



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*



Rural Labour Market Developments in the Former Yugoslav Republic of Macedonia

ABSTRACT

The significant changes in the quantitative and qualitative characteristics of human resources in rural Macedonia can be explained by the continued trend of emigration from villages to urban areas and abroad. The intensity of emigration has altered the demographic structure and reproductive base of the rural population, along with the income of rural households. The rural and agricultural labour market faces a mismatch with respect to the unfavourable age, education and spatial distribution of the total labour force. A reduction in the participation of women in the agricultural labour force is a new feature. The overall transformation is apparent in the income structure of rural households. An increase in the share of households with mixed income sources notably stems from households that receive remittances and foreign currency funds from family members abroad. The demographic revitalisation of rural areas depends on economic revitalisation, with a more rational use of the labour force and human resources, as well as a restructuring of agricultural production and agricultural holdings. In addition, improvements are necessary in the functioning of market institutions to better meet the needs of smaller farmers and the rural economy.

Key words: Rural labour market, agricultural transformation, rural households, emigration process, rural economy business management.

FACTOR MARKETS Working Papers present work being conducted within the FACTOR MARKETS research project, which analyses and compares the functioning of factor markets for agriculture in the member states, candidate countries and the EU as a whole, with a view to stimulating reactions from other experts in the field. See the back cover for more information on the project. Unless otherwise indicated, the views expressed are attributable only to the authors in a personal capacity and not to any institution with which they are associated.

Available for free downloading from the Factor Markets (www.factormarkets.eu)
and CEPS (www.ceps.eu) websites

ISBN 978-94-6138-129-3

© Copyright 2011, Verica Janeska and Štefan Bojnec

Contents

1. Introduction	1
2. Demographic developments by statistical region	2
2.1 Labour force and employment of the rural population.....	3
2.2 Changes in the total population, urban and rural	3
2.3 The labour force in rural areas.....	6
2.4 Gender, age and educational structure of the rural population.....	7
3. The labour force in agriculture	10
3.1 Agricultural population in the pre-transition period	10
3.2 Active agricultural population in the period of transition	10
3.3 Characteristics of the total, active agricultural population.....	13
4. Determinants of labour market changes and policy implications.....	14
5. Conclusions	15
References	17

List of Tables

Table 1. Basic demographic features of the Republic of Macedonia, by statistical region (NUTS 3).....	2
Table 2. Demographic indicators, 2008.....	3
Table 3. Number and share (in %) of the urban and rural population at the regional level (NUTS 3), 1994 and 2002	5
Table 4. Working-age population (15-79),* by economic activity in rural areas (in %), 2004–09.....	6
Table 5. Gender structure (in %) of the working-age population (15-79)* by economic activity in rural areas, 2004–09	7
Table 6. Age structure (in %) of the working-age population (15-79)* by economic activity in rural areas, 2004–09	8
Table 7. Educational structure (in %) of the working-age population (15-79)* by economic activity in rural areas, 2004–09	9
Table 8. Active agricultural population in 1981, 1994 and 2002.....	11
Table 9. Active agricultural population, 1996–2009	11
Table 10. Active agricultural population according to ownership, 2002–09	12

Rural Labour Market Developments in the Former Yugoslav Republic of Macedonia

Verica Janeska and Štefan Bojnec*

Factor Markets Working Paper No. 5/September 2011

1. Introduction

The labour market in the Former Yugoslav Republic of Macedonia¹ has developed through different phases (Micevska, 2008). It is generally accepted for developed and developing countries that knowledge-based economic growth is crucial for raising the level of international competitiveness, but the education system needs to be geared towards producing a workforce that can be used efficiently in the labour market (Sapsford and Tzannatos, 1993; Jajri and Ismail, 2010). Grgić et al. (2010) investigated the (dis)satisfaction of the rural population with their quality of life and intentions to migrate from rural areas in Croatia, arguing that the major hardships of rural life are of an economic nature – lack of employment opportunities, inadequate choice of profession and lower incomes compared with those in a city.

The challenging issues faced by the Macedonian rural economy are similar to those in some developing countries with agriculture in an unstable economy (Schultz, 1945) and affect aspects of rural business development, such as a lack of management skills, finance, access to bank credit, access to markets and appropriate technology. In addition are low levels of production capacity, a lack of recognition by large companies, a lack of interest, long bureaucratic processes, and an absence of support for the roles that small businesses can play in economic development (Jakimovski, 2002; Todaro and Smith, 2003; Kongolo, 2010; Todorov and Vittuari, 2010). In the agricultural sector, the family farm structure prevails (Hanson, 1996; Swinnen and Van Herck, 2009).

This study assesses the role of rural labour market developments in the country, where small-scale farms and subsistence agriculture (Abele and Frohberg, 2003) play an important social-buffer role in the rural economy (Petrick and Weingarten, 2004). The contribution of this paper is threefold. It is the first study to provide a qualitative and quantitative analysis of key issues surrounding the development of the rural labour market and agriculture in the Republic of Macedonia. The paper also assesses the institutional framework for the functioning of rural labour markets and its impacts on development, along with structural changes in the labour market of the rural economy and agriculture. Finally, the paper reviews human capital and labour mobility, providing a descriptive overview that draws upon informative and comprehensive reports on the factors driving rural and agricultural labour markets. In spite of high unemployment rates and job shedding, agriculture and the rural economy in the Republic of Macedonia have remained very important for maintaining jobs, small businesses and entrepreneurship, economic development and poverty alleviation during the transition (Swinnen et al., 2005; Macours and Swinnen, 2008).

* Verica Janeska is Professor at the Institute of Economics, Ss. Cyril and Methodius University, Skopje, Republic of Macedonia. Štefan Bojnec is Professor of economics at the Faculty of Management, University of Primorska, Koper, Slovenia (email: stefan.bojnec@fm-kp.si or stefan.bojnec@siol.net).

¹ Although the Republic of Macedonia is the name used within the country, it was admitted to the United Nations in 1993 following its succession from former Yugoslavia in 1991 under the provisional name of Former Yugoslav Republic of Macedonia, sometimes abbreviated as FYROM. In this paper we use the shorter of the two names.

The rest of the paper is structured in the following way. First, demographic developments are presented by statistical region. Second, the labour force and employment of the rural population are analysed for the total economy, urban and rural. The paper focuses on the labour force in rural areas and its structure by gender, age and education. Third, specific attention is given to the labour force in agriculture during the pre-transition and transition periods. Fourth, based on the empirical analyses of rural labour market developments, the paper considers the main determinants of labour market changes in agriculture and rural areas, with managerial and policy implications. The final section derives the main findings and conclusions.

2. Demographic developments by statistical region

The Republic of Macedonia is characterised by a high degree of demographic differences among the regions with respect to the total increase in the population, natural and migratory movements, population density and other demographic features.² The basic demographic data, according to the population censuses of 1994 and 2002 (SSORM, 1994, 2002) are presented in Table 1 at the statistical regional level (NUTS 3).

According to a mapping of socio-economic differences among the municipalities, the latter are categorised into six zones based on the concentration of the population in the municipalities. These comprise areas with low concentrations (up to 50 persons per km²), zones of medium concentration (51-100 inhabitants per km²), overpopulated zones (101-150 inhabitants per km²), significantly overpopulated zones (151-500 inhabitants per km²), very significantly overpopulated zones (501-1,000 inhabitants per km²) and extremely crowded areas (over 1,000 inhabitants per km²) (UNDP, 2004). Pursuant to the territorial organisation in 2002, more than a third (37) of the municipalities were classed as low-concentration areas, 17 municipalities had an average concentration, 9 were overcrowded, 10 were significantly overcrowded, 5 were very substantially overcrowded and 6 municipalities had over 1,000 inhabitants per km².

Table 1. Basic demographic features of the Republic of Macedonia, by statistical region (NUTS 3)

Region	Total population		Changes – increase 1994-2002		Growth rate (%)	Migration	Population density per km ²	
	1994	2002	(No.)	(%)			1994	2002
Total	1,945,932	2,022,547	76,615	3.94	0.48	-30,992	76.0	79.0
Vardar	131,035	133,180	2,145	1.64	0.20	-1,670	40.7	41.4
East	201,525	203,213	1,688	0.84	0.10	-3,305	48.3	48.7
Southwest	211,226	219,741	8,515	4.03	0.49	-6,191	64.2	66.8
Southeast	168,481	171,416	2,935	1.74	0.22	-4,743	64.8	66.0
Pelagonija	242,614	238,136	-4,478	-1.85	-0.23	-5,297	49.7	48.8
Polog	281,982	305,930	23,948	8.49	1.02	-8,472	116.8	126.7
Northeast	163,841	172,787	8,946	5.46	0.66	-1,557	70.6	74.4
Skopje	545,228	578,144	32,916	6.04	0.73	243	314.6	333.6

Source: State Statistical Office of the Republic of Macedonia, population censuses of 1994 and 2002.

² The collection, processing and publication of regional data is based on the Nomenclature of Territorial Units for Statistics (NUTS).

The State Statistical Office reported data on regional statistics in 2008, including demographic data (Table 2). The average population density in 2008 was 82.2 inhabitants per km². Most of the population lived in cities, and the most densely populated place was the Skopje region (329 persons per km²). About 43% of the population lived in rural areas, which entailed 86.7% of the total area of land.

Table 2. Demographic indicators, 2008

	Republic of Macedonia	Statistical regions							
		Vardar	East	Southwestern	Southeastern	Pelagonija	Polog	Northeast	Skopje
Total population (in thousands)	2,046.9	153.9	180.3	222.1	172.4	234.9	312.6	174.3	596.4
Population density (per km ²)	82.2	38.1	51.0	66.5	62.9	49.8	129.4	75.4	329.0
Old-age dependency ratio (in %)	42.3	41.0	38.7	41.4	41.1	45.3	41.3	44.1	43.1
Average age (in years)	37	38	39	36	37	40	33	36	37

Source: State Statistical Office of the Republic of Macedonia.

The population is still showing a positive natural increase, although with a reduced pace of growth compared with the 1990s. According to the 2009 data, the natural population growth in 2009 amounted to 4,624 persons and the population growth rate was estimated at 0.33%.

The average age of the population in 2008 was approximately 37, and almost 70% of the population were of working age (between 15 and 64). The oldest population was recorded in Pelagonija, while the youngest population lived in the Polog statistical region. The share of the working-age population among the total in these two regions respectively amounted to 68.8% and 72.1%.

2.1 Labour force and employment of the rural population

To identify the existing condition of the labour market, as well as the scope and quality of the available human resources in rural areas, it is first necessary to review the changes in the total rural population, as the pool from which the labour force is recruited. Taking into consideration the long duration of demographic processes, we review the changes over a long time interval. The changes in the size and structural characteristics of the labour force and employees, as well as the inactive population, are analysed according to the available Labour Force Survey (LFS) data for the period 2004–09.

2.2 Changes in the total population, urban and rural

Major changes in the distribution and redistribution of the population since the beginning of the 1960s have contributed to increased heterogeneity in its internal distribution and emphasised a spatial–demographic polarisation. Among other ways, this is expressed in a larger concentration of the population in urban areas and the depopulation in the greater part of rural areas.

According to the population census of 1961 (SSORM, 1961), more than three-fifths (61.4%) of the total population lived in rural areas. After that there was a period of continual reduction in the rural population, which fell to about 50% of the total population in 1971. In the intercensal period of 1981–94, the total population in the country increased by 6.2% while the rural population decreased by 42,374 persons, or 5.2%. In the same period, the share of the rural population in the total population fell from 44.9% to 40.0%.

In the period since 1994, there have been substantial changes in the territorial organisation and identification of the rural and urban settlements in the country.³ Because of the incomparability of the data, to assess the existing conditions and changes in the spatial distribution of the population in rural areas, we reviewed the available data from the population censuses of 1994 and 2002 (processed according to the territorial organisation from 2004). In 2002, the share of the rural population among the total population amounted to 43.3%. At the regional statistical level, it varied from 70.8% (Polog) to 28.2% (Skopje). In addition to Polog, those statistical regions with a larger share of the rural population are the Southwest and the Southeast (Table 3).

The data for the urban and rural population show that in the period 1994–2002, the reduction of the rural population continued in all of the statistical regions except in the Southwest and Polog regions. In these two areas, there was and has remained a dominant share of the rural population. In 2002, almost three-fifths (59.2%) of the total rural population was concentrated in three statistical regions (Polog, Southwest and Skopje). According to the existing territorial organisation, almost half (41) of the total number of municipalities (84) in the country is solely made up of rural populations.

Most of the rural settlements have extremely small populations and because of the unfavourable age structure, they are at risk of being without a resident, such as Novaci (where the population density is 5 inhabitants per km²) and Drugovo (8 inhabitants per km²). This situation is primarily caused by the intensive rural–urban emigration that took place before the 1990s, as well as emigration abroad over the last two decades. At the same time, there are rural municipalities with a very high population density, such as Aracinovo (400 inhabitants per km²), Bogovinje (211 inhabitants per km²) and Vrapciste (161 inhabitants per km²). These are mainly settlements with high fertility rates, where emigration has not caused a significant fall in the natural increase of the population.

In line with the law on regional development, the Bureau for Regional Development has determined those villages that are deemed to be located in underdeveloped areas.⁴ These statistics reveal that about 69% of the national territory and approximately 17% of the total rural population are designated as being in underdeveloped areas. The criteria for determining the economically underdeveloped areas are unreliable, however, because some Macedonian villages with high rates of migration, a lack of municipal services and economic infrastructure have not been given the status of extremely underdeveloped villages and vice versa.

³ The first one was in 1996, when the territory of the country was divided into 123 municipalities, but the law did not determine rural and urban settlements. With the second one in 2004, 84 municipalities were established, and the rural and urban settlements were determined. According to the Law on the Territorial Organisation of Local Self-Government in the Republic of Macedonia, the villages are determined to be settlements with the one functional meaning in which one sector prevails and the physiognomy and function of the area is agricultural (*Official Gazette of RM*, No. 55/04).

⁴ The basic criteria and indicators for determining the level of development, i.e. the underdeveloped areas in the Republic of Macedonia, are the socio-economic index (for which the following indicators are used: GDP per capita, budget income per capita, and increase of the added value of the nonfinancial sector) and the demographic index (for which the following indicators are used: natural population increase, ageing coefficient, net migration per 1,000 inhabitants and graduated students per 1,000 inhabitants (aged 25–64)) (*Official Gazette of RM*, No. 162/08).

Table 3. Number and share (in %) of the urban and rural population at the regional level (NUTS 3), 1994 and 2002

Regions	Population census 1994			Population census 2002		
	Total	Urban	Rural	Total	Urban	Rural
Republic of Macedonia						
Number	1,945,932			2,022,547	1,147,006	875,541
%	100			100	56.7	43.3
Vardar						
Number	152,479	104,143	48,336	154,535	106,207	48,328
%	100.0	68.3	31.7	100.0	68.7	31.3
East						
Number	180,081	111,345	68,736	181,858	120,547	61,311
%	100.0	61.8	38.2	100.0	66.3	33.7
Southwest						
Number	212,856	99,010	113,846	221,546	79,964	141,582
%	100.0	46.5	53.5	100.0	36.1	63.9
Southeast						
Number	168,481	74,497	93,984	171,416	77,632	93,784
%	100.0	44.2	55.8	100.0	45.3	54.7
Patagonian						
Number	242,614	162,250	80,364	238,136	160,925	77,211
%	100.0	66.9	33.1	100.0	67.6	32.4
Polog						
Number	280,352	83,270	197,082	304,125	88,762	215,363
%	100.0	29.7	70.3	100.0	29.2	70.8
Northeast						
Number	163,841	87,420	76,421	172,787	97,757	75,030
%	100.0	53.4	46.6	100.0	56.6	43.4
Skopje						
Number	545,228			578,144	415,212	162,932
%	100.0			100.0	71.8	28.2

Source: State Statistical Office of the Republic of Macedonia.

According to the decision determining economically underdeveloped areas (*Official Gazette of RM*, No. 17/06 and 54/06), 64% of the total number of villages in Macedonia is eligible for support under this law. The total number of rural centres is 113, of which 20 also have the status of 'specific region'.⁵ The total number of villages with the status of specific region is 1,005 and they are divided as follows:

- 50% are mountainous, predominantly in the Southwest statistical region; they are followed by the statistical regional groups of Polog and Pelagonija, and the Northeast and East, with the smallest share being located in the Vardar and Skopje statistical regions;

⁵ The main criteria for determining the areas with specific development needs are the level of economic development, the demographic index, the geographical location, the level of technical and social infrastructure, the value of the natural resources and cultural heritage (*Official Gazette of RM*, No. 63/07).

- 33% are extremely underdeveloped villages, located mainly in the statistical regions of East, Vardar, Pelagonija and Northeast; and
- 15% of the villages are located on the borderline.

Nowadays, a great number of rural municipalities are facing a process of depopulation, and fall under the status of a specific region. This situation will determine to a large extent the existing conditions of the rural labour market, and will no doubt have great influence on those in the future, especially in the regional context. Basically these difficulties will be manifested in a lack of human resources, particularly among the younger and educated labour forces. At the same time, attention should be paid to the continuous depopulation of small rural areas on the one hand, and the significant growth of the population in the larger rural municipalities on the other hand. This implies an unequal distribution of the human resources and imposes the need for a differentiated approach in the identification of strategic objectives for the development of these areas and rural labour markets.

2.3 The labour force in rural areas

The changes and the current status of the available human resources and labour force in rural areas in the Republic of Macedonia are considered on the bases of available data from the LFS for the period 2004–09 (Table 4). They show that during this period the rural population aged 15-79 increased by 13.7%, and its share of the total population in the country (aged 15-79) rose from 38.2 (2004) to 42.3% (2009).

*Table 4. Working-age population (15-79), * by economic activity in rural areas (in %), 2004*

	2004	2005	2006	2007	2008	2009
Total population	609,902	648,002	664,865	647,248	698,145	693,632
Employed persons	183,114	208,210	233,005	235,896	262,409	258,433
Unemployed persons	102,029	110,962	115,543	110,280	114,006	119,720
Inactive population	324,760	328,830	316,317	301,072	321,731	315,479
Employment rate**	30.0	32.1	35.0	36.4	37.6	37.3
Employment rate***	34.6	36.9		41.3	42.8	42.2
Unemployment rate****	35.8	34.8	33.1	31.9	30.3	31.7
Share of inactive in total population	53.2	50.7	47.6	46.5	46.1	45.5
Share of labour force in total population	46.8	49.3	52.4	53.5	53.9	54.5

* Age span based on Labour Force Survey data for the working-age population according to the ILO recommendations.

** According to the ILO recommendations (share of the employed in the working-age population 15-79).

*** According to the EUROSTAT recommendations (share of the employed in the working-age population 15-64).

**** According to the ILO recommendations (share of the unemployed in the total labour force).

Source: State Statistical Office of the Republic of Macedonia, Labour Force Survey.

During this period, the share of the active population, that is, the labour force in the total population aged 15-79, grew from 46.8% (2004) to 54.5% (2009) in rural areas and the inactive population respectively declined from 53.2% to 45.5%. Simultaneously, within the total labour force, relatively larger growth was seen in the share of the employed (41.1%), compared with the unemployed (17.3%). Such changes caused a rise in the employment rate and a fall in the unemployment rate. Apart from these changes, employment in rural areas remained relatively low and unemployment extremely high. The large share of the inactive population and the high unemployment rate in these areas signify a lack of participation by a relatively large proportion of the working-age population and the labour force.

2.4 Gender, age and educational structure of the rural population

From the point of view of the available human resources in rural areas, observations of the changes in the demographic structure (gender and age) are important, as are those of the educational structure of the working-age population and the labour force. The LFS data show that among the total population aged 15-79, men make up the larger share. Besides a slight decrease in the period 2004–09, the participation of men among the employed and unemployed was and remains dominant and very high (Table 5). The gender structure of the inactive population is the opposite. This situation can be partly explained by the fact that most of the rural population is concentrated in statistical regions where the share of the Albanian population prevails. Traditionally, Albanian women in rural areas are less economically active than they are in urban areas.

Table 5. Gender structure (in %) of the working-age population (15-79) by economic activity in rural areas, 2004–09*

	2004	2005	2006	2007	2008	2009
Total population	609,902	648,002	664,865	647,248	698,145	693,632
Men	50.8	50.7	51.4	51.1	50.1	51.1
Women	49.2	49.3	48.6	48.9	49.9	48.9
Employed persons	183,114	208,210	233,005	235,896	262,409	258,433
Men	70.1	67.5	69.1	67.2	68.1	68.9
Women	29.9	32.5	30.9	32.8	31.9	31.1
Unemployed persons	102,029	110,962	115,543	110,280	114,006	119,720
Men	66.5	64.3	64.9	65.5	62.9	65.9
Women	33.5	35.7	35.1	34.5	37.1	34.1
Inactive population	324,760	328,830	316,317	301,072	321,731	315,479
Men	34.9	35.5	33.4	33.2	32.4	30.9
Women	65.1	64.5	66.6	66.8	67.6	69.1

* Age span based on Labour Force Survey data for the working-age population according to the ILO recommendations.

Source: State Statistical Office of the Republic of Macedonia, Labour Force Survey.

A large share of women in the inactive population does not mean that this segment of the population is not active at all or that they are not a potentially available labour force in rural areas. Rather, this finding should be observed in the context of the great number of unpaid family workers in agriculture, as well as the age structure of the inactive rural population.

As for the age structure of the rural population (aged 15-79), the LFS data show that in the period 2004–09 the greatest increases were noticed in the age groups 40-49 (21.0%) and 50-64 (18.7%). Significantly smaller increases were seen among the young population aged 15-29 (12.4%) and the younger middle-aged population aged 30-39 (13.9%), with only a slight rise for the population aged 65 and older (0.3%). Despite these changes, the share of the younger population (15-39) in the period observed remained relatively high and amounted about 50% (Table 6).

Substantial differences were found in the age structure of the employed and unemployed in rural areas. The proportion of youth (15-29) was lower among the total employed than among the contingent of unemployed persons. The opposite applied to all other age groups. Meanwhile, the highest unemployment rates were those of the younger population, which were lower for the age groups 30-39 and 40-49, and lowest for the population aged 50 and older. In 2009, the unemployment rates amounted to 44.1% (at age 15-29), 30.2% (age 30-39), 27.0% (age 40-49) and 23.7% (age 50-64). The implication here is that there is a large

degree of labour underutilisation of the younger population in rural areas.⁶ This situation is caused by a very small number of new jobs and persistently underdevelopment conditions for entrepreneurship and self-employment, which suggest fewer opportunities for the employment of young people in the country, especially in rural areas.

Table 6. Age structure (in %) of the working-age population (15-79) by economic activity in rural areas, 2004–09*

	2004	2005	2006	2007	2008	2009
Total population	609,902	648,002	664,865	647,248	698,145	693,632
15-29	31.0	31.0	31.6	31.6	31.5	30.6
30-39	20.0	19.6	20.0	19.5	18.9	20.0
40-49	16.8	17.6	17.5	18.2	17.8	17.9
50-64	18.9	18.9	19.3	18.9	19.5	19.7
65+	13.2	13.0	11.6	11.8	12.3	11.7
Employed persons	183,114	208,210	233,005	235,896	262,409	258,433
15-29	21.9	22.5	24.1	23.9	24.4	23.0
30-39	28.3	26.8	26.7	26.4	26.2	27.6
40-49	26.4	27.1	26.5	26.9	26.4	25.4
50-64	20.4	20.1	20.2	20.3	20.8	21.8
65+	3.0	3.5	2.5	2.4	2.2	2.2
Unemployed persons	102,029	110,962	115,543	110,280	114,006	119,720
15-29	43.6	41.5	42.8	41.9	42.8	39.2
30-39	28.9	27.9	25.8	25.9	24.4	25.8
40-49	18.9	20.2	19.0	18.6	17.9	20.3
50-64	8.5	10.2	12.3	13.5	14.8	14.6
65+	0.1	0.1	0.1	0.0	0.1	0.1
Inactive population	324,760	328,830	316,317	301,072	321,731	315,479
15-29	32.2	32.8	33.0	33.9	33.2	33.7
30-39	12.6	12.1	13.0	11.6	11.0	11.7
40-49	10.8	10.6	10.4	11.2	10.9	10.9
50-64	21.4	21.0	21.1	19.8	20.1	19.9
65+	23.1	23.4	22.6	23.5	24.8	23.8

* Age span based on Labour Force Survey data for the working-age population according to the ILO recommendations.

Source: State Statistical Office of the Republic of Macedonia, Labour Force Survey.

As for the age structure of the available human resources in rural areas, of particular interest are the analyses of the inactive population, whose share in the total population (aged 15-79) in the period 2004–09 amounted to around 50% or less. They show that during the observed period, the number of young persons grew by 1.7%, while decreases were noted for all other age groups, except for those aged 65 and older, which remained the same. A third of the total inactive population belonged to the age group 15-29, and a relatively high share was composed of the younger middle-aged population (30-39). This means that relatively large parts of the inactive population are young persons (about 45%). Women made up the

⁶ The situation in urban areas is similar, where the unemployment rate of the young population (aged 15-29) is even higher. In 2009 it amounted to 47.4%.

majority of the available human resources among the inactive population in rural areas. Less than a fifth of the total inactive population was aged 65 and older.

The working-age population (15-79)⁷ in rural areas is characterised by the predominant participation of individuals with low levels of education (for a similar finding for Slovenia, see Bojnec and Dries, 2005). Despite continuous increases in the proportions of the population with secondary and tertiary education, these shares remain relatively small. Therefore, these changes have not resulted in a significant change in the quality of human resources in rural areas (Table 7). The main reasons for this educational structure of the labour force in rural areas are the concentration of education in urban areas and the self-selection process for migration as well as emigration abroad.

Table 7. Educational structure (in %) of the working-age population (15-79) by economic activity in rural areas, 2004–09*

	2004	2005	2006	2007	2008	2009
Total population	609,902	648,002	664,865	647,248	698,145	693,632
Low level of education	68.1	66.4	66.2	63.2	62.7	61.3
Secondary education	28.8	30.4	30.0	32.7	33.2	33.7
Tertiary education	3.1	3.2	3.8	4.1	4.0	5.0
Employed persons	183,114	208,210	233,005	235,896	262,409	258,433
Low level of education	50.8	52.3	52.7	47.9	46.4	46.1
Secondary education	42.1	40.7	39.8	44.7	46.6	45.6
Tertiary education	7.0	7.0	7.6	7.4	7.0	8.4
Unemployed persons	102,029	110,962	115,543	110,280	114,006	119,720
Low level of education	52.1	46.4	47.9	46.6	46.4	45.1
Secondary education	44.9	50.7	48.2	49.0	48.2	48.2
Tertiary education	3.0	2.9	3.9	4.4	5.3	6.7
Inactive population	324,760	328,830	316,317	301,072	321,731	315,479
Low level of education	82.8	82.0	82.8	81.2	81.8	79.9
Secondary education	16.3	17.0	16.2	17.4	17.0	18.5
Tertiary education	0.9	1.0	1.0	1.4	1.2	1.6

* Age span based on Labour Force Survey data for working-age population according to the ILO recommendations.

Source: State Statistical Office of the Republic of Macedonia, Labour Force Survey.

The changes in the educational structure of the labour force (employed and unemployed persons) have taken place in the same direction. In the period 2004–09, the number of employed persons with secondary education increased by 52.7%, and by 67.4% for those with tertiary education. As for the unemployed, these indicators amounted to 26.0% and 162.3% respectively. Nevertheless, this increase has not resulted in significant improvements in labour force quality in rural areas, owing to the initially very poor educational structure.

As for the inactive population, the absolute decrease of persons with low levels of education (by 6.3%) is evident, as is the increase of those with secondary (10.8%) and tertiary education (63.9%). Alongside these changes, the educational structure of the inactive population in rural areas remained very unfavourable. About four-fifths of this population (80%) had low levels of education.

⁷ Age span based on LFS data for the working-age population according to the ILO recommendations.

3. The labour force in agriculture

The available data for the total and active agricultural population from the population census of 2002 (SSORM, 2002), the census of agriculture in 2007 (SSORM, 2007) and the LFS differ more or less. One reason is the different definitions and methodologies used for data collection and data processing. Consequently, the data do not allow more precise identification of the labour force engaged in the agricultural sector. As a result, in reviewing the size and structural characteristics of the labour force in the agricultural sector it is important to take into consideration the changes that have occurred in the agricultural population over a long time interval.

3.1 Agricultural population in the pre-transition period

In the period 1953–94, the Republic of Macedonia was marked by a trend of continual reductions in the labour force in the agricultural sector, but with a varying degree over time. So in the period 1953–61, the total agricultural population fell by about 97,000 and during the intercensal period (1961–71) by about 64,400 persons. The largest extent of change occurred in the period 1971–81. At the same time, while the data are incomparable,⁸ the reduction of the labour force is most apparent, because it reached about 265,000 persons. Such changes are the result of a fast process of industrialisation, as well as the intensive and spontaneous transfer of an agricultural into a non-agricultural population.

The total transfer of the agricultural into the non-agricultural population in the period 1953–81 is estimated at about 660,000 to 690,000 persons (Penev and Tomic, 1986, p. 7). It should be noted that the scope of the transfer is significantly larger in relation to the scope of the reduction in the total agricultural population, because it includes both natural and migratory movements.

During the period 1981–94, the reduction of the agricultural population (165,795 persons) continued. Even though it was much smaller in relation to the previous period, it showed a substantial change under the conditions of an unfavourable economic slowdown and economic recession. It is important to point out that this period partially coincides with the start of the socio-economic transformation of the country, from the previous socio-economic framework of the former Yugoslavian self-managed system to a market economy within an independent Macedonian state in 1991. Therefore, these movements do not correspond with the development and structure of the economic sectors in the country, that is, in great part they are the result of inadequate treatment of the development of agriculture and rural areas.

The share of agriculture in the total population also shows the extent of the changes that have occurred. Namely, according to the census years, the above-mentioned indicator amounted to 62.7% (SSORM, 1953), 51.4% (SSORM, 1961), 39.9% (SSORM, 1971), 21.7% (SSORM, 1981), and 11.8% (SSORM, 1994). This evidence clearly reveals the significant decline in the share of the agricultural population among the total population.

At the same time, also evident is the huge change that occurred in the share of the agricultural population among the rural population, which decreased from 91.3% (1953) to 48.4% (1981) and 29.5% (according to the situation in 1994). This entailed a dramatic change in the structure of the rural population, because less than a third of it was made up by the agricultural segment. If we take into consideration that about 90.0% of the agricultural population is located in rural areas, then the change that has taken place is even clearer.

3.2 Active agricultural population in the period of transition

The changes highlighted above in the total and active agricultural population in the Republic of Macedonia are also characteristic for the period of transition. In parallel has been the

⁸ The data are not completely comparable due to the change in the definition of the agricultural population. In 1953, 1961 and 1971, the total agricultural population was defined according to occupation, and in 1981 and 1994 it was defined according to sector of employment.

problem of identifying their scope. Thus, the analysis of the active agricultural population draws upon data from several sources that are more or less methodologically different.

The population census of 1994 revealed that the active agricultural population at the beginning of the transition period (the start of the 1990s) had downsized by more than half compared with the situation in 1981 (Table 8). The change is even greater if we observe the economically active share of the agricultural population. This trend also continued in the period after 1994, but to a lesser degree. That was confirmed by the population census of 2002, although the data from these two censuses are not methodologically comparable.⁹

Table 8. Active agricultural population in 1981, 1994 and 2002

	Number		
	1981	1994	2002
Active agricultural population – Total	215,805	91,354	49,849
Economically active agricultural population	214,943	53,444	44,044*
Household members who help out/unpaid family workers	862	37,910	5,805
Share (in %) of economically active in total active agricultural population	99.6	58.5	88.4

* Status of employment: 17,964 employed; 277 employers; 25,803 self-employed workers.

Source: Censuses of population of 1981, 1994 and 2002, State Statistical Office, Republic of Macedonia.

The LFS has been conducted in the Republic of Macedonia since 1996. In relation to the active agricultural population, these data show that the period 1996–2009 was marked by significant oscillations. The size of the active agricultural population in the interval ranged from 149,163 (2001) to 87,608 persons (2004). This huge difference of more than 60,000 persons is hard to explain by significant changes in the development and structure of the economic sectors in the country. The size of the active agricultural population was relatively more stable during the last five years of this period (Table 9).

Table 9. Active agricultural population, 1996–2009

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Total economically active population – employed	537,591	512,301	539,762	545,222	549,846	599,308	561,341	545,108	522,995	545,253	570,404	590,234	609,015	629,901
Active population in agriculture – total	99,857	94,932	107,249	115,361	119,971	149,163	133,581	119,951	87,608	106,179	114,485	107,433	119,498	116,601
Economically active population in agriculture*	66,123	72,342	66,901	64,883	66,161	71,548	71,753	61,424	47,683	54,248	57,658	54,340	62,693	60,889
Unpaid family workers in agriculture**	33,734	22,590	40,348	50,478	53,810	77,615	61,828	58,576	39,925	51,931	56,827	53,093	56,805	55,712
Share (in %) of active agricultural population in total active population (employed)	18.6	18.5	19.9	21.2	21.8	24.9	23.8	22.0	16.8	19.5	20.1	18.2	19.6	18.5
Share (in %) of unpaid family workers in total active agricultural population	33.8	23.8	37.6	43.8	44.9	52.0	46.3	48.8	45.6	48.9	0.0	49.4	47.5	47.8

*Active agricultural population without unpaid family workers in agriculture.

**For the period 1997-2002 they represented approximately 90% of the total unpaid family workers.

Source: State Statistical Office of the Republic of Macedonia, Labour Force Survey.

⁹ In relation to the economic structure of the population, the population census of 2002 applied the same methodology as the LFS.

In the period 1996–2009, the participation rate of the active agricultural population among the total economically active population, that is, the total employed in the country, hovered at around 20%, although with certain exceptions. This suggests a relatively small share for the agricultural sector, which is still higher than in the EU-27 countries. Nevertheless, from the point of view of the country analysed and from its experience of economic development and changes in the real sector during the last decade, this indicator can be considered underestimated.

The active agricultural population in the country is characterised by a specific structure owing to the significantly large share of unpaid family workers.¹⁰ Their participation among the total active agricultural population after 2000 has been higher than 45%, which means that almost half the active farmers do not practice their occupation professionally and are helped by members of their families in the agricultural household.

The available data from the LFS show that most (about 90%) of the active farmers are engaged on their own property, that is, on individual agricultural holdings. This means that a relatively small part of the labour force is employed by businesses with other forms of ownership (social, mixed, collective, state and undefined) (Table 10).

Table 10. Active agricultural population according to ownership, 2002–09

	2002	2003	2004	2005	2006	2007	2008	2009
Active population in agriculture – total	133,581	119,951	87,608	106,179	114,485	107,433	119,498	116,601
Private ownership	120,416	107,242	77,936	98,344	107,841	101,258	112,528	111,489
Other ownership	13,164	12,709	9,672	7,836	6,644	6,175	6,969	5,112
Structure (in %) – share in total active agricultural population								
Private ownership	90.1	89.4	89.0	92.6	94.2	94.3	94.2	95.6
Other ownership	9.9	10.6	11.0	7.4	5.8	5.7	5.8	4.4

Source: State Statistical Office of the Republic of Macedonia, Labour Force Survey.

In 2007, a census of agriculture was conducted, which among other things gave information about the share of the labour force engaged on individual agricultural holdings and that employed by business entities. It showed that 476,613 persons were engaged in the field of agriculture, among whom 471,069 were employed by individual holdings and 5,544 by business entities. Besides the different methodological approach, it can be stated that there is a huge deflection of these data from those in the LFS.

For clarification of these data, it is important to point to the structure of the total number of members of individual households (454,504 persons) who worked more than 50 hours on individual agricultural holdings, according to the type of agricultural activity. For 167,992 persons, working in agriculture was a sole activity, for 24,812 it was the main, for 98,318 it was an additional and for 163,382 a temporary activity. Consequently, it can be concluded that for 192,804 persons (or 42.4%), work in agriculture was a sole or main activity, and for 261,700 persons (or 57.6%) it was an additional or temporary activity.

This conclusion in turn means that almost 200,000 members of individual agricultural holdings can be viewed as the active agricultural population. This information corresponds to the number of individual agricultural holdings, which according to the census of agriculture of 2007 amounted to 192,378 holdings. In this context, the large number of seasonal workers should be taken into account, which in 2007 amounted to 109,606 persons (among whom 103,187 were employed by individual holdings and 6,419 by business entities).

¹⁰ In the LFS, unpaid family workers are defined as persons who work without pay in a business entity or farm (owned by a family member).

Based on the above-mentioned data, it is very difficult to precisely identify the size of the active agricultural population in the Republic of Macedonia. Taking into consideration the genesis of the changes in the agricultural sector and the active agricultural population over a longer term, as well as the changes and existing conditions in the economic development of the country during the transition period, the active agricultural population can be estimated as larger than 100,000 persons. That means that the size of the active agricultural population is larger than that registered by the LFS. In this context, it is important to also bear in mind the very small number of active farmers who are registered and have health and pension insurance (about 20,000 persons). Therefore, a valid presupposition is that many active farmers (a relatively large share) do not declare their activity, that is, they are registered as unemployed in order to obtain health insurance, which is paid by the state. At the same time, it is indisputable that under conditions of high unemployment, economic activity in agriculture contributes to assuring the existence of a significant segment of the population and to maintaining social peace in the country. This implies that agriculture plays a more significant role in the economy than the official statistical data indicate.

3.3 Characteristics of the total, active agricultural population

In relation to the structural characteristics of the active agricultural population, with the aim of identifying the current conditions in agricultural and rural labour markets, we address the changes that took place in the pre-transition period and the last decade. More specifically, according to the available data for the pre-transition period, we analyse the structural features of the agricultural population. Even though this entails two different categories, with respect to the dominant participation of the active segment in the total agricultural population during the pre-transition period, the analysis does indeed give relevant information about the general development patterns.

In 1994 the structure of the agricultural population involved the almost equal participation of men and women (50.3% in relation to 49.7%) compared with 1981, when the share of women was larger (54.3%). Furthermore, specific changes had occurred in the age structure of the agricultural population. They manifested in different absolute and relative declines of this population in different age groups. In absolute size, the changes are most apparent in the growth of the age group 0-19 and the decline of the age group 60 and older. In 1994, the participation of these two groups in the total agricultural population respectively amounted to 38.3% and 8.7%. Nevertheless, such a transformation could not be considered a new feature owing to the drastic reduction in the absolute size of the agricultural population in total and by individual age groups.

As for the gender structure of the active agricultural population, all of the available data confirm that during the last decade the share of men has prevailed. According to the LFS data, it has ranged between 60% and 65%, and in the census of agriculture in 2007 it amounted to about 57%. The age structure of the active agricultural population is characterised by a significant reduction in the share of the young population and growth in that of elderly persons. The census of agriculture in 2007 confirms that 12.6% of the total active agricultural population was younger than age 25, and 14.6% were aged 65 and older.

In addition, adverse conditions can be observed from the perspective of educational structure and occupation. According to data from the census of agriculture in 2007, of the total labour force engaged in individual agricultural holdings and employed by business entities, 55.9% had a low level of education, 37.0% had secondary and 7.1% had tertiary education. Meanwhile, only 5% had agricultural education. The LFS data show that more than 90% of the economically active population in agriculture was engaged in elementary occupations.

Concerning the structural features of the active agricultural population, the current situation could be assessed as unfavourable, because of the accelerating process of labour force ageing and its qualitative characteristics from the perspective of education and occupation. These structures seem to be a consequence of a negative selection process, whereby younger and more educated persons flow out of agriculture and out of rural areas.

4. Determinants of labour market changes and policy implications

The changes in the size and the structural characteristics of the working-age population and labour force in rural areas as well as its spatial distribution are caused by the continual emigration (to urban areas or abroad) and large regional differences in the natural population increase. Although during the past decades emigration affected all of the rural areas, its direct (reduction of the total population) and indirect influences (a narrowing of the population reproductive base) have not been reflected equally. In such circumstances, both components of population growth – a natural increase and migration movements (internal and external) – are the basic determinants of the current conditions of the labour market in rural areas.

The major changes in the fertility rate during the last two decades have caused an enormous reduction in the country's natural increase in population. In the period 1994–2009, it was reduced by more than three times (from 15,772 to 4,624) and the rate of the natural population increase declined from 8.1 to only 2.3 per 1,000 persons. In absolute size, the natural population increase was drastically reduced in all areas of the country, including the high fertility areas, which in great part are rural.

The natural population movements in the Republic of Macedonia are characterised by a large degree of heterogeneity and regional differences. In 2009, the natural population increase rates were highest in the Skopje and Polog statistical regions, where the majority or 86% of the total natural increase in the country occurred. The relatively large growth of the population in some municipalities of Skopje and Polog, as well as in the Southwest statistical region, is still under the influence of a high rate of increase in the natural population, although a great number of them include migratory areas. These three statistical regions represent the areas where the largest part of the rural population is concentrated. The total fertility rate shows that during the last few years, the reproduction of the population, in the sense of a renewal of the generations, has not taken place in any of the statistical regions. Moreover, a gradual reduction of the working-age population can be expected, along with that of the labour force in rural areas in the above-mentioned three statistical regions. The degree of the reduction will mainly be determined by the extent of emigration movements abroad.

The intensity of rural–urban migration has declined significantly since 1990 compared with previous decades, particularly the period 1961–71, when this kind of migration reached its culmination. This trend started in the second half of the 1980s and coincided with growing rates of emigration abroad. Net migration (calculated by a vital statistics method) shows that in the period 1981–94, rural areas lost more than 130,000 inhabitants, while positive net migration in urban areas amounted to only 2,640 persons. This means that the greatest part of the rural population departing villages chose to migrate abroad (Dimitrieva et al., 2000).

The available data confirm that in the first half of the 1990s, the volume of rural–urban migration recorded was very small.¹¹ This trend continued during the next few years until 1996. Data from regular statistical research on immigrants and emigrants show that the negative net migration of rural areas amounted to about 1,000 persons.

Rural–urban migration since 1996 has been substantially different, mainly because of the above-mentioned changes in territorial organisation and the identification of rural and urban settlements. Available data for the period 2006–09 confirm a similar trend and intensity of rural–urban migration as that recorded in the first half of the 1990s.

With respect to the influence of migration on changes in the rural labour market, as well as the existing size and structural characteristics of the labour force and available human resources, emigration abroad has played a crucial role. During the last two decades, it has reached a very high scale. In the absence of precise information, based on numerous

¹¹ In the period 1990–94, the negative net migration (annual average) from rural areas amounted to 1,468 persons.

domestic and foreign data sources, it can be estimated that 150,000-200,000 persons have left the Republic of Macedonia. Emigration has been especially intense from rural areas in the Polog and Southwest statistical regions.

Based on the size and the structural features of the labour force (particularly of unemployed persons) and the inactive population, one can conclude that in rural areas there are still significant, available human resources. Yet if we bear in mind the territorial distribution of the total rural population, then the majority of these resources are concentrated in three regions. This means that to a greater or lesser degree an appropriate labour force is lacking in a majority of the agricultural areas of the country. This is consistent with the findings by Rizov and Swinnen (2004) on human capital, market imperfections and labour reallocation, also for other transition countries. Consequently, today a large part of the agricultural and arable land remains under-cultivated or uncultivated.

With respect to the structural features of the available human resources, the situation of the labour force and the share of the working-age population (15-64) among the inactive population are quite different. Most of the labour force consists of a young male population with a relatively unfavourable educational structure. At the same time, the greatest share of the inactive population, and its potential human resources, consists of a relatively young female population with a very unfavourable educational structure.

5. Conclusions

Human resource management is important for the development of agriculture and the rural economy. This analysis of the quantitative and qualitative characteristics of the human resources in rural areas and agriculture in the Republic of Macedonia shows that during the last two decades, which coincide with the period of transition, significant changes have occurred. These can be explained by the continued trend of emigration from villages to urban areas and abroad, especially from traditional areas of emigration. The emigration was initially stimulated by economic conditions, stemming from the inadequate treatment of the agricultural sector and the development of villages. The extent of emigration has directly or indirectly influenced changes in the demographic structure of the population, especially the reduction of the reproductive base of the rural population, along with that of the agricultural population and the labour force in all of the regions, except the statistical regions of Polog and Southwest.

The evidence and information gathered from the analysis of the rural and agricultural population, especially the size and the characteristics of the labour force in agriculture, lead to the conclusion that the country has disposed of a certain kind of human potential. With a view to determining the optimal use of natural resources and developing the agricultural sector, judging by its qualitative characteristics the labour force can be regarded as insufficient in a majority of the agricultural regions. This implies a rural and agricultural labour market mismatch. In many rural areas, the lack of labour force presents a serious limiting factor in the development of agricultural production. In that sense, there is an evident tendency towards a worsening imbalance between the two basic factors of agricultural production: the land that has the natural potential and the asymmetric concentration of the rural and agricultural population, as well as the available labour force.

As for the characteristics of the labour force and their influence on development, the reduction in the participation of women in the agricultural labour force can be seen as a new feature. Yet, this change remains in the shadow of an unfavourable age and educational structure, as well as the adverse spatial distribution of the total labour force. For market-oriented agricultural production, a significant factor is the education level of farmers. In that regard, maximal consideration should be given to the registered unemployed who are agricultural experts and faculty degree-educated persons, whose number in the country is not small.

Looking at the aspect of the qualitative changes in human resources in agriculture, the transformation that has occurred in the income structure of rural households should be highlighted. Concerning income sources, there has been an increase in the share of mixed households and especially in that of households that receive remittances and foreign currency funds from family members who are abroad. This is especially characteristic for the Polog and Southwest statistical regions, where a significant share of the rural population is concentrated. In these areas the percentage of purely agricultural households is smaller and at the same time the inflows of remittances are significant, owing to the higher degree of emigration abroad.

A precondition for the rational use of the labour force and the achievement of intensive agricultural production is a change in the structure of agricultural holdings according to the size of the asset. Significant improvements are also necessary in the functioning of market institutions to meet the needs of smaller farmers. Small and fragmented assets are limiting factors for the appropriate economic use of the labour force, as well as the use of modern mechanisation. Experience shows that assets no smaller than 5 ha are the minimum required for a size of production units capable of larger market production, full employment and the creation of income that will completely satisfy the needs of the rural household. According to the census of agriculture in 2007, of the total 192,378 agricultural holdings, 43.4% had up to 0.5 ha, and 20.1% had 0.5-1 ha of agricultural land. Only 9,737 or 4.1% of the agricultural holdings had more than 5 ha (SSORM, 2007).

Taking into consideration that the quality of human capital is one of the most important factors for efficient agricultural development, the existing situation in the Republic of Macedonia requires a greater focus of attention on the human resources in this sector. For changes in a positive direction, a demographic and economic revitalisation of rural areas is necessary. Amid the conditions of social and economic transformation, and the implications of the long-term economic crisis, during the 1990s there was a significant increase in interest among urban citizens in migrating (or returning) to rural areas. Yet this interest was not adequately capitalised upon to accelerate a revitalisation of rural areas.

References

- Abele, S. and K. Frohberg (eds) (2003), *Subsistence Agriculture in Central and Eastern Europe: How to Break the Vicious Circle?*, Studies on the Agricultural and Food Sector in Central and Eastern Europe 22, Institute of Agricultural Development in Central and Eastern Europe (IAMO), Halle (Saale), Germany.
- Bojnec, Š. and L. Dries (2005), "Causes of changes in agricultural employment in Slovenia: Evidence from micro-data", *Journal of Agricultural Economics*, 56(3): 399-416.
- Dimitrieva, E., V. Janeska and B. Hinic (2000), « Les mouvements migratoires (internes et internationaux) et la répartition spatiale de la population dans l'ancienne République Yougoslave de Macédoine », in B. Kotzamanis (ed.), *Mouvements migratoires et la répartition spatiale de la population, La démographie des Balkans*, Université de Thessalie et Université de Macédoine Réseau Démobalk, Volos: Presses Universitaires de Thessalie, pp. 46-77.
- Grgić, I., T. Žimbek, M. Tratnik, J. Markovina and J. Juračak (2010), "Quality of life in rural areas of Croatia: To stay or to leave?", *African Journal of Agricultural Research*, 5(8): 653-660.
- Hanson, R. (1996), "Family farm structure and market orientation in the Republic of Macedonia", PhD Thesis, Department of Agricultural Economics, University of Wisconsin, Madison, WI.
- Jajri, I. and R. Ismail (2010), "Impact of labour quality on labour productivity and economic growth", *African Journal of Business Management*, 4(4): 486-495.
- Jakimovski, J. (2002), "Rural development: Does Macedonia need a new approach?", Paper prepared for the Xth EAAE Congress, "Exploring Diversity in the European Agri-Food System", Zaragoza, 28-31 August.
- Kongolo, M. (2010), "Job creation versus job shedding and the role of SMEs in economic development", *African Journal of Business Management*, 4(11): 2288-2295.
- Macours, K. and J.F.M. Swinnen (2008), "Rural poverty in transition countries", *World Development*, 36(11): 2170-2187.
- Micevska, M. (2008), "The labour market in Macedonia: A labour demand analysis", *Labour*, 22(2): 345-368.
- Penev, G. and D. Tomic (1986), *The evolution of the agricultural population in relation of economic development*, Demografska sveska 13, Center for Demographic Research, Institute of Social Science of the University of Belgrade.
- Petrack, M. and P. Weingarten (ed.) (2004), *The Role of Agriculture in Central and Eastern European Rural Development: Engine of Change or Social Buffer?*, Studies on the Agricultural and Food Sector in Central and Eastern Europe 25, Institute of Agricultural Development in Central and Eastern Europe (IAMO), Halle (Saale), Germany.
- Rizov, M. and J.F.M. Swinnen (2004), "Human capital, market imperfections and labor reallocation in transition", *Journal of Comparative Economics*, 32(4): 745-774.
- Sapsford, D. and Z. Tzannatos (1993), *The Economics of the Labour Market*, London: Macmillan.
- Schultz, T.W. (1945), *Agriculture in an Unstable Economy*, New York: McGrawHill.
- State Statistical Office of the Republic of Macedonia (SSORM) (1953, 1961, 1971, 1981, 1994, 2002), Population Censuses 1953, 1961, 1971, 1981, 1994, 2002, SSORM, Skopje.
- (2007), Census of Agriculture 2007, SSORM, Skopje.

- Swinnen, J.F.M. and K. Van Herck (2009), *Agricultural Aspects of Accession to the European Union: Lessons from the EU New Member States and Implications for the Former Yugoslav Republic of Macedonia*, Report prepared for the UNDP, LICOS Centre for Institutions and Economic Performance, University of Leuven, and Centre for European Policy Studies, Brussels.
- Swinnen, J.F.M., L. Dries and K. Macours (2005), "Transition and agricultural labour", *Agricultural Economics*, 32(1): 15-34.
- Todaro, M.P. and S.C. Smith (2003), *Economic Development*, 8th edition, Harlow, UK: Pearson Education.
- Todorov, K. and M. Vittuari (2010), "*Towards a shift from agricultural to rural development policy: The case of the Republic of Macedonia*", European Association of Agricultural Economists 118th Seminar, 25-27 August, Ljubljana, Slovenia (<http://purl.umn.edu/94898>).
- United Nations Development Program (UNDP) (2004), *Mapping of the socio-economic disparities among Macedonian municipalities*, State Statistical Office, Ministry for Local Self-Government and UNDP, Skopje and New York, NY.