

September 2010



The ESPON 2013 Programme

DEMIFER

Demographic and migratory flows affecting European regions and cities

Applied Research Project 2013/1/3

Deliverable 12/06

Demifer Case Studies

Thessalia (Greece)

“Challenge of decline” poorly faced by immigration

Prepared by

Minas Angelidis and Gabriella Karka

National Technical University of Athens

School of Architecture / Department of Urban and Regional Planning

Athens, Greece



EUROPEAN UNION

Part-financed by the European Regional Development Fund

INVESTING IN YOUR FUTURE

This report presents results of an Applied Research Project conducted within the framework of the ESPON 2013 Programme, partly financed by the European Regional Development Fund.

The partnership behind the ESPON Programme consists of the EU Commission and the Member States of the EU27, plus Iceland, Liechtenstein, Norway and Switzerland. Each partner is represented in the ESPON Monitoring Committee.

This report does not necessarily reflect the opinion of the members of the Monitoring Committee.

Information on the ESPON Programme and projects can be found on www.espon.eu

The web site provides the possibility to download and examine the most recent documents produced by finalised and ongoing ESPON projects.

This basic report exists only in an electronic version.

© ESPON & CNR, 2010.

Printing, reproduction or quotation is authorised provided the source is acknowledged and a copy is forwarded to the ESPON Coordination Unit in Luxembourg.

Table of contents

| | |
|---|----|
| Figures..... | 1 |
| Maps..... | 1 |
| Tables into the Report..... | 2 |
| 1. Introduction..... | 5 |
| 1.1. Specification of the research questions and the aims (CNR - NTUA)..... | 5 |
| 1.2. Physical geography, historical and economic background | 6 |
| 1.3. Urbanisation and settlements, urban system..... | 9 |
| 1.4. Outline of the case study report..... | 12 |
| 2. Review of existing analyses of demographic and migratory flows for Thessalia | 13 |
| 3. Demographic stocks and flows of Thessalia | 13 |
| 3.1. Age structure of the population..... | 14 |
| 3.2. Population change and its components..... | 18 |
| 3.3. Births and deaths, natural change, fertility rate, life expectancy | 22 |
| 3.4. International migration flows to Greece and Thessalia: intensity and provenance | 25 |
| 3.5. Demographic characteristics of the foreign migrants and their contribution to the change of the demographic pattern in Greece and Thessalia | 30 |
| 3.6. Migration from other Greek regions to Thessalia, internal migration, total net migration to Thessalia | 31 |
| 3.7. Demographic characteristics of inter-regional and internal migrants for Thessalia and their contribution of the change of the demographic pattern..... | 32 |
| 3.8. Implication of the total net migration to the change of the demographic pattern..... | 32 |
| 3.9. Other composition of migrants..... | 32 |
| 4. Economic change and population: the labour market of Thessalia | 33 |
| 4.1. Economic characteristics: GDP, unemployment..... | 33 |
| 4.2. Economic activity: composition of the economy, investments, fixed capital formation, gross value added, employment | 35 |
| 4.3. Socio-demographic characteristics and changes in the working age population | 39 |
| 4.4. The role of migration..... | 40 |
| 5. Economic change and population: other aspects of Thessalia..... | 40 |
| 6. Economic and social consequences of demographic change in Thessalia..... | 40 |
| 7. Remarks for the DEMIFER scenarios for Thessalia | 41 |
| 8. Conclusions and the demographic challenges in Thessalia | 42 |
| 9. Annex I: Main problems of availability and quality of data | 43 |
| Bibliography – sources | 44 |

Figures

Graph 3.1.1: Population age pyramid per sex 1991

Graph 3.1.2: Population age pyramid per sex 2001

Graph 3.2.1: Population of the prefectures of Thessalia 1991 - 2008

Graph 3.2.2: Population of Greece and the prefectures of Thessalia 1991 – 2008, 1991=100

Graph 3.3.1: Thessalia Live births 1990-2008

Graph 3.3.2: Thessalia Deaths 1990-2008

Graph 3.3.3: Thessalia natural increase 2000-2008

Maps

Map 1.2.1: Situation of Thessalia in Greece

Map 1.2.2: Thessalia region: LAU1 population density 2001, Functional Urban Areas (FUAs) population 2001

Map 1.3.1: Settlements' network structure of Thessalia: Urban Morphological Zones (UMZ)

Map 1.3.2: Settlements' network structure of Thessalia: Population 2001 by Municipalities (LAU1) classified (by NSSG) in mountainous / semi-mountainous / lowland and urban / semi-urban / rural

- Map 3.1.1: Thessalia: Ageing rate % (persons aged 65+ years / Total population) per LAU1 (municipalities) 2001
- Map 3.2.1: Thessalia region: Population change % 1991-2001 per LAU1 (municipalities) mountainous, semi-mountainous, lowland
- Map 3.4.1: Thessalia region: Number of migrants 1995-2001 from / to Thessalia prefectures / rest of Greece / rest of EU-27

Tables into the Report

- Table 3.1.1: Population by age groups, NUTS3 regions of Thessalia 1991
- Table 3.1.2: Population by age groups, NUTS3 regions of Thessalia 2001
- Table 3.1.3: Population change by age groups, NUTS3 regions of Thessalia 1991-2001
- Table 3.2.1: Population of EU27, Greece and Thessalia 1971-2007
- Table 3.2.2: Thessalia: population change 1991-2001 by urban, semi-urban and rural LAU1 units
- Table 3.2.3: Thessalia: population change 1991-2001 by mountainous, semi-mountainous and lowland areas
- Table 3.2.4: Resident population of 4 urban centres and 14 small cities of Thessalia 1991 - 2001
- Table 3.3.1: Crude birth rate, crude death rate and natural change rate (‰) 1991, 2001, 2007 in Greece and Thessalia
- Table 3.3.2: Total fertility rates 1990 – 2008 in the regions of Thessalia and Attiki
- Table 3.3.3: Life expectancy 1997-2008: EU-27, Greece, Thessalia by sex
- Table 3.4.1: Foreign population in Greece 2001-2009
- Table 3.4.2: Share of foreign population of Greece and Thessalia in 2001
- Table 3.4.3: Share of foreigners in the population of Greece in 2008
- Table 3.4.4: Inter-regional and international migration to Thessalia from 1995 to 2001
- Table 3.5.1: Number of births and deaths in Greece and Thessalia 2004-2008: nationals and foreign migrants
- Table 3.6.1: Inter-regional migration to Thessalia from 1995 to 2001
- Table 3.9.1: Nationals, direct descendants of migrants and foreign residents, by educational level and employment situation in Greece 2008
- Table 4.1.1: EU27, Greece, Thessalia: GDP PPS at current prices per capita 1995, 2001, 2007
- Table 4.1.2: Unemployment rate (population 15 years and over) - EU27, Greece, Thessalia % 1999-2008
- Table 4.2.1: Gross fixed capital formation per sector in Greece and Thessalia 1995, 2001, 2004
- Table 4.2.2: Gross value added (GVA) by sector in EU-27, Greece and Thessalia 1995, 2001, 2007.
- Table 4.2.3: Thessalia: Employment per economic activity 2001
- Table 4.3.1: Economically Active Population (EAP) aged 15 and over of EU-27, Greece and Thessalia 2001 and 2007 by age and sex
- Table 7.1: Results of a number of DEMIFER scenarios for Thessalia

Tables in the Annex

- Table 3.1.4: Population by age groups, NUTS3 regions of Thessalia 1991
- Table 3.1.5: Population by age groups, NUTS3 regions of Thessalia 2001
- Table 3.1.6: Population by age groups, NUTS3 regions of Thessalia 1.1.2009
- Table 3.1.7: Population change by age groups, NUTS3 regions of Thessalia 1991-2001
- Table 3.1.8: Population change by age groups, NUTS3 regions of Thessalia 2001-2009
- Table 3.2.1a: Population of EU27, Greece and Thessalia 1991-2009
- Table 3.2.2a: Thessalia: population change 1991-2001 by urban and rural LAU2 units on the basis of the respective division of LAU2 units by NSSG
- Table 3.2.2b: Thessalia: population change 1991-2001 by "urban", "semi-urban" and "rural" LAU1 units
- Table 3.2.3a: Thessalia: population change 1991-2001 by mountainous, semi-mountainous and lowland areas on the basis of the respective division of LAU2 units by NSSG
- Table 3.2.3b: Thessalia: population change 1991-2001 by mountainous, semi-mountainous and lowland areas on the basis of the respective division of LAU2 units by NSSG
- Table 3.6.2 Inter-regional and international migration to Thessalia from 1995 to 2001

Table 3.6.3: Internal migration to Thessalia from 1995 to 2001

Table 3.7.1: Resident Population per sex, age groups and prefecture of residence in 2001 (Census) for Thessalia per region of residence in December 1995

Table 3.9.2: Educational level of the foreign population 2001

Table 4.1.1a: Gross domestic product (GDP) at current market prices at NUTS level 3 EU27, Greece, Thessalia, prefectures of Thessalia

Table 4.1.2a: Unemployment by sex and age, at NUTS levels 1, 2 and 3 (1,000) - EU27, Greece, Northern Greece, prefectures of Thessalia

Abbreviations

NSSG National Statistical Service of Greece

NUTS Nomenclature of Territorial Units for Statistics

GDP PPS = GDP in Purchasing Power Parities

Key findings

- *The population change rate of Thessalia was lower than the national average from 2001 to 2009. It decreased slightly -by -0.6%.*
- *The increase rate of the Thessalia's Greek citizens was continuously limited from 1981 to 2009 due to decreasing fertility rate and accelerated ageing. Foreign migrants who entered Thessalia since the beginning of '90s revived the age pyramid and increased the fertility rate and the natural change rate. Thus they have a considerable positive impact on the total population change rate of the region. In this context, the total population natural change rate during the period 2004-2008 was much lower than it would be without the contribution of migrants.*
- *The population of the four bigger urban centres of Thessalia was increasing continuously during the two last decades while that of the lowland rural areas more or less stagnated and that of the mountainous areas is rapidly decreasing. There is a shift from the mountainous to the lowland areas and from the rural to the urban and coastal zones.*
- *The impacts of the foreign migration were more important on the bigger cities of Larisa and Volos where the main bulk of immigrants was directed, than in the rest of the region.*
- *Interregional migration to and from Thessalia is, in general terms, very low.*
- *The large majority of the foreign immigrants are Albanians; they are integrated in the region to a considerable degree; the majority of them are salaried employees; their educational level is low and they obtain considerably lower wages than Greek workers and carry out rural and urban activities which are abandoned by Greeks.*
- *The in-flow of a low-wage workforce contributed to the delay in the decline of agriculture (both in the mountainous and the lowland areas) as well as of the urban industrial sector of Thessalia. It has, also, contributed to the acceleration of the development of the tourism, the construction and the low level services, which are located mainly in the urban centres and the touristic coastal areas of the region.*
- *However, the employment of migrants has not been used in a process of restructuring of the economy of the region that could ensure the development of the region in the future; therefore, the continuation of the integration of new immigrants in the region at the same rate as observed until recently is uncertain. Thus, the continuation of the contribution of the foreign migration to the response to the Thessalia demographic challenges in the future is uncertain too.*
- *The results of the policy scenarios would create considerable challenges to the economic and social fabric: integration of immigrants in the growing areas and adaptation to a shrinking population in the areas of population decline.*

1. Introduction

1.1. Specification of the research questions and the aims (CNR - NTUA)

In the frame of the ESPON DEMIFER project, the case studies contribute to improve the knowledge on and the understanding of demographic and migratory flows at the regional and local level. They focus on internal and international migration as the component with stronger links to the regional socio-economic situation and dynamics.

The specific research questions and the specific aims of the case studies are:

How are demographic and migratory flows affecting the entire case study area, its regional subdivisions and its cities?

- How do demographic change and migratory movements bring about population change – growth or decline –, population ageing and ageing of the working age population?
- What are the factors of attraction or the causes of interregional and international migration at the regional level?
- Is information regarding the skill level of interregional, intra EU and international migrants available?
- What are the economic and social consequences of migratory flows in the case study area, or, more in general, what are the links between ‘demography’ and ‘economy’ in the case study areas? (CNR)

Thessalia is included by DEMIFER (Interim Report) in the *Type «Challenges of decline»*. “Regions belonging to this type face some kind of a demographic problem and can at best be characterised with the term “stagnation”. Due to a negative natural and a negative migration balance the EU 27+4 depopulation regions are concentrated within this type, which is also confronted with the second highest share of elderly people”.

However, as we will see, in the context of Greece, Thessalia’s demographic “type” is a mixture of two other types observed in Greece. The entire Greek territory faces a serious decline of natural change rate of natives together with a very important raise of the migration from outside since the ‘90s. This migration makes the age pyramid younger and the demographic balance of the entire country positive. The migrants from outside are directed more intensively to the dense areas (the bigger cities) and less to the rural areas. Therefore, the two Greek metropolitan regions –Athens and Thessalonica- gain more in population and fertility rate and their age pyramid becomes younger to a higher degree comparatively to the rest regions. For these reasons, among others, these regions are classified in the DEMIFER type “*Transitions*”. This “type of regions shows a younger age structure compared to the EU 27+4 average. Both the natural and the migratory balance are on average slightly negative, resulting in a minimal but overall total population decrease. This type offers a high variation concerning natural population development and net migration rates. That is why regions with both positive and negative natural as well as migration balance can be found”. Inversely, the less urbanised and presenting a higher share of agricultural activity Greek regions the demography of which gained less from international migration are classified in the “*Euro-mediterranean*” type regions the population of which would decrease (see in detail in the DEMIFER IR).

In this frame, Thessalia which includes both some important cities and a considerable rural area presents a mixture of the characteristics of the Greek “Euro-mediterranean” and “Transitions” types. Therefore we should focus on the analysis of both the urban and the rural aspects of

Thessalia as well as on the way these aspects are combined to produce an overall demographic pattern.

Through the case of Thessalia we could also study some *demographic patterns which are important for Greece as well as representative of some important aspects of a “Southern European” demographic model*, such as:

- The demographic transformation of the rural space
- The migration from the countryside to cities
- The migration from mountainous and / or inner areas to lowland and / or coastal areas in relation, among others, with the tourism development.
- The installation of external migrants to urban versus rural areas,
- The change of the age – sex pyramid, provided that the ageing of native population is combined with the arrival of young external migrants

In order to study more appropriately some of the above issues we use in addition data at LAU1 level¹.

Another interesting point in the Thessalia case is that the role of the main urban centre (capital city) is undertaken by the bi-pole of Larisa and Volos. This enables us to discuss more widely the demographic aspect of the networking of cities.

In more general terms, *the present case study could contribute to highlight several aspects of the “Challenge of migration” or “Challenge of migration impacts” as the international migration (both from the New member states and the non – EU space) to Thessalia is a crucial aspect of its demographic, economic and social change. This challenge is also important for entire Greece and more widely for the Southern European countries.*

1.2. Physical geography, historical and economic background

Location, physical geography and summary presentation of the region of Thessalia

The **region of Thessalia** is situated in the central - eastern part of the mainland Greece -see in the Map 1.2.1- and its area (14.037 km²) amounts in 10.6% of the total of Greece.



Map 1.2.1: Situation of Thessalia in Greece

¹ We should add, as a “technical” remark, that in the case of Thessalia there are no major problems of “homogeneity” i.e. there is not a part of the NUTS2 territory of Thessalia that is functionally associated to another NUTS2 region.

Thessalia occupies the east side of the Pindus watershed, extending south of Macedonia to the Aegean Sea. The northern tier of Thessalia is defined by a generally southwest-northeast spur of the Pindus Range that includes Mt. Olympus, close to the Macedonian border. Within that broken spur of mountains are several basins and river valleys. The easternmost extremity of the spur extends south-eastward from Mt. Olympus along the Aegean coast, terminating in the Magnesia Peninsula that envelops the Pagasetic Gulf and forms an inlet of the Aegean Sea (Wikipedia 2010). Thessalia's major river, the Pineios, flows eastward from the central Pindus Range just south of the spur, emptying into the Gulf of Thermaikos.

The Trikala, Karditsa and Larisa lowlands form an important central plain which is surrounded by ring of mountains.

Thessalia (GR14 – NUTS2 level) includes the *prefectures* (Greek “nomoi” - NUTS3 level) of *Karditsa, Larisa, Magnesia and Trikala* -Map 1.2.2.

Its *population density in 2009 - 52.4 inhabitants / km²* - is slightly lower than that of Greece: 83 inhabitants / km².

Historical background

Thessalia participated in the Greek War of Independence (1821-1829), but was not recognized as part of Greece until 1881.

The administrative region of Thessalia was created in 1986 (together with the twelve rest administrative regions of the country). The city of Larisa is the administrative capital of Thessalia.

40 years ago, in 1971, the Thessalia population amounted to 661,000 inhabitants – see next in the Table 3.2.1. The two most populated and more urbanised prefectures of Larisa and Magnesia had, respectively, 233,000 and 161,000 inhabitants, while the prefectures of Karditsa and Trikala, less populated and less urbanised, had each one roughly 130,000 inhabitants.

During the decade of '70, the total population of Thessalia increased by 5.2%, slower than total Greece (11.1%). While the population of the prefectures of Larisa and Magnesia increased considerably: 9.1% and 12.9%, respectively, the population of the prefecture of Trikala hardly increased (+0,6%) and the one of the prefecture of Karditsa diminished considerably (-6.1%).

In the next *decade of '80*, the population of Thessalia increased by 5.1%, similar to the rate of the previous decade. This rate was, also, similar to the one of Greece in total (5.3%). Regarding the prefectures, the population of Larisa and Magnesia continued growing with a significant rate (7.3% and 7.9% respectively) while the population of Trikala had a low rate (2.9%). On the contrary, the population of Karditsa continued diminishing (-1.4%).

See for the population change after 1991 in Section 3.

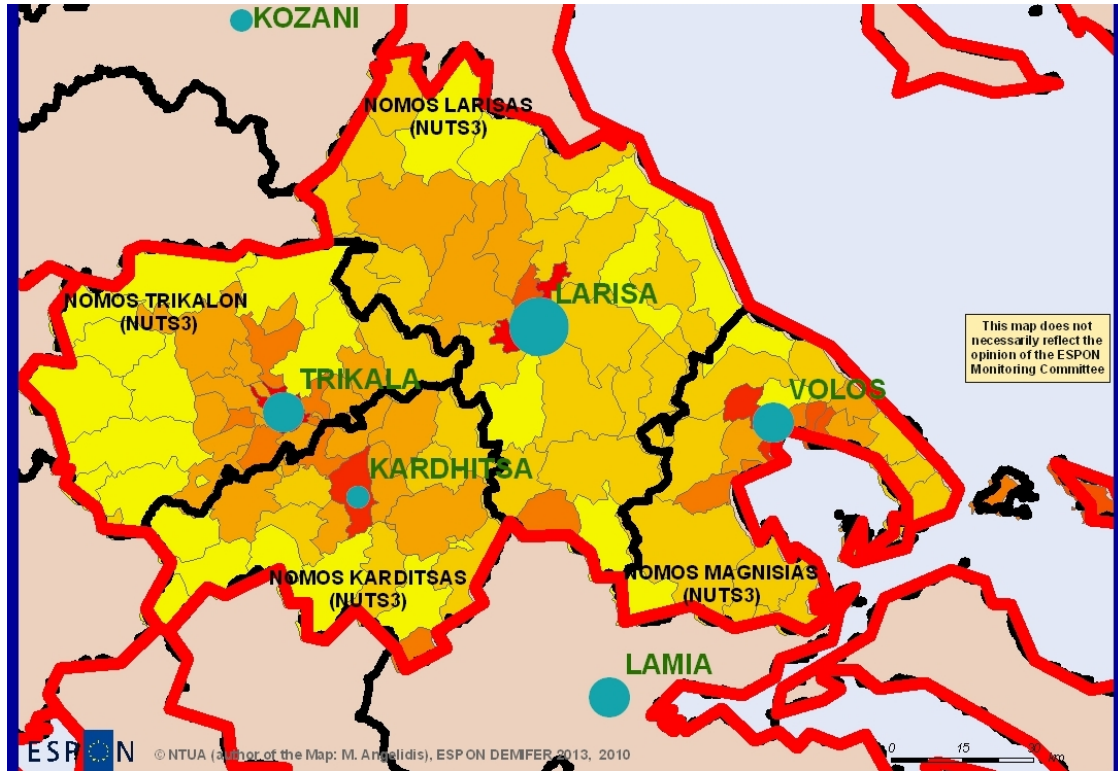
Economical background

Thessalia is located in the main developmental and transport (road, rail) axis of the country: Patrai - Athens - Thessaloniki - Northern borders. Its distance from the two big developmental centres of Athens and Thessaloniki is, 3,5-4,0 and 1,5-2,5 hours, respectively (allowing same-day trips from and to the region). In a relatively small distance from its northern border; Egnatia highway, will presumably become the major developmental axis of Western to Eastern Greece. Consequently, Thessalia is located in a strategic and easily accessible geographical position.

The population of Thessalia in 2009 (735,885 inhabitants) amounted to 6.5% of the total population of Greece (Eurostat 2010) and provided 6.0% of the country's GDP (Eurostat 2003). In terms of GVA it provides 4.8% of the country's production (Eurostat 2010). It presents comparatively higher participation in the agricultural sector. It provides 11.9% of the total agricultural production of the country (in terms of GVA), 6.1% of the manufacture production and 4.2% of the services (Eurostat 2010).

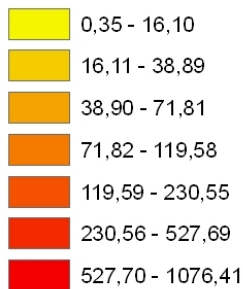
The average Greek GDP (PPS in current prices) per capita amounted in 2007 to 23.100 (Eurostat 2010). –see in Table 4.1.1 in next. The GDP of Thessalia (17.000) amounts (2007) to 73,6% of the respective average for the country and 68,2% of the EU-27 average.

See in more extent in section 4.1.



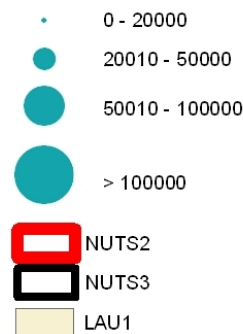
EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Resident population density 2001 per LAU1



**"Monimos plythismos" in Greek

FUAs Population 2001



Regional level: LAU1 (Greek municipalities)
Source: NTUA team for the elaboration of data
Origin of data: Eurostat, National Statistical Service of Greece, 2010
©EuroGeographics Association for administrative boundaries

Map 1.2.2: Thessalia region: LAU1 population density 2001, Functional Urban Areas (FUAs) population 2001

Source of data: Eurostat and NSO of Greece

1.3. Urbanisation and settlements, urban system

The urbanisation degree of Thessalia is relatively medium. The region includes numerous small settlements corresponding, more or less, to LAU2 units. The degree of dispersal of the settlements is very high; This is obvious, among others, from the *Map 1.3.1* of the Urban Morphological Zones (UMZ) constructed on the basis of the Corine Land Cover (CLC) 2006 (see for the definition of UMZ in the respective documents).

The LAU2 units -“*dimotika diamerismata*” in Greek- are sub-divisions of Municipalities and Communes. They are aggregated in *93 Municipalities and 11 Communes which correspond to LAU1 units* –see *Map 1.3.2*.

National Statistical Service of Greece (NSSG) classifies, since 2001, LAU2 units (Municipalities and Communes) the most populated settlement of which has less 2.000 inhabitants as “rural” and the rest as “urban”. Before 2001 it classified LAU2 units the most populated settlement of which had less than 2,000 inhabitants, 2,000 –10,000 inhabitants and more than 10,000 inhabitants, respectively, as “rural”, “semi-urban” and “urban”. As we work here up to the LAU1 level (municipalities, communes), we simulated as “urban” the LAU1 units (municipalities) of Thessalia with more than 2.000 inhabitants, those with 2.000-10.000 inhabitants as “semi-urban” and the rest as “rural” –see in the *Map 1.3.2*.

On the basis of this simulation, 14 LAU1 units were urban in 2001 while 49 were semi-urban and 24 were rural. The “urban” population surpasses the “rural” population.

See for the population change according this tripartite division at LAU1 level in section 3.2.

NSSG classifies the Greek LAU2 units (“*dimotika diamerismata*”) NSSG in *mountainous*², *semi-mountainous*³ and *lowland*⁴. As we work here up to the LAU1 level (municipalities, communes), we simulated as “mountainous” the LAU1 units (municipalities) of Thessalia whose area is, in its larger part, mountainous. Similarly we characterised the rest LAU1 units as “semi-mountainous” or “lowland” –see in the *Map 1.3.2*.

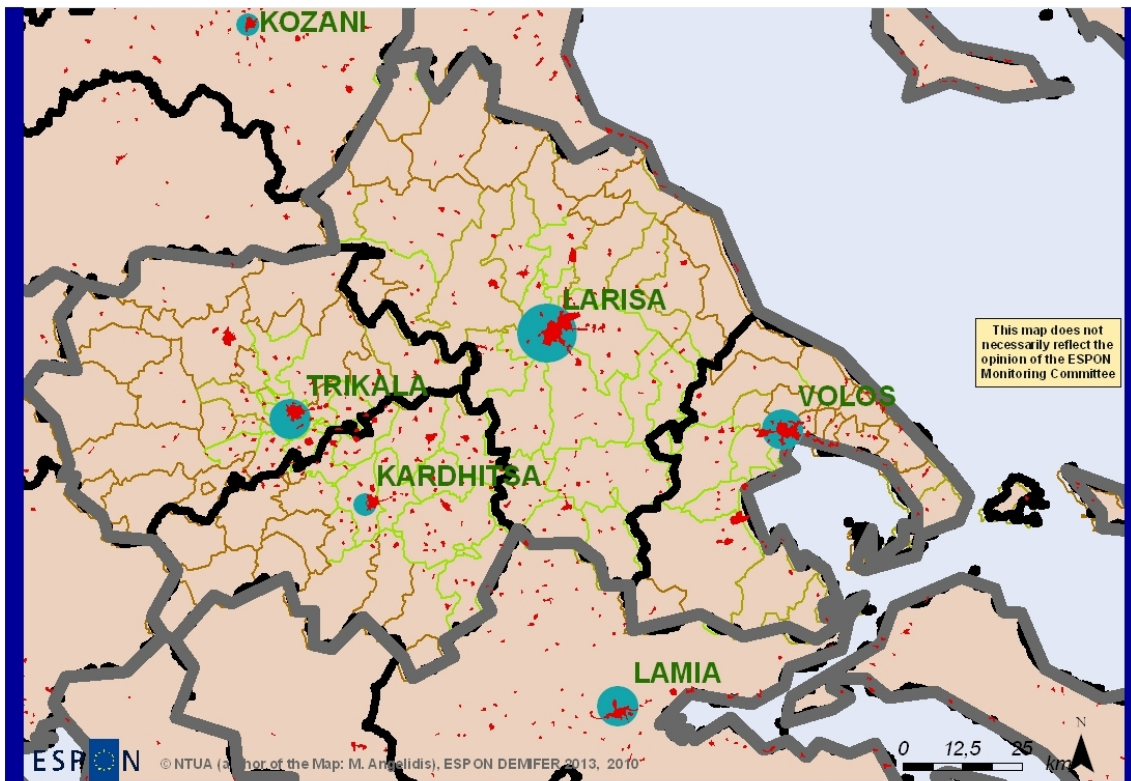
On the basis of this simulation, 46 LAU1 units of Thessalia are mountainous, 20 are semi-mountainous while 43 are lowland. It is clear that the bigger in population LAU1 units (municipalities) in 2001 are lowland.

See for the population change according this tripartite division at LAU2 level in section 3.2 (we don’t provide total results per category at LAU1 level).

² NSSG definition of the Mountainous LAU2 units: Settlements with slopping and uneven surface, broken by ravines and covered by steep mountains which create deep and multiple folds with elevation differences over 400 metres as well as settlements whose entire surface or the bulk of this lies at an altitude above 800 meters above sea level.

³ NSSG definition of the Semi - mountainous LAU2 units: Settlements who are located in the foot of mountains or whose area is shared by half in the plain and by the other half in the mountain, but always with altitude below 800 metres in their larger part.

⁴ See for the NSSG definition of the LAU2 units in the published results of the population censuses 1991 and 2001.



ESPON
 EUROPEAN UNION
 Participating by the European Regional Development Fund
 INVESTING IN YOUR FUTURE

Regional level: LAU1 (Greek municipalities)
 Source: NTUA team for the elaboration of data
 Origin of data: Eurostat, National Statistical Service of Greece, 2010
 ©EuroGeographics Association for administrative boundaries

Urban Morphological
 Zones (UMZ) 2006
 per LAU1 (municipalities)



Categories
 of LAU2 units

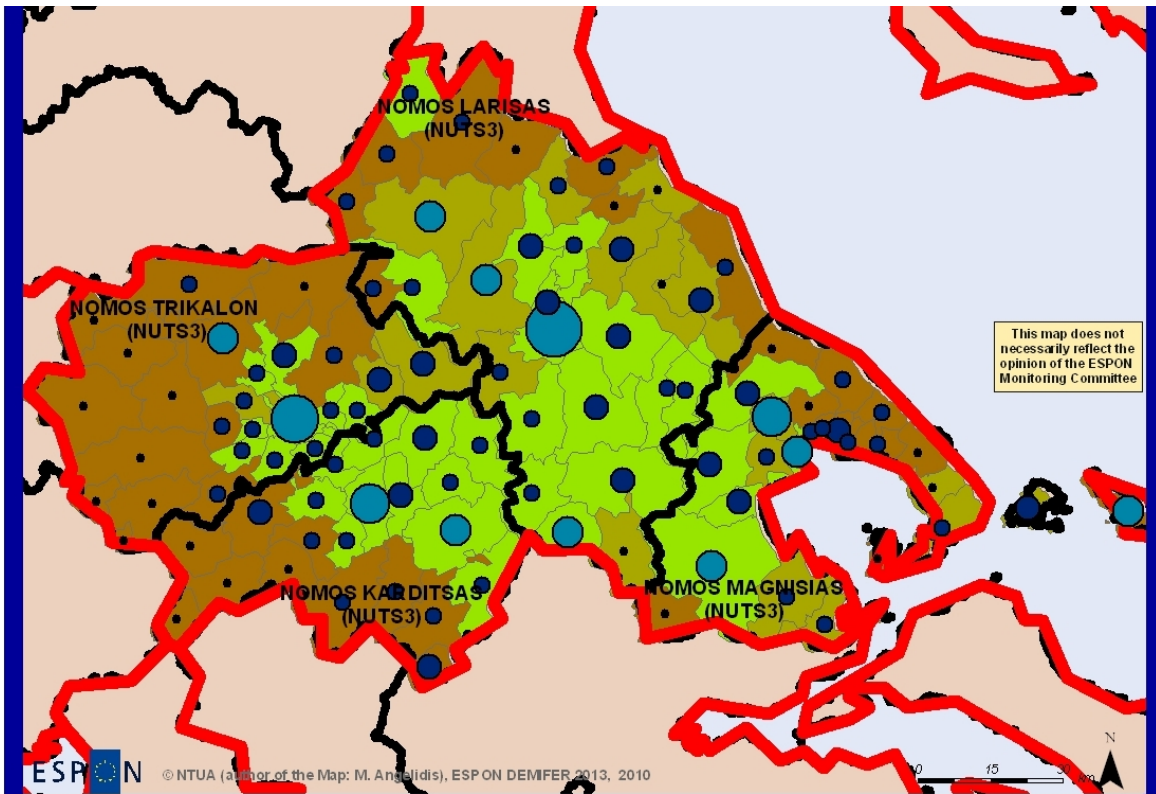
- Semi-mountainous
- Mountainous
- Lowland

FUAs Population 2001

- 0 - 20000
- 20010 - 50000
- 50010 - 100000
- 100100 - 500000
- NUTS2
- NUTS3
- LAU1

**Map 1.3.1: Settlements' network structure of Thessalia:
 Urban Morphological Zones (UMZ)**

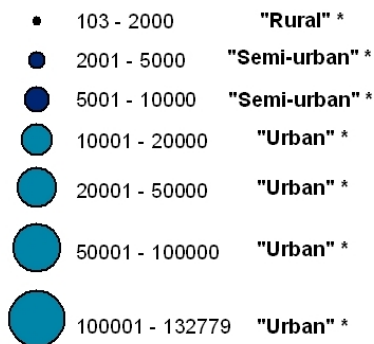
Source of data: Corine Land Cover (CLC) 2006 project documents



EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: LAU1 (Greek municipalities)
Source: NTUA team for the elaboration of data
Origin of data: Eurostat, National Statistical Service of Greece, 2010
©EuroGeographics Association for administrative boundaries

**Population of LAU1 units
(Municipalities & Communes) 2001**



**Categories of LAU1 units
(Municipalities & Communes)**



* According to the NTUA team classification

**Map 1.3.2: Settlements' network structure of Thessalia:
Population 2001 by Municipalities (LAU1)
classified (by NSSG) in mountainous / semi-mountainous / lowland
and urban / semi-urban / rural**

Source of data: Eurostat and NSS of Greece, author of the Map: M. Angelidis

The geography of Thessalia, with an extended lowland part surrounded by mountainous bulges and, in the Eastern, the contact with Aegean Sea, *favours its internal territorial integration*.

The region's settlements' network includes two relatively large cities: Larisa and Volos -132,779 and 117,980 inhabitants in 2001⁵, respectively-, and two medium sized cities: Trikala and Karditsa, with 57,914 and 41,411 inhabitants, respectively. It also includes 14 small cities with population ranging between 17,400 and 8,200 inhabitants in 2001, a large number of which are centres of rural territories.

This urban network is *cohesive* to a considerable degree as the small cities are closely related to the 4 big cities.

See, in more detail, in the Sections 3 and 4.

1.4. Outline of the case study report

After the presentation of the historical and economic background of the region in *section 1*, we review, in *section 2*, the existing analyses of demographic and migratory flows for Thessalia.

In *section 3*, the report focuses on the demographic stocks and flows of the region. It examines population potential by territorial levels, age structure, population change and migration, focusing on the impacts of the entry of an important young population potential of foreigners to the demographic pattern of the region.

In *section 4*, we examine the economic change of the region in close relation with the evolution of the labour market.

In *section 5* we analyse the other relationships among economic development and population change and in *section 6* the economic and social consequences of demographic change.

In *section 7* we comment concisely the results of the DEMIFER scenarios for Thessalia.

Finally, in the conclusions –*section 8*-, we try to describe and comment the overall demographic and migratory pattern of the region.

⁵ Resident population of Municipalities; the city of Volos includes the Municipalities of Volos and Nea Ionia.

2. Review of existing analyses of demographic and migratory flows for Thessalia

There are no in depth analyses of demography and migration specifically for Thessalia; however, there are numerous such researches and publications for the total of Greece and its regions, from which we can extract useful specific conclusions for Thessalia. Some short demographic analyses of the region of Thessalia or some of its prefectures were conducted in the frame of preparatory studies for the respective regional and prefectural developmental Plans.

The more recent researches and publications regarding the territorial demographic and migratory flows in Greece stress the importance of migration, since the early '90s, or the radical change of the Greek territorial demographic and migratory patterns –see, among others, in Kotzamanis – Sofianopoulou 2008 and Kanellopoulos - Gregou - Petralias 2005.

3. Demographic stocks and flows of Thessalia

As we have already noted, the population of Thessalia in 2009 amounted to 735,885 persons (Eurostat, according to the NSSG estimation), and represented 6,5% of the total population of the country.

Thessalia is the third biggest Region of the country -regarding population.

The population distribution in sexes for 2009 in Thessalia was: 363,533 (49.4%) men and 372,352 (50.6 %) women.

The population of the two bigger *NUTS3 regions -prefectures, “nomos”* in Greek- of Thessalia: Larisa and Magnesia amounted in 2009 to: 286,505 and 203,945 inhabitants respectively, while the population of Trikala and Karditsa amounted to 130,112 and 115,323 inhabitants, respectively –see *Map 3.2.1*.

According to the division by the NSSG of the LAU1 units in “rural”, “semi-urban” and “urban” – see section 1.3- , *the urban population of the region amounted in 2005 to 44% of the total population while the rural population amounted to 40% and that of the “semi-urban” to 16%.*

The prefectures of Larisa and Magnesia include the *most important urban centres of the region: Larisa and Volos, which form a “bi-pole” that has a capital city role in the spatial planning of the country.*

.

3.1. Age structure of the population

In 1991, Thessalia's population presented the same ageing index (persons 65+ years/ persons 0-14 years): of 0.72 like Greece. However, the share of the 15-64 years old population in Thessalia was greater than that of Greece -Tables 3.1.1-3 and Tables 3.1.4-5 in Annex.

See the Thessalia age pyramid in 1991 in Graph 3.1.1.

Already then, the populations of Karditsa and Trikala were considerably more aged than those of Larisa and Magnesia: ageing indexes, respectively: 0,90, 0,78, 0,62 and 0,72.

In more detail: In 1991, the prefectures of Larisa and Magnesia presented higher rates of the 15-64 years old population (66.4% and 65.5% respectively), similar to the rates in the regional and national level (65.3% and 67.3%). Inversely, these prefectures presented smaller rates of the older population (12.7% and 14.5% respectively). On the contrary, the prefectures of Karditsa and Trikala present smaller rates in the younger population (63.1% and 4.7%) and higher in the older population (17.5% and 15.4%).

During the period 1991-2001 the population of Thessalia aged more intensively than that of Greece. In 2001 the ageing index of Thessalia reached 1.17 while this of Greece was 1,10.

See the Thessalia age pyramid in 2001 in Graph 3.1.2.

The ageing index increased much more in Karditsa and Trikala and amounted to 1.93 and 1.76 respectively, while in Larisa and Magnesia it reached 1.25 and 1.35. During the same decade, the ageing index increased by 0.57 points in both the prefectures of Karditsa and Trikala, while it increased only by 0.40 and 0.37 for Larisa and Magnesia respectively.

More specifically: During the decade 1991- 2001, in the prefectures of Larisa and Magnesia we can identify a significant increase in the rates of the 15-64 years old population, +0.8% and +1.7%, respectively (Thessalia +0.6%, +0.8% for the country). On the contrary, in the prefectures of Karditsa and Trikala, the rates of the 15-64 years population diminish (-0.6% and -0.8% respectively). As for the older population, we can identify a high increase in the prefectures of Karditsa and Trikala, +4,8% and 5,3%, respectively, similar to the increase of the older population in Thessalia +3,9%, while in Larisa and Magnesia, the increase is smaller (+3.8% and +2.7%)

The population of the prefectures of Larisa and Magnesia in 2001 was clearly younger than that of Trikala and Karditsa –see in *Table 3.1.2*. The rates of the 15-64 years population of the prefectures of Larisa and Magnesia amounted to 67% while those for the two other regions were much lower: 62-64% (66% for Thessalia, 68% for the country). Inversely, the older population (65 years and over) rates were relatively low for Larisa and Magnesia: roughly 17%, while they were relatively high for the two other prefectures: 21-22% (18% for Thessalia, 17% for the country).

From 2001 until 2009 the ageing process continued more or less.

The ageing indexes of Karditsa and Trikala increased to 1.93 and 1.76 respectively, while those of Larisa and Magnesia to 1.25 and 1.35 (table 3.1.6 in Annex). Again, the ageing rate is higher in the two “more rural” prefectures (Karditsa and Trikala). The differences of the ageing indexes in these two cases are: 0.46 points and 0.42 points, while for Larisa and Magnesia the respective increases amount to 0.24 and 0.25 points-

Table 3.1.1: Population by age groups, NUTS3 regions of Thessalia 1991

| Code | Regions | Total pop. 1991 | Pop. age: 0-14 years | Pop. age: 15-64 years | Pop. age: 65 or over | % Share of the pop. that is aged 15-64 years | % Share of the pop. that is aged 65 or over |
|-------|------------------|-----------------|----------------------|-----------------------|----------------------|--|---|
| GR | Greece | 10,223,392 | 1,945,050 | 6,875,320 | 1,403,022 | 67.3 | 13.7 |
| GR14 | Thessalia | 729,505 | 147,065 | 476,333 | 106,107 | 65.3 | 14.5 |
| GR141 | Karditsa | 123,215 | 23,856 | 77,793 | 21,566 | 63.1 | 17.5 |
| GR142 | Larisa | 271,786 | 56,466 | 180,556 | 34,764 | 66.4 | 12.7 |
| GR143 | Magnesia | 196,273 | 39,239 | 128,586 | 28,448 | 65.5 | 14.5 |
| GR144 | Trikala | 138,231 | 27,504 | 89,398 | 21,329 | 64.7 | 15.4 |

Source of data: Eurostat and NSS of Greece, our own elaboration

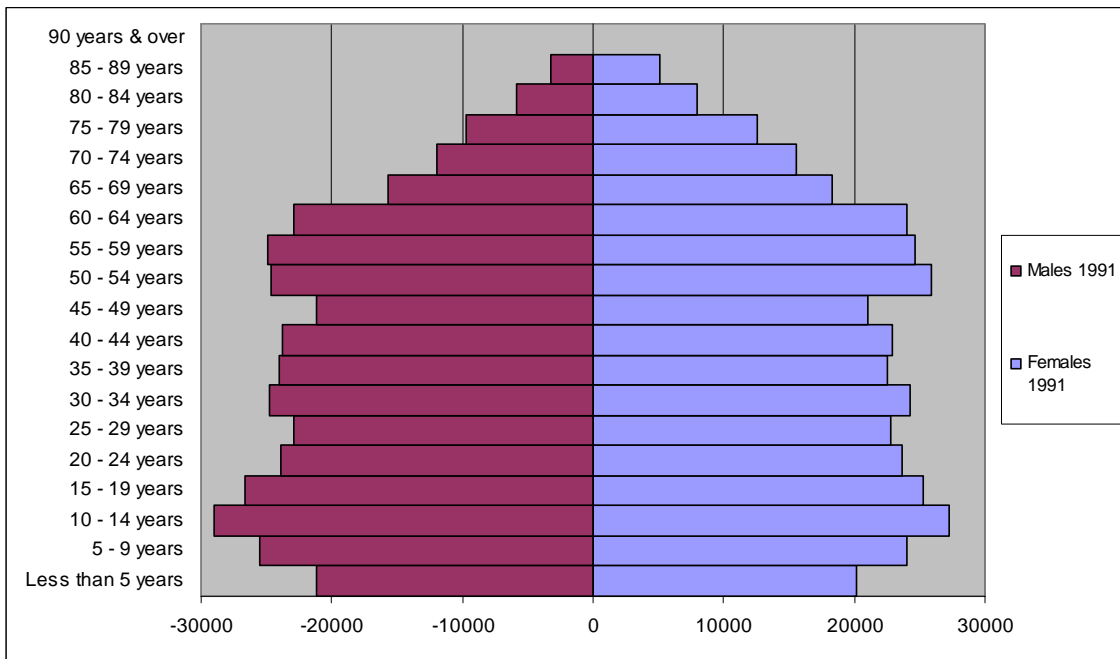
Table 3.1.2: Population by age groups, NUTS3 regions of Thessalia 2001

| Code | Regions | Total Pop. 2001 | Pop. age: 0-14 years | Pop. age: 15-64 years | Pop. age: 65 or over | % Share of the pop. that is aged 15-64 years | % Share of the pop. that is aged 65 or over |
|-------|------------------|-----------------|----------------------|-----------------------|----------------------|--|---|
| GR | Greece | 10,934,097 | 1,660,899 | 7,445,964 | 1,827,234 | 68.1 | 16.7 |
| GR14 | Thessalia | 740,115 | 116,686 | 487,401 | 136,028 | 65.9 | 18.4 |
| GR141 | Karditsa | 120,265 | 18,216 | 75,210 | 26,839 | 62.5 | 22.3 |
| GR142 | Larisa | 282,156 | 45,965 | 189,666 | 46,525 | 67.2 | 16.5 |
| GR143 | Magnesia | 205,005 | 32,033 | 137,783 | 35,189 | 67.2 | 17.2 |
| GR144 | Trikala | 132,689 | 20,472 | 84,742 | 27,475 | 63.9 | 20.7 |

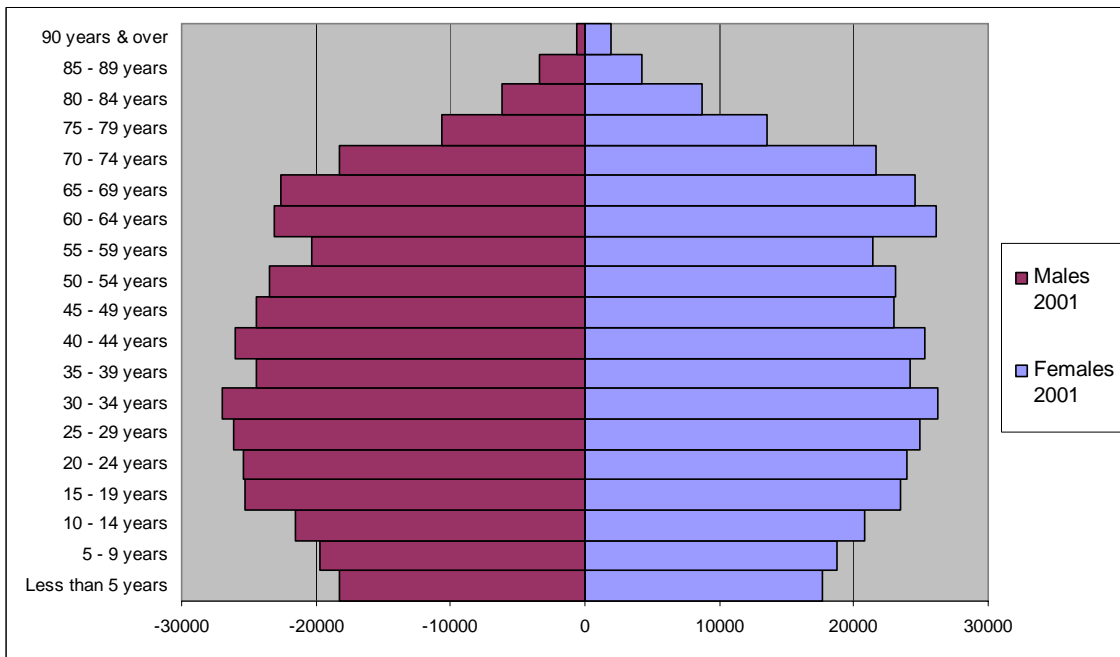
Source of data: Eurostat and NSS of Greece, our own elaboration

Table 3.1.3: Population change by age groups, NUTS3 regions of Thessalia 1991-2001

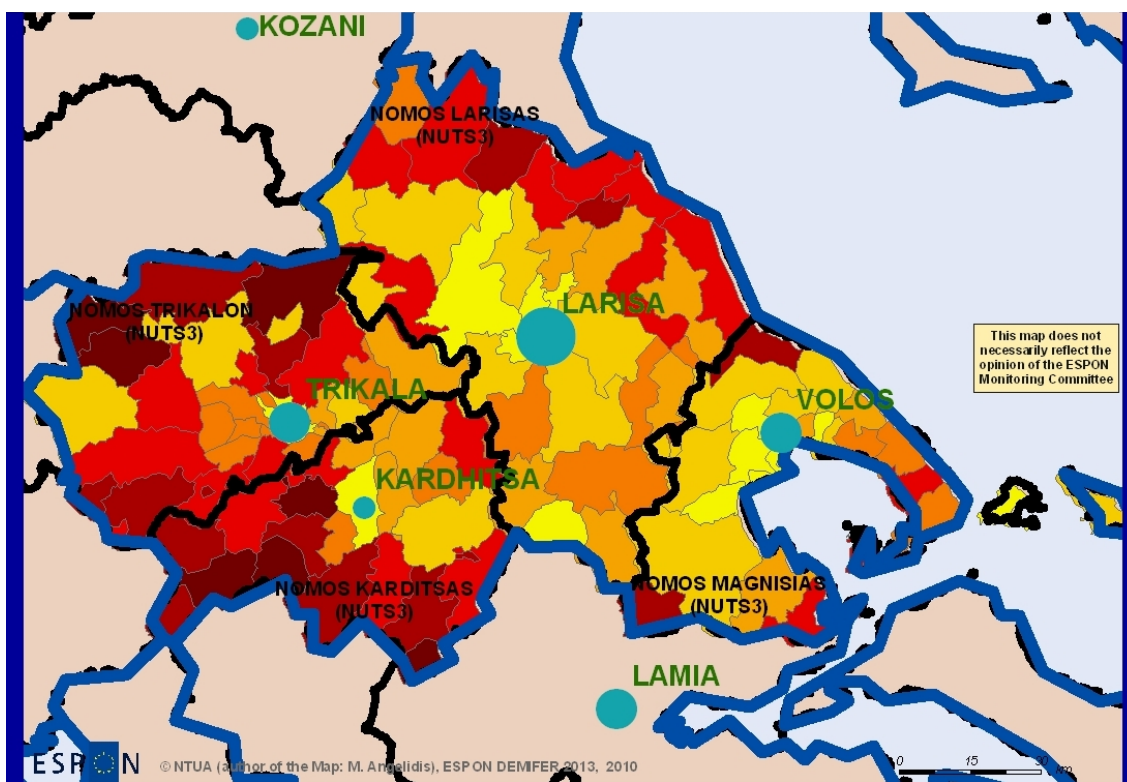
| Code | Regions | Total Pop. Change 1991-2001 | Pop. age: 0-14 years 1991-2001 | Change in pop. Age:15-64 years 1991-2001 | Change in pop. Age:65 or over 1991-2001 | % Share of the pop. that is aged 15-64 years 1991-2001 | % Share of the pop. that is aged 65 or over 1991-2001 |
|-------|------------------|-----------------------------|--------------------------------|--|---|--|---|
| GR | Greece | 710,705 | -284,151 | 570,644 | 424,212 | 0.8 | 3.0 |
| GR14 | Thessalia | 10,610 | -30,379 | 11,068 | 29,921 | 0.6 | 3.9 |
| GR141 | Karditsa | -2,950 | -5,640 | -2,583 | 5,273 | -0.6 | 4.8 |
| GR142 | Larisa | 10,370 | -10,501 | 9,110 | 11,761 | 0.8 | 3.8 |
| GR143 | Magnesia | 8,732 | -7,206 | 9,197 | 6,741 | 1.7 | 2.7 |
| GR144 | Trikala | -5,542 | -7,032 | -4,656 | 6,146 | -0.8 | 5.3 |



Graph 3.1.1: Population age pyramid per sex 1991



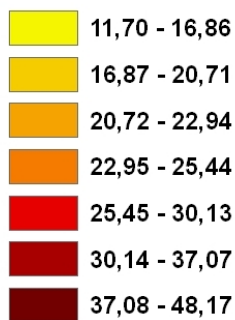
Graph 3.1.2: Population age pyramid per sex 2001



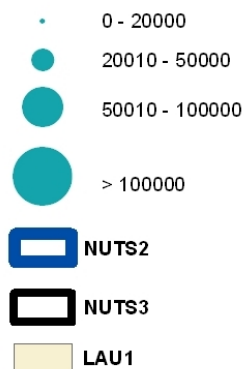
EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: LAU1 (Greek municipalities)
Source: NTUA team for the elaboration of data
Origin of data: Eurostat, National Statistical Service of Greece, 2010
©EuroGeographics Association for administrative boundaries

**Resident population 2001
aged 65 years and more
rate % per LAU1 units
(Municipalities & Communes)**



FUAs Population 2001



**Map 3.1.1: Thessalia: Ageing rate % (persons aged 65+ years / Total population)
per LAU1 (municipalities) 2001**

Source of data: Eurostat and NSO of Greece, author: M. Angelidis

3.2. Population change and its components

The rate of population change of Thessalia is lower than the national average. Indicatively, during the period 1991-2001, the population of the region increased by 1.6% while the respective national rate amounted in 7.2% - See in Table 3.2.1 and in Table 3.2.1a in Annex.

During the decade 1991-2001, the population of the prefectures of Larisa and Magnesia increased by 3.9% and 4.6%, respectively, while the population of the prefectures of Karditsa and Trikala diminished by 2.4% and 3.9%, respectively –see also in Graphs 3.2.1 and 3.2.2.

During the period 2001-2009 (estimations NSSG – Eurostat for the beginning of the year, see in Table 3.2.1a in Annex), the population of Thessalia decreased by 0.6%, while the population of the country increased by 3.0%. The population of the prefecture of Larisa increased by 1.5%, while the population of the prefecture of Magnesia diminished by -0.5% and the population of the rural prefectures of Karditsa and Trikala diminished by -4,2%, and -2.1%, respectively.

Table 3.2.1: Population of EU27, Greece and Thessalia 1971-2007

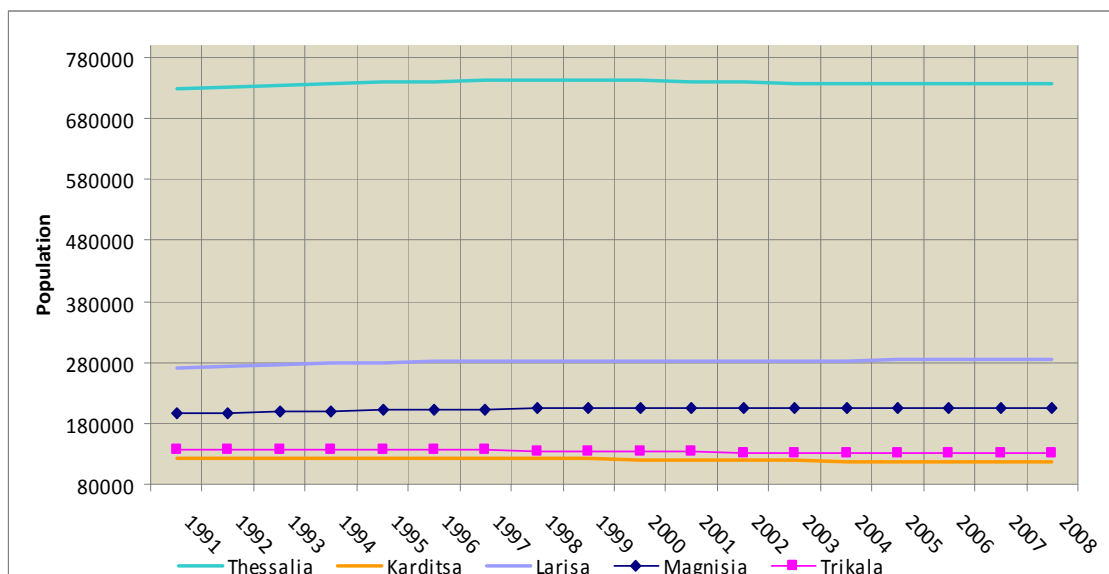
| | | 1971 | 1981 | 1991 | 2001 | 2007 | 1971-1981 | 1981-1991 | 1991-2001 | 2001-2007 | 1971-2001 |
|-------|-----------|-------------------------|-----------|------------|------------|------------|---------------------|-----------|-----------|-----------|-----------|
| | | Population – in 1,000 | | | | | Population change % | | | | |
| EU27 | EU-27 | | | 464,201 | 484,324 | 432,679 | | | 4.3 | -10.7 | |
| | | Population – in units * | | | | | Population change % | | | | |
| GR | Greece | 8,768,641 | 9,740,417 | 10,192,911 | 10,931,206 | 11,171,740 | 11.1 | 5.3 | 7.2 | 2.2 | 24.7 |
| GR14 | Thessalia | 660,986 | 695,654 | 729,086 | 740,454 | 737,034 | 5.2 | 5.1 | 1.6 | -0.5 | 12.0 |
| GR141 | Karditsa | 133,018 | 124,930 | 123,340 | 120,404 | 116,516 | -6.1 | -1.4 | -2.4 | -3.2 | -9.5 |
| GR142 | Larisa | 233,159 | 254,295 | 271,486 | 282,156 | 285,440 | 9.1 | 7.3 | 3.9 | 1.2 | 21.0 |
| GR143 | Magnesia | 161,392 | 182,222 | 195,972 | 205,032 | 204,148 | 12.9 | 7.9 | 4.6 | -0.4 | 27.0 |
| GR144 | Trikala | 133,417 | 134,207 | 138,288 | 132,862 | 130,930 | 0.6 | 2.9 | -3.9 | -1.5 | -0.4 |

* Estimated resident population at the beginning of the year: NSSG and Eurostat

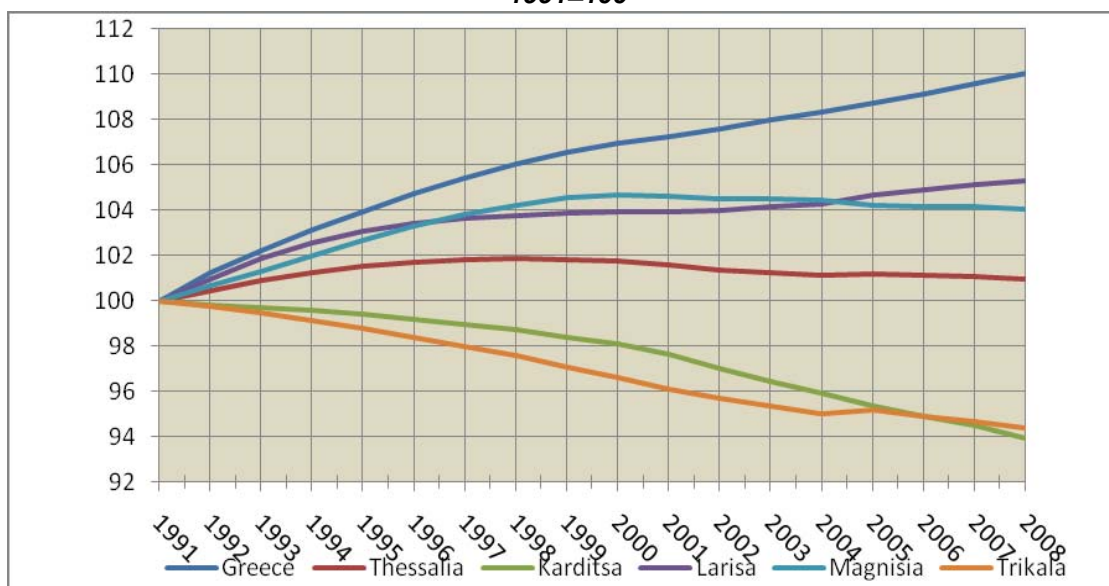
Sources of data: Eurostat, NSSG

See more details on the population of Greece and Thessalia by year 1991-2009 as well as the respective definition in Table 3.2.1a in Annex

Graph 3.2.1: Population of the prefectures of Thessalia 1991 - 2008



Graph 3.2.2: Population of Greece and the prefectures of Thessalia 1991 – 2008, 1991=100



Urban and rural population

We presented in section 1.3 the definition of the division of LAU2 units of Thessalia by the NSSG in urban / semi-urban / rural before 2001 and urban / rural after 2001 as well as the definition of the simulation of this tripartite division at LAU1 level by our team.

According to both these divisions it is clear that the rural population decreased considerably during the decade 1991-2001, while the urban population (including “urban: and “semi-urban” according to the NSSG definition before 2001) increased a lot.

On the basis of the NSSG classification at LAU2 level the urban population increased by roughly 40.000 persons during 1991-2001 and its share in the total population increased from roughly 60% in 1991 to roughly 65% in 2001.

The rural population decreased by roughly 35.000 persons and its share in the total population decreased from roughly 40% in 1991 to roughly 35% in 2001.

As we needed to give more clarifications on the estimations on the basis of the NSSG division at LAU2 level, we present the respective results in the Tables 3.2.2a and 3.2.2b in Annex.

See for the results on the basis of the division at LAU1 level in the Map 3.2.1.

Mountainous, semi-mountainous and lowland population

We presented in section 1.3 the definition of the division of LAU2 units of Thessalia by the NSSG in mountainous, semi-mountainous and lowland as well as the definition of the simulation of this tripartite division at LAU1 level by our team.

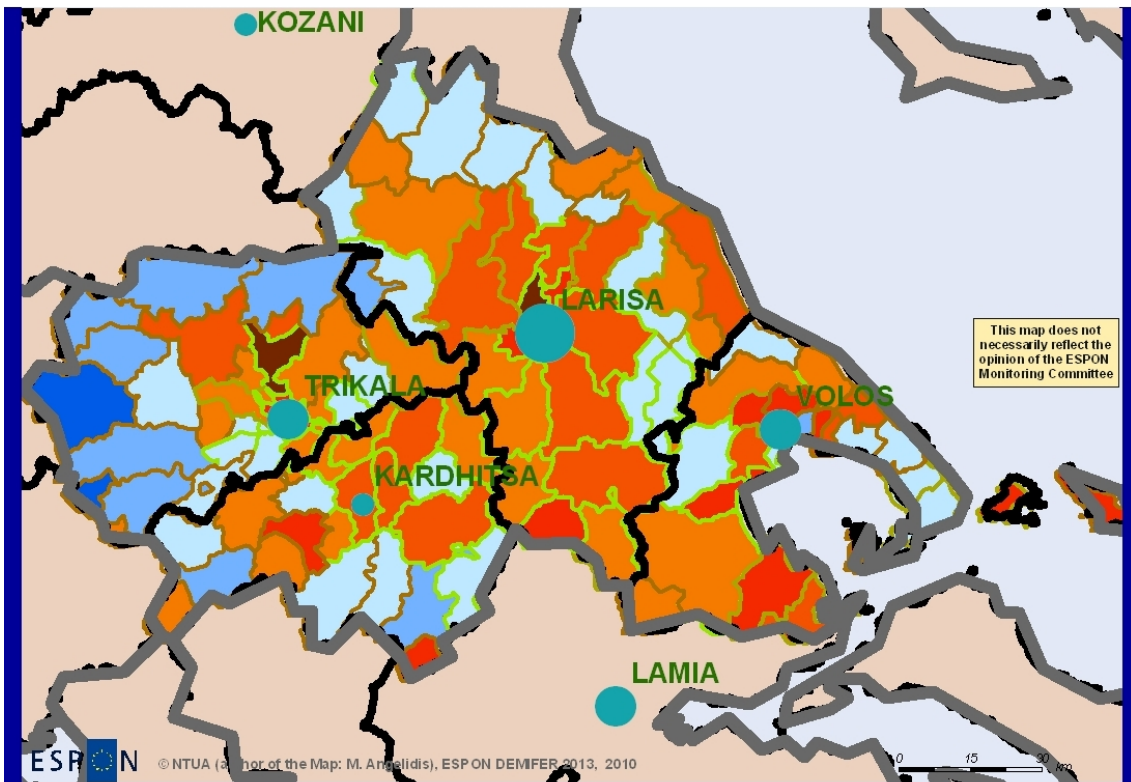
According to both these divisions it is obvious that the mountainous population decreased considerably during the decade 1991-2001, while the lowland population increased a lot. On the basis of the NSSG classification at LAU2 level the mountainous population decreased by roughly 23%, the semi-mountainous one decreased by roughly 4%, while the lowland population increased by roughly 7%. In 2001, the lowland population represented the 77% of the total population, while the semi-mountainous and the mountainous populations amounted only to 12% and 11% respectively.

As we needed to make some assumptions for the calculations on the basis of the NSSG division at LAU2 level, we present the respective results in the Tables 3.2.3a and 3.2.3b in Annex.

See for the results on the basis of the division at LAU1 level in the Map 3.2.1.

Shift from the mountainous to the lowland areas and from the rural to the urban and coastal zones

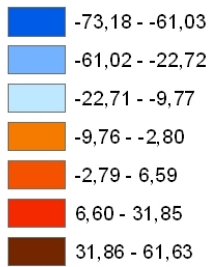
The population of the mountainous units, the majority of which are rural, is shrinking; Part of it "descends" to the urban lowland units. Only the coastal mountainous municipalities where the tourism is developing presents a population increase. The semi-mountainous municipalities close to urban centres gain population while those which are distant to cities loose population. The urban centres, lowland in their large majority, gain population because, among other reasons, they receive population from the mountainous / semi- mountainous and rural / semi-urban municipalities.



EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: LAU1 (Greek municipalities)
Source: NTUA team, for the elaboration of data
Origin of data: Eurostat, National Statistical Service of Greece, 2010
©EuroGeographics Association for administrative boundaries

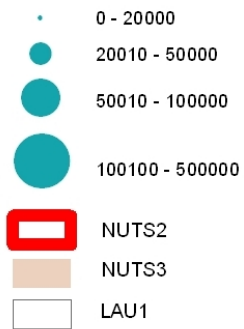
**Population change %
per LAU1 (municipalities)
1991-2001**



**Categories
of LAU2 units**



FUAs Population 2001



**Map 3.2.1: Thessalia region: Population change % 1991-2001
per LAU1 (municipalities) mountainous, semi-mountainous, lowland**

Source of data: Eurostat and NSO of Greece, author: M. Angelidis

The population of the four big urban centres of Thessalia: Larisa, Volos, Trikala and Karditsa grew considerably during the decade 1991-2001 (+11.0%, +8.4%, +11.3% and +6.3%, respectively -Table 3.2.4. The population of the 14 small cities of the region increased by 4,6% in total; cities located closer to the road axis Athens – Thessalonica grew the most.

Table 3.2.4: Resident population of 4 urban centres and 14 small cities of Thessalia 1991 - 2001

| Municipality Name | Pop. 1991 | Pop. 2001 | Pop. Change 1991-2001 |
|---------------------------------------|-----------|-----------|-----------------------|
| Larisa | 119,659 | 132,779 | 11.0 |
| Municipalities of Volos and Nea Ionia | 108,874 | 117,980 | 8.4 |
| Trikala | 52,034 | 57,914 | 11.3 |
| Karditsa | 38,940 | 41,411 | 6.4 |
| 14 small cities of Thessalia | 154,801 | 161,856 | 4.6 |

Source of data: NSSG - our own elaboration

3.3. Births and deaths, natural change, fertility rate, life expectancy

In the decade 1991-2001, the crude birth rate in Greece declined significantly: from 10.0 ‰ to 9.4 ‰ (-0.6 points) -Table 3.3.1, while it rose from 2001 to 2007: from 9.4 ‰ to 10.0 ‰. A similar evolution is identified in Thessalia: during 1991-2001, the crude births rate declined significantly: from 9.8‰ to 8.7‰ (-1.1 points) while it rose from 2001 to 2007: from 8.7‰ to 9.8‰ (+1.1 points). In 2007 the crude birth rate in Thessalia was slightly lower than the national average. The absolute number of live births increased slightly in Thessalia from 1991 to 2007 – Graph 3.3.1.

Table 3.3.1: Crude birth rate, crude death rate and rate of natural change rate (‰) 1991 to 2007 in Greece and Thessalia

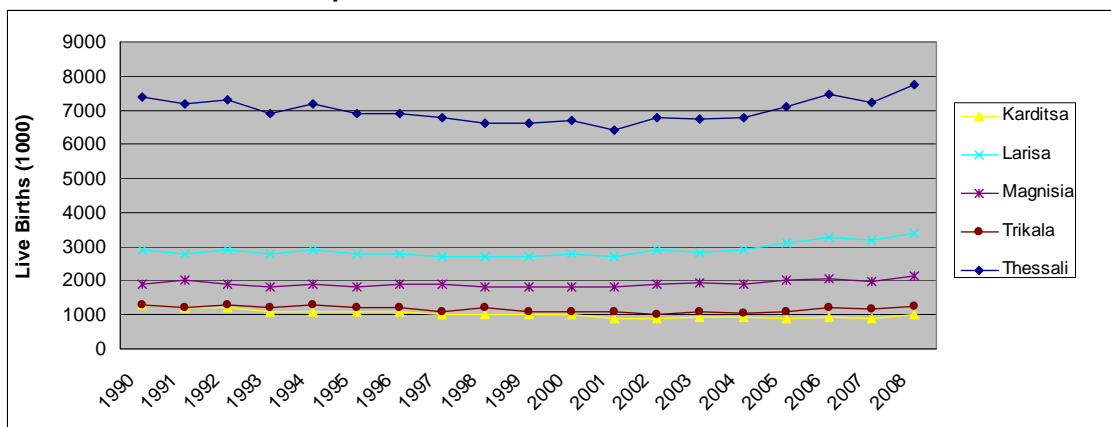
| Regions | Crude birth rate (‰) | | | | | Crude death rate (‰) | | | | | Crude rate of natural increase (‰) | | | | |
|------------------|----------------------|------|------|-----------|-----------|----------------------|------|------|-----------|-----------|------------------------------------|-------------|-------------|-----------|-----------|
| | 1991 | 2001 | 2007 | 1991-2001 | 2001-2007 | 1991 | 2001 | 2007 | 1991-2001 | 2001-2007 | 1991 | 2001 | 2007 | 1991-2001 | 2001-2007 |
| Greece | 10.0 | 9.4 | 10.0 | -0.6 | 0.6 | 9.3 | 9.4 | 9.8 | 0.1 | 0.4 | 0.7 | 0,0 | 0.2 | -0.7 | 0.2 |
| Thessalia | 9.8 | 8.7 | 9.8 | -1.1 | 1.1 | 9.6 | 10.4 | 11.1 | 0.8 | 0.7 | 0.2 | -1.7 | -1.3 | -1.9 | 0.4 |
| Karditsa | 9.4 | 7.5 | 7.8 | -1.9 | 0.3 | 10.5 | 12.8 | 13.8 | 2.3 | 1 | -1.1 | -5.3 | -6 | -4.2 | -0.7 |
| Larisa | 10.3 | 9.5 | 11.1 | -0.8 | 1.6 | 8.7 | 9.1 | 9.7 | 0.4 | 0.6 | 1.6 | 0.4 | 1.4 | -1.2 | 1 |
| Magnesia | 10.1 | 8.6 | 9.8 | -1.5 | 1.2 | 9.9 | 9.8 | 10.9 | -0.1 | 1.1 | 0.2 | -1.2 | -1.1 | -1.4 | 0.1 |
| Trikala | 8.6 | 7.9 | 8.8 | -0.7 | 0.9 | 10.1 | 11.9 | 12.1 | 1.8 | 0.2 | -1.5 | -4 | -3.3 | -2.5 | 0.7 |

Source of data: Eurostat - own further elaboration of data

The same decline and, next, raise can be identified in all four prefectures of Thessalia -Table 3.3.1 and Graph 3.3.1. The most important raises of the crude birth rates during 2001-2007 are

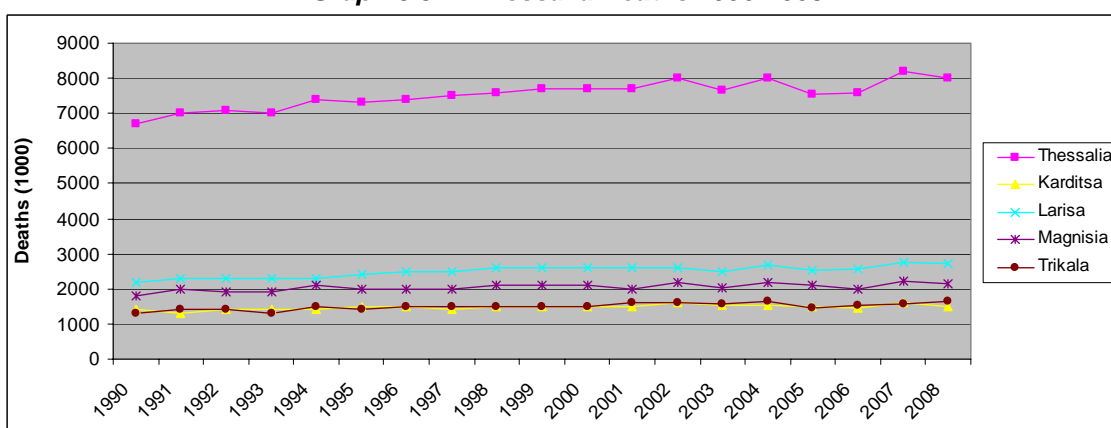
identified in the “more urban” prefectures of Larisa and Magnesia with -1.6‰ and 1.2‰, respectively; these prefectures presented the higher rates in 2007: 11.1‰ and 9.8‰, respectively. The respective rates for Trikala and Karditsa were clearly lower (8.8‰ and 7.8‰, respectively).

Graph 3.3.1: Thessalia Live births 1990-2008



On the other hand, for the same time period (1991-2001) the mortality rate (crude death rate) in Greece increased from 9.3‰ to 9.4‰ and continue to increase until 2007: 9.8‰ – Table 3.3.1. The respective rate for Thessalia increased from 9.6‰ in 1991 to 10.4‰ and increased again to 11.1‰ in 2007. The 2007 rate was substantially higher than the national average. The absolute number of deaths increased considerably in Thessalia from 1991 to 2007 -Table 3.3.1 and Graph 3.3.2. The death rates were considerably higher in 2007 in the less urbanised prefectures of Karditsa (13.8‰) and Trikala (12.1‰) than in Magnesia (10.9‰) and Larisa (9.8‰).

Graph 3.3.2: Thessalia Deaths 1990-2008



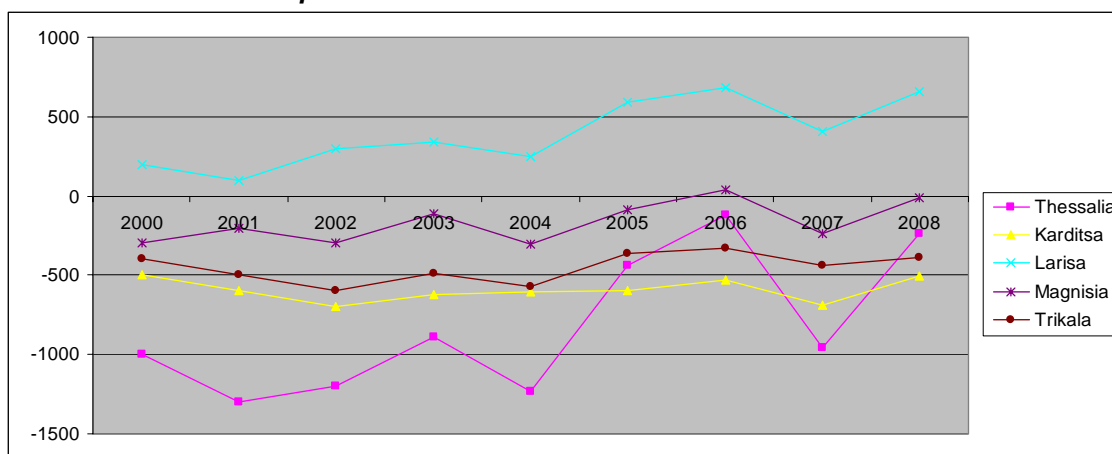
As a consequent, the natural change rate in the entire country was positive in 1991 (+0.7‰), decreased to 0.0‰ in 2001 and increased slowly: to 0.2‰ in 2007.

The respective change for Thessalia was considerably different. In 1991, Thessalia presented a lower birth rate and a higher death rate compared to the national average, as long as it included comparatively higher percentage of rural population, which is older than the total population in

all Greek regions. Consequently, the population's natural change rate in Thessalia in 1991 was only 0.2‰ -while for Greece 0.7‰. This rate decreased significantly in 2001: -1,7‰. Then, until 2007, it slightly increased but still remained negative: -1.3‰ -Table 3.3.1 and Graph 3.3.3.

Undoubtedly, the inversion in the natural change in both the country and the region of Thessalia, from the mid-90s until our days, is very closely related to the impressive increase of foreign migration to Greece -see section 3.5.

Graph 3.3.3: Thessalia natural increase 2000-2008



The evolution during the period from 1991 to 2007, differs significantly in each one of the prefectures of Thessalia –Table 3.3.1 and Graph 3.3.3. In 2007, only the prefecture of Larisa, which includes a big urban centre, had a positive rate of natural change: +1.4‰. Inversely, the prefecture of Magnisia has a moderately negative rate: -1.1‰, while the prefectures of Trikala and Karditsa have, respectively, a high (-3.3‰) and even higher negative rate (-6.0‰).

The total fertility rate in Thessalia was already low in 1990 – 1.57 -, decreased substantially up to 1.29 in 2001 and increased considerably up to 1.62 in 2008 -Table 3.3.2.

The rates of Thessalia, a region which contains an important less urbanized area, are considerably greater than the respective rates for the most urbanized region of Greece, the metropolitan region of Athens (Attiki) -1.29 in 1990, 1.17 in 2001 and 1.40 in 2008.

Table 3.3.2: Total fertility rates 1990 – 2008 in the regions of Thessalia and Attiki

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|-----------|-------------|------|------|------|------|------|------|------|------|------|------|-------------|------|------|------|------|------|------|-------------|
| Thessalia | 1.57 | 1.54 | 1.54 | 1.45 | 1.5 | 1.43 | 1.42 | 1.39 | 1.34 | 1.33 | 1.34 | 1.29 | 1.37 | 1.37 | 1.38 | 1.45 | 1.53 | 1.5 | 1.62 |
| Attiki | 1.29 | 1.29 | 1.29 | 1.23 | 1.23 | 1.2 | 1.17 | 1.18 | 1.16 | 1.16 | 1.18 | 1.17 | 1.19 | 1.22 | 1.24 | 1.25 | 1.32 | 1.35 | 1.40 |

Source of data: Eurostat - own further elaboration of data

Considering life expectancy at birth (LEB), we note that during the period 1997-2007, Thessalia increased significantly its rates by 1,7 years for females and 2,0 years for males; both are over the increase in national level +1.4 and +1.6 years respectively -Table 3.3.3. Life expectancy at birth for males in 2007 in Thessalia (76.7) was lower than the national average (77.1) but greater than the EU average. Life expectancy at birth for females in Thessalia in the same year

(81.9) was above the Greek average (81.8) and lower than the EU27 average (82.2). Life expectancy at 65 years in Thessalia increased significantly both for men and women during 1997-2008. Life expectancy at 85 years and over in Thessalia increased for men and decreased for women.

Table 3.3.3: Life expectancy 1997-2008: EU-27, Greece, Thessalia by sex

| | | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|-------------------|-------------------|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | | Life expectancy at birth (only), by gender | | | | | | | | | | | |
| Males | EU27 | | | | | | 74.5 | 74.6 | 75.2 | 75.4 | 75.8 | 76.1 | |
| | Greece | 75.4 | 75.4 | 75.5 | 75.5 | 76.0 | 76.2 | 76.5 | 76.6 | 76.8 | 77.2 | 77.1 | 77.7 |
| Females | EU27 | | | | | | 80.9 | 80.8 | 81.5 | 81.5 | 82.0 | 82.2 | |
| | Greece | 80.4 | 80.3 | 80.4 | 80.6 | 81.0 | 81.1 | 81.2 | 81.3 | 81.6 | 81.9 | 81.8 | 82.4 |
| Thessalia Total | Less than 1 year | 77.4 | 77.6 | 77.8 | 77.9 | 78.3 | 78.3 | 78.7 | 78.5 | 79.2 | 79.7 | 79.2 | 79.8 |
| | 65 years | 17.2 | 17.2 | 17.2 | 17.3 | 17.4 | 17.3 | 17.8 | 17.6 | 18.3 | 18.5 | 18.1 | 18.5 |
| | 85 years and over | 5.0 | 4.7 | 4.9 | 4.6 | 4.6 | 4.4 | 4.5 | 4.3 | 4.8 | 4.9 | 4.7 | 4.8 |
| Thessalia Females | Less than 1 year | 80.2 | 80.3 | 80.4 | 80.5 | 80.7 | 80.9 | 81.2 | 81.1 | 81.9 | 82.3 | 81.9 | 82.4 |
| | 65 years | 18.2 | 18.2 | 18.3 | 18.3 | 18.4 | 18.2 | 18.8 | 18.5 | 19.2 | 19.5 | 19.0 | 19.4 |
| | 85 years and over | 5.0 | 4.7 | 5.0 | 4.6 | 4.6 | 4.2 | 4.4 | 3.9 | 4.5 | 4.6 | 4.1 | 4.3 |
| Thessalia Males | Less than 1 year | 74.7 | 75.1 | 75.3 | 75.5 | 76.0 | 75.8 | 76.3 | 76.1 | 76.7 | 77.3 | 76.7 | 77.3 |
| | 65 years | 16.1 | 16.1 | 15.9 | 16.1 | 16.3 | 16.3 | 16.7 | 16.7 | 17.3 | 17.5 | 17.2 | 17.5 |
| | 85 years and over | 5.0 | 4.6 | 4.7 | 4.5 | 4.4 | 4.6 | 4.7 | 5.0 | 5.4 | 5.2 | 5.6 | 5.6 |

Source of data: Eurostat - own further elaboration of data

3.4. International migration⁶ flows to Greece and Thessalia: intensity and provenance

The foreign migration flows to Greece since the '90s

Since the '90s Greece changed from a country of emigration into a country of immigration. While the share of foreigners in the total Greek population was less than 2% until the mid- '90s, *in 2001, foreigners constituted already 7.0% of the recorded population (census)*. This share continued to rise considerably: it increased to 7.9% in 2006 to 8.1% in 2008 and 8.3% in 2009 - Table 3.4.1.

Table 3.4.1 Foreign population in Greece 2001-2009

| | 2001 | 2004 | 2006 | 2007 | 2008 | 2009 |
|----------------------|------------|------------|------------|------------|------------|------------|
| Total | 10,934,097 | 11,040,650 | 11,125,179 | 11,171,740 | 11,213,785 | 11,260,402 |
| Foreigners | 762,191 | 891,197 | 884,000 | 887,600 | 906,400 | 929,530 |
| Foreigners / Total % | 7.0 | 8.1 | 7.9 | 7.9 | 8.1 | 8.3 |

Source of data: Eurostat / NSSG – own elaboration of data

In reality this share is higher because an important number of migrants who entered Greece illegally are not recorded by the National Statistical Service of Greece (NSSG). The number of illegally entered migrants who were not granted a provisional permit (card) of residence in the

⁶ Migration from abroad

country, therefore they were not recorded by the NSSG, is unknown. From the other hand, the number of persons who entered the country illegally raised impressively during the last years: from 51,000 in 2003 to 146,000 in 2008⁷ (Data from the Greek Ministry of Interior).

The contribution of foreign migrants in the increase of the population of Greece was crucial during the period 1991-2001: the natural balance was positive by 13,000 persons (see among others in Kotzamanis- Sofianopoulou 2008) while the total (resident) population increased by 704,000 persons. Therefore, *the Greek population increase during the '90s is due almost totally (98%) to the raise of the number of foreigners in this period. The entry of numerous foreign migrants from the beginning of '90s combined with the evolution of fertility (decrease of the rates of natives since the beginning of '80s) had an important impact on the change of the Greek population pattern.*

The most important foreign community in Greece in 2001 (NSSG, census 2001) was that of *Albanians: 7% of the total population and 57.5% of the total foreign population.* Bulgarians, Georgians and Romanians with 4.6%, 3.0% and 2.9% of the total foreign population are following.

In 2008, the share of Albanians in the total foreigners in Greece has probably increased to 73.5% (NSSG, 2009 – probably the definition of foreigners is not the same with that of the 2001 population census). The share of EU27 citizens amounted at 4.8% of the total -including citizens of Bulgaria (0.95 of the total foreign population), Romania (0.7%) and UK (1.0%). The share of the rest Western Balkans (except Albania) amounted to 0.9%. *The total share of the foreign population from the ESPON space amounted in 4.9% of the total foreign population.*

Migration from abroad to Thessalia

According to the 2001 census, *the share of foreigners in Thessalia (4.3%) was considerably smaller than the national average (7.0%)* -Table 3.4.2. This share was bigger in the more urbanized prefectures of Larisa (6.8%) and Magnesia (4.3%) and smaller in Trikala (2.4%) and Karditsa (2.1%).

The share of Albanians in Thessalia in 2001 was higher than in Greece: 80.1% of the Total foreigners in Thessalia compared to 57.5% in Greece (see Table 3.4.2). This rate was higher in the prefectures of Larisa and Karditsa that have important rural areas: 86.2% and 86.3%, respectively. The share of Bulgarians and Romanians are slightly lower in Thessalia, compared to the national average, while that of Georgians is much lower.

⁷ 45.000 in 2004, 66.000 in 2005, 95.000 in 2006, 112.000 in 2007

Table 3.4.2: Share of foreign population of Greece and Thessalia in 2001

| | Total population | Total foreign population | Albani-ans | To- tal for- eign pop- ula- tion | Alb- a- nia- ns | Bul- g- aria- ns | Ge- or- gia- ns | Ro- ma- nia- ns | Oth- ers | Alba- nians | Bul- ga- ri- ans | Ge- or- gia- ns | Ro- ma- nia- ns | Oth- ers |
|-----------|---------------------|--------------------------|-----------------------|--|--------------------------|---------------------------|--------------------------|--------------------------|-------------------------------|----------------|---------------------------|--------------------------|--------------------------|-------------|
| | in absolute numbers | | % of total population | | | | | | % of total foreign population | | | | | |
| Greece | 10,934,097 | 761,813 | 438,036 | 7.0 | 4.0 | 0.3 | 0.2 | 0.2 | 2.4 | 57.5 | 4.6 | 3.0 | 2.9 | 35.0 |
| Thessalia | 740,454 | 31,950 | 25,593 | 4.3 | 3.5 | 0.2 | 0.0 | 0.1 | 0.6 | 80.1 | 3.7 | 0.6 | 2.6 | 13.5 |
| Karditsa | 120,404 | 2,491 | 2,150 | 2.1 | 1.8 | 0.1 | 0.0 | 0.0 | 0.2 | 86.3 | 2.9 | 0.0 | 2.1 | 8.7 |
| Magnesia | 282,156 | 12,259 | 8,801 | 4.3 | 3.1 | 0.3 | 0.0 | 0.1 | 0.8 | 71.8 | 7.7 | 1.1 | 2.7 | 17.8 |
| Larisa | 205,032 | 13,956 | 12,033 | 6.8 | 5.9 | 0.1 | 0.0 | 0.2 | 0.7 | 86.2 | 1.0 | 0.2 | 2.8 | 10.1 |
| Trikala | 132,862 | 3,244 | 2,609 | 2.4 | 2.0 | 0.0 | 0.0 | 0.1 | 0.4 | 80.4 | 1.0 | 0.5 | 2.3 | 16.3 |

Source of data: Eurostat / NSSG (census 2001) – own elaboration of data

Table 3.4.3: Share of foreigners in the population of Greece in 2008

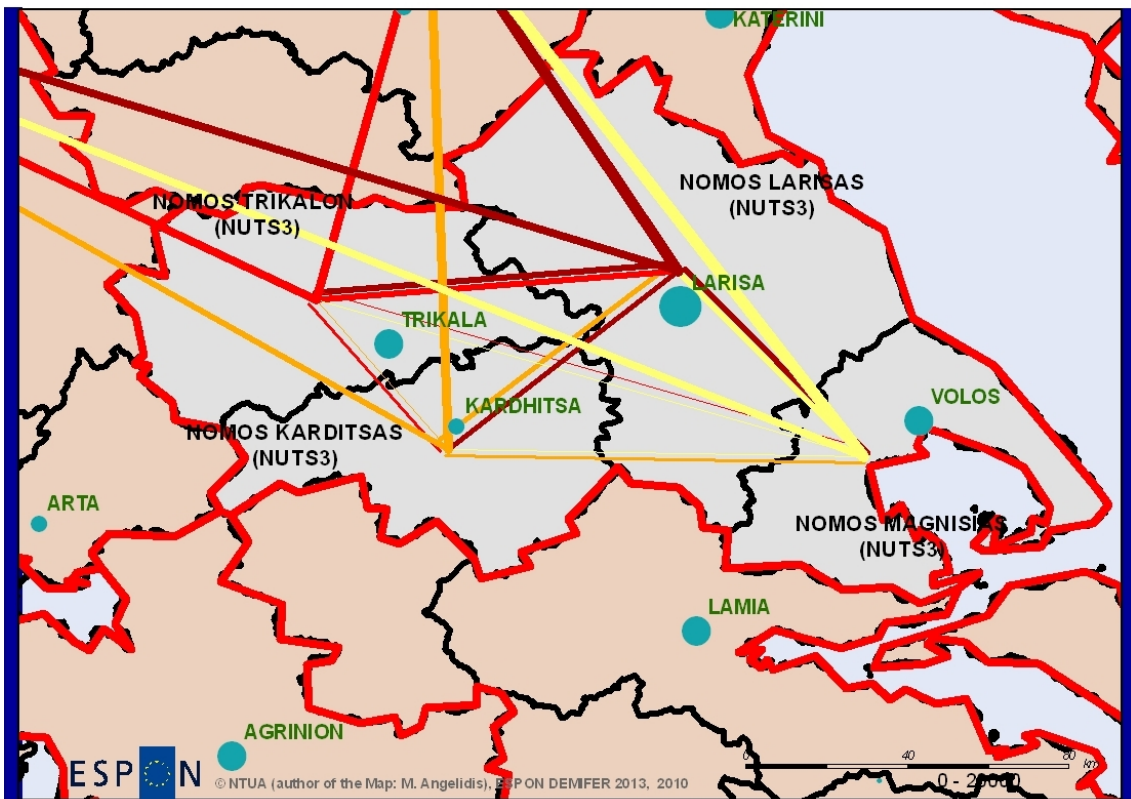
| | Total For- eigners | EUROPE | EU27 | Bulgaria | Romania | United Kingdom | Albania | Western Balkans (except Albania.) | Rest of the world | ESPON space |
|---|-----------------------|---------|--------|----------|---------|-------------------|---------|--|-------------------------|----------------|
| | 785,514 | 672,665 | 37,416 | 7,270 | 5,119 | 7,542 | 577,504 | 6,922 | 112,747 | 30,868 |
| % | 100 | 85.6 | 4.8 | 0.9 | 0.7 | 1.0 | 73.5 | 0.9 | 14.4 | 3.9 |


Source of data: Eurostat / NSSG – own elaboration of data

The 2001 census recorded also the numbers of persons who migrated to Thessalia from 1995 to 2001 and from 2000 to 2001.

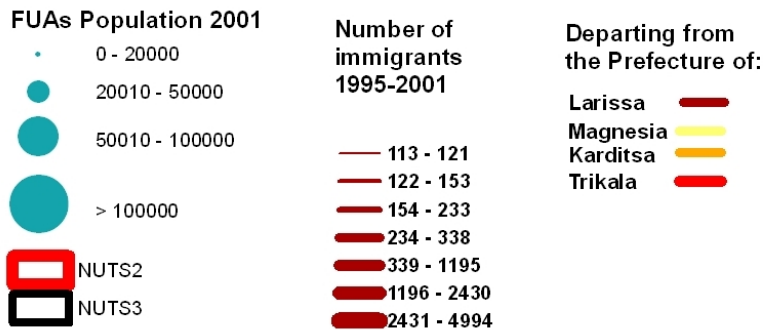
In the total resident population of Thessalia in 2001, 2.0% migrated to it since 1995 from abroad -see in Table 3.4.4-, while 0,4% migrated to it since 2000.

The higher rate of these migrants is observed in Magnesia (2.4%) while Larisa and Trikala present a slightly lower rate: 2.1%. The lowest rate of this kind of migrants is observed in Karditsa: 1.2% -see in Map 3.4.1.




 EUROPEAN UNION
 Part financed by the European Regional Development Fund
 INVESTING IN YOUR FUTURE

Regional level: LAU1 (Greek municipalities)
 Source: NTUA team for the elaboration of data
 Origin of data: Eurostat, National Statistical Service of Greece, 2010
 ©EuroGeographics Association for administrative boundaries



**Map 3.4.1: Thessalia region: Number of migrants 1995-2001
 from / to Thessalia prefectures / rest of Greece / rest of EU-27**

Source of data: Eurostat and NSO of Greece, author of the Map: M. Angelidis

Table 3.4.4: Inter-regional and international migration to Thessalia by age groups and region of provenance from 1995 to 2001

| | Total resident population of Thessalia 2001 | Residence in 1995 | | |
|------------|---|-------------------|------------------------------------|-------------------------------|
| | | Thessalia | All Greek regions except Thessalia | Residents of Countries Abroad |
| | 704,231 | 663,482 | 25,712 | 15,037 |
| Age groups | | | | |
| Total | 100.0 | 89.6 | 3.5 | 2.0 |
| 0-4 | 100.0 | 0.0 | 0.0 | 0.0 |
| 5-9 | 100.0 | 94.1 | 3.1 | 2.8 |
| 10-14 | 100.0 | 95.5 | 2.4 | 2.2 |
| 15-19 | 100.0 | 90.3 | 6.6 | 3.2 |
| 20-24 | 100.0 | 86.5 | 9.1 | 4.4 |
| 25-29 | 100.0 | 85.4 | 9.8 | 4.8 |
| 30-34 | 100.0 | 90.5 | 5.9 | 3.6 |
| 35-39 | 100.0 | 92.7 | 4.5 | 2.8 |
| 40-44 | 100.0 | 95.0 | 3.0 | 2.0 |
| 45-49 | 100.0 | 96.7 | 1.9 | 1.4 |
| 50-54 | 100.0 | 97.4 | 1.4 | 1.2 |
| 55-59 | 100.0 | 97.8 | 1.2 | 1.0 |
| 60-64 | 100.0 | 97.8 | 1.2 | 1.0 |
| 65-69 | 100.0 | 98.4 | 1.0 | 0.7 |
| 70-74 | 100.0 | 98.8 | 0.9 | 0.3 |
| 75-79 | 100.0 | 98.9 | 0.9 | 0.2 |
| 80-84 | 100.0 | 99.0 | 0.9 | 0.1 |
| 85+ | 100.0 | 98.9 | 1.0 | 0.1 |

Source of data: NSSG (on demand of NTUA team) – own elaboration of data

In 2010 (data for the beginning of 2010), according to data of the Regional Authority of Thessalia (Kissavou 2010), 35.000 foreigners from countries outside EU27 resident legally in Thessalia (they have a provisional permit of residence). Their total number has not changed considerably during the last years. Only a small part of them is moving inside or outside Thessalia in order to find a job.

From the 35.000 foreign migrants, 32.500 are Albanians (93.5% of the total), 380 Ukrainians, 280 Russians (0.8%), 200 Egyptians and 195 Moldavians (we do not refer to citizens of EU27 countries). The percentage of Albanians in the prefecture of Larisa amounts to 95%; it is slightly smaller in the 3 other prefectures.

The large majority of the migrants are economic migrants and they are occupied in salaried employment. The large majority of them have a permit of employment for two years.

3.5. Demographic characteristics of the foreign migrants and their contribution to the change of the demographic pattern in Greece and Thessalia

Using data for the migration from abroad during 1995-2001, we conclude that *the foreign migrants both to Greece and Thessalia are clearly younger than the nationals.*

Specifically for Thessalia, this type of migration concerns mainly the population ages from 5-44 years with higher shares in the age classes 20-34 years: 4.4%. 4.8% and 3.6% of the population classes of Thessalia 20-24, 25-29 and 30-34 years came from abroad from 1995 to 2001 - see in Table 3.6.2 in Annex.

More analytically, the participation (%) of the migrants coming from abroad to the respective age classes of the total population of Thessalia are: 15-19 years: 3.2%. 20-24: 4.4%. 25-29: 4.8%. 30-34: 3.6%. 35-39: 2.8% and 40-44: 2%.

The respective rates are almost equal for both males and females.

For Magnesia, the rates for the age classes 20-24 and 25-29 were 9% and 5.3% respectively; for Larisa 4.5% and 4.8% and for Trikala 4.3% and 5.5% respectively.

Undoubtedly, *the inversion in the natural change in both the country and the region of Thessalia, from the mid-90s until our days, is very closely related to the entry of a very important number of foreign migrants much younger in average than the nationals.*

The contribution of foreign migrants to the raise of the birth rate and the fertility rate of the population of Greece since 1990 was very important. 45% of the migrants in 2001 were women (6.3% of the total Greek female population), the large majority of which were in childbearing age (75% of the female foreign migrants are 15-49 years old).

For 100 foreign women 15-49 years old there was recorded twice the number of births than in Greek women (66 compared to 33), while in the respective two years 2004-2005, a total fertility rate of an average of 2.21 children corresponds to each foreign woman (2.54 for Albanian women) and only 1.20 for Greek women. According to the data for 2004-2005, the births resulting from foreign women constitute the 1/6 of the total (Kotzamanis- Sofianopoulou 2008).

This change becomes even clearer from the analysis of the births and deaths *during the period 2004-2008* per nationals (Greeks) and foreign migrants in Greece and in Thessalia - Table 3.5.1.

In Greece, natural change was positive during this period (Drettakis 2010, using NSSG data): +22,088 inhabitants because the positive natural change of the foreign population counterbalances the negative natural change of the national population.

In Thessalia the total natural change during the same period is negative: -2,997 inhabitants. The change of foreign population is positive but it does not exceed the natural decrease (in absolute number) of the national population.

Taking into account that during 2004-2008, the total population of Thessalia decreased by 1,261 inhabitants (737,340 in 2004 and 736,079 in 2008 / NOSG estimations) *the net migration into Thessalia during 2004-2008 probably amounted to 1,743 inhabitants or, roughly, to 0,59 ‰ of the total population of the region, per year.*

**Table 3.5.1: Number of births and deaths in Greece and Thessalia 2004-2008:
nationals and foreign migrants**

| | Births | | | Deaths | | | Natural change | | |
|------------------|---------------|---------------|--------------|---------------|---------------|------------|----------------|---------------|--------------|
| | Nationality | | | Nationality | | | Nationality | | |
| | Total | Greek | Foreign | Total | Greek | Foreign | Total | Greek | Foreign |
| Greece | 555,471 | 458,974 | 96,497 | 533,383 | 524,979 | 8,404 | 22,088 | -66,005 | 88,093 |
| Thessalia | 36,318 | 31,501 | 4,817 | 39,315 | 39,109 | 206 | -2,997 | -7,608 | 4,611 |

Data of NSSG, compiled by Drettakis 2010

3.6. Migration from other Greek regions to Thessalia, internal migration, total net migration to Thessalia

Inter-regional migration

Of the total resident population of Thessalia in 2001, 3.47% migrated to it since 1995 from other regions of Greece. The higher rates correspond to Attiki -1.39%- and Central Macedonia (including Thessaloniki): 0.82% - see Table 3.4.4, Table 3.6.1 and Table 3.6.2 in Annex as well as Map 3.4.1.

The higher rate % of inter-regional migrants (migrated to Thessalia from other regions of Greece) is identified in the prefecture of Magnesia: 4% of the total population of prefecture in 2001, while the prefecture of Larisa has a rate of 3.6% - See Table 3.6.3 in Annex.

Internal migration

Only a small part of the total of persons who migrated to each one of the prefectures of Thessalia during 1995-2001 originated from the rest of Thessalia. Their share in the total population of each prefecture amounted from 0.64% for Karditsa to 0.78% for Magnesia -see in Table 3.6.3 in Annex.

Table 3.6.1: Inter-regional migration to Thessalia from 1995 to 2001

| Region of Residence in 2001 Census | Total | % of the total resident population of Thessalia in 2001 |
|---|----------------|---|
| Thessalia | 740,115 | 100.00 |
| Region of Residence in December 1995 | | |
| East Macedonia and Thrace | 1,328 | 0.18 |
| Central Macedonia | 6,034 | 0.82 |
| West Macedonia | 1,264 | 0.17 |
| Thessalia | 663,482 | 89.6 |
| Ipeiros | 981 | 0.13 |
| Ionian Islands | 262 | 0.04 |
| Dutiki Ellada | 992 | 0.13 |
| Sterea Ellada | 2,098 | 0.28 |
| Pelloponisos | 672 | 0.09 |
| Attiki | 10,261 | 1.39 |
| Voreio Aigaio | 536 | 0.07 |
| Notio Aigaio | 566 | 0.08 |
| Crete | 718 | 0.10 |
| All Greek regions exc. Thessalia | 25,712 | 3.47 |
| Residents Abroad | 15,037 | 2.03 |

Source of data: NSSG (on demand of NTUA team) – own elaboration of data

3.7. Demographic characteristics of inter-regional and internal migrants for Thessalia and their contribution of the change of the demographic pattern

Inter-regional Migration

The majority of persons who migrated to Thessalia from other regions of Greece since 1995 to 2001 belong to the age 5-49 years - see in Table 3.6.2 in Annex. Even more important is the share of the more restrained group of population aged 15-44 years that belongs to the “working population”, for instance the share in the population aged 25-29 years amounts to 9,8% while the shares of the groups 20-24 and 25-29 are also very important.

More analytically, the participation (%) of the above inter-regional migrants to the respective age classes of the total population of Thessalia is: 15-19 years: 6.5%, 20-24: 9.1%, 25-29: 9.8%, 30-34: 5.9%, 35-39: 4.5% and 40-44: 3.0%

The respective rates are almost equal for both males and females.

For Magnesia the percentages in the groups 15-19, 20-24 and 25-29 are 7.6%, 10.3% and 10.1% respectively while in Larisa they are 7.5%, 9.9% and 9.6% respectively – see in Table 3.7.1 in Annex.

Internal migration

The age composition of the migrants moving from each of the prefectures of Thessalia to the others is more or less similar to the age composition of the inter-regional and foreign migrants-see above and Table 3.7.1 in Annex.

In more detail:

in Magnesia the majority of migrants from the other prefectures belongs to the age group 5-44 (75%). Similar rates can be found in the rest three prefectures as well: Larisa 80.1%, Karditsa 72.4% and Trikala 76.8%.

3.8. Implication of the total net migration to the change of the demographic pattern

As observed previously, the flow of foreign migration since the '90s had a crucial contribution to the change of the overall demographic pattern in Greece and Thessalia. The entry of foreign migrants contributed to the increase of the population of Greece and Thessalia not only through the impressive raise of the net migration but also through the very considerable raise of the average fertility and the natural change.

3.9. Other composition of migrants

A recent (2008) specific survey of the NSSG showed that the educational level of foreign migrants is lower in average compared to the Greek population: the share of migrants is higher in primary education and lower in third level education - Table 3.9.1.

Table 3.9.1: Nationals, direct descendants of migrants and foreign residents, by educational level and employment situation in Greece 2008

| | | Nationals | | | | Non-nationals | | No answer | |
|-----------------------------|-------------------|---|-------------|-------------------------------|------------|-------------------|------------|-------------------|------------|
| | | with at least one parent born in Greece | | with both parents born abroad | | | | | |
| | | Number of persons | % | Number of persons | % | Number of persons | % | Number of persons | % |
| Educational level | First level | 3,359,405 | 44.6 | 51,079 | 44.5 | 291,913 | 54.0 | 71,376 | 51.1 |
| | Second level | 2,770,451 | 36.8 | 42,258 | 36.8 | 187,672 | 34.7 | 44,622 | 32.0 |
| | Third level | 1,402,991 | 18.6 | 21,402 | 18.7 | 60,760 | 11.2 | 23,656 | 16.9 |
| Employment situation | Employees | 4,092,951 | 54.3 | 55,121 | 48.0 | 367,215 | 68.0 | 56,674 | 40.6 |
| | Unemployed | 319,317 | 4.2 | 9,148 | 8.0 | 24,806 | 4.6 | 3,872 | 2.8 |
| | Unemployment rate | | 7.2 | | 14.2 | | 6.3 | | 6.4 |
| | Non active | 3,120,579 | 41.4 | 50,469 | 44.0 | 148,323 | 27.4 | 79,107 | 56.6 |
| | Total | 7,532,847 | 90.5 | 114,738 | 1.4 | 540,345 | 6.5 | 139,653 | 1.7 |

Source: NSSG, *Research on the position of migrants and their direct descendants in Labour Market 2009*

The 2001 census, also, showed that *the percentage of the foreign population with third level education is lower both for Greece and Thessalia compared to the Greek population* while it is higher regarding the first level education - Table 3.9.2 in Annex.

For the entire Greece in 2008, the rate of employment is much higher in the case of foreign migrants (68% compared to 54.3% for the Greek natives) while the unemployment rate is lower for the migrants (6.3%) than for the Greek natives (7.2%).

4. Economic change and population: the labour market of Thessalia

4.1. Economic characteristics: GDP, unemployment

GDP per capita in Greece in 1995 (12,300 - PPS / Purchasing Power Standard at current market prices) was equal to the 84.2% of the average in EU-27 (14,700). It rose up to 92.8% (23,100) of the respective average in 2007 (24,900). Therefore, *it gained 8.6 points – Tables 4.1.1 and Table 4.1.1a in Annex⁸.*

GDP per capita in *Thessalia* in 1995 (10,900) was at 74.2% of the average in EU-27 and at 88.6% of the average in Greece. It decreased to 68.2% (17,000) of the EU-27 average and to 73.6% of the Greek average in 2007. Therefore, *Thessalia GDP decreased considerably compared to Greece and EU; it lost 15.0 points and 6.0 points, respectively.*

The relative decrease of the GDP per capita (in terms of % of the EU and Greece averages) was much more important in the prefectures of Karditsa and Trikala where the rural sector remains important. Thus the higher decrease could be attributed to the higher decrease of GDP in the rural sector.

Specifically, the % rate of the GPS per capita in the prefecture of Karditsa decreased from 80.5% of the national average in 1995 to 54.5% in 2007. It thus lost impressively (25.9 percentage points). The respective losses amount to 17.8 points for Trikala (slightly less “rural” prefecture than Karditsa), 12.8 points for Larisa (having an important rural sector but also a big urban

⁸ See for the GDP in Euros in Table 4.1.1a in Annex

centre) and only 9.7 points for Magnesia (which has a comparatively less important rural sector). It is expected that the decline of the rural sector of Thessalia will continue in next decades unless a major reorientation of its agriculture would be realized –see in more detail in section 4.2.

**Table 4.1.1: EU27, Greece, Thessalia: GDP PPS* at current prices per capita
1995, 2001, 2007**

| Code | | Purchasing Power Standard per inhabitant | | | Purchasing Power Parities per inhabitant in percentage of the EU average | | | | Purchasing Power Parities per inhabitant in percentage of Greece average | | | |
|-------|-----------|--|--------|--------|--|-------|-------|-----------------------------------|--|-------|-------|-----------------------------------|
| | | 1995 | 2001 | 2007 | 1995 | 2001 | 2007 | Differences in % points 1995-2007 | 1995 | 2001 | 2007 | Differences in % points 1995-2007 |
| | EU27 | 14,700 | 19,800 | 24,900 | 100.0 | 100.0 | 100.0 | | | | | |
| GR | Greece | 12,300 | 17,100 | 23,100 | 84.2 | 86.5 | 92.8 | 8.6 | 100.0 | 100.0 | 100.0 | |
| GR14 | Thessalia | 10,900 | 13,300 | 17,000 | 74.2 | 67.0 | 68.2 | -6.0 | 88.6 | 77.8 | 73.6 | -15.0 |
| GR141 | Karditsa | 9,900 | 10,200 | 12,600 | 67.8 | 51.4 | 50.5 | -17.3 | 80.5 | 59.6 | 54.6 | -25.9 |
| GR142 | Larisa | 11,000 | 14,600 | 17,700 | 75.2 | 73.7 | 71.0 | -4.2 | 89.4 | 85.4 | 76.6 | -12.8 |
| GR143 | Magnesia | 12,000 | 15,100 | 20,300 | 81.6 | 76.1 | 81.4 | -0.2 | 97.6 | 88.3 | 87.9 | -9.7 |
| GR144 | Trikala | 9,800 | 10,400 | 14,300 | 67.1 | 52.7 | 57.3 | -9.8 | 79.7 | 60.8 | 61.9 | -17.8 |

Source of data: EUROSTAT - elaboration of the Table: NTUA

Unemployment

Unemployment % rates (age: 15 years and over) decreased in Greece and Thessalia from 12.1% and 13.4%, respectively, in 1999 to 7.7% and 8.4% in 2008. Therefore, the unemployment rates for Greece and Thessalia in 2008 were greater than that of the EU-27 (7.0%) -Table 4.1.2, see also Table 4.1.2a in Annex.

Unemployment rates were in 2008 higher in the more urbanised prefectures of Larisa and Magnesia (9.7% and 8.1%) than in the rural prefectures of Karditsa (6.5%) and Trikala (7.1%).

**Table 4.1.2: Unemployment rate (population 15 years and over)
- EU27, Greece, Thessalia % 1999-2008**

| | | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|-------|-----------|------------|------|------|------|------|------------|------------|------------|------------|------------|
| EU27 | | | | | | 9.1 | 9.2 | 8.9 | 8.2 | 7.2 | 7.0 |
| GR | Greece | 12.1 | 11.4 | 10.8 | 10.3 | 9.7 | 10.5 | 9.8 | 8.9 | 8.3 | 7.7 |
| GR14 | Thessalia | 13.4 | 12.9 | 12.9 | 11.4 | 10.7 | 9.8 | 9.5 | 8.2 | 7.8 | 8.4 |
| GR141 | Karditsa | 8.7 (u) | 11.0 | 10.7 | 12.9 | 12.6 | 6.2 (u) | 9.3 (u) | 5.8 (u) | 6.6 (u) | 6.5 (u) |
| GR142 | Larisa | 12.9 | 11.4 | 11.1 | 12.5 | 11.9 | 11.5 | 10.4 | 9.0 | 9.5 | 9.7 |
| GR143 | Magnesia | 16.1 | 15.0 | 12.7 | 12.5 | 11.5 | 9.3 | 8.5 | 7.8 | 5.9 | 8.1 |
| GR144 | Trikala | 14.5 | 14.6 | 17.5 | 7.8 | 6.7 | 10.1 | 8.7 | 8.8 | 7.3 (u) | 7.1 (u) |

u unreliable / uncertain data

Source of data: EUROSTAT - elaboration of the Table: NTUA team

4.2. Economic activity: composition of the economy, investments, fixed capital formation, gross value added, employment

The *rural sector*, despite the fact that it has shrunk during the last decades, continues to have an important share in the *composition of the Thessalia economy*, as it covers roughly the 35% of the GDP and the 39% of the employment.

The most important agricultural products are the hard wheat and the cotton, however important extents are also occupied by the remaining cereals, tobacco, arboraceous cultivations and the vines. In the livestock-farming there are, also, recorded important sizes of livestock (the ovines constitute roughly the 13%, the cattle the 10% and the pork 14% of the corresponding total sizes of the country) while the production of cheese is very important.

Thessalia “ranks 1st in the production of cotton among the other regions with the 42% of the total production, 1st in the production of cheese with the 24% of the total (2nd in 2001 with 15%), 2nd in the production of milk with 14%, 3rd in apples with 26%, tomatoes and wheat with 18% and 21% respectively and 3rd, in national level, in the production of almonds, in pig breeding and traditional qualitative products and food, while it presents an important delay compared to the national average in the production of biological products” (Thessalia Region, OP, 2007 -data compiled from the Greek Revue “Selection” 2006 and NSSG 2006).

Structural changes attempted during the last years, such as the restructuring of the composition of the production in favour of more competitive products, grouping of farmers etc, were not completed.

Despite this even unaccomplished modernisation, *Thessalia’s agriculture remains labour force intensive*.

Industry, once very powerful in the region, especially in Volos, is limited permanently. Especially, the share of big industrial units in the entire sector was limited with corresponding consequences in the employment.

Tourism is developing, mainly in the coastal areas of the region. The entire *service sector* is growing in terms of GDP and employment; however, the most important growth concerns services related to the construction, restaurants, health and education as well as public services, while the share of the most dynamic branches of services such as the services to the enterprises remains weak.

Below, we argue and specify these general estimates via the analysis of special economic characteristics of the region (investments, fixed capital formation etc).

Thessalia receives 6% of the *national investments* (Thessalia OP), which is slightly smaller than its rate in the country population (6.7%). Its rate in the industrial investments in the country amounted in 5.4% in the period 2000-2004 (Thessalia Region, OP, 2007 -data compiled from ICAP 2005).

The analysis of the *per NACE branches composition of the fixed capital formation* in the years 1995, 2001 and 2004, shows that *the share of the agriculture in the economy of Thessalia surpasses the double of the respective share at national level* (9.9% for Thessalia and 4.5% for Greece in 1995, 10.0% and 4.2%, respectively, in 2004) -Table 4.2.1.

The rate of industry in Thessalia was equal to that for Greece in 1995. They both fall during the next 9 years with the fall for Thessalia being more important; only 10.1% of the fixed capital corresponds to the industry for Thessalia in 2004.

The development of services during 1995-2004 was very important both for Greece and Thessalia. Their shares amounted in 82% and 80% in 2004, respectively. *The larger part of Thessalia became fully a “services” economy and society.*

The share of the economy of Thessalia in the country (in terms of formation of fixed capital) grown from 5.6% in 1995 to 6.6% in 2004; the participation of the Thessalia agriculture and services increased while the share of the industry diminished

**Table 4.2.1 Gross fixed capital formation per sector
in Greece and Thessalia 1995, 2001, 2004**

| | All NACE branches ⁹ | Agriculture, hunting, forestry and fishing | Industry | Services ⁹ | All NACE branches* | Agriculture, hunting, forestry and fishing | Industry | Services ⁹ | All NACE branches ⁹ | Agriculture, hunting, forestry and fishing | Industry | Services ⁹ |
|--------------------------------|--------------------------------|--|----------|-----------------------|--------------------|--|----------|-----------------------|--------------------------------|--|----------|-----------------------|
| Absolute values | 1995 | | | | 2001 | | | | 2004 | | | |
| Greece | 16,720 | 752 | 8,152 | 7,817 | 38,329 | 1,294 | 5,035 | 32,000 | 51,943 | 2,170 | 6,729 | 43,044 |
| Thessalia | 935 | 93 | 465 | 377 | 2,202 | 226 | 254 | 1,722 | 3,436 | 343 | 347 | 2,746 |
| Relative Values % | % | | | | % | | | | % | | | |
| Greece | 100 | 4.5 | 48.8 | 46.8 | 100.0 | 3.4 | 13.1 | 83.5 | 100.0 | 4.2 | 13.0 | 82.9 |
| Thessalia | 100 | 9.9 | 49.8 | 40.3 | 100.0 | 10.3 | 11.5 | 78.2 | 100.0 | 10.0 | 10.1 | 79.9 |
| Share of Thessalia in Greece % | 5.6 | 12.3 | 5.7 | 4.8 | 5.7 | 17.5 | 5.0 | 5.4 | 6.6 | 15.8 | 5.2 | 6.4 |

Millions of euro (from 1.1.1999) / Millions of ECU (up to 31.12.1998)

*excluding extra-territorial organizations and bodies

Source of data: EUROSTAT – elaboration of the Table: NTUA

The analysis of the *per sector composition of the Gross value added (GVA)* in the years 1995, 2001 and 2007, leads to similar conclusions and results.

The share of the agriculture in the economy of Thessalia surpasses 2.5 times the respective share at national level (9.4% for Thessalia and 3.8% for Greece in 2007) -Table 4.2.2. The share of agriculture both for Greece and Thessalia decreased very much from 1995 to 2007 (more than 50%). The rural sector was in 1995 and remains in 2007 relatively more important (13.%) in Larisa. It was even more important in Karditsa and Trikala in 1991 (31.2% and 29.1%, respectively); the rural sector of these two prefectures diminished very much during 1991-2007: its share decreased to only 11.8% and 8.5% in 2007.

⁹ NACE branches classification – agglomerates often used by Eurostat

- Agriculture, hunting, forestry and fishing (A and B)
- Mining and quarrying; industry, electricity, gas and water supply (C to E)
- Construction (F)
- Wholesale and retail trade, repair of motor vehicles, motorcycles and personal and household goods; hotels and restaurants; transport, storage and communication (G, H and I)
- Financial intermediation; real estate, renting and business activities (J and K)
- Public administration and defence, compulsory social security; education; health and social work; other community, social and personal service activities; private households with employed persons (L to P).

The share of *industry GVA* in Thessalia (to the total GVA of the region) was (1995) and remains (2007) more important than in Greece. The respective shares remained roughly unchanged. Magnesia, which included the traditionally industrial city of Volos continue to be specialised in industry, despite the losses in productive potential and employment during the last 30 years.

The development of services during 1995-2007 was very important both for Greece and Thessalia. Their shares (in GVA) amounted to 77% and 66% in 2007, respectively.

It appears from the Table 4.2.2 that the % share of services in the less urbanised prefectures of Karditsa and Trikala were recently (2007) greater than in Larisa and Magnesia. Evidently these two last have a more important role in financial and higher level services –as other analyses on the basis of a division of services in a greater number of branches have demonstrated. On the other hand, it is obvious that in the previously mainly rural prefectures of Karditsa and Trikala the service sector became far more important than in the past

The share of the economy of Thessalia in the country (in terms of GVA) diminished from 6.1% in 1995 to 4.8% in 2007.

**Table 4.2.2 Gross value added (GVA) by sector in EU-27,
Greece and Thessalia 1995, 2001, 2007**

| | All NACE branches - in 000 | All NACE branches | Agriculture etc | Mining, electricity and water supply | Industry (including (1) and (2)) | Construction | Trade, hotels & restaurants, transport etc | Services (including (3) to (5)) | Financial, real estate & business | Public administration, education, health |
|-----------|----------------------------|-------------------|-----------------|--------------------------------------|----------------------------------|--------------|--|---------------------------------|-----------------------------------|--|
| | | | | (1) | (2) | (3) | (4) | (5) | | |
| | | % | % | % | % | % | % | % | % | % |
| 1995 | | | | | | | | | | |
| Greece | 83,062.6 | 100 | 9.9 | 16.0 | 22.4 | 6.4 | 26.8 | 67.7 | 21.2 | 19.7 |
| Thessalia | 5,104.1 | 100 | 21.3 | 16.0 | 23.9 | 8.0 | 21.9 | 54.7 | 17.5 | 15.4 |
| Karditsa | 770.3 | 100 | 31.2 | | | | | | | |
| Larisa | 1,956.7 | 100 | 19.9 | | | | | | | |
| Magnesia | 1,528.9 | 100 | 13.9 | | | | | | | |
| Trikala | 848.3 | 100 | 29.1 | | | | | | | |
| 2001 | | | | | | | | | | |
| Greece | 128,969.0 | 100 | 6.4 | 13.2 | 21.4 | 8.2 | 31.1 | 72.2 | 19.5 | 21.7 |
| Thessalia | 6,746.0 | 100 | 15.0 | 15.0 | 25.0 | 9.9 | 19.3 | 60.1 | 16.8 | 23.9 |
| Karditsa | 839.7 | 100 | 24.4 | 9.1 | 17.9 | 8.8 | 15.9 | 57.7 | 17.0 | 24.8 |
| Larisa | 2,832.6 | 100 | 18.9 | 12.1 | 20.8 | 8.7 | 17.1 | 60.3 | 17.0 | 26.2 |
| Magnesia | 2,122.6 | 100 | 6.3 | 23.6 | 36.3 | 12.7 | 22.2 | 57.4 | 16.3 | 19.0 |
| Trikala | 951.2 | 100 | 14.5 | 9.7 | 18.3 | 8.6 | 22.7 | 67.2 | 17.4 | 27.1 |
| 2007 | | | | | | | | | | |
| Greece | 199,801.5 | 100 | 3.8 | 13.6 | 19.6 | 6.0 | 33.5 | 76.5 | 18.8 | 24.3 |
| Thessalia | 9,668.1 | 100 | 9.4 | 18.7 | 24.8 | 6.1 | 20.5 | 65.8 | 16.9 | 28.4 |
| Karditsa | 1,130.2 | 100 | 11.8 | 12.0 | 18.8 | 6.9 | 19.1 | 69.4 | 17.7 | 32.6 |
| Larisa | 3,902.0 | 100 | 13.5 | 13.7 | 19.0 | 5.4 | 19.4 | 67.5 | 17.6 | 30.4 |
| Magnesia | 3,194.3 | 100 | 4.0 | 29.8 | 36.1 | 6.3 | 21.1 | 59.9 | 15.8 | 23.0 |
| Trikala | 1,441.7 | 100 | 8.5 | 13.3 | 20.1 | 6.8 | 23.1 | 71.4 | 16.6 | 31.7 |

Millions of euro (from 1.1.1999)/Millions of ECU (up to 31.12.1998)

*excluding extra-territorial organizations and bodies

Source of data: EUROSTAT - elaboration of the Table: NTUA

Employment by economic activity in Thessalia and its four prefectures in 2001

For the case of employment there is a quite similar composition compared to those of the capital formation and GVA per NACE branches in Thessalia and its prefectures – see Table 4.2.3.¹⁰

Table 4.2.3: Thessalia: Employment per economic activity 2001

| | All NACE branches - in 000 | All NACE branches | a_b Agriculture etc | c_e Industry etc | f Construction | g_h_i Trade, hotels & restaurants, transport etc | j_k Financial, real estate & business | L_to_p Public adm., education, health etc |
|-----------|----------------------------|-------------------|---------------------------|------------------|----------------|--|---------------------------------------|---|
| | | | % of the Total employment | | | | | |
| Greece | | | | | | | | |
| Thessalia | 280.2 | 100 | 28.8 | 10.3 | 5.2 | 25.9 | 5.5 | 24.3 |
| Karditsa | 40.4 | 100 | 43.1 | 4.5 | 4.7 | 22.3 | 4.2 | 21.3 |
| Larisa | 112.9 | 100 | 27.9 | 10.8 | 4.1 | 26.3 | 5.7 | 25.3 |
| Magnesia | 68.5 | 100 | 16.1 | 14.9 | 6.7 | 31.4 | 3.8 | 27.2 |
| Trikala | 58.4 | 100 | 35.8 | 8.2 | 5.8 | 21.1 | 8.0 | 21.1 |

Source of data: EUROSTAT - elaboration of the Table: NTUA

In the region of Thessalia, which includes an important plain, the share of the employment in the *rural sector* in the total employment (28.8%) is higher than the national average. The share of agriculture is much higher (than in the region) in the prefectures (“*nomoi*”) of Karditsa (43.1%), and Trikala (35.8%), while Larisa has a lower value (27,9%) and Magnesia has a much lower share (16.1%).

The two more “urban” prefectures -Magnesia and Larisa- are clearly specialised in *industry* (rates: 14.9% and 10.8%, respectively). Magnesia presents also a higher rate in *Construction*, very probably related to the development of tourism in its coastal zone. Again the tourism development in Magnesia is related to its higher rate (31.4% against 25.9% for the entire Thessalia) in the activities: *trade, hotels and restaurants, transport etc.*

The % rate in the *financial, real estate & business activities* is associated with the role of cities as developmental and administrative centres; Larisa presents a higher rate (5.7%) compared to the entire Thessalia.

In the prefectures of Larisa and Magnesia, which include the big urban centres of Larisa and Volos, the rates of *administration and public services* (public administration, compulsory social security, education, health etc) are comparatively higher: 27.2% in the prefecture of Magnesia and 25.3% in the prefecture of Larisa.

¹⁰ We elaborated data for the year 2001 for Thessalia and its four prefectures for the employment per economic activity in six groups of branches of the NACE classification –see previously

4.3. Socio-demographic characteristics and changes in the working age population

During the period of 2001-2007, the Economically Active Population (EAP) aged 15 and over of Thessalia increased by 3.6% and amounted in 2007 to 320,000 persons. The change rate was lower than the national average (7.3%) -Table 4.3.1.

The respective change rates were more important than the regional average in the prefectures of Karditsa (10.8%), Larisa (10.1%) and Magnesia (6.8%). On the other hand in Trikala, an important part of which is mountainous, there is a very important decrease (-15.5%).

Table 4.3.1: Economically Active Population (EAP) aged 15 and over of EU-27, Greece and Thessalia 2001 and 2007 by age and sex

| | 2001 | 2007 | Change in the EAP 15 2001-2007 % | 2001 | | 2007 | | 2001 | 2007 | Change 2001-2007 |
|-----------|----------------|----------------|----------------------------------|-------------|-------------|-------------|-------------|--|-------------|------------------|
| | Total - in 000 | Total - in 000 | | Males % | Females % | Males % | Females % | EAP 15-24 years / EAP 15years and over % | | |
| EU - 27 | | 236,615.6 | | | | 55.1 | 44.9 | | 11.3 | |
| Greece | 4,580.2 | 4,916.7 | 7.3 | 60.6 | 39.4 | 59.2 | 40.8 | 11.3 | 7.4 | -3.9 |
| Thessalia | 308.8 | 320.0 | 3.6 | 60.8 | 39.2 | 60.6 | 39.5 | 11.3 | 8.2 | -3.1 |
| Karditsa | 43.5 | 48.2 | 10.8 | 62.5 | 37.2 | 59.5 | 40.5 | 11.7 | 8.1 | -3.6 |
| Larisa | 122.5 | 134.9 | 10.1 | 63.0 | 37.1 | 60.2 | 39.8 | 11.5 | 8.8 | -2.7 |
| Magnesia | 73.2 | 78.2 | 6.8 | 62.0 | 38.1 | 63.2 | 36.7 | 10.7 | 9.3 | -1.3 |
| Trikala | 69.5 | 58.7 | -15.5 | 54.5 | 45.3 | 58.6 | 41.4 | 11.2 | 5.1 | -6.1 |

Source of data: EUROSTAT - elaboration of the Table: NTUA

The *composition by sex* of the Thessalia's EAP was in 2001 similar to the national average. The rate of females increased from 39.4% of the total EAP in 2001 to 40.8% in 2007. This rate was more important (45.3%) in 2001 in the relatively more rural and more mountainous prefecture of Trikala; however, this rate diminished to only 41.4% in 2007.

During the same period, *the economic activity rate of the young population, aged 15-24 years* in 2001 in Thessalia (11.3%) was equal to the national average. It then decreased substantially and amounted only to 8.2% in Thessalia in 2007.

This last rate was higher than the national average (7.4%) but much lower than the EU-27 average (11.3%). In other words, the participation of young population of Thessalia in the EAP in 2007 was very low. The decrease during 2001-2007 of the economic participation of the young population was considerably higher in the more mountainous and rural prefecture of Trikala (-6.1 percentage points) while it was very low (substantially lower than the regional average) in the more urbanised prefecture of Magnesia.

4.4. The role of migration

Both the agriculture and the industry of Thessalia became less competitive and less important since the beginning of '90s. One of the reasons of the decrease in competitiveness was the relatively high salaries of Greek labour force.

In this context, the role of migration from abroad since the '90s was very important in the region. The foreign migration contributed a considerable workforce both in the declined rural and the developing urban economic sectors of Thessalia. Specifically, in the rural areas, the entry of migrants retarded the shrinking of the entire rural sector. In urban areas, foreign migrants found employment in both the sectors of hotels and restaurants as well as of the Construction and some low level services and contributed to the development of these sectors.

5. Economic change and population: other aspects of Thessalia

As we have also pointed out, the rural mountainous economy of Thessalia is shrinking while the rural sector of the once rich plain of Thessalia is also decreasing. These changes are closely related to the shift of the mountainous population to the lowland and the shift of the entire rural population towards the bigger cities. As the population that has migrated is younger, the population of the mountainous municipalities became more aged while this one of the bigger cities as well as of some smaller lowland cities became less old than expected.

The economic development of the bigger Thessalia's cities was moderate therefore their population increase was less than expected. The migrants from the rest areas of Thessalia as well as the arrival of foreign migrants was not enough to speed the economy of the bigger cities, therefore the increase of their population was moderate.

6. Economic and social consequences of demographic change in Thessalia

Obviously, the considerable ageing of the Greek population of the region has very important impacts on the society and economy of Thessalia: the cost of pensions and the healthcare system is rapidly growing; the capacity of the population to undertake development initiatives was limited etc.

However, the most important aspect of the Thessalia's demographic change was the arrival of an important number of migrants, which improved the current age composition of the Thessalia's population and increased the fertility rate; this will lead to a positive population development rate in the future. Also, the immigration to Thessalia offered a considerable potential of low-wage workers. The need for such workers was growing in Thessalia during the last decades, especially for the rural sector, which is traditionally important for the region. In general terms, Thessalia's farms were facing important difficulties in developing and were losing employment posts; specifically, they could not find low-wage workers from the local workforce, especially from the younger, for some low-skill activities (such as the harvest, the herd etc), since the actual consumption model in the region is associated to higher wages. Therefore, the engagement of immigrants for the low-skilled activities allowed certain rural activities to be continued. The low-wage immigrants had a similar contribution in the development of other sectors as the construction, both in rural and urban areas, in the touristic development, in some urban services etc. Especially, the arrival of immigrants in the Thessalia countryside kept alive a number of villages.

Evidently, the contribution of migrants should be evaluated in the context of the contradictory aspects of the Thessalia economy that represent well the Greek economy. *The employment of a low-skilled and low-educated workforce, such as the migrants, allowed the persistence and temporary development of some sectors without the implementation of structural changes* (innovation and restructuring in order to increase competitiveness at international level) which were necessary. Of course, the employment of low-wage migrants pushed down the threshold of the wages in the region and complicated the engagement of the Greeks (which don't accept these very low wages).

Therefore, the employment of the low-wage workforce of migrants does not have an important contribution to the economically sustainable development of Thessalia.

With regard to the remaining social consequences, it should be taken into account that a big share of immigrants doesn't have legal authorization of work and, consequently, doesn't pay (as their employers) social security; however, the social benefits to the immigrants (education, health etc) overload the social expenses of the country.

The presence of immigrants did not create appreciable social tensions in Thessalia; however the problem of safety was worsened in the region, as in the entire Greece.

7. Remarks for the DEMIFER scenarios for Thessalia

A first comment should be made concerning the technical assumptions for the construction of the scenarios of Thessalia.

According to our analysis, the last five years are very important in shaping the population prospects of the region, since the flow of migrants has been limited and most of them have been integrated and they have already influenced the demographic model. However, it seems that the population "prospects" in the DEMIFER scenarios for the period 2005-2010 have not taken into account the recent population growth of Thessalia. More specifically, according to the "Status quo" scenario, there is a decline in population of Thessalia equal to -8342 persons during the period 2005-2010, while the NSSG estimates for the period 2004-2009 (which is very close to 2005-2010) a much smaller reduction (-4955 persons). If the last decline has been considered, probably the long-term decline in the Thessalia population would be smaller.

According to the same scenario, the total natural increase for Thessalia for 2005-2010 is -7.902 persons. However, according to the NSSG data (see in section 3.5), the natural increase for the period 2004-2008 for Thessalia amounted to -2.997 persons. This considerable difference is eventually due to the fact that the scenario underestimated the natural change of foreign migrants to Greece. For the case of Thessalia, their "natural change" (deaths - births) amounted to 4.611 persons (for the period 2004-2008), while that of Greeks amounted to -7.608, therefore the total natural change for Thessalia amounted to -2.997 persons.

In order to understand the interrelations of the DEMIFER scenarios with the demographic model of Thessalia, we created the Table 7.1, where the main results of five scenarios for the periods 2005-2010 and 2045-2050 are clear.

The case of the "Status Quo" reference scenario shows a greater reduction in population and the policy scenarios: challenged market and limited social are following. In contrast the other policy scenarios foresee an increase in population for the period 2045-2050.

Taking into account the conclusions of the analysis of the interrelation between the social-economic situation and the demographic change of Thessalia, the demographic results of the policy scenarios seem to be very consistent.

Table 7.1: Results of a number of DEMIFER scenarios for Thessalia

| | Natural increase | Internal in-migration | Internal out-migration | Immigration ESPON countries | Emigration ESPON countries | Immigration rest of the world | Emigration rest of the world | Net migration | Total population change | Period |
|-------------------|------------------|-----------------------|------------------------|-----------------------------|----------------------------|-------------------------------|------------------------------|---------------|-------------------------|-----------|
| Status Quo | -7902 | 64622 | 74252 | 9758 | 7501 | 11270 | 4337 | -440 | -8342 | 2005-2010 |
| | -35289 | 48337 | 48467 | 6910 | 4766 | 10332 | 2758 | 9589 | -25700 | 2045-2050 |
| Challenged market | -9909 | 64600 | 74248 | 10051 | 7647 | 11688 | 4401 | 42 | -9,867 | 2005-2010 |
| | -28442 | 49017 | 49127 | 8280 | 5667 | 12548 | 2782 | 12269 | -16,173 | 2045-2050 |
| Expanding | -8611 | 64695 | 74360 | 10783 | 8167 | 12890 | 4793 | 1048 | -7563 | 2005-2010 |
| | -12150 | 62560 | -63236 | 15184 | -11004 | 22685 | -6418 | 19772 | 7622 | 2045-2050 |
| Limited social | -9234 | 64614 | 74258 | 10112 | 7382 | 11087 | 4227 | -54 | -9,288 | 2005-2010 |
| | -22912 | 51760 | 51795 | 7092 | 4407 | 7479 | 1700 | 8428 | -14,484 | 2045-2050 |
| Growing social | -8380 | 64692 | 74349 | 10719 | 7875 | 12289 | 4640 | 836 | -7,545 | 2005-2010 |
| | -9402 | 63290 | 64257 | 13702 | 9053 | 17416 | 4893 | 16203 | 6,801 | 2045-2050 |

8. Conclusions and the demographic challenges in Thessalia

During the '80s, Thessalia was a region with increasing population at a small rate, and a decreasing fertility rate and natural change. Its agriculture and industry were also declining. The population of mountainous and / or rural areas was decreasing and becoming considerably more aged in average. A considerable part of it migrated to Thessalia bi-pole, constituted by Larisa and Volos.

From the beginning of '90s, while the ageing of the Greek population of Thessalia accelerated with very negative economic and social consequences, a considerable potential of foreign migrants entered Greece and a comparatively smaller one arrived in Thessalia. This human potential contributed not only to the population balance of the region but also revived the age pyramid and increased the fertility rate and the natural change rate.

The impacts of the foreign migration were more important to the bi-pole Larisa - Volos where the main bulk of immigrants was directed, than in the rest of the region.

The flow of low-wages workforce contributed to the delay in the decline of agriculture both in the mountainous and the lowland areas of Thessalia. The impacts to the urban industrial sector of the region were similar.

On the other hand, foreign migrants contributed, also, to the acceleration of the development of the sectors of hotels and restaurants, construction and low level services located mainly in the urban centres and the touristic coastal area of the region – as for example in the area of the Pelion mount.

However, the employment of migrants has not been used in a process of restructuring of the economy of the region which is obviously necessary; furthermore the skill level of the migrants could not allow such contribution. In this context, the continuation of the integration of new im-

migrants in the region (as in entire Greece) at the same rate (as until recently) is uncertain, in the future. This ascertainment is strengthened by the fact that during the current financial crisis of the Greek economy, which questions the possibility of the continuation of fast rates of economic growth as in the recent past, a number of immigrants decided to return in their homelands.

The main challenge from this scope is to really integrate the foreign immigrants in the economic and social structure of the region (as well as of the entire country) through their appropriate insertion in the educational system, the “legal” economy and the pensionary and healthcare system in order to contribute not only to the revival of the demographic structures but also to the sustainable economic and social development of the region. This kind of development will allow the stay of the majority of migrants in the region; this will maximise their contribution to the encounter of the demographic problems of the region in the long run.

9. Annex I: Main problems of availability and quality of data

(1) During the last two decades, the National Statistical Service of Greece has made enough changes in the definitions of the indicators and spatial typologies which were used, a fact that has made the diachronical comparisons very difficult. Indicatively, while in most of the analyses of population before 2001, “de facto” population is used, since the 2001 (year of census) “resident population” is mainly used. Furthermore the classification in urban / rural regions etc has changed. Also, the published data for the 1991 and 2001 censuses has changed more than two times.

(2) In 1997 the 5.000 small Municipalities and Communes of Greece were grouped in 1.000 bigger municipalities.

(3) The data concerning the study of the migration flows are based, almost exclusively, in the 2001 census' question to the reported persons regarding their residence in 2000 and 1995.

Bibliography – sources

- Angelidis M. - G. Karka - D. Manousaridi - E. Tsigkas, 2007, *Development dynamics and social transformations in Athens 1991-2006* (in Greek), NTUA, Athens.
- Drettakis M., 2010, *Natural increase of foreign migrants during 2004-2008* in “Avgi” Journal 21.4.2010
- Eurostat, 2010, *Tables and data* on the following issues:
- Statistics of population by sex and age, working population, GDP etc by NUTS0, 1, 2, 3 levels etc
- Greek Ministry of Interior, 2010, *Data on foreign migrants*
- ICAP, *Directory of Greek enterprises*, 2005
- Karditsa Development Company AC, *Operational Development Plan of the Prefecture of Karditsa 2007-2013*
- Kanellopoulos C. – Gregou M. – Petralias A., 2005, *Illegally resident third country nationals in Greece: state approaches towards them, their profile and social situation*, Centre of Planning and Economic Research (KEPE), Athens.
- Kissavou E., *35.000 foreign migrants live in Thessalia*, article in “Eleftheria” Journal 14.2.2010.
- Kotzamanis B. - Sofianopoulou K., *The contribution of foreigners to the natality and fertility of the Greek population* in Demo News, LDSA, September – October 2008, No 1, Volos.
- Maroukis Th., 2009, *Undocumented Migration - Counting the Uncountable. Data and Trends across Europe, EC CLANDESTINO Project – Country Report: Greece*, Hellenic Foundation for European & Foreign Policy, Athens.
- National Statistical Service of Greece, 2010: *Tables and data* on the following issues:
- Population by sex and age, working population, etc by NUTS0, 1, 2, 3 levels, LAU1 level
 - GDP by NUTS0, 1, 2, 3 levels
 - Population census 1991 and 2001
 - International, Inter-regional and internal migration by age to Thessalia by NUTS2, 3 levels 1995-2001 and 2000-2001
 - Population projections
- NSSG, *Research on the position of migrants and their direct descendants in Labour Market* 2009
- Prefecture of Magnesia, 2007, *Strategic Development Plan of Magnesia*
- Thessalia Region, 2007, *Operational Plan (OP) of Thessalia 2007-2013*
- Wikipedia, *Thessaly*, 2010, <http://en.wikipedia.org/wiki/Thessaly> 01/09/2010
- Urban Morphological Zones (UMZ) from Corine Land Cover (CLC) 2006