or cease commercial production while continuing to receive CAP support, resulting in a reduction in farmers leaving the agricultural sector. However, more recent studies that could rely on long farm-level panel data for all Member States found that, on average, at EU level both coupled and decoupled payments contributed to reduce the rate of out-migration of labor from the agricultural sector [Olper *et al.*, 2014]. This finding is consistent with predictions from theory [Barkley, 1990] concerning the impact of support reducing the incentives to exit the sector and providing returns to farmer, although as in the form of welfare transferred from other groups of the society.

There are suggestions from some authors that the cross-compliance conditions introduced into Pillar 1 by the 2003 CAP reform might also have a negative employment impact [Baum *et al.*, 2006], particularly in regions of the EU-15 where an expected extensification of production (i.e. lower inputs and increased set-aside) would be likely to decrease employment. Reductions in agricultural sector employment arising from extensification would also be likely to have both upstream and downstream impacts on supply chains as demand for goods and services declined.

In terms of rural development (Pillar 2), the studies also indicate a more complex response than that anticipated. The expected outcome of policy change was an increase in employment both on-farm and in the wider rural areas. The assumption underlying the reform was that decoupling would free farmers to invest in production and also to diversify, while Pillar 2 support would provide a wider array of jobs in the local economy, making rural areas more attractive and retaining both services and a working age population. In practice, the outcomes vary across Member States depending on eligibility for Pillar 1 support, the selection of Pillar 2 measures and the effectiveness with which they were implemented.

Only three studies were identified in the literature survey for the period 2010 leading up to 2020, and they suggest both positive and negative outcomes for employment. The current period exhibits a more complex

and spatially differentiated situation making the impact of policies difficult to predict. The New Member States have increasingly received more decoupled Pillar 1 aid, and the balance of Pillar 1 and 2 spending across the has EU varied considerably. One *ex ante* evaluation using partial and general equilibrium models [Helming and Tabeau, 2017] has indicated that by reallocating Pillar 1 budgets to a coupled agricultural labor subsidy, the average employment in agriculture in the EU could increase by 0.6 - 1.6% in the current programming period up to 2020.

7.3 Quantification of Policy Impacts on Employment

A limited number of studies attempted to quantify the impacts of the 2003 reform (see Table 7.3) in terms of its impacts on employment numbers. A study focusing on Austria [Neuwirth et al., 2010] estimated that, if the money used for CAP subsidies were used in other economic sectors, an estimated net total of 33,000 agricultural jobs would have been lost. Overall, however, the literature shows that decoupling could have provoked an overall loss of agricultural jobs. One Scottish study [Topp and Mitchell, 2003] forecasts that the 2003 CAP Reform would reduce employment between 4,900 and 7,800 in a single Scottish region, while a wider perspective undertaken some years later [Gohin and Latruffe, 2006] estimated that decoupling may have lost 85,000 to 134,000 full-time onfarm workers across the entire EU-15 (i.e. an average of 5.000 - 9.000jobs per Member State). An ex ante evaluation using CGE models compared impacts in Greece and Scotland [Balamou et al., 2008], noting that a 30% decrease in coupled support resulted in a 2.65% decrease in employment in Greek rural areas and a 0.21% decrease in Scottish rural areas. In contrast, an *ex post* evaluation with econometric analysis [Olper et al., 2014] estimated that CAP payments over the period 1990-2009 prevented the exit of 27,000 workers from the farming sector, equivalent to approximately 1,420 per year. These findings are supported by an additional ex post evaluation [Neuwirth et al., 2010] which determined that direct payments had maintained 40,000 - 50,000 agricultural jobs.

Table 7.	.5. Estimated	reflects of different mea	sules and reforms of the CF	1
Source	Year	Policy proposal	Method	Impact
Topp and Mitchell	2003	Agenda 2000	<i>Ex ante</i> evaluation with mathematical programming	5,000-8,000 agricultural jobs lost
European Commission	2006	The LEADER II initiative	<i>Ex post</i> evaluation with statistical data analysis	100,000 agricultural jobs created
SAC	2006	Scottish RDP 2000- 2006: forestry scheme	<i>Ex ante</i> evaluation with expert interviews	2,780 jobs created in nurseries, contracting and in-house staff
Bournaris and Manos	2012	Pillar 2: Alternative crops and Agri- environment schemes	<i>Ex ante</i> evaluation with a scenario analysis	 i) -2.7% of total labor with only Single Farm Payment (SFP) ii) +2% of total labor with adoption of alternative crops under SFP
European Commission	2015	Pillar 2: 2014-2020 RDP programs	<i>Ex post</i> evaluation with statistical data analysis	 i) 60,000 non-agricultural start-ups across all Member States ii) LEADER approach will cover 51% of EU rural population iii) 3.9 million training places to improve rural labor skills
Gohin and Latruffe	2006	Decoupling	<i>Ex ante</i> evaluation with equilibrium models	i) 85,000 - 134,000 farm jobs lost
				ii) 3,000 jobs created in food industry
Balamou <i>et</i> <i>al</i> .	2008	Decoupling: 30% decrease in coupled support	<i>Ex ante</i> evaluation with CGE models	i) 2.65% decrease in employment in Greek rural areasii) 0.21% decrease in employment in Scottish rural areas
Neuwirth <i>et</i> al.	2010	Direct payments	<i>Ex post</i> evaluation with statistical data analysis	40,000 - 50,000 agricultural jobs maintained
CAP-IRE	2011	Complete removal of the CAP	<i>Ex ante</i> evaluation with multiple methods	30% of farmers exiting the agricultural sector
Latruffe <i>et al</i> .	2013	Complete removal of the CAP	<i>Ex ante</i> evaluation with econometric analysis	21% of farmers exiting the agricultural sector
Olper et al.	2014	Total CAP payments	<i>Ex post</i> evaluation with econometric analysis	27,000 agricultural jobs maintained
Helming and Tabeau	2017	Pillar 1 budgets reallocated to a farm labor subsidy	<i>Ex ante</i> evaluation with equilibrium models	Average employment in EU agriculture could increase by 0.6- 1.6%

Table 7.3: Estimated effects of different measures and reforms of the CAP

In terms of Pillar 2 impacts, a small-scale study focused on the forestry sector in Scotland estimated that the 2000-2006 Scottish Rural Development Program (RDP) generated about 2,780 full time equivalent jobs [SAC, 2006], while the European Commission [2006] stated that rural diversification measures of the LEADER II initiative helped to both secure agricultural jobs and create temporary jobs through environmental and village renewal activities. The number of jobs maintained and/or created were estimated to be in the region of 100,000, half of which were available to women. An *ex ante* evaluation of Pillar 2 based on a scenario analysis [Bournaris and Manos, 2012] exploring the effects of alternative crops and agri-environment schemes suggested that under current conditions the Single Farm Payment (SFP) would decrease labor by 2.7%, while a scenario that enabled adoption of alternative crops under SFP would lead to a 2% increase in total labor. However, in none of the examples is it possible to determine the duration of the jobs beyond the reporting period, nor the nature of the work itself (e.g. skilled vs. unskilled; temporary, seasonal, or casual).

7.4 Conclusions

In general, the quantitative studies examined in the literature survey find that the influence of the CAP on agricultural and rural jobs increases with the amount of support received, and this is linked to higher farm income, capital, investments and productivity induced by the policy. Indeed, up until recently, the CAP has supported intensive and highly mechanized farming. However, the overall effect of Pillar 1 support has been one of slowing the decline in or maintaining the actual number of jobs in agriculture rather than creating new jobs: direct subsidies can augment farms' financial access to investments which tend to increase the agricultural productivity per unit of labor rather than creating a demand for new labor. The impact of Pillar 2 on employment is more difficult to estimate as it varies widely depending on Member State goals, selection of measures and the effectiveness of program delivery. Regarding Pillar 2, there is little indication of the permanence of jobs beyond the funding period.

Did the evidence from empirical analysis confirm theoretical expectations? The answer cannot be as unequivocal as one would desire. Complexity arises not only because of the differences across the labor markets and agricultural systems of EU Member States, but because the way that policies are implemented at national/regional level plays a major role in the accessibility of and returns from funding. This latter point is an issue largely ignored in the literature, with a few noticeable exceptions [e.g. Angioloni *et al.*, 2017].

Changing impacts of the CAP upon rural and agricultural employment could be anticipated over the current programming period (to 2020), and ones that are increasingly geographically differentiated over time. Patterns will increasingly be influenced by national and regional choices concerning CAP spending priorities, as well as by the underlying structural, legal and fiscal frameworks that shape the processes of structural change in the sector and in the wider rural economy of each Member State.

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