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**New challenges for EU agricultural sector and rural areas.**

**Which role for public policy?**

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**EU Agricultural Systems in the  
new CAP perspectives**

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## **EU Agricultural Systems in the new CAP perspectives**

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### *Abstract*

*In recent years EU agricultural system have been characterized by several development patterns and different policies tools have been adopted by each country as a means to reach economic development in rural regions, above all in advanced countries. The recognition of agricultural and territorial systems is essential to define regional development programs, especially in a period when the new rural development policies are going to be designed and planned.*

*Present research tries to identify and analyse main structural models of “agricultures” within European Union, whose classification could be useful as decision tool to define policies of intervention, in view of new programming period (CAP 2014-2020).*

*The research is focused on the analysis of agricultural features in 247 regional areas (NUTS 2) of all European countries and has been carried out adopting a Principal Components Analysis (PCA) to identify main factors that differentiate agricultural systems in EU countries, taking into account a specific group-set of social and economic indicators. Afterward, by applying cluster analysis on the results of PCA, we classified the different regional areas into homogenous groups.*

*The results allow a general classification of “homogeneous agricultural areas”, whose categorization may be useful for better understanding characteristics of the European Union countryside and better orientate ongoing planning of new CAP.*

*Keywords: Rural regions, CAP 2014-2020, agricultural systems, NUTS2*

*JEL classification: Q18, R12, R14*

### **1. INTRODUCTION**

After the launch of Rural Development Regulation, a new approach and new goal toward rural and agricultural policies were adopted (Lowe *et al.*, 2002; Dwyer *et al.*, 2007) with the aim to support long-term livelihood of rural areas as a whole, linking subsidies to conservation agriculture.

Agricultural sector occupy a relevant role in the economy of European Union but its features are structurally and geographically diversified (Shucksmith *et al.*, 2005). By means of rural development policies EU has aimed to an integration of greatly differentiated agricultural territory, protecting diversity of European farmland and thus providing a wide range of services (Erjavec *et al.*, 2009). In last two programming periods (2000-2006 and 2007-2013) the European Union's rural development policy has identified as main priority the enhancement of endogenous resources of rural areas (agro-food production, enhance of environment and rural heritage, new services, etc.), especially in those lagging behind.

A different approach has characterized CAP Pillar I that was firstly aimed at price and market support and then has more and more changed towards a direct support, less focused to specificities of different agricultural systems.

Current reform proposals of new CAP towards 2020 have been conceived in order to respond to the future challenges for agriculture and rural areas and to meet the objectives of new planning of CAP (European Commission, 2011). The reform orientations - in order to promote resource efficiency with a view to smart, sustainable and inclusive growth for EU agriculture and rural areas – keep the structure of the CAP around two pillars and use instruments that should be complementary in pursuing the CAP objectives.

On this basis, the recognition of agricultural and territorial systems is essential to define the new policies, especially in a period when the new common agricultural policies are going to be designed and planned.

This research aims at identifying and analysing the main structural models of European agriculture, whose classification could be useful as decision tool to support policies of intervention, in view of new programming period (CAP 2014-2020).

The study is focused on the analysis of agricultural features in 247 regional areas (NUTS 2) of all European Union countries and has been carried out adopting a Principal Components Analysis (PCA) methodology to identify main factors of differentiation of agricultural systems in EU countries, taking into account a specific group-set of social and economic indicators. The indicators employed in this study are referred to the agricultural context, concerning social, demographic and economic factors, and have been derived from EUROSTAT and other official statistical sources. Afterward, by applying cluster analysis on the PCA results, we classified the different regional areas into homogenous groups.

That allowed to verify whether new CAP reform is getting ready to fit the different structural features of European regions..

## **2. THEORETICAL FRAMEWORK**

Policy studies have been carried out in order to examine main features of the Common Agricultural Policy (CAP) and its implications for the future development of European countries and environment (Lowe *et al.*, 2002; Winter and Gaskell, 1998), analyzing the consequences of policy reform (Schmid *et al.*, 2007), assessing the distributive impacts of Common Agricultural Policy (Rocchi, 2009) or exploring the difference that place makes in the implementation of public funding mechanism (Watts *et al.*, 2009).

In the view of European enlargement debate and the economic impact of extending the Common Agricultural Policy to the Central and Eastern European countries constitute another important topics of policy studies' perspectives that has been widely conceptualized and analyzed by scientific community, first of all in order to evaluate main effects on the redistribution of EU budget and related payments (Bach *et al.*, 2000; Beard and Swinban, 2001; Schmid and Sinabell, 2007).

Thus the importance of public actions has been defined as crucial, and “political dimension is a pivotal aspect of rural development”. Local government role is often the centrepiece of rural political systems and interventions to reconfigure local government are therefore quintessentially rural development initiatives (Douglas, 2005). Furthermore agricultural and rural policies must tend to improve different socioeconomic structure of rural areas, enhancing local economic activities, in order to facilitate income and employment enhancement (Mattas, 2003).

The mosaic of European regions require a deep process to plane the future place-making activities and regional planning could provide a debate for deciding types of future settlement patterns society (Haughton and Counsell, 2004) avoiding regional disparities. This implies that the effects of single regional, national or Community projects held could have a considerable impact on the spatial structure and on economies of other Member States (European Commission, 1999).

Given the spatial dimension of rural development is closely related to the linkages between the agricultural and the socio-economic sector, the identification of the characteristics that differentiate social and economic processes are essential to impulse the development of a regional area (D’Amico and Sturiale, 2002).

Spatial differentiation found in the concept of region its full expression and homogeneity. Regions are an essential dimension of the development process (Scott and Storper, 2003) and region typologies are a common tool to cluster regions with similar characteristics and possibly similar policy needs (Verburg *et al.*, 2010).

Whereas the approaches and methods to rural policies should be adapted to specific local contexts and historical conditions with the aim to achieve an adequate individual and social wellbeing (Cannarella and Piccioni 2005). The role of multiple interrelations take a relevant importance and they should be taken into account to measure the impact of the public actions in rural areas (Bryden, 2002; Douglas, 2005). These interdependencies, widely recognized in the economic literature, allow to define the relationships between economic development and evolution of social, cultural and environmental systems (Hytinen *et al.*, 2000) that allow to reconnect local economic growth to human development and social capital components (Callois and Schmitt, 2009).

As widely recognized in economic literature Agriculture is not only a rural space (Lowe *et al.*, 1995; van der Ploeg and Renting, 2000), on the contrary it can be viewed as multi-level process, whose interrelation are closely relate to interrelation between society and environment resources, including individual farm household, countryside actors, policies and institution and nature values (van der Ploeg *et al.*, 2000; Ellis and Biggs, 2001).

Furthermore many studies have been pointed out the importance of local and human resources embodied in a local context (Deller *et al.*, 2001; Cannarella and Piccioni, 2005) which could play a essential role in generating a substantial factor for creativity and competitiveness of rural areas, increasing the regional economic development of specific geographic area (Kim *et*

*al.*, 2005), whose effect and implication are useful to address choices of policy makers and economic policies (Gallup *et al.* 1999; Watts *et al.*, 2009).

Within this perspective the identification of most representative elements of rural features and agricultural structures can provide useful tools to increase competitiveness of local systems.

The economic features of rural region are associated to the interconnections of local and global forces, strengthening related to territorial and population dynamics and globalization processes (Ashley and Maxwell, 2001; Terluin, 2003). In fact the performance of regional economies, as systems of physical and relational assets (Scott and Storper, 2003), varies markedly in terms of wage, wage growth, employment growth and patenting rate and, at the same time it is strongly influenced by the strength of local clusters and the vitality and plurality of innovation (Porter, 2003). Innovation, diversification and quality products become the most important issue for both agricultural development and rural poverty reduction (Tripp, 2001), first of all in the lagging regions of the European Union (Libery and Kneafsey, 1998).

In this direction, the identification of homogenous areas constitute the most important assumption for a local context planning by public actions. The recognition of peculiarities and specific requirements of each agricultural area allow to contextualize the spatial relationships between activities and the critical issues and become fundamental to develop adequate policy strategies suitable for specific local needs with the aim to create guidelines for the implementation of a planning intervention.

### **3. METODOLOGY**

In recent years rural areas of EU have been characterized by several development models and different policies tools have been adopted by every country as a means to reach economic development in rural regions, above all in advanced countries (Terluin, 2003).

Studies on efficiency and productivity changes of rural region among European Countries have been carried out taking into account several analysis prospect (Serrao, 2003), issues and indicators to best address the needs of rural development policy makers (Bryden, 2002). General patterns of rural development have been examined using specific indicator and different methodologies have been applied to identify the rural features of European (Bryden, 2002; Ballas *et al.*, 2003; Winters *et al.*, 2008) and extra-European regions (Porter, 2003; Gülümser *et al.*, 2006).

Despite agriculture, forestry and fishing formed the traditional economic base of rural areas, the set of externally-oriented economic activities in rural space is now much larger. According to OECD approach, rural development covers the following general subjects: a) population and migration; b) economic structure and performance; c) social well-being and equity; d) environment and sustainability

In this paper, we wondered what is the main goal of rural development policies in the European Union. The focus will be different depending on whether policy is mainly addressed to the agricultural community level or more generally to the rural community level.

Unlike other states, in most EU member countries, rural development is much more closely linked to agricultural policy and rural development policies fall within the second pillar of the Common Agricultural Policy<sup>1</sup> (OECD, 2007).

Assuming that the rural development policies in EU member states are mainly targeted at farms, the general subject of this paper is related to *farms socio economic structure*. Ensuring and promoting efficient production and employment in agricultural sector is surely one of the main objectives of European rural policies.

The indicators employed in this study are referred to the agricultural context, concerning social, demographic and economic factors. The data have been derived from EUROSTAT, European Commission and other official statistical sources.

The socio-economic indicator have been selected in order to describe socio-economic structure of European farms, and have been divided in following five groups:

- land use;
- physical farm size;
- economic farm size;
- livestock;
- Social and demographic features of agricultural context

Within these categories we have identified 27 indicators above listed in the table 1.

The spatial statistical analysis applied to cognitive investigations require complex exploration involving a multiplicity of indicators and a high number of variables.

In this respect, we adopted specific multivariate analysis techniques to simplify the structure of data with the aim to highlight and identify the suitable variables (real or latent).

The research, focused on the analysis of territorial development process in 246 regions of 27 European countries, has been carried out adopting a Principal Components Analysis (PCA) methodology as a mechanism to identify main factors of rural systems in EU countries, taking into account a specific group-set of social and economic indicators, extrapolated from each of examined countries. Afterward, by *applying* cluster analysis on most representative ratios, selected through the PCA, we set and characterized the different rural areas into homogenous groups.

The zoning has been realized through the use of appropriate multivariate statistical techniques, such as principal components analysis (PCA) and cluster analysis (CA), whose methodologies have been widely shown in the economic literature (Johnston, 1979; Moller, 1995, Hair *et al.*, 1998).

Combined or separated application of above mentioned methodologies in rural development studies has been employed in many research focused on rural economics and geography prospects (Hyttinen *et al.*; 2000; Ballas *et al.*; 2003; Gülümser *et al.*; 2006; Winters *et al.*; 2008; Davidova *et al.*, 2009).

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<sup>1</sup> Rural areas benefit from various types of financial instruments from the Structural Funds of EU. One of the most important is the Common Agricultural Policy by FEASR.

With reference to PCA, it makes it allow to synthesize specific information from all of the basic variables in a new set of reduced variables (principal components), while CA allow to synthesized taxonomic groups in a "homogeneous" cluster.

Table 1 – Subjects and indicators of socio-economic structure

| General Subjects  | Groups of Indicators                                    | Indicators  |
|---|---|---|
| Farm socio-economic structure   | Land use  | % arable area   |
|   |   | % permanent grass area  |
|   |   | % permanent crops area  |
|   |   | % irrigable area (irrigable area / Utilised Agricultural Area)  |
|   |   | % Mediterranean permanent crops (citrus and olive tree area / permanent crops area)   |
|   |   | % Vineyards area (vineyards area / permanent crops area)  |
|   | Physical farm size                                      | Average Physical Farm Size (ha/farm)  |
|   |   | % of holdings with less than 5 ha UAA   |
|   |   | % of holdings with 5 ha to less than 50 ha UAA  |
|   |   | % of holdings with 50 ha UAA or more  |
|   | Economic farm size                                      | Average Economic Farm Size (ESU/farm)   |
|   |   | % of holdings with less than 2 ESU  |
|   |   | % of holdings with 2 ESU to less than 100 ESU   |
|   |   | % of holdings with 100 ESU or more  |
|   | Livestock   | Importance of semi-subsistence farming (% of farms < 1 ESU)   |
|   |   | Livestock sector: Average number of LSU per farm (LSU / farm)   |
|   |   | % of total cattle holdings (total cattle holdings / total holdings with livestock)  |
|   |   | % of dairy cows holdings (dairy cows holdings / total holdings with livestock)  |
|   |   | % of sheep-goats holdings (sheep-goats holdings / total holdings with livestock)  |
|   | Social and demographic features of agricultural context | % beef cows holdings (beef cows holdings / total holdings with livestock)   |
|   |   | Training and Education in Agriculture (% managers with basic or full agricultural training)                                       |
|   |   | Age structure of regional population (% 0-14 y.o.)  |
|   |   | Age structure of regional population (% 15-64 y.o.)   |
|   |   | Age structure of regional population (% >=65 y.o.)  |
|   |   | Dependency ratio (ratio between sum of the population less than 15 years and 65 years or over and population from 15 to 64 years) |
|   |   | Age Structure in Agriculture (Ratio: farmers <35 y.o./ farmers >=55 y.o.)   |
| Employment Development of Primary Sector (Share of primary sector employment in total employment) |   |   |

## 4. RESULTS

### 4.1 The Principal Component Analysis

Starting from most significant 15 variables, by means of the PCA, 4 components were extracted that explain 67.2% of the total variance. Table 2 shows the matrix of rotated components loadings<sup>2</sup> that represent the correlation indexes among the initial variables and each of the components. These components represent the differentiation factors within the whole variables system in question. The higher the coefficient value is, in absolute

<sup>2</sup> Components were rotated using the Varimax method. This method allows to obtain orthogonal factors and makes easier the interpretation of the components by minimizing the number of variables related to each of the extracted components.

terms, the more the variable is considered decisive for that factor. It also allows to interpret the components meaning.

The first component (24.8% of the explained variance) identifies the level of **professional agriculture**. As a fact, this component is positively related with the percentage of holdings with 50 ha or more of Utilized Agricultural Area, the higher economic size (100 or more ESU), the percentage of managers with basic or full agricultural training. These farms are mainly operating in the livestock sector, and more specifically in the beef sector. One more social indicators help to better characterize the component and to understand the relationship between the agricultural sector and the economic context in which it act: the negative correlation with the share of employment in the primary sector helps to localize this agriculture in more developed economic context. That means that from negative to positive values of the first component, we pass from less developed areas, where the agriculture is relatively more relevant in terms of employment but weaker in terms of income, to higher level developed areas, characterized by a more professional agriculture.

Information on specific productions are given by other components.

The second one explains 15.6% of total variance and identifies **dairy production and young agriculture**. This component is positively correlated with the percentage of livestock farms with dairy cows and with holdings included between 5 and 50 hectares of UAA. Moreover, the indicators that better characterize the components are related to the farmer, as there is a positive correlation both with the ratio between farmers less than 35 and more than 55 years old and with the percentage of more educated farmers.

The **Mediterranean agriculture** is synthesised by third component that represents 15.5% of total variance. Positive values of the components are related to areas whose permanent crops, particularly olive and citrus growing, represent a significant share of the UAA. However, this components includes areas that can be very different in terms of natural resource, quality production and economic sustainability. On the one hand, a positive correlation with the percentage of irrigable UAA identifies good fertility of soils, that can be fairly linked to fruit and more intensive growing. On the other hand, the third component is positively related to olive, as well as to the sheep-goat holdings, that characterize a more extensive agriculture. The correlation with the dependency ratio underlines how this type of agriculture is mainly localized in areas with a weaker social and demographic structure.

Some of these characteristics are even more evident in the fourth component (11.3% of the explained variance) that better represents the **extensive agriculture in a weak context**. This agriculture is identified by a positive correlation with the percentage of permanent meadow and pastures, with the share of beef, sheep and goat holdings on the total of livestock farms, and with the level of dependency ratio. Then, moving from negative to positive values of the component means an increasing importance of extensive livestock farms, and, at the same time, a more dependent demographic structure. The more or less weakness of the social context where this type of agriculture operates will depend on the relative weight on the dependency ratio of older or young population components.



Table 2 - Value of component loadings

| Variables   | Components |        |        |        |
|---|------------|--------|--------|--------|
|   | 1          | 2      | 3      | 4      |
| % permanent grass area  | -0,040     | 0,056  | -0,154 | 0,848  |
| % permanent crops area  | -0,263     | -0,257 | 0,731  | -0,134 |
| % irrigable area (irrigable area / Utilised Agricultural Area)  | 0,019      | -0,078 | 0,714  | -0,307 |
| % Mediterranean permanent crops (citrus and olive tree area / permanent crops area)   | -0,277     | -0,224 | 0,778  | 0,090  |
| % of holdings with 5 ha to less than 50 ha UAA  | 0,390      | 0,600  | -0,020 | 0,284  |
| % of holdings with 50 ha UAA or more  | 0,803      | 0,082  | -0,208 | 0,115  |
| % of holdings with 100 ESU or more  | 0,836      | 0,216  | -0,001 | -0,200 |
| Livestock sector: Average number of LSU per farm (LSU / farm)   | 0,846      | 0,034  | -0,038 | -0,006 |
| % of dairy cows holdings (dairy cows holdings / total holdings with livestock)  | 0,005      | 0,781  | -0,229 | 0,053  |
| % of sheep-goats holdings (sheep-goats holdings / total holdings with livestock)  | -0,004     | -0,388 | 0,492  | 0,421  |
| % beef cows holdings (beef cows holdings / total holdings with livestock)   | 0,581      | -0,075 | -0,176 | 0,551  |
| Training and Education in Agriculture (% managers with basic or full agricultural training)                                       | 0,632      | 0,628  | -0,218 | -0,134 |
| Dependency ratio (ratio between sum of the population less than 15 years and 65 years or over and population from 15 to 64 years) | 0,478      | 0,045  | 0,417  | 0,410  |
| Age Structure in Agriculture (Ratio: farmers <35 y.o./ farmers >=55 y.o.)   | -0,133     | 0,785  | -0,177 | -0,127 |
| Employment Development of Primary Sector (Share of primary sector employment in total employment)                                 | -0,612     | 0,161  | 0,152  | -0,195 |

Note: KMO's test = 0.736; Bartlett's test of Sphericity = 1888.09 Sig. .000

#### **4.2 The cluster analysis**

The next step of survey, as mentioned above, was the application of a cluster analysis to the factor scores in order to aggregate European regions (NUTS 2) according to the different agricultural features that were previously identified through the PCA.

Cluster analysis includes different methods and algorithms for grouping the observations (the regions, in our case). In this work, the K-means method was used, a non-hierarchical method that, unlike the hierarchical ones, allows for the re-assignment of units after each step, and minimizes the variance within each cluster for all clusters. The assignment algorithm was based on the *nearest centroid sorting*: cluster centroids are estimated in a iterative way and each unit is assigned so that its distance from the centroid is minimized.

One limit of non-hierarchical methods is that they require to specify *a priori* the number of groups to be formed, leaving room for the subjectivity and the expertise of the researcher (Cannata G., 1995, Coppola A., 1999). The decision of how many clusters to form can be derived by running the algorithm repeatedly with different number of groups and comparing the results in terms of distance within and among the groups. Based on that, in our work we got 6 groups, whose characteristics are synthesised by the values of the centroids (table 3).

Table 3: Values of final cluster centers

|   | Cluster   |           |           |           |           |           |
|---|-----------|-----------|-----------|-----------|-----------|-----------|
|   | 1         | 2         | 3         | 4         | 5         | 6         |
| Professional agriculture                | 0,411     | 1,282     | -0,400    | -0,527    | -1,084    | -0,932    |
| Dairy production and young agriculture  | -0,629    | 0,445     | 0,878     | -0,486    | -0,609    | 1,930     |
| Mediterranean agriculture               | -0,392    | 0,036     | -0,332    | 1,664     | -0,926    | -0,371    |
| Extensive agriculture in a weak context | 0,774     | -0,554    | 1,350     | -0,061    | -0,901    | -0,407    |
| <b>Number of regions</b>                | <b>60</b> | <b>56</b> | <b>24</b> | <b>45</b> | <b>41</b> | <b>20</b> |

The first group, *extensive northern EU agriculture* (fig. 1), is the largest one (60 units) and is mainly characterized by component 2 (with negative sign) and component 4 (positively signed). Therefore, the agriculture of this group of regions is more extensive, with a high percentage of permanent meadow and pastures oriented to meat production (beef and goat livestock). Regions of this group belong to different territorial contexts (UK, Spain, Sweden), but the group mainly reflects the UK agriculture, representing 53% of the regions included. Besides the extensive production, this agriculture is characterised by the presence of big size farm (the share of holdings with 50 hectares or more is higher than the EU average), but shows a weakness point in its human capital, whose ratio between younger and older farmers is one of the lowest of EU level (7%), and it's similar to that observed in group 4.

The high positive value of the first component synthesises the features of the second group that includes 56 regions and represents the EU professional and strong agriculture - *the core of EU continental agriculture* (fig. 2). This is the agriculture of France, Belgium, Denmark and Netherlands, based on farmers with the highest level of training (58% have a specific agriculture degree or education), on farm with a relevant economic size (25% of holdings has a size equal or more than 100 ESU) and wide livestock presence (both cows and beef livestock), on good land quality (12% of the UAA is irrigated).

Extensive agriculture features (component 4) strongly characterise the third group - *the mountain agriculture* (fig. 3)- which include 24 regions. However, regions of group 3 are relatively smaller in terms both of physical and of livestock farm size (negative value of the first component); the positive value of the second component suggests that these regions are also oriented to dairy production. Differences in social and demographic characteristics can also be observed: in group 3 the employment function of the agricultural sector is slightly more relevant and farmers are relatively younger and more skilled. No specific country identifies this group, but mountain areas seem to be associated with it, such as the Atlantic mountain area of Iberic peninsula (Galicia, Asturias and Cantabria) and French, Austrian and Italian Alps.

Groups from 4 to 6 are the ones where the agriculture reaches the highest EU employment share (9.4%, 13.4% and 11.6% respectively).

Productive characteristics are very different in group 4 (45 regions), where component 3 gets the highest positive value. Crop production represents the 29% of UAA (with respect to 7.4% at EU level) and Mediterranean crops (olive and citrus) weight for 50% of the permanent crops area. Sheeps and goats are also relevant in livestock farming. Farm average size is lower than previous groups but quality land is higher and 27% of the UAA is irrigated. To this cluster belong the entire Greece, most of the Italian and Spanish regions, Portugal and Cyprus (*Mediterranean agriculture of Southern EU*) (fig. 4).

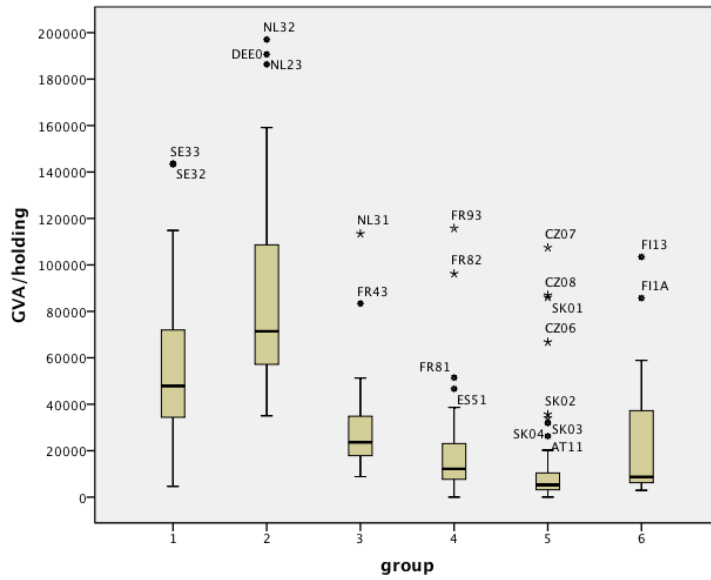
Negative values of all the components distinguish the fifth group (41 regions) characterised by an *agriculture of semi-subsistence* (fig. 5). Here, even if the agriculture plays an important role in terms of employment (13% of the total), the sector shows many weakness factors: the physical structure correspond to micro/small size, land use is not specialized, profitability of labour and land are the lowest within the EU and the farmers' training and educational level is slightly low. This type of agriculture is preferentially situated in regions of the Eastern EU countries (Bulgaria, Hungary, Poland and Romania).

The sixth and last group includes 20 regions (*medium dairy agriculture*) (fig. 6). The negative value of component 1, besides the agricultural employment share is mainly related to the lowest presence of larger farms, to the smallest livestock farm size and to the lowest dependency ratio. The effect of these indicators hides the action of the farmers' training and education level that is the highest within the EU. Factors, though, that better identify the group are the dairy production that is carried out in 47% of the livestock farms and the ratio between very young and older farmers that reaches the 37% of total. The regions included in group 6 are Bayern and Baden-Württemberg in Germany, regions in North-East Poland and Finland.

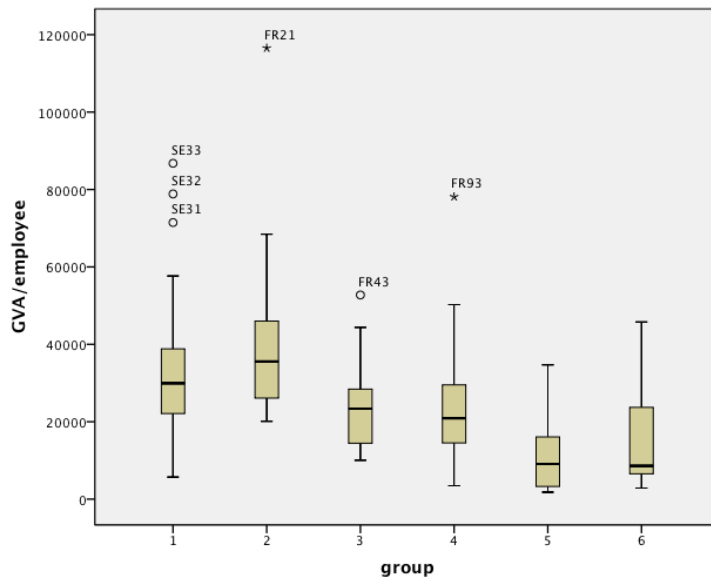
The groups show significative differences not only in terms of physical structure and production systems, but in terms of income capability and labour productivity, too.

By means of the test of Kruskal-Wallis, distributions of GVA per holding and per employee are proved to be statistically different among groups (GVA/holding:  $\chi^2 = 123.690$  Sig. =.000; GVA/employee:  $\chi^2 = 91.191$  Sig. =.000). Pairwise comparison of GVA per holding highlights that this result is mainly related to clusters 1 and 2, whose distributions are significantly different respect to other groups, while they are very similar between themselves. As GVA per employee is concerned, on one side most significative differences characterize groups 5 and 6 respect to the other ones, on the other side, groups 3 and 4 have more similar distributions between themselves. That is graphically presented in graph 1 and 2.

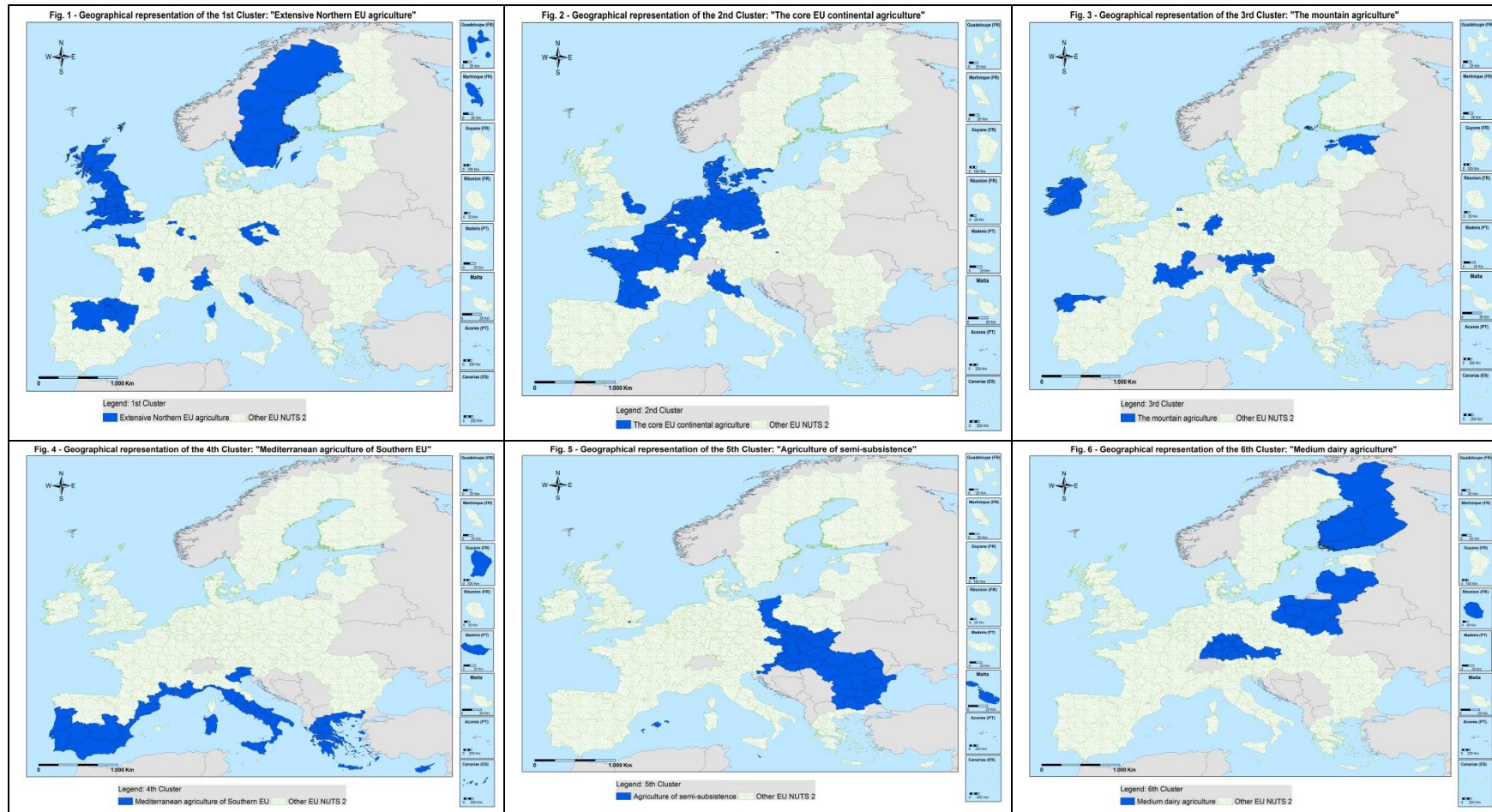
Graph 1: Distribution of GVA per holding by groups (data in euro)



Graph 2: Distribution of GVA per employee by groups (data in euro)



New challenges for EU agricultural sector and rural areas.  
Which role for public policy?



## **5. CONCLUDING REMARKS**

The paper aimed at drawing a picture of European agricultural systems in order to highlight similarity and dissimilarity among EU regions. Our findings confirm that we can't consider the European agriculture as a whole, but we need to take into account productive and structural specificities, as well as the different socio-economic context in which the agricultural systems operate. That is particularly relevant when policies should be built up and implemented. When CAP firstly was introduced, it was applied to six countries with agricultural systems that were more similar than today. During the years, a support that was preferentially modelled on "continental agricultural systems" increased the existing gaps among EU countries; also due to the progressive enlargement and to the entrance of new countries, characterized by very different economic structure and development level. In last decades a lot of effort has been done in order to review the Pillar I support but, even if the payment scheme has been changes, the distribution of aids among farms, regions and agricultural systems has been rather conservative. We are now at the dawn of a new CAP reform that could be very shocking in terms of payment distribution. How the EC proposals match with the picture of agricultural systems that came out from the cluster analysis?

An analysis of CAP reform effects is beyond the aim of this work. However, two main remarks can be pointed out.

First of all, CAP reform is proposing a basic payment that should still be related to the eligible land. This payment keeps the nature of the current decoupled aid, that is a rent (Sotte, 2005), and will continue to mainly benefit larger holdings, as those included in groups 1, 2 and 3. If the CAP reform wants to reach a more uniform support throughout EU agriculture, the basic payment do not guarantee it. Neither the capping seems to be a sufficient tool in that direction. Our analysis showed significant differences among groups in terms of holdings' income capability and labor productivity. A policy following equity criteria should take these differences into account and that requires a flexibility of instruments larger than the one basic payment can guarantee. But, an even preliminary step in defining policies and tools is to clarify the objectives CAP Pillar I want to pursue. As market and price policy has changed towards a mainly direct support, the link between objectives and tools became less clean-cut. Even, the distinction between Pillar I and II in terms of objectives is less evident and the EC reform proposals seem to reflect it.

Secondly, the policy debate is more and more moving the attention on the environmental role that agriculture should play and the proposal of Pillar I reform translates that into a "green payment", allocating to it the 30% of the annual national ceiling. Besides organic farming and practices referred to Directives 92/43/EEC and 2009/147/EC, the environmental rules to be followed are focused on crop diversification, permanent grassland and ecological areas. There is no doubt that the proposed green rules better fit the extensive and mountain agricultural systems, on one side, and larger holdings, on the other side, while intensive, small and medium farms could have more operative and economic problems to apply them. In these farms, the way

environmental objectives are implemented could conflict with the economic competitiveness objective the Commission declare to pursue.

Then, the new CAP reform while has some positive and innovative elements, fails to take into account the diversified picture that characterize EU agricultures. To better fit this picture would require a deeper analysis of each agricultural system needs a more fair rethinking of objectives and tools to be implemented in each area.

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