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## Tracing the Consequences of Economic Crisis in Rural Areas – Evidence from Greece

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### 1. Introduction

Rural areas play a vital role in the European Union (EU), as they cover more than 90 percent of the European territory, and host about half of its population and economic activity. Diversity is the main characteristic of rural areas, with both decline and dynamism present. Notwithstanding their diversity, rural areas in the EU share some common characteristics and evolution patterns. There are no significant differences between rural and urban areas, in terms of the age structure of the population, as well as employment/unemployment rates. The income per inhabitant in rural areas is 25-30% lower, coupled with a different social structure. Besides, the economic importance of agriculture in rural areas is declining, while the services sector is continually gaining momentum.

For quite a long time international economy has been undergoing rapid changes such as globalization of markets, improved communications, reduced transportation costs, changing trade patterns, the concentration of power across the agrifood chain, and the diversification of activities in rural regions. Significant opportunities as well as threats are the obvious result of these changes for rural areas. The recent crisis accelerated these changes and aggravated existing problems. Concurrently, a sweeping restructuring process is well under way in rural areas, encompassing the whole structure of the economy and all aspects of rural life. Rural labor markets are profoundly affected by this process, in all their dimensions, especially the structure of employment (Copus et al., 2006).

Meanwhile, the structure of the farm sector is evolving continually in response to internal and external conditions. One of the fundamental elements of farm structures is the labor force employed in agriculture. As the farm sector is integrated into local and regional economies in various ways, the intersection of rural labor markets with the multiple forms of farm employment is presumably a hot issue.

Poverty is another distinguishing feature of rural areas. Rural poverty is a widespread phenomenon, since at least 70 per cent of the world's very poor people are found in rural areas and this is not likely to change in the immediate future, despite widespread urbanization and demographic changes in all regions (IFAD, 2011). However, it is sufficiently documented in the literature that rural poverty is qualitatively 'different' from its urban counterpart, as, for example, it is considered invisible or irrelevant to the urban

preoccupations of most analysts and policy-makers (Tickamyer, 2006). Moreover, inequalities within agriculture surpass inequalities among non-agricultural households while agricultural inequalities and poverty differ structurally from those in the rest of society (Pauw, 2007; Commins, 2004). Some other dimensions of poverty are nowadays at the forefront of the research interest, such as the incidence of “in-work poverty” in the EU (Allègre, 2008).

As a result of the renewed interest on the conditions and development dynamics of rural areas, a range of typologies has been used for the sub-national data collection in a multi-national context. In particular, from the mid-1990's the OECD established a territorial scheme for the classification of the various types of areas (OECD, 1994). According to this methodology, which has been widely used, regions are classified as *predominantly urban* (PU), *intermediate* (IR), or *predominantly rural* (PR), based on the percentage of population living in local rural units. Drawing on a variation of the original OECD methodology the EU has recently introduced a revised urban-rural typology (Eurostat, 2010), resulting to a reclassification of several regions.

All rural areas today face important economic, environmental and territorial challenges. These include the rise in income of people living in rural areas, the protection of the environment and natural resources, the valorisation of rural landscapes, the improvement of services and infrastructures, the economic recovery from the recent crisis, etc. In the near future, of particular importance are the challenges of growth, creation of new jobs and sustainability especially for the rural areas that are isolated, depopulated or dependent on agriculture. Of paramount importance are the challenges emanating from the continual restructuring and modernization of European agriculture. It is expected that “in EU-15 some 2 million workers on a full time basis will leave the sector by 2014. In addition, 1-2 million full-time workers may potentially leave the sector within the ten New Member States, and 1-2 million workers in Bulgaria and Romania. To this must be added around 5 million hidden unemployed persons on European farms” (CEC, 2006).

Greece is experiencing one of its most severe crises after the Second World War. From 2009 the Greek economy has entered into recession. The unprecedented crisis of the Greek economy has already been painfully felt by its citizens, as disposable income has decreased, unemployment rates have reached record levels, productive activities have shrunk and income inequalities have widened. GDP is expected to contract by 3% in 2011. The only encouraging sign comes from the increase of exports, as well as the creation of new jobs in agriculture during the last three years, in contrast to the disappointing progress of all the other macroeconomic indicators. Greece still has an extensive farm sector with a predominantly small-scale structure and multiple productive systems combined in various ways with a heterogeneous rural space. Moreover, according to recent data Greece has the highest risk of poverty for employed individuals among all EU countries (14% in comparison to 8% for the EU as a whole) (Allègre, 2008).

This chapter aims to trace the consequences of the current economic crisis in rural areas of Greece. This is pursued by addressing the dual question: How has the current crisis affected rural areas and how have rural areas responded to the crisis? More specifically, what impact has this crisis had on labor markets, poverty, farm structural adjustment, and what kind of adjustment patterns were adopted in various types of areas? The analysis is undertaken at

the level of PU-IR-PR areas, as they are defined in the recently revised EU urban-rural typology. The empirical investigation is based both on the compilation of existing statistical data and the elaboration of original micro-data of various data sources (see below).

The chapter is organized into six main sections. After the introduction the conceptual framework is outlined, followed by the methodology and data sources. In the fourth section the results are presented, with a focus on the structure of the economy and on some critical dimensions of rural labor markets such as employment, poverty incidence, in-work poverty risk; an analysis follows of farm structures in relation to rural labor markets as well as an examination of the economic performance of agriculture. The results are then discussed within the broader framework of relevant literature and the chapter is completed with the conclusions.

## 2. The conceptual framework

Rural areas are inherently diverse, hence affected in different ways, and to differing extents, by the external forces with which they interact (Bryden & Bollman, 2000). Global or regional economic crises constitute one of the major driving forces of change in both rural and urban areas. The variety of impacts of recent crises on different areas has been documented (see for example Fallon & Lucas, 2002; Trivelli et al., 2009).

Given the profound changes rural areas throughout Europe are experiencing some recurrent themes emerge from the relevant literature. These include urbanization or counter-urbanization, unemployment rates, convergence of industrial structures and the extent of self-employment. However, due to the complex nature of rural labor markets simple indicators have to be viewed in interaction with the demographic trends, the capabilities of the rural workforce, the indirect impact of infrastructure and basic services as well as the alternative employment opportunities for farm households (Copus et al., 2006).

It has to be noted that there's no consensus on the way the "crisis" is perceived. As Bessant (2007) notes: "...the terms farm crisis, agricultural crisis and rural crisis lack clear and concise meaning. Much of the debate revolves around four main themes: farm financial difficulties, structural changes in agriculture, rural livelihoods and international dimensions. The examination of these interrelated levels of analysis offers a valuable framework for interpreting the multifold contexts, meanings, and responses to crisis".

Employment in agriculture is a multidimensional phenomenon, which occurs with a multiplicity of forms. Depending on the particular focus of the research interest, employment in agriculture – both of the head and the other members of the household – is occasionally approached from various angles: disguised unemployment, full-time/part-time employment, pluriactivity, off-farm employment, diversification of activities within and outside the farm, etc. There's also a continuous complementarity or substitutability of family- and non-family work in agriculture.

This multiplicity is the result of the distinct nature of the basic farm production unit which, like other small family businesses, is inextricably linked to the consumer and social unit (household and family, respectively). It is also in direct connection with the adoption of modern technology by farmers, developments in other sectors of the economy, as well as with the respective policies. Moreover, agricultural employment assumes a clear spatial

dimension, when examined in different types of areas, such as the rural, urban, etc. Thus, the combination of sectoral and spatial character of agricultural employment is of particular interest.

As a result, the agricultural labor markets are in a constant process of structural change in their characteristics as well as adaptation to changing economic conditions. Additionally, agricultural labor markets retain some distinctive characteristics in relation to the labor markets of the secondary and tertiary sector, as the latter extend to much larger geographic areas, due to the nature and ease of mobility of their respective production activities. In contrast, in the case of agriculture, labor markets are much more locally-tracked. However, the frequent participation of rural households' members in different labor markets through multiple forms of employment points out the direct relationship of agricultural labor markets with the changes in the structures of local and regional economies.

Therefore, the examination of rural labor markets in relation to those critical characteristics of farm structures provides a clear insight into the adjustment process of rural areas, facilitating at the same time the assessment of the recent crisis impacts. Also, this perspective allows for the analysis of concrete dimensions of poverty as, for example, it has been found that among the most important risk factors for working poverty in the EU are the part-time or less than full-year work and a combination of low pay, under-employment and family structures (Allègre, 2008).

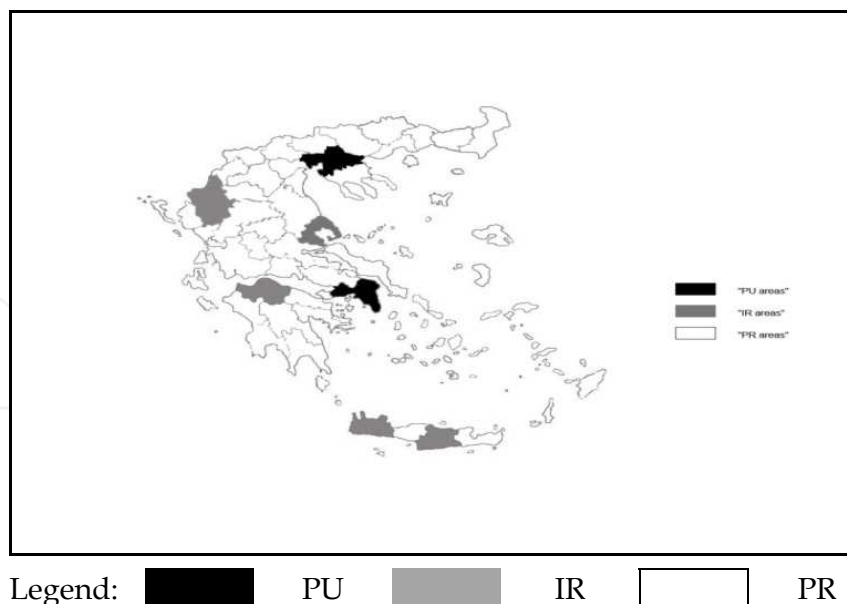
Furthermore, as a result of the recognition of the spatial heterogeneity, various territorial classifications have been developed. The OECD methodology proceeds in two successive phases (OECD, 2007). Firstly, the rural local administrative units at level 2 (LAU2s) are defined and secondly the various areas are classified as PU, IR and PR, on the basis of the population share living in rural LAU2s. The discrepancy in surface area of both LAU2 and NUTS III regions has been recognized as the main constraint of this methodology. In an effort to overcome this constraint, Eurostat has adopted a new typology at the NUTS III level since 2010. "NUTS" is the acronym of the EU system of territorial classification, from the French "Nomenclature des Unités Territoriales Statistiques".

This new typology creates clusters of adjacent urban grid cells and then classifies as rural all the remaining clusters. Urban grid cells have a threshold of 5000 inhabitants and 300 inhabitants per km<sup>2</sup>. A local administrative unit at level 2 (LAU2) is classified as rural if at least half of its population lives in rural areas. After a re-grouping of 'small' NUTS III regions (less than 500 km<sup>2</sup>), it categorizes all NUTS III regions as PU, IR and PR according to the share of population in rural grid cells. It also treats the large urban centers as the OECD methodology does. This revision has resulted in a "predominantly rural" population living in NUTS III regions of EU countries, at a rate of 24%, four percentage points greater than that obtained from the standard OECD methodology (Eurostat, 2010). Finally, the three categories of areas at the NUTS III level in Greece are depicted in Map 1.

### 3. Methodology and data

Within the aforementioned conceptual framework, our study aims to cover the whole period between 1993 and 2011, during which there is available data. Over this time span, some representative years were selected as landmarks, signaling some major events for the Greek and European economy and considered to have affected rural labor markets. In 1993





Map 1. Greece: PU-IR-PR Areas according to the new Eurostat typology (NUTS III)

the McSharry reform of the Common Agricultural Policy (CAP) took place. This effected a reduction in institutional prices and provision of income subsidies, coupled with the area or number of animals. As well, in 1993 the single European market was created and the country started to prepare for accession to the economic and monetary union (EMU). In 2000, the CAP reform had already been implemented, the “Agenda 2000” program was initiated, the Euro-Mediterranean agreements were applied and the World Trade Organization started running. The same year represents the point just before the entry of Greece into the EMU. Furthermore, 2006 was the first year of application of the most recent reform of the CAP – with income support decoupled from the type and level of production –, the EU had been enlarged with 12 additional countries and the Greek economy was fully integrated within EMU. Finally, 2010 is the most recent year with available data, and the Greek economy is going through a period of recession and deep crisis at all levels. Thus, our analysis refers to the sub-periods 1993-2000, 2000-2006 and 2006-2010 or 2006-2011.

The data for our empirical investigation derive from a series of statistical surveys, conducted from both Eurostat and the Hellenic Statistical Authority (HSA), such as: Population Census, National Accounts, Labor Force Surveys (LFS), Household Budget Surveys (HBS), Farm Structure Survey and a report with statistical and economic information of EU regions (EU DG Agr., 2011). Where data from LFS and HBS were used, we estimated various indicators and figures by elaborating the micro datasets of these surveys; this is denoted by the phrase “original micro-data” in the description of the sources in the tables. Stemming either from the elaboration of micro-data or from published datasets, data is then compiled at NUTS II or NUTS III level, depending on its availability.

## 4. Results

### 4.1 Importance of rural areas

Greece could be characterized as one of the most “rural” countries in the EU. Greece, along with Ireland, Portugal, Finland and Estonia are the EU countries in which PR areas occupy

the vast majority of territory. The consideration of some basic indicators reveals a polarized pattern of spatial organization (Table 1). The most distinguishing characteristic is the dominance of PR areas in the distribution of territory, population, gross value added (GVA) and employment; in most of these cases, Greek PR area performance is almost double the respective EU average. The opposite applies for IR areas, which lag behind. However, these disparities are smoothed out if one considers the PR and IR areas as a single entity. PU areas account for almost half the total population and employment and more than half the total GVA, even though they extend to only 5.6% of the national territory.

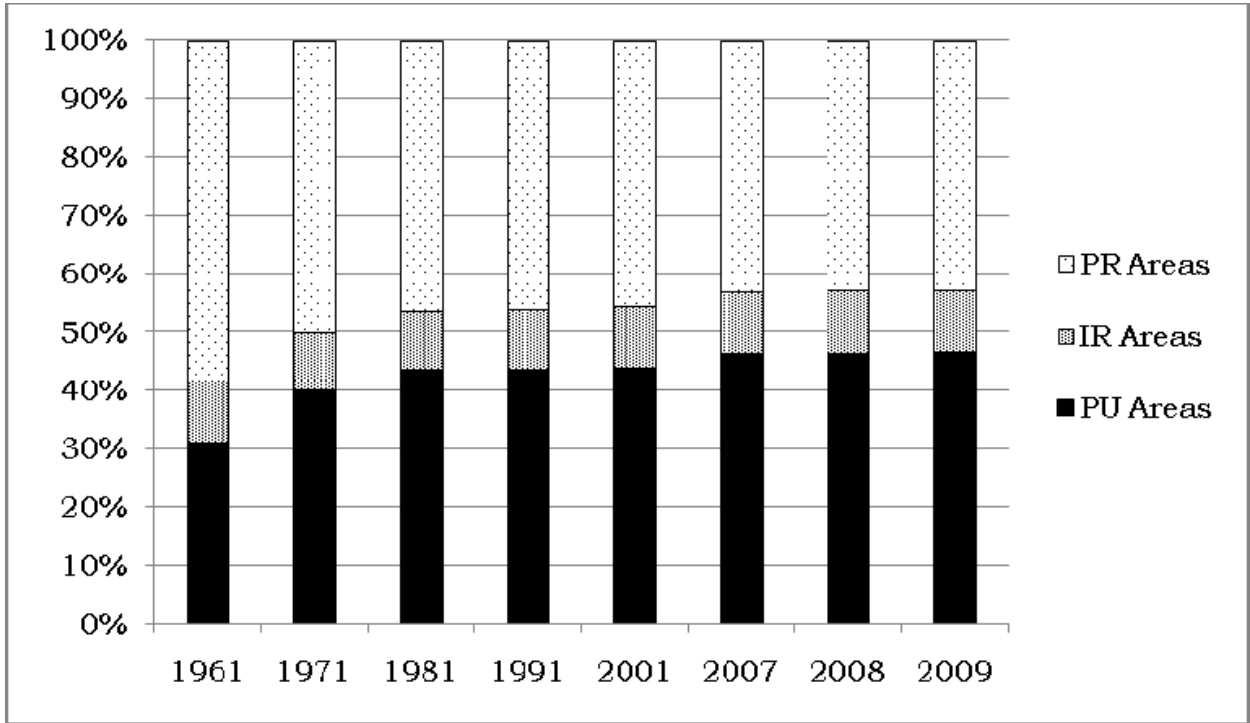
		PR	IR	PU	All Areas	PR+IR
% Territory, 2007	Greece	82.2	12.1	5.6	100.0	94.3
	EU 27	56.6	34.3	9.2	100.0	90.9
% Population, 2007	Greece	43.2	10.5	46.3	100.0	53.7
	EU 27	23.7	35.5	40.9	100.0	59.2
% Gross Value Added, 2007	Greece	32.5	8.8	58.6	100.0	41.3
	EU 27	16.6	31.8	51.6	100.0	48.4
% Employment, 2007	Greece	40.8	10.8	48.4	100.0	51.6
	EU 27	21.4	34.6	44.0	100.0	56.0

Source: EU DG Agr., 2011, NUTS III data  
PR: Predominantly Rural Areas, IR: Intermediate Areas, PU: Predominantly Urban Areas

Table 1. Importance of rural areas in Greece and EU, 2007

PR areas do not seem to have benefited from the demographic changes of the last 50 years (Fig. 1). Between 1961 and 2009 PU areas increased their share of the total population of the country from one third to almost half, whereas IR areas retained a constant share of 10.5% In contrast, the population of PR areas decreased from 58% to 43% of the total population over this time span. These trends are the result of the processes of rural exodus and urbanization, particularly prominent in the 1960’s and 1970’s; they also relate to demographic changes, such as birth rates and immigration. Interestingly, the share of PU areas in the total population from 2001 through 2009 increased by almost three percentage points at the expense of PR areas, after twenty years of relative stability.

Likewise, from 1993 to 2010, PU areas exhibited the highest employment growth, whereas the absolute number of unemployed almost doubled in PR areas and grew by 85.1% in IR areas (Table 2). Unemployment rates, on the other hand, seem to converge, even though IR areas were above and PR areas slightly below the national average in 2010. During the recent crisis unemployment rate increased by three percentage points in the whole country, with the highest rise in PU areas (3.5 points) and the lowest in PR areas (2.5 points). Concurrently, all areas except for PR have lost jobs and the number of unemployed people increased everywhere, most notably in PU areas.



Sources: 1961-2001 Hellenic Statistical Authority, 2007-09 Eurostat (2011a), compiled from NUTS III data  
PR: Predominantly Rural Areas, IR: Intermediate Areas, PU: Predominantly Urban Areas

Fig. 1. Distribution of population in Greece (1961-2009)

		1993	2000	2006	2010	1993-2010	2006-2010
PU	Employed (persons)	1348104	1434918	1660574	1652998	22.6%	-7576
	Unemployed (persons)	175871	202045	147089	217461	23.6%	70372
	Unemployment rate	11.5%	12.3%	8.1%	11.6%		
IR	Employed (persons)	881912	970896	1051546	1026875	16.4%	-24671
	Unemployed (persons)	78270	126361	104618	144879	85.1%	40261
	Unemployment rate	8.2%	11.5%	9.0%	12.4%		
PR	Employed (persons)	1490162	1694205	1740696	1747119	17.2%	6423
	Unemployed (persons)	116409	191336	175704	231692	99.0%	55988
	Unemployment rate	7.2%	10.1%	9.2%	11.7%		
All Areas	Employed (persons)	3720178	4100019	4452816	4426992	19.0%	-25824
	Unemployed (persons)	370550	519742	427411	594032	60.3%	166621
	Unemployment rate	9.1%	11.3%	8.8%	11.8%		

Source: HSA, Labor Force Surveys, compiled from NUTS II original micro-data  
PU: Predominantly Urban Areas, IR: Intermediate Areas, PR: Predominantly Rural Areas

Table 2. Employment and unemployment in Greece (1993-2010)

4.2 The structure of the economy

Noteworthy changes in the structure of the economy have taken place throughout the examined period. The domination of the tertiary sector seems to have been enhanced in the



national economy between 1996 and 2008. In particular, two service branches increased their share of the total GVA, in contrast to all other economic activities (Table 3). These are, firstly,

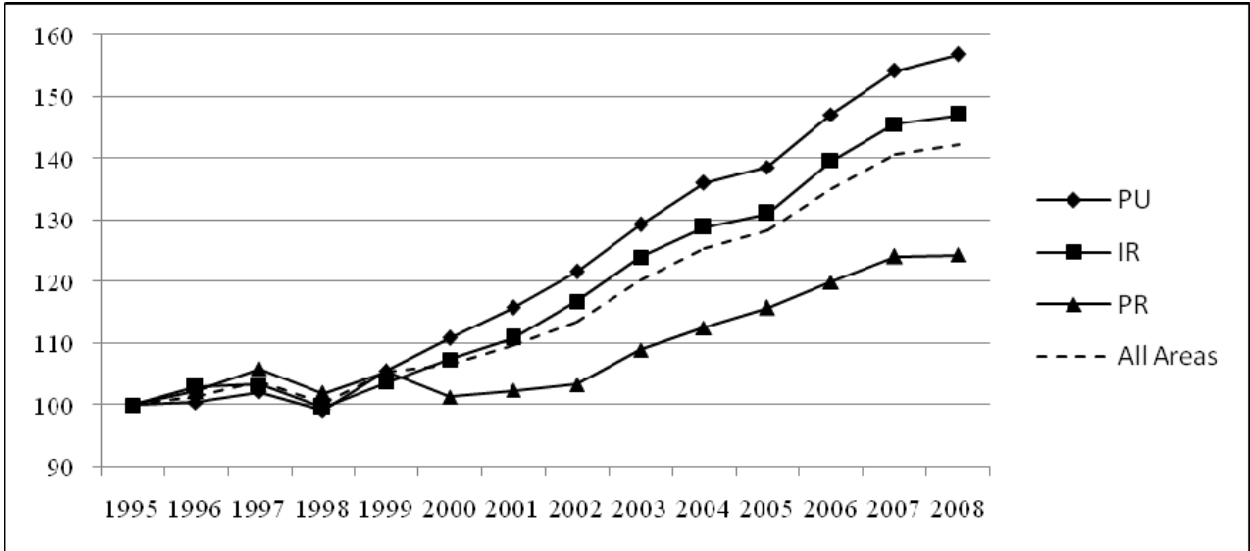
		1996	2000	2006	2007	2008
PU	All activities	100.0	100.0	100.0	100.0	100.0
	Agriculture; fishing	1.7	1.1	0.6	0.6	0.5
	Industry	19.6	18.5	16.2	15.4	14.8
	Industry (except construction)	13.9	13.1	11.2	10.7	11.5
	Construction	5.7	5.4	5.1	4.7	3.2
	Services (except extra-territorial organizations)	78.7	80.4	83.2	84.0	84.7
	Wholesale, retail trade; hotels, restaur; transp.	30.7	31.4	35.7	36.2	35.5
	Financial intermediation; real estate	23.8	25.2	22.7	22.9	22.5
	Public administr., community services; hh act.	24.3	23.8	24.8	24.9	26.6
IR	All activities	100.0	100.0	100.0	100.0	100.0
	Agriculture; fishing	14.2	8.0	5.0	4.4	4.1
	Industry	20.6	18.9	20.5	19.1	19.0
	Industry (except construction)	14.1	11.0	13.1	12.8	13.4
	Construction	6.5	7.9	7.4	6.3	5.7
	Services (except extra-territorial organizations)	65.1	73.1	74.5	76.5	76.9
	Wholesale, retail trade; hotels, restaur; transp.	28.6	31.8	34.4	36.0	35.6
	Financial intermediation; real estate	18.1	17.2	15.7	15.9	15.8
	Public administr., community services; hh act.	18.5	24.1	24.4	24.6	25.5
PR	All activities	100.0	100.0	100.0	100.0	100.0
	Agriculture; fishing	16.3	13.1	7.8	7.3	6.7
	Industry	25.8	24.6	23.6	23.5	22.7
	Industry (except construction)	18.5	15.6	14.4	14.4	15.2
	Construction	7.3	8.9	9.3	9.2	7.5
	Services (except extra-territorial organizations)	57.9	62.3	68.5	69.2	70.6
	Wholesale, retail trade; hotels, restaur; transp.	23.9	28.1	32.1	32.3	32.7
	Financial intermediation; real estate	20.7	15.6	14.7	14.9	14.9
	Public administr., community services; hh act.	13.3	18.6	21.7	21.9	23.0
All Areas	All activities	100.0	100.0	100.0	100.0	100.0
	Agriculture; fishing	9.1	6.6	3.7	3.4	3.1
	Industry	22.3	21.0	19.4	18.8	18.1
	Industry (except construction)	15.9	13.9	12.5	12.3	13.1
	Construction	6.5	7.0	6.9	6.5	5.1
	Services (except extra-territorial organizations)	68.6	72.5	76.9	77.8	78.7
	Wholesale, retail trade; hotels, restaur; transp.	27.6	30.1	34.2	34.8	34.5
	Financial intermediation; real estate	21.9	20.6	19.0	19.2	19.0
	Public administr., community services; hh act.	19.1	21.7	23.6	23.8	25.2

Source: Eurostat (2011b), National Accounts, compiled from NUTS III data  
PU: Predominantly Urban Areas, IR: Intermediate Areas, PR: Predominantly Rural Areas

Table 3. Distribution of Gross Value Added by Branch (1996-2008)

the wholesale and retail trades, hotels, restaurants and transportation, and secondly, public administration, community services and household activities. These two sectors accounted for 60% of the total GVA in 2010. The other service branch - financial intermediation and real estate - has followed a slightly downward course. Despite their decreasing trend, industrial activities, apart from construction, have recovered since 2007. The share of agriculture and construction has shrunk everywhere. It has to be noted that PR areas have surpassed the national average and all other areas in agriculture, construction and other industries; the latter comprise mainly the agrifood sector. Also, PU areas have specialized in all types of services, while IR areas are similar to that of the national economic structure.

Various areas are also diverse in terms of economic growth. After a rather uniform course in the mid-90's, real gross domestic product (GDP) diverges among the three types of areas (Figure 2). Thus, starting from 1995 with an index of real GDP equal to 100, in 2008 PU areas have reached 157, IR areas 147 and PR areas 124. The rate of growth decreased everywhere in 2007-2008, but mainly in PR areas.



Source: Eurostat (2011b), National Accounts, compiled from NUTS III data  
PU: Predominantly Urban Areas, IR: Intermediate Areas, PR: Predominantly Rural Areas

Fig. 2. Gross Domestic Product at constant 1995 prices, Index 1995=100

4.3 Rural labor markets

4.3.1 Employment

Important modifications are observed in the structure of employment over the 1993-2010 period. The highest net change in absolute numbers of total employment (22.6%) from 1993 to 2010 is registered in PU areas, compared to 17.2% in PR areas and 16.4% in IR areas (Table 4). During the same period, the tertiary sector increased steadily, mostly in PR and IR areas, whereas the secondary sector showed a positive change only in PR areas (by 19.3%). PR areas are the only ones that have had a positive balance in employment during the recent crisis. Particularly, in contrast to the tertiary sector, job losses have occurred in the secondary sector in all types of areas. A noteworthy increase of employment in the primary sector has been registered in IR and to a lesser degree in PU areas.

		1993	2000	2006	2010	1993-2010	1996-2010
PU Areas	Primary Sector	15227	18216	10969	16645	9.3%	5676
	Secondary Sector	376524	346590	370851	326965	-13.2%	-43886
	Tertiary Sector	956353	1070113	1278754	1309389	36.9%	30635
	Total	1348104	1434919	1660574	1652999	22.6%	-7575
IR Areas	Primary Sector	234813	216275	155005	169585	-27.8%	14580
	Secondary Sector	223590	230466	242045	201710	-9.8%	-40335
	Tertiary Sector	423511	524155	654497	655580	54.8%	1083
	Total	881914	970896	1051547	1026875	-16.4%	-24672
PR Areas	Primary Sector	543815	479788	370105	365443	-32.8%	-4662
	Secondary Sector	299774	349295	367941	357741	19.3%	-10200
	Tertiary Sector	646573	865123	1002652	1023935	58.4%	21283
	Total	1490162	1694206	1740698	1747119	17.2%	6421
All Areas	Primary Sector	793855	714279	536079	551673	-30.5%	15594
	Secondary Sector	899888	926351	980837	886416	-1.5%	-94421
	Tertiary Sector	2026437	2459391	2935903	2988904	47.5%	53001
	Total	3720180	4100021	4452819	4426993	19.0%	-25826

Source: HSA, Labor Force Surveys, compiled from NUTS II original micro-data  
PU: Predominantly Urban Areas, IR: Intermediate Areas, PR: Predominantly Rural Areas

Table 4. Structure of Employment (Persons by Sector) in Greece (1993-2010)

The above changes in the absolute level of employment are also reflected in the structure of employment in the various types of areas. As far as the percentage contribution of each sector is concerned, the main trends are the relatively strong presence of the primary sector, despite its continuous downward course, the enhancement of the already dominant position of the tertiary sector, along with the decline of the secondary sector (Table 5). The structure of employment in PR areas is a combination of the highest share of tertiary and primary sectors along with a non-hysteresis of the secondary sector.

		1993	2000	2006	2010
PU Areas	Primary Sector	1.1	1.3	0.7	1.0
	Secondary Sector	27.9	24.2	22.3	19.8
	Tertiary Sector	70.9	74.6	77.0	79.2
IR Areas	Primary Sector	26.6	22.3	14.7	16.5
	Secondary Sector	25.4	23.7	23.0	19.6
	Tertiary Sector	48.0	54.0	62.2	63.8
PR Areas	Primary Sector	36.5	28.3	21.3	20.9
	Secondary Sector	20.1	20.6	21.1	20.5
	Tertiary Sector	43.4	51.1	57.6	58.6
All Areas	Primary Sector	21.3	17.4	12.0	12.5
	Secondary Sector	24.2	22.6	22.0	20.0
	Tertiary Sector	54.5	60.0	65.9	67.5

Source: HSA, Labor Force Surveys, compiled from NUTS II original micro-data  
PU: Predominantly Urban Areas, IR: Intermediate Areas, PR: Predominantly Rural Areas

Table 5. Structure of Employment (% employment by Sector), 1993-2010

A more detailed picture is derived at a disaggregated level from 2000 to 2008. Here, the dominant position of services is due to the increasing share of public administration and financial intermediation (Table 6). The share of employment in industry seems rather

		2000	2006	2007	2008
PU	All activities	100.0	100.0	100.0	100.0
	Agriculture; fishing	1.9	1.1	1.1	1.1
	Industry	21.6	20.3	20.9	20.8
	Industry (except construction)	15.4	13.1	13.2	13.1
	Construction	6.2	7.2	7.8	7.7
	Services (except extra-territorial organizations)	76.5	79.0	78.7	78.9
	Wholesale, retail trade; hotels, restaur; transp.	36.4	35.2	34.7	34.9
	Financial intermediation; real estate	10.9	13.4	14.1	14.3
	Public administr., community services; hh act.	29.2	30.4	29.9	29.7
IR	All activities	100.0	100.0	100.0	100.0
	Agriculture; fishing	19.9	14.1	12.9	12.9
	Industry	17.6	19.0	18.0	17.8
	Industry (except construction)	9.8	9.7	9.2	9.1
	Construction	7.8	9.3	8.8	8.7
	Services (except extra-territorial organizations)	62.4	66.8	68.8	68.9
	Wholesale, retail trade; hotels, restaur; transp.	32.8	31.0	32.9	33.1
	Financial intermediation; real estate	5.4	7.4	7.7	7.8
	Public administr., community services; hh act.	24.2	28.4	28.1	28.0
PR	All activities	100.0	100.0	100.0	100.0
	Agriculture; fishing	32.0	23.8	23.1	23.0
	Industry	18.3	18.5	18.7	18.6
	Industry (except construction)	10.6	10.6	10.5	10.5
	Construction	7.7	7.9	8.2	8.1
	Services (except extra-territorial organizations)	49.7	57.2	57.5	57.6
	Wholesale, retail trade; hotels, restaur; transp.	27.1	29.0	29.1	29.3
	Financial intermediation; real estate	3.9	5.6	5.6	5.6
	Public administr., community services; hh act.	18.7	22.6	22.8	22.7
All Areas	All activities	100.0	100.0	100.0	100.0
	Agriculture; fishing	17.0	11.9	11.3	11.3
	Industry	19.8	19.4	19.7	19.6
	Industry (except construction)	12.7	11.7	11.6	11.6
	Construction	7.1	7.7	8.1	7.9
	Services (except extra-territorial organizations)	63.3	68.7	69.0	69.1
	Wholesale, retail trade; hotels, restaur; transp.	32.0	32.2	32.2	32.4
	Financial intermediation; real estate	7.3	9.5	9.9	10.1
	Public administr., community services; hh act.	24.0	27.0	26.8	26.7

Source: Eurostat (2011c), Labor Force Surveys, compiled from NUTS III data  
PU: Predominantly Urban Areas, IR: Intermediate Areas, PR: Predominantly Rural Areas

Table 6. Distribution of Employment by Branch in Greece (2000-2007)

unchanged, as a result of diverging trends of its constituent parts, and agriculture steadily decreased. In comparison to national averages, PU areas enjoyed a greater share in industry, except for construction and all kinds of services, IR areas in agriculture, constructions and trade-hotels-transportation and PR areas in agriculture and constructions.

Additionally, employment rates differ slightly among areas (ranging from 61.3% in PR areas to 64.8% in IR areas in 2007) and lag behind EU averages by four percentage points. Nonetheless, over the 2003-2007 period they showed a positive change in IR and PU areas (by 3.5 and 2.4 percentage points, respectively) while in PR areas they shrunk by 1.8 percentage points. On the other hand, PR and IR surpass PU areas in the incidence of self-employment by almost 16 percentage points (36% in contrast to 20%) (EU DG Agr., 2011).

4.3.2 Poverty incidence and in-work poverty risk

The examination of rural labor markets would be incomplete without an assessment of the significance of poverty incidence in various areas. To that end, we estimate poverty rates by defining five different poverty lines. The first line corresponds to 5% of the poorest households while the other four lines vary from 40% to 70% of the median of the distribution of equivalent expenditure or equivalent disposable income. It has to be mentioned that for comparisons of poverty among its Member States, the EU most frequently uses the line which corresponds to 60% of these medians, usually called the “central” poverty line. In Table 7 the percentages of households below every poverty line are depicted.

Poverty line (% of mean equivalent expenditure)					
	At 5% of the poorest	40%	50%	60%	70%
PU	3.4	4.3	9.2	14.9	22.2
IR	7.7	9.1	14.6	21.2	29.7
PR	9.7	11.8	20.2	27.5	36.6
All Areas	6.9	8.4	14.8	21.3	29.6
Poverty line (% of mean equivalent income)					
PU	3.9	3.8	7.7	12.4	18.5
IR	7.4	6.9	13.3	21.1	30.1
PR	7.9	7.5	13.6	23.2	32.6
All Areas	6.3	6.0	11.3	18.7	26.8

Source: HSA (2008), Household Budget Survey 2008, Elaborated original micro-data  
PU: Predominantly Urban Areas, IR: Intermediate Areas, PR: Predominantly Rural Areas

Table 7. Poverty rates (percentage of households below the poverty lines) without imputed incomes, 2008

The same figures are calculated with imputed expenditure and imputed income (Table 8). It is well known that the inclusion of imputed expenses and imputes income in those calculations might alter the results of poverty incidence. This is so because, for example, in Greece 4/5 of all families and a far greater proportion of poor families reside in their own



Poverty line (% of mean equivalent expenditure, including imputed expenses)					
	At 5% of the poorest	40%	50%	60%	70%
PU	2.2	1.2	6.0	10.6	16.8
IR	7.2	5.7	10.7	19.4	27.4
PR	8.2	6.5	9.9	19.3	30.6
All Areas	5.7	4.3	10.1	17.3	25.8
Poverty line (% of mean equivalent income, including imputed income)					
PU	3.8	2.8	5.1	11.5	18.5
IR	6.5	4.2	11.3	17.5	26.2
PR	5.3	3.5	14.0	22.7	32.6
All Areas	5.0	3.4	8.7	16.1	24.7

Source: HSA (2008), Household Budget Survey 2008, Elaborated original micro-data  
PU: Predominantly Urban Areas, IR: Intermediate Areas, PR: Predominantly Rural Areas

Table 8. Poverty rates (percentage of households below the poverty lines), including imputed expenses and incomes, 2008

homes. Consequently, imputed rent represents a significant element of both their expenses and incomes. In rural areas, the percentage of owner-occupiers approximates to almost 100%.

Thus, based on the central line of poverty (60% of median income or expenditure) without the imputed expenses and income, 18.7% (or 21.3% based on cost) of the population was below the poverty line in 2008. If imputed income (or imputed costs) of households are included in disposable income (or in financial expenditure) then the proportion of the poor is limited to 16.1% or 17.3%, respectively. The corresponding figures for rural areas are larger than the country as a whole, almost double the poverty rates in PU areas and significantly greater for the population residing in IR areas of the country. Finally, the inclusion of imputed income (or expenditure) reduces the poverty rates significantly and disproportionately. In PR areas the highest reduction is observed – from 27.5% to 19.3% for the central line of mean equivalent expenditure – because of the greater importance of imputed expenses and the higher rate of poor households in those areas compared to PU and IRs.

Furthermore, the index of in-work poverty risk is assessed only for households that had wage-labor or unemployed members. Therefore, this index refers mainly to the risk of poverty in relation to employment/unemployment in secondary and tertiary sectors, as the vast majority of agricultural employment is on a self-employment basis. The index is calculated for every household and ranged from zero, when all the active members of the household work as employees and paid over € 1,000 a month, to one, when all members of the household were unemployed and received no unemployment allowance.

As seen in Table 9, from the 1<sup>st</sup> quarter of 2009 until the 1<sup>st</sup> quarter of 2011, the risk of in-work poverty was higher in IR areas. It also deteriorated in all types of areas in that period, when the current crisis was well under way. The most rapid worsening has taken place in PU areas, increasing by 43.2% in the last two years.



	2009 I	2009 II	2009 III	2009 IV	2010 I	2010 II	2010 III	2010 IV	2011 I	2011 I - 2009 I (%)
PU	0.165	0.172	0.185	0.195	0.205	0.209	0.217	0.230	0.236	43.2%
IR	0.217	0.212	0.225	0.224	0.240	0.246	0.255	0.268	0.290	33.8%
PR	0.221	0.195	0.183	0.203	0.232	0.217	0.207	0.241	0.269	21.7%
All Areas	0.192	0.186	0.191	0.199	0.212	0.214	0.218	0.237	0.254	32.3%

Source: Adaptation from Zografakis & Mitrakos, 2011  
PU: Predominantly Urban Areas, IR: Intermediate Areas, PR: Predominantly Rural Areas

Table 9. Risk of in-work poverty in Greece, 2009-2011

4.3.3 Farm structures and rural labor markets

Notwithstanding the presence of agriculture all over the country, farm structures are quite diverse and differentially evolving. Although IR and PR areas have similar average farm sizes – in both physical and economic terms – in 1990, after 17 years the distance between them has widened in favor of IR areas (Annex Table 1). The same observation holds for the share of the most “entrepreneurial” farms (those having an economic size greater than 40 ESU). In addition, IR areas exhibited the highest rate of change in the total number of farms during the 2005-2007 period. In PU areas on the other hand, there seems to be a strong and increasing presence of very small farms, which increased their share from 55.5% in 2005 to 59.6% in 2007.

Ageing of farming population is a widespread phenomenon. As we see from Table 10, more than one third of all holders were 65 years old or more. It has to be noted that this problem was less acute in IR areas, despite deterioration everywhere.

	2000	2003	2005	2007
PU	32.2%	39.6%	39.1%	39.6%
IR	23.9%	29.7%	31.2%	32.5%
PR	33.4%	37.2%	38.5%	38.9%
All Areas	31.0%	35.5%	36.8%	37.4%

Source: Eurostat (2011d), Farm Structure Survey, compiled from NUTS II data  
PU: Predominantly Urban Areas, IR: Intermediate Areas, PR: Predominantly Rural Areas

Table 10. Holders aged 65+ years/Total Holders (2000-2007)

To get a clearer picture of the demographic prospects of Greek farms, we constructed the “holders’ renewal” index, defined as the percentage of holders with an age of less than 35 years old to holders older than 65 years old (Table 11). It is again the IR areas which ranked first, even though the index steadily worsened in all areas.

	1990	1993	1995	1997	2000	2003	2005	2007
Total Agricultural Area (ha per farm)								
PU					2.1		2.1	1.9
IR	4.7	4.9	5.1	5.1	5.3	5.7	5.8	5.8
PR	4.2	4.1	4.2	4.0	4.2	4.5	4.6	4.5
All Areas	4.3	4.3	4.5	4.3	4.4	4.8	4.8	4.7
Economic Size Units per farm (1 ESU=1200 €)								
PU					3.4		4.7	4.9
IR	5.3	7.4	8.1	7.6	8.2	7.9	8.4	9.2
PR	4.1	5.9	5.4	5.2	5.8	5.8	6.1	6.6
All Areas	4.4	6.2	6.1	5.8	6.3	6.3	6.6	7.2
Percentage of farms in Less Favoured Areas								
PU					12.1%		12.8%	13.9%
IR	48.5%	48.7%	47.7%	48.0%	50.4%	51.3%	52.2%	53.1%
PR	63.9%	63.4%	63.4%	62.6%	63.8%	62.9%	64.4%	65.2%
All Areas	59.9%	59.6%	59.3%	58.9%	58.9%	60.1%	59.9%	60.7%
Percentage of farms with Economic Size < 2 ESU								
PU					60.5%		55.5%	59.6%
IR	35.6%	28.8%	24.6%	27.8%	27.6%	31.0%	29.9%	26.8%
PR	45.4%	34.0%	37.4%	37.8%	36.2%	39.6%	37.0%	35.2%
All Areas	42.9%	32.7%	34.0%	35.3%	34.9%	37.5%	35.9%	34.0%
Percentage of farms with Economic Size > 40 ESU								
PU					0.6%		1.6%	1.8%
IR	0.4%	1.5%	1.6%	1.3%	1.8%	1.9%	2.5%	2.8%
PR	0.3%	0.7%	0.6%	0.4%	0.7%	1.1%	1.2%	1.6%
All Areas	0.3%	0.9%	0.8%	0.6%	1.0%	1.3%	1.5%	1.9%
Change in the number of farms								
	1990-93	1993-95	1995-97	1997-2000	2000-03	2003-05	2005-07	
PU								2.8%
IR	-4.0%	-2.0%	-1.7%	-4.2%	0.5%	0.3%		4.4%
PR	-3.5%	-2.0%	3.8%	-3.6%	5.5%	-2.9%		2.8%
All Areas	-3.6%	-2.0%	2.4%	-0.5%	0.9%	1.1%		3.2%

Source: Eurostat (2011d), Farm Structure Survey, compiled from NUTS II data  
PU: Predominantly Urban Areas, IR: Intermediate Areas, PR: Predominantly Rural Areas  
ESU: European Size Units

Annex Table 1. Basic Farm Structure Indicators

	2000	2003	2005	2007
PU	20.2%	11.0%	11.1%	9.7%
IR	42.4%	32.0%	29.0%	28.6%
PR	25.1%	18.1%	16.1%	16.5%
All Areas	28.1%	20.7%	18.5%	18.8%

Source: Eurostat (2011d), Farm Structure Survey, compiled from NUTS II data  
PU: Predominantly Urban Areas, IR: Intermediate Areas, PR: Predominantly Rural Areas

Table 11. Holders’ renewal index (Holders aged <35 years/holders aged 65+ years), 2000-2007

Additional insights about farm structures are derived from the decomposition of “farmers” i.e. all those who identified themselves as “farmers” in the list of the professional statuses of Labor Force Surveys (Table 12). Thus, at the national level, over the 1993-2010 period, self-

		1993	2000	2006	2010
PU	Self-employed without hired labor	52.6	53.5	44.7	61.2
	Self-employed with hired labor	12.5	6.0	6.9	8.4
	Assistant in the family business	19.7	20.7	12.4	14.2
	Hired worker	15.2	19.7	36.0	16.3
	Total	100.0	100.0	100.0	100.0
IR	Self-employed without hired labor	52.1	53.3	60.5	57.4
	Self-employed with hired labor	6.5	10.1	8.2	15.3
	Assistant in the family business	38.7	35.0	28.4	23.2
	Hired worker	2.6	1.6	2.9	4.1
	Total	100.0	100.0	100.0	100.0
PR	Self-employed without hired labor	56.4	58.0	65.2	72.7
	Self-employed with hired labor	3.4	6.4	6.0	6.1
	Assistant in the family business	38.0	33.4	25.6	18.0
	Hired worker	2.3	2.1	3.2	3.2
	Total	100.0	100.0	100.0	100.0
All Areas	Self-employed without hired labor	55.0	56.5	63.3	67.5
	Self-employed with hired labor	4.5	7.5	6.7	9.1
	Assistant in the family business	37.8	33.5	26.1	19.5
	Hired worker	2.6	2.5	3.9	3.9
	Total	100.0	100.0	100.0	100.0

Source: HSA, Labor Force Surveys, compiled from NUTS II original micro-data  
PU: Predominantly Urban Areas, IR: Intermediate Areas, PR: Predominantly Rural Areas

Table 12. Occupation "Farmer", by type (% of total occupation "Farmer"), 1993-2010

employed farmers without hired labor comprised the majority, reaching two thirds of the total in 2010 [with increasing trends], while assistants in the farm family business experienced a spectacular drop in their contribution [share] by half. In parallel, self-employed farmers with hired labor doubled their share. In PR areas, the aforementioned trends of the self-employed without hired labor along with assistants in the farm family business developed at a more rapid pace, in contrast to self-employed with hired labor and hired workers, who were less pronounced than in the whole country. IR areas displayed the highest share of both self-employed farmers with hired labor and assistants in the farm family business. PU areas diverged significantly, with hired workers having a quadruple share than the national average, although that was reduced by 20 percentage points from 2006 to 2010. Also, the lowest share of the assistants in the farm family business was observed in PU areas.

Only 8.0 percent of the total family labor force is employed full-time on agriculture (Table 13) which means that the vast majority of farm family members engage in agriculture on a part-time basis. The lowest and more rapidly shrinking rate of full-time employment is seen in PU areas.

	2000	2003	2005	2007
PU	8.0%	3.6%	5.5%	3.9%
IR	10.9%	8.6%	8.0%	8.4%
PR	9.8%	8.1%	8.0%	8.0%
All Areas	10.0%	8.1%	7.9%	8.0%

Source: Eurostat (2011d), Farm Structure Survey, compiled from NUTS II data  
PU: Predominantly Urban Areas, IR: Intermediate Areas, PR: Predominantly Rural Areas

Table 13. Family labor force full-time employed (2000-2007)

Furthermore, in 2007 the percentage of holders who besides agriculture are engaged in other gainful activities ranged from 22.7% in PR areas to 25.8% in PU areas (Table 14). A similar pattern is observed in the EU, although at a much higher level.

	PU	IR	PR	All Areas
Greece	25.8	25.0	22.7	23.2
EU 27	36.8	38.8	35.8	37.0

Source: EU DG Agr., 2011, NUTS III data  
PU: Predominantly Urban Areas, IR: Intermediate Areas, PR: Predominantly Rural Areas

Table 14. Holders with other gainful activities (%), 2007

It has to be noted that the percentage of pluriactive farm holders decreased over time since in 1990/91. It was 24% in “most rural” regions and 31% in “intermediate” regions, in contrast to 26% in the country as a whole (Post & Terluin, 1997).

From the combination of data concerning part-time employment in agriculture and pluriactivity, an estimation of hidden unemployment could be derived (Terluin et. al., 1994). Thus, almost two thirds of part-time farm holders do not have any other profitable activity.

Even though this figure is high, there exists a difference of 5.5 percentage points between IR and PU areas (Table 15).

	PU	IR	PR	All Areas
% part-time holders [1]	95.3	89.0	89.3	89.4
% holders with other gainful activities [2]	25.8	25.0	22.7	23.2
Estimation of hidden unemployment [1] – [2]	69.5	64.0	66.6	66.2

Source: Authors’ estimation, based on Tables 13 and 14  
PU: Predominantly Urban Areas, IR: Intermediate Areas, PR: Predominantly Rural Areas

Table 15. Estimation of hidden unemployment, 2007

A final dimension of rural labor markets concerns immigrants working in agriculture. According to official data, they represent 8.2% of all employees in agriculture in 2010 (Table 16). Although these figures seem to be underestimated, three interesting findings emerge. Firstly, immigrants’ share in total agricultural employment increased 16 times between 1993 and 2010. Secondly, the ratio of immigrants without Greek nationality to those with it is 3:1 on a national scale. Thirdly, the highest share of immigrants was observed in PU areas (20.4% in 2010), more than triple the IR areas. Despite the fact that the contribution of immigrants to farm employment progressively increased, presumably the figures in Table 16, to some degree, are due to the improvement of the quality of statistical data and a higher rate of registration of immigrants to the official statistical surveys. In addition, a significant

		1993	2000	2006	2010
PU	Immigrants with Greek Nationality	0.0	3.2	8.8	7.0
	Other Immigrants	0.9	0.8	10.4	13.4
	All Immigrants	0.9	3.9	19.1	20.4
IR	Immigrants with Greek Nationality	0.1	0.1	1.2	1.8
	Other Immigrants	0.5	0.4	2.4	4.8
	All Immigrants	0.6	0.6	3.6	6.6
PR	Immigrants with Greek Nationality	0.2	0.5	1.8	2.0
	Other Immigrants	0.3	0.8	3.7	6.4
	All Immigrants	0.5	1.3	5.5	8.3
All Areas	Immigrants with Greek Nationality	0.2	0.5	1.8	2.1
	Other Immigrants	0.3	0.7	3.5	6.1
	All Immigrants	0.5	1.2	5.3	8.2

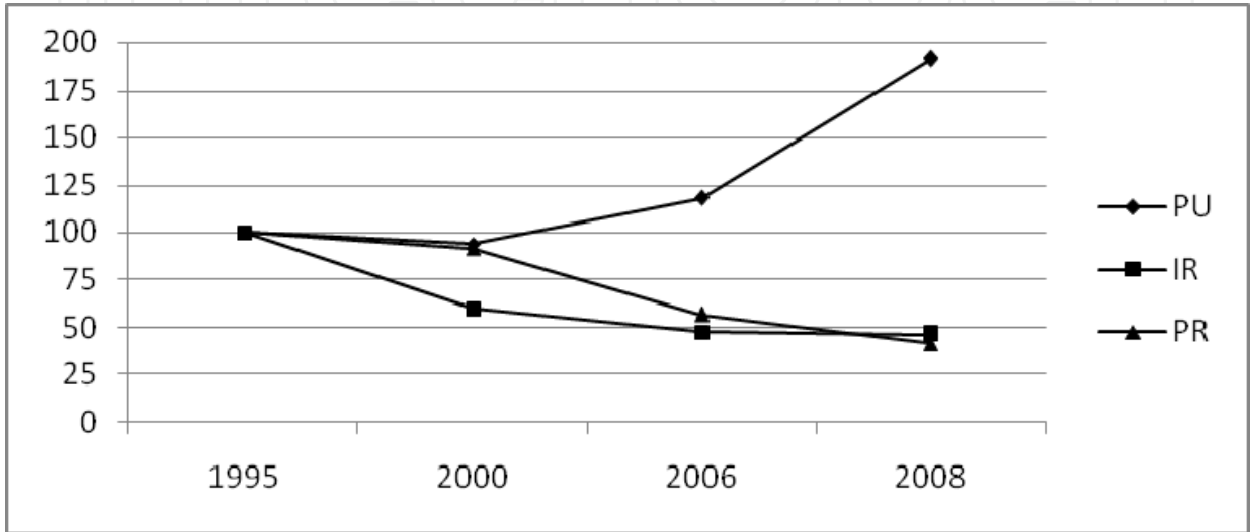
Source: HSA, Labor Force Surveys, compiled from NUTS II original micro-data  
PU: Predominantly Urban Areas, IR: Intermediate Areas, PR: Predominantly Rural Areas

Table 16. Immigrants employed in agriculture (% total employment in agriculture), 1993-2010

and growing part of those immigrants have established their own farm holdings, after some years of employment as farm hired workers.

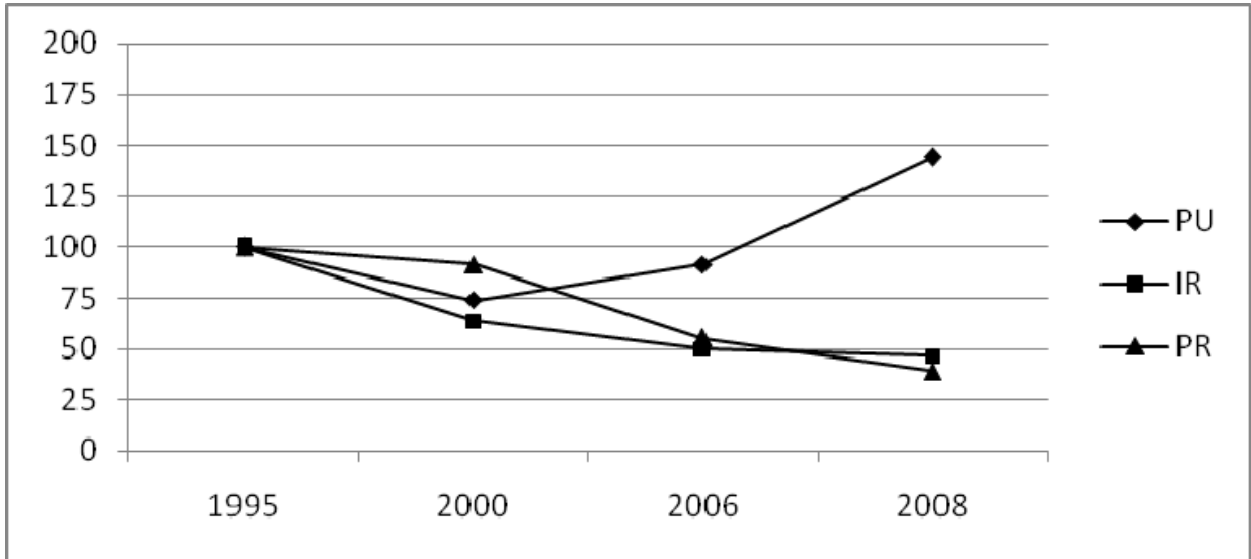
4.4 Economic performance of agriculture

Apart from structural characteristics and labor market issues, various areas are diverse in terms of economic performance. Farm income in Greece exhibits a steady decline since the mid 1990's. Although at a varying pace, this decline concerns all farm income indicators (Karanikolas, 2011). In Figures 3 and 4 we see the course of the net entrepreneurial income



Source: Eurostat (2011e), compiled from NUTS II Eurostat data,  
PU: Predominantly Urban Areas, IR: Intermediate Areas, PR: Predominantly Rural Areas

Fig. 3. Entrepreneurial income of agriculture, constant 1995 prices, index 1995=100



Source: Eurostat (2011d & 2001e), Authors' calculations, compiled from NUTS II Eurostat data  
PU: Predominantly Urban Areas, IR: Intermediate Areas, PR: Predominantly Rural Areas

Fig. 4. Entrepreneurial income per farm, constant 1995 prices, index 1995=100



of agriculture, which is the net income of family farms after the remuneration of all non-family production factors.

Thus, net farm family income, either as an absolute figure or on a per farm basis declines in all areas from 1995 through 2000. However, after 2000 the indexes in PU areas exhibit a remarkable rise, in contrast to IR and PR areas, where the declining course continues.

## 5. Discussion

The preceding analysis has revealed some long-term trends in the evolution of labor markets. To sum up, both diverging and converging trends among areas are present. PU areas have benefited most from population and employment growth. Demographic analysis showed that, in contrast to many European countries and regions, the process of counter-urbanization does not seem to be confirmed in the Greek case, at least not from the population point of view. In terms of employment and GVA a declining role of agriculture is observed along with less declining shares of industry and expanding services, indicating a continuous diversification of the economy. At the same time, unemployment rates progressively converge, with IR and PR areas reaching PU areas. Changes in the sectoral structure of employment pose the question whether decline in agricultural employment is counterbalanced by growing employment in other sectors (Bryden & Bollman, 2000). As far as the sectoral specialization is concerned, PR areas specialize in agriculture and construction while they exhibit a certain dynamism in the agrifood sector - with regard to GVA and job growth.

On the other hand, diverging trends are observed, in relation to rates of employment. In particular, from 2003 to 2007 employment rate increased in IR and PU areas by 3.5 and 2.4 percentage points, respectively, whereas in PR areas it fell by 1.8 percentage points. This fact raises questions about the long-term prospects of rural areas, given the ambitious policy targets put forward by the EU, such as the 'Lisbon' objective on labor market participation without undermining cohesion. Furthermore, self-employment is a wide-spread phenomenon, especially in IR and PR areas; in the latter it also increases most rapidly over the 2005-2009 period.

With regard to the current crisis, according to the foregoing analysis, it emerges that, despite the changing profile of all areas, PR areas continue to lose population, while IR hold, and PU areas increase their population share. Unemployment rate has increased by three percentage points in the whole country, with the highest rise in PU areas (3.5 points) and the lowest in PR areas (2.5 points). Concurrently, the number of unemployed people has increased everywhere, most notably in PU areas, but PR areas enjoy a slight job growth in contrast to IR and PU areas which suffer a loss in job positions. The critical question is: Could this job growth be sustained? It seems that the answer is "no", since more recent evidence displays job loss in all economic sectors. Specifically, from the first quarter of 2010 through the first quarter of 2011 total employment fell by 7.7% in agriculture, by 13.8% in industry and by 2.2% in services (Zografakis & Mitrakos, 2011). Noteworthy changes occurred at the sectoral level, too. In contrast to the tertiary sector, job loss has occurred in the secondary sector in all types of areas. A remarkable increase of employment in the primary sector - contrary to the general trend - has been registered in IR and, to a lesser degree, in PU areas. Our data showed a slower rate of economic growth in PR areas after mid-1990's and a stagnation in

2007-08. Nonetheless, the most recent data (1<sup>st</sup> Q.2010 – 1<sup>st</sup> Q.2011) suggest that the whole country is already experiencing a sharp contraction of economic activity, though there's no indication regarding the relative performance of various types of areas.

Over time pluriactivity is decreasing and is more equally distributed among areas. The slight precedence of PU and IR areas in terms of pruriactivity must be attributed to the ability of local and regional labour markets to offer employment opportunities beyond agriculture. The relationship of pluriactivity with farm-exit rates is one of its main dimensions. As we have seen, the speed of change in farm structures seems to be much higher in IR areas; this is also the case where the rate of farm exit in the 1990's is concerned, as well as the rate of the creation of new farms after 2005. It seems that this is in contrast to other research findings, e.g. from Western Germany, indicating that farmers quit agricultural occupation at faster rates in regions with small farms and a high share of part-time farming (Glauben et al., 2006). A similar contention is supported for the relationship between large farms and the probability of farm exit, which has been found to be negative (Mishra et al., 2010); but our data indicates that farm exit rates are higher in the areas with the largest and growing average farm size, that is in IR areas.

Moreover, the decision of a farm operator for off-farm employment varies depending on farm size. Alasia et al. (2009) suggest that although human capital and farm characteristics are important determinants for both smaller and larger holdings, for smaller agricultural holdings the decision to work off-farm is heavily influenced by family, community and regional characteristics; also, urban regions are not the main labor markets for the operators who are involved in off-farm labor hence their main linkages are with the rural labor market itself. This stresses the need for a more detailed research on the intersection between rural labor markets and farm structural, farm holder and area characteristics. Although not based on micro-data, our analysis of off-farm employment implies that the three types of areas, despite their differences in labor markets and farm structures, have no substantial differences in pluriactivity.

As we have seen, poverty rates for PR areas are larger than those of the country as a whole, almost double the poverty rates in PU areas and significantly greater for the population residing in IR areas of the country. The inclusion of imputed income (or expenditure) reduces the poverty rates significantly and disproportionately. The highest reduction is observed in PR areas– from 27.5% to 19.3% for the central poverty line – because of the greater importance of imputed expenses and the higher rate of poor households, compared to PU and IR areas. Ownership-occupancy is thus a prime mechanism for the mitigation of the consequences of the crisis: A poor family that lives in its own property is clearly in a better position than other families which rent a house, since low income does not entail the risk of eviction and loss of housing which is the greatest fear of the poor who have no such guarantee. Therefore, poverty rate indicators reveal the fragile socio-economic status of rural households.

Our results are in line with earlier research findings, showing that farm households are one of the most vulnerable and low-income groups in society (Hill, 2000). Moreover, in Greece, employment in the agricultural sector, along with old age, residence in rural areas, low educational qualifications and, to a lesser extent, lack of employment have been identified as closely associated with acute poverty; this conclusion is drawn irrespective of the welfare

indicator, the level of the poverty line, or the size of the equivalence scales used in the analysis (Tsakloglou and Panopoulou, 1998).

Poverty risk for the working population is another serious and progressively worsening threat throughout all areas. A comparative analysis of this issue among EU countries showed that Greece ranks first in all workers and second (after Portugal) in part-time employees (Allègre, 2008). Apparently, this concerns the majority of the farm population, as farm employment in all areas is carried out on a part-time basis.

What ensues, then, is that farm households as well as rural households are among the low-income groups in society. It has been documented that after a decade of relative stability of inequalities (1988-1999), a decrease in the income and well-being discrepancy between farm and non-farm households took place over the period 1999-2005 (Karanikolas et al., 2008). Nevertheless, social and economic situation during the current crisis raises deep concern. Unemployment is rising dramatically, the nominal and real incomes are shrinking, the welfare state is suffering because of the financial adjustments and social indicators of inequality and poverty seem to worsen (Leventi and Matsaganis, 2011). An empirical question for future research concerns the spatial variation of poverty, as prior experience shows that during a crisis the incidence of poverty increases more in rural than in urban areas (Fallon & Lucas, 2002).

Another set of data clarified the type of the structural adjustment of agriculture during the period under study; this is done by examining the evolution of farm structures, the agricultural labor markets and the real farm income (Table 17). As was displayed in detail in the previous section, PR areas show stagnation in farm structures and stagnation/decline in the agricultural labor markets. The latter is evident from the highest rate of increase of the ‘self-employed without hired labor’ along with the highest rate of decrease of ‘assistants in the farm family business’ and the lowest level of ‘hired labor’. The above indicate a shift towards a “lone-farmer” model. In addition, although their agri-food sector exhibits certain dynamism, real per farm income has suffered a spectacular drop by 61% over the 1995-2008 period.

On the contrary, farm structures in IR areas are more dynamic, as is evident from the evolution of both physical and economic sizes of farms, the higher rate of replacement of

	PU Areas	IR Areas	PR Areas
Farm Structures Evolution (1993-2008)	dynamic	dynamic	stagnant
Agricultural Labor Markets (1993-2010)	dynamic	dynamism and retention of family characteristics	stagnation/decline
Real per Farm Income			
1995-2000	-26%	-36%	-8%
2000-2008	70%	-17%	-52%
1995-2008	44%	-53%	-61%

PU: Predominantly Urban Areas, IR: Intermediate Areas, PR: Predominantly Rural Areas

Table 17. Summary of farm structures evolution and structural adjustment of agriculture

holders and the relatively low share of elderly farmers. As far as the agricultural labor markets are concerned, IR areas exhibit a combination of dynamism (the highest share and rate of change of the 'self-employed with hired labor') and retention of family characteristics (the lowest reduction of 'assistants in the farm family business'). Nevertheless, the farming sector in these areas has sustained a heavy loss in real per farm income especially from 2000 to 2008.

PU areas diverge significantly, with hired workers having a quadruple share than the national average, along with the lowest share of the assistants in the farm family business and the highest share of immigrants employed in agriculture. PU are the only areas with a substantial rise of real per farm income over the 2000-2008 period, after a decrease from 1995 to 2000. On the other hand, of particular importance is the strong and increasing presence of very small farms, which have augmented their share from 55.5% in 2005 to 59.6% in 2007. It is very unlikely that this increase concerns "hobby farmers" or "lifestyle farmers" or "semi-subsistence farmers" (though the above do exist), as those data come from interviewees with the professional status of "farmer". Consequently, most likely it refers to tiny farms in terms of utilized area, but not in their economic size; the most prominent examples are intensive greenhouse farms cultivating fresh fruits and vegetables, and intensive dairy farms, both relying on extended use of immigrant labor force. It seems that this might be an alternative to the economic crisis, given the economic performance of farms in PU areas.

Thus, the aforementioned differences help to "recognize the multidimensional or multilevel nature of farm-related crises, the complex nature of precipitating factors, and the varied implications for farm livelihoods, rural communities, and the agricultural sector" (Bessant, 2007).

Greek rural areas, as their European counterparts, "face particular challenges as regards growth, jobs and sustainability in the coming years... In intermediate areas, the challenge will be to avoid the risk of exclusion associated with lack of skills and low incomes. In remoter areas with higher levels of agricultural employment, the management of the restructuring process will play a significant role in the broader rural economy" (CEC, 2006). Hopefully, the preceding analysis has contributed to the clarification of some critical dimensions of spatial differentiation. Moreover, at this level of analysis, perhaps some intra-area characteristics and differences are insufficiently depicted. This underlines the urgent need for a more disaggregated analysis. Additionally, there's scope for improvement in the adopted methodology, taking into account, for example, that the use of data with a different territorial reference (NUTS II and NUTS III) could weaken the consistency of the results.

## 6. Conclusion

The aim of this chapter has been to trace the consequences of the current economic crisis in rural areas of Greece. The central question of the study has been: How the current crisis has affected rural areas and how rural areas have responded to this crisis? The analysis at the level of predominantly urban (PU), intermediate (IR) and predominantly rural (PR) areas – as recently redefined by Eurostat – has revealed some critical dimensions of spatial differentiation.

All types of areas in Greece are experiencing rapid changes in their labor market characteristics, poverty rates and structural adjustment of agriculture. Both diverging and converging trends among areas are present. In the context of a continuous diversification of

the economy, PU areas have benefited most from population and employment growth, while unemployment rates progressively converge, with IR and PR areas reaching PU areas. In all areas but PR, rates of employment have increased, self-employment has spread especially in PR and IR areas, and in the course of time the all-pervading pluriactivity has decreased.

Households in PR areas along with farm households, irrespective of their place of residence, proved to be some of the most vulnerable parts of the population to the risk of poverty. Ownership-occupancy is a key mechanism for the mitigation of the consequences of the crisis, most importantly in PR areas. In-work poverty risk is another serious threat for the working population in all areas, particularly disturbing to those with a part-time employment such as the majority of farmers. Notwithstanding the presence of agriculture all over the country, farm structures are quite diverse and differentially evolving, most rapidly in IR areas. Generally speaking, the structural adjustment of agriculture is characterized by dynamism in PU areas, by stagnation/decline in PR areas and by dynamism/steadiness in IR areas. Moreover, within the adverse environment of the current crisis diverging trends are enhanced, unemployment is rising dramatically, the nominal and real incomes are shrinking, and social indicators of inequality and poverty seem to worsen after a period of relative convergence.

The above findings assume a prime importance considering the challenges that rural areas face. The analysis has elucidated the distinct patterns of adjustment pertaining to various types of areas. The fact that intra-area characteristics and differences might be insufficiently depicted underlines the urgent need for a more detailed analysis and for area-specific policy responses. In addition, as the economic crisis is in full swing, a critical question emerges about its long-term implications, even after the recovery of the economy.

Finally, our analysis indicates that the participation of Greek economy in successive stages of the European integration and its consequent exposure to a more competitive environment are coupled with asymmetric effects on various types of areas. It also turns out that the concurrent implementation of EU rural development policy, despite its apparent cohesion effects, has not been enough to restrain the diverging spatial trends.

## 7. Note

The authors have an equal contribution to this chapter.

## 8. References

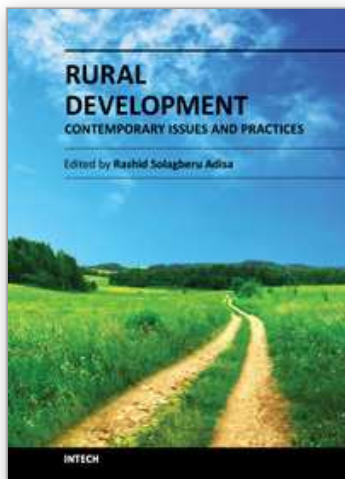
- Alasia, AL., Weersink, A., Bollman, R. & Granfield, J. (2009). Off-farm labor decision of Canadian farm operators: Urbanization effects and rural labor market linkages. *Journal of Rural Studies*, Vol. 25, No. 1 (January 2009), pp. 19-24, ISSN 0743-0167.
- Allègre, G. (2008). *Working poor in the EU: an explanatory comparative analysis*, Observation Francais des Conjonctures Économiques, Working Paper No. 2008-35, November 2008, Paris.
- Bessant, K. (2007). Multiple Discourses on Crisis: Farm, Agricultural, and Rural Policy Implications. *Canadian Journal of Agricultural Economics/Revue Canadienne d'agroéconomie*, Vol. 55, No. 4 (December, 2007), pp. 443-457, ISSN 0008-3976.



- Bryden, J. & Bollman, R. (2000). Rural employment in industrialized countries. *Agricultural Economics*, Vol. 22, No. 2 (March 2000), pp. 185-197, ISSN 0169-5150.
- CEC [Commission of the European Communities] (2006). Employment in rural areas: closing the jobs gap, COM (2006) 857 final, Brussels, 21.12.2006.
- Commins, P. (2004). Poverty and Social Exclusion in Rural Areas: Characteristics, Processes and Research Issues. *Sociologia Ruralis*, Vol. 44, No 1. (January, 2004), pp. 60-75, ISSN 0038-0199.
- Copus, A., Hall C., Barnes, A., Dalton, Gr., Cook, P., Weingarten, P., Baum, S., Stange, H., Lindner, Ch., Hill, A., Eiden, G., McQuaid, R., Grieg, M. and M. Johansson (2006). Study on Employment in Rural Areas (SERA), *A Study commissioned by EC-DG for Agriculture and Rural Development*, Date of Access 27.07.11, Available from [http://ec.europa.eu/agriculture/publi/reports/ruralemployment/sera\\_report.pdf](http://ec.europa.eu/agriculture/publi/reports/ruralemployment/sera_report.pdf)
- EU-DG for Agriculture and Rural Development (2011). Rural Development in the European Union - Statistical and Economic Information - Report 2010, Date of Access 25.07.11, Available from <http://ec.europa.eu/agriculture/agrista/rurdev2010>
- Eurostat (2010). A revised urban-rural typology, in *Eurostat regional yearbook 2010*, ISSN 1830-9674, Brussels.
- Eurostat (2011a). Population, Date of Access 20.07.11, Available from <http://epp.eurostat.ec.europa.eu/portal/page/portal/population>
- Eurostat (2011b). National Accounts, Date of Access 20.07.11, Available from [http://epp.eurostat.ec.europa.eu/portal/page/portal/national\\_accounts](http://epp.eurostat.ec.europa.eu/portal/page/portal/national_accounts)
- Eurostat (2011c). Labor Force Surveys, Date of Access 20.07.11, Available from [http://epp.eurostat.ec.europa.eu/portal/page/portal/labour\\_market](http://epp.eurostat.ec.europa.eu/portal/page/portal/labour_market)
- Eurostat (2011d). Farm Structure Survey, Date of Access 25.07.11, Available from <http://epp.eurostat.ec.europa.eu/portal/page/portal/agriculture/data/database>
- Eurostat (2011e). Regional Agriculture Statistics, Date of Access 25.07.11, Available from <http://epp.eurostat.ec.europa.eu/portal/page/portal/agriculture/data/database>
- Errington, A. & Gasson, R. (1996). The increasing flexibility of the farm and horticultural workforce in England and Wales. *Journal of Rural Studies*, Vol.12, No.2 (April 1999), pp. 127-141, ISSN 0743-0167.
- Fallon, P. & Lucas, R. (2002). The Impact of Financial Crises on Labor Markets, Household Incomes, and Poverty: A Review of Evidence. *World Bank Research Observer*, Vol. 17, No 1, pp. 21-45, ISSN 0257-3032.
- Glauben, Th., Tietje, H. & Weiss, Ch. (2006). Agriculture on the Move: Exploring Regional Differences in Farm Exit Rates in Western Germany. *Jahrbuch für Regionalwissenschaft*, Vol. 26, No. 1, (March 2006) pp. 103-118, ISSN 0173-7600.
- HSA [Hellenic Statistical Authority] (1993, 2000, 2006, 2010). Labor Force Surveys Database, Original micro-data, Athens.
- HSA [Hellenic Statistical Authority] (2008). Household Budget Survey 2008 Database, Original micro-data, Athens.
- HSA [Hellenic Statistical Authority], various years, Population census, Date of Access 20.07.11, Available from <http://www.statistics.gr>
- Hill, B. (2000). *Farm incomes, wealth and agricultural policy*, 3rd Edition, Ashgate Publishing, ISBN-10: 0754611329, Surrey, UK.
- IFAD [International Fund for Agricultural Development] (2011). Rural Poverty Report 2011, Date of Access 20.07.11, Available from <http://www.ifad.org/rpr2011>



- Karanikolas, P. (2011). Greek agriculture in face of the crisis; problems and prospects. *Neos Logios Hermis*, Vol. 1, No. 2 (May 2011), pp. 211-232, ISSN 1792-7161 [in Greek].
- Karanikolas, P., Zografakis, St. & Martinos, N. (2008). Income inequalities and welfare status of farm and non-farm households, in *Greek agriculture and agricultural policy*, K. Krimbas & L. Louloudis (Eds.), 59-77, Academy of Athens, ISBN 978-960-404-126-8, Athens, Greece [in Greek].
- Leventi, Ch. & Matsaganis, M. (2011). Distributional impact of crisis in Greece, paper presented at the conference “*Social policy and social cohesion in Greece under crisis*”, Bank of Greece, 13<sup>th</sup> May 2011, Athens, Greece.
- Mishra, A.K., Raggi, M., Viaggi, D. (2010). Determinants of farm exit: a comparison between Europe and the United States, paper presented at the 114th EAAE Seminar “*Structural change in agriculture*”, April 15-16, 2010, Berlin, Germany.
- OECD (1994). *Creating rural indicators for shaping territorial policy*, OECD, ISBN 978-9264141124, Paris, France.
- OECD (2007). *Regional Typology*, GOV/TDPC/TI(2007)8, Paris.
- Pauw, K.W. (2007). Agriculture and poverty: Farming for food or farming for money? *Agrekon*, Vol. 46, No. 2, (April, 2007), pp. 195-217, ISSN 0303-1853.
- Post, J. & Terluin, I. (1997). The changing role of agriculture in rural employment, in *Rural employment, an international perspective*, R. Bollman & J. Bryden (Eds.) 305-326, CAB International, ISBN 0 85199 198 X, New York, USA.
- Terluin, I.J., Godeschalk, F.E., von Meyer, H., Post, J.H., & Strijker, D. (1994). *The agricultural income situation in Less Favoured Areas of the EC*, European Communities, ISBN 9282673413, Brussels, Belgium.
- Tickamyer, A. (2006). Rural poverty, in *Handbook of Rural Studies*, P. Cloke, T. Marsden and P. Mooney (Eds.), 411-426, Sage Publications, ISBN 0 7619 7332 X, London.
- Trivelli, C., Yancari J. & de los Ríos, C. (2009). *Crisis and Rural Poverty in Latin America*, Working Paper No. 37, Rural Territorial Dynamics Program. Rimisp, ISBN 9972-46-51-257-5, Santiago, Chile.
- Tsakoglou P. and Panopoulou G. (1998). Who are the poor in Greece? Analysing poverty under alternative concepts of resources and equivalence scales, *Journal of European Social Policy*, Vol. 8, No. 3 (July 1998), pp. 229-252, ISSN 0958-9287.
- Zografakis, St. & Mitrakos, Th. (2011). Working poverty in households with unemployed members during the current crisis, paper presented at the conference “*Social policy and social cohesion in Greece under crisis*”, Bank of Greece, 13<sup>th</sup> May 2011, Athens, Greece.



## **Rural Development - Contemporary Issues and Practices**

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Development of rural areas has witnessed increasing attention globally, especially over the past three to four decades. The highpoint in the renewed global interest in the development of rural people and their environment was reached with the setting of the Millennium Development Goals (MDGs) in the year 2000. All of the set goals are basically rural development goals. With less than four years to the deadline for the achievement of the MDGs, it is almost certain that the goals are far from being achieved in, especially, most developing countries for whom the MDGs were essentially set. The struggle thus continues for rural development. As long as problems of poverty, disease, illiteracy, unemployment, poor infrastructure, environmental degradation and others persist (or increase) in rural communities, better and more result-oriented solutions to perennial and emerging problems of rural communities would be required. But rural development, in spite of the variations in thresholds of rurality among nations, is not exclusively a Third World or ‘developing countries’ process, owing to its multi-dimensionality. It is a global phenomenon that obviously requires global strategies. This book not only looks at rural development from its multi-dimensional perspectives, it is also a product of the experiences and expertise of distinguished scholars across the continents. Aiming to provide a comprehensive single volume that addresses salient issues and practices in rural development, the book covers themes ranging from sustainable agriculture, biodiversity conservation, strategic environmental assessment, renewable energy, rural financial resources, assessment of protected areas to statistics for rural development policy. Other subject matters covered by the book include social marginality, land use conflict, gender, cooperatives, animal health, rural marketing, information and communication technology, micro-business, and rural economic crisis. The book is thus an invaluable source of useful information on contemporary issues in rural development for researchers, policy makers, and students of rural development and other related fields.

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