Study on Employment in Rural Areas

Final Deliverable

Andrew Copus, Clare Hall, Andrew Barnes , Graham Dalton, Peter Cook
(Scottish Agricultural College)
Peter Weingarten, Sabine Baum, Henriette Stange **(IAMO, Halle)**
Christian Lindner, Alexandra Hill **(IRPUD, University of Dortmund)**
Gerd Eiden **(Landsis g.e.i.e. Luxembourg)**
Ronald McQuaid, Malcolm Grieg **(Napier University, Edinburgh)**
Mats Johansson **(Royal Institute of Technology, Stockholm)**

May 2006

A study Commissioned by:
European Commission
Directorate General for Agriculture
Unit F.3. Consistency of Rural Development
Contract No. 30-CE-0009640/00-32

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Main Abbreviations Used

AWU Annual Working Unit
CAP Common Agricultural Policy
CEEC Central and Eastern European countries (Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia)
EES European Employment Strategy
EU15 EU member states immediately prior to 2004 enlargement
EU25 Current EU member states
EU27 Current EU member states plus “acceding” countries (BG,RO)
GVA Gross Value Added
LMA Labour Market Accounts
NMS New Member States of the European Union (Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, Slovenia)
NMS12 New Member States of the European Union plus the acceding countries Bulgaria and Romania
NUTS Nomenclature des Unités Territoriales Statistiques
OECD Organisation for Economic Co-operation and Development
PR Predominantly Rural
PU Predominantly Urban
RDR Rural Development Regulation
SR Significantly Rural
TFR Total Fertility Rate
Note: EU27 state names are abbreviated using the standard Eurostat two letter abbreviations

Authorship by chapter

Chapter 1:	Andrew Copus
Chapter 2:	Mats Johansson
Chapter 3:	Ronald McQuaid, Malcolm Gregg
Chapter 4:	Sabine Baum
Chapter 5:	Ronald McQuaid, Malcolm Gregg
Chapter 6:	Clare Hall
Chapter 7:	Andrew Copus, Andrew Barnes
Chapter 8:	Christian Lindner
Chapter 9:	Gerd Eiden
Chapter 10:	Peter Weingarten, Henriette Stange, Peter Cook
Chapter 11:	Graham Dalton, Peter Weingarten, Peter Cook, Andrew Copus

Authorship of the Case Study reports:

Coordination:	Peter Cook (EU15 cases)l Peter Weingarten, Henriette Stange (NMS12 cases)
Pinzgau- Pongau (AT)	Klaus Wagner, Josef Hambrusch, Leopold Kirner
Wittenberg (D)	Henriette Stange
Valencia (ES)	Joan Noguera-Tur, Jenaro Parra-Ruiz
Etelä-Pohjanmaa (FL)	Perttu Pyykkönen, Panu Kallio
Allier (FR)	Edward Cook
Karditsa (GR):	Ioanna Grammatikopoulou, Joan Noguera-Tur (supervisor)
South West Ireland (IE)	Peter Cook
Noord-Drenthe (NL)	Edward Cook
Orkney Island (UK)	Peter Cook
Jihomoravsky Kraj (CZ)	Jan Drlík, Radek Koutný, Daniela Spesná, Hana Horská
Hajdú-Bihar (HU)	Csaba Forgács
Latgale (LV)	Baiba Rivza
Szczecinski (PL)	Anna Kloczko-Gajewska, Edward Majewski
Kosický Kraj (SK)	Jan Drlík, Radek Koutný, Daniela Spesná, Hana Horská
Cluj (ROM)	Kinga Kerekes, Maria Vincze, Eva Albert

Acknowledgements

The core project team would like to acknowledge the advice and assistance they have received from the Steering Group, and from Peggy Dieryckx Visschers in particular. They would also like to thank Elena Saraceno for her advice and guidance, Torbiern Carlquist (Eurostat), and Julda Kielyte (DG Agriculture) for technical guidance and supply of data sets. The expert contributions of the Case Study authors (named overleaf) to the Country Profiles (Appendix 1) must also be acknowledged.

As coordinator I would like to express my particular thanks to Christian Lindner (IRPUD), who, in addition to taking responsibility for Chapter 8, has also created all the maps in this report – a very substantial task in itself. I am also indebted to Graham Dalton and Clare Hall for their assistance with editing of the report and its several appendices. Finally, I would like to acknowledge the tolerance and understanding of my wife Helen during the past year.

Andrew Copus, Aberdeenshire, May 2006
(andrew.copus@nordregio.se)

EXECUTIVE SUMMARY

Chapter 1 : Introduction

1. This report is a response to a request by the 2003 Agriculture Council, for a review of rural employment, particularly in relation to young people and women, in order to assess the contribution of the reformed Common Agricultural Policy (CAP) and the new Rural Development Regulation (RDR) towards meeting the employment objectives agreed at the 2000 Lisbon Council (70% employment rate overall and 60% female employment rate by 2010).
2. This immediate policy context, together with the 2004 enlargement, are set against a background of more gradual, but nonetheless far-reaching, changes in the role of agriculture, demographic and social changes, and the realignment of the rural economy.
3. The objectives set for the report are therefore both *empirical*, - to set out a clear, comprehensive and up-to date picture of the European rural labour market, - and *evaluative*, - by addressing the fundamental issue of the extent to which these trends, are likely to help (or hinder) the EU meet its Lisbon employment objectives. A specific policy dimension is added by the requirement to investigate the role which the reformed CAP (Pillar 1 and Pillar 2) is likely to take in this process.

The Structure of the Report

4. A key underlying assumption of the report is that rural labour markets are rather more complex than a focus solely on economic activity, employment and unemployment rates would imply. Therefore whilst these indicators are central to this report (see Chapters 3-5), the terms of reference require a broader view, taking account of interactions with demographic trends (particularly migration, Chapter 2), the capabilities of the rural workforce (human capital), commuting (Chapter 7), and the indirect impact of infrastructure and basic services (because of their role in determining economic opportunities, the quality of rural life, and rates of entrepreneurship, Chapter 8). Chapter 6 discusses some of the most important alternative employment opportunities which present themselves to European farm households.
5. Chapter 9 is concerned with the problem of delimiting rural Europe at a NUTS 3 regional level, and with summarising key demographic and employment patterns through the creation of typologies. An initial examination of the impacts of CAP reform (CAP introduction in the New Member States) on rural employment patterns, based upon case studies in 15 European regions (Chapter 10), completes the review.
6. The final chapter of the report attempts to draw together the various detailed findings of the empirical and policy evaluation elements of the report, but also to address the broader question of how the described rural employment patterns and trends, together with the Common Agricultural Policy (Pillars 1 and 2), are likely to affect the progress towards meeting the Lisbon employment targets.

Methodology and Geographical Framework

7. In this report the analysis of geographical patterns is based upon Eurostat Regio data for all NUTS 3 regions in the 25 EU Member States and two acceding countries. This empirical resource is supplemented and enriched by literature reviews and regional case studies. For convenience the EU27 are frequently divided into two groups, the EU15 and the “NMS12” (New Member States as of 2004 plus the two countries due to join in 2007)

8. The analysis is centred on data for 2001, though there is some variation due to data availability. Analysis of past demographic trends relates to change since 1980 and 1990. In other sections of the report the time period varies, and is determined by data availability. Projections of future trends in agricultural employment in Chapter 4 extend to 2014.
9. The three-fold classification of regions developed by the OECD (Predominantly Urban – PU, Significantly Rural – SR, and Predominantly Rural – PR) forms a standard framework for the description of European patterns and trends. SR regions, which are sometimes called "intermediate", are distinguished from PR regions by the presence (in the former) of a significant number of densely populated municipalities. Roughly one third of the 1,284 NUTS 3 regions of the EU27 (current membership + 2 "acceding" countries) is in each of the three rural-urban categories.
10. At various points in the discussion cartographic analysis suggests that the labour markets of regions more remote from the main centres of economic activity (whether in a national or an EU-wide context) have distinctive characteristics. This accounts for a number of references to the Peripherality Index developed for the Commission by Schurmann and Talaat in 2000, (and updated by the project team).

Chapter 2 : Demography

Rural-urban distribution and patterns of change

11. Demography is probably the single most important supply-side determinant of economic activity and employment trends in rural areas.
12. Approximately 56% of the EU27 population live in rural (SR or PR) regions. The greatest shares of rural population are in Sweden, Finland, Bulgaria, Slovenia and Ireland. At the other extreme the most urbanised countries are Belgium, Netherlands, Denmark, Germany and the UK.
13. Although the overall rural share of the EU population has remained fairly constant in recent decades, this relative stability at an aggregate level masks significant variation between and within individual Member States. Generally speaking the SR regions have grown slightly at the expense of the PR group. The most negative rural population trends have been in the NMS12.
14. In order to get a clearer picture of the patterns of change within the rural regions of Europe it is helpful to disaggregate it into its two major components:
    - *Natural change*: In recent years the death rate has exceeded the birth rate in almost two thirds of PR regions - resulting in natural population decrease. In most SR and PU regions the relationship is reversed, resulting in natural increase.
    - *Migration:* However, in quantitative terms migration is more important - due to both its direct and indirect effects[1] - in all three types of regions. Across Europe, the SR regions generally show the most positive/least negative net migration figures, since they benefit both from (urbanisation) movements from the PR regions on one side, and (counter-urbanisation) movements from the PU regions on the other. By contrast most of the regions in both PU and PR categories show relatively negative net migration trends.

[1] Via age structures and natural change.

Age and Gender Disparities

15. Demographic ageing is an important issue throughout large parts of the developed world, but it is especially evident in the PR regions of some Member States, notably ES, GR, PT and FR, where the populations of PR regions have a higher proportion of people over 65. The same countries show a relatively low ratio of children (0-15) to pensioners (>65), a low ratio of young adults (15-24) to pensioners, and a high overall dependency ratio (total population/ages 15-64). Elsewhere in Europe these indicators suggest that ageing is not more pronounced in the PR regions than in SR or PU areas.
16. There is also some evidence of gender imbalances in the PR parts of some Member States. In the Nordic and Baltic countries, and in Southern Europe, strong rural-urban migration of females in the economically active age groups continues to result in a degree of "masculinisation" of the rural population, leading to a secondary effect on fertility rates.

Overall patterns of Demographic "Performance"

17. Overall patterns of "performance" are presented in the form of a typology of NUTS 3 regions (see paragraph 99 below). In very broad terms European demographic patterns and trends may be summed up in terms of two processes, urbanisation and counter-urbanisation. Many SR regions have benefited from the results of both. In addition, some features (such as age structure) show North-South patterns, whilst others, (such as gender inequalities) vary along an East-West axis.

Chapter 3 : Economic Activity and Unemployment in Rural Europe

Economic Activity Rates

18. The proportion of the working age population which is employed or seeking work (the economic activity rate) is a basic indicator of participation in the regional economy. Low rates of economic activity may be indicative of an ageing population (participation falls off in the over-50 age groups through early retirement and long-term illness) or of barriers to employment, particularly affecting older women, which discourage significant numbers from seeking work. Economic activity rates are, on average, slightly higher in urban regions than in rural regions. They are generally higher in the North and West of Europe, and lower in the Southern and Eastern Member States. They are also (on average) higher in central regions than in regions in the European periphery.
19. The evidence of changes in economic activity rates during the 1990s is rather fragmentary. Overall it seems to suggest stagnation in rural regions and a small increase in urban areas.
20. Rural-urban patterns in activity rates by gender are complex. Male rates are (everywhere) higher than female rates. Male rates also tend to be higher in the urban regions than in rural regions, while female rates are relatively constant. It is rather risky to draw conclusions from aggregate data, when there is substantial variations between member states. However, these results seem to suggest that whilst there is a difference in male participation rates between urban and rural areas (due to characteristics of the local labour markets and economic environment), the determinants of the lower female rates are independent of rural/urban issues, and are perhaps more societal.

Employment Rates

21. With one or two exceptions, employment rates (the proportion of working age population in employment) are also generally higher in urban regions than rural regions. Geographical patterns are broadly similar to those of activity rates (with lower levels when moving from NW to SE and from centre to periphery).
22. In terms of employment rates the urban-rural gender differences present a slightly different pattern to that of economic activity. This time both male and female rates are lower in rural regions. The female rural-urban differential is slightly greater than that for males. This suggests that the employment constraints of rural areas affect women disproportionately, and compound the societal limitations on female participation.
23. Trend analysis is hampered by substantial data problems. Nevertheless there is some evidence of a widening urban-rural gap in employment rates, with those of PU and SR regions apparently growing faster than those in the PR group.

Unemployment Rates

24. Unemployment rates are generally significantly higher in rural than in urban regions. Again, there is evidence of both core-periphery and NW-SE gradients across the EU27. Urban-rural differences are relatively larger than those in economic activity and employment, and are particularly pronounced in countries characterised by high unemployment rates (especially in the NMS12).
25. Female and youth unemployment rates also tend to be relatively high in rural regions (both SR and PR), confirming the conclusion presented in paragraph 22. The proportion of unemployment which is long term (more than 1 year) is relatively high in SR regions only. In the PR group the proportion is slightly lower than that of PU regions, probably due to seasonal employment opportunities in tourism and agriculture in the former.
26. It is estimated that "hidden unemployment" (involving underemployed farmers and farm workers) probably accounts for the equivalent of more than 3 million persons in the PU regions of the EU27 (3% of all economically active persons), 3 million in the SR (4%), and 2 million (5%) in the PR regions.

Overall Patterns of Labour Market Participation and Performance

27. In summary, the level of participation, as reflected in the economic activity rate, is largely a function of three supply-side factors: gender differences, age structures, and "worker discouragement"[2]. Variations in employment/unemployment rates are generally a function of both demand characteristics (such as the sectoral structure and competitiveness) and supply side factors. This broad two-way characterisation forms the basis of a simple typology, which is presented below (paragraph 102).

[2] This term simply conveys the tendency for economic activity rates to be reduced where employment opportunities are scarce, as some members of the community do not consider it worthwhile to search for a job.

Chapter 4 : Agricultural employment

The relative importance of primary sector employment

28. In most rural regions the primary sector accounts for less than 10% of total employment. In a third of rural regions its share is less than 5%. However, in some rural regions – particularly in the Central and Eastern European Countries (CEEC) (RO, BG, PL, LT, LV, SI) as well as in the Southern part of the EU15 (GR, ES, PT) – the primary sector has shares in employment above 25%. The fact that the share of primary sector employment is greatest in peripheral rural regions suggests both a low rate of past adjustment and a lack of alternative employment opportunities. The potential for a marked future reduction in agricultural employment in such regions is high, especially if their economies grow and opportunities in other sectors emerge.

Agricultural Employment Trends

29. Since 1990 the trend in agricultural employment within in the EU15 has been almost universally downwards, by an average of 2–3% per year. This equates to an absolute reduction in the EU15 agricultural workforce of some 340,000 persons or 190,000 annual work units (AWU) per year. The only exceptions where losses have been smaller, concern a few regions characterised by ageing farm holders, or a higher proportion of female and part-time workers, and some which showed a strong rise in "other gainful activities".
30. The development in the CEECs was different. In some countries (e.g. CZ, SK, EE), restructuring during transition has led to a strong decrease in agricultural labour, whilst in others (such as BG, RO, and SI) there has been an increase due to the rise of semi-subsistence farming acting as a social buffer[3] in response to increased levels of unemployment.
31. These patterns of change suggest complex evolutionary processes, influenced by labour saving technical progress, the macro-economic environment, farm structures, the socio-economic characteristics of farmers and workers, and the way various policies intervene in this sector. The preponderance of family labour (over 90% of the EU25 farm workforce) points to key role played by household decision making, with intergenerational change as an opportunity for larger adjustments in an otherwise rather "incremental" process of downsizing through part-time working. Conversely, where hired labour forms a high share of the farm workforce (as in CZ, FR, NL, SK, East Germany, and Southeast England), we can expect a faster adjustment of labour input to changing economic conditions.
32. Projections of future development based on recent trends in the EU15 suggests that between 2000 and 2014 a further 4-5 million workers, or 28-35% of the agricultural workforce, may leave the sector. The trend towards part time working means that the forecast percentage losses measured in AWU are greater, averaging 35-47% across the EU15, i.e., 2-2.5 million full-time equivalent workers. Thus, the projected future reduction of agricultural workforce per year (270,000 to 340,000 persons or 140,000 to 190,000 AWU) is equal or even less than the losses per year between 1995 and 2000.
33. Forecasting change in the farm workforce in the NMS12 is much more difficult and speculative. However, using a range of assumptions regarding anticipated structural adjustment processes (without taking any policy impact into account) leads to the conclusion that between 28% and 59% of the workforce of the NMS10 may potentially leave agriculture by 2014 . This is equivalent to 1-2

[3] In other words absorbing people who would otherwise be unemployed

million AWU, or 2-4 million persons. A further 1-2 million persons may leave the farming sector in RO and BG.

34. It is perhaps worth stressing the fact that (providing overall output levels are maintained) the agricultural sector (considered in isolation) should emerge as relatively more competitive if the above forecasts are broadly correct. This has obvious relevance to the Lisbon competitiveness objective.
35. The analysis further suggests some hypotheses as to how these changes may occur in different regional and national contexts. Key characteristics affecting the process of change are the age structure of the workforce, and the relative importance of part-time farming. Regional and national economic conditions, and access to alternative employment opportunities may also play a role.
36. Such alternative opportunities, and the capacity of the rural economy to absorb the (often part-time) labour coming out of the agricultural sector will have a significant effect on overall regional performance in relation to Lisbon employment targets. The findings of Chapter's 3 and 5 suggest that this is likely to be less problematic in the more diversified and dynamic SR regions, and more difficult in remoter PR regions, (where the relative scale of movement out of agriculture is also more substantial). However it must also be kept in mind that much of the downsizing will be achieved without a direct impact upon rural unemployment, through retirement and non-entry of young farm household members. The detailed dynamics of this complex system cannot be revealed from secondary data analysis, and a more precise understanding/quantification would require detailed case study work.

Age Structure of the Farm Workforce

37. The low and decreasing proportion of young people in most regions suggests that one of the main ways that adjustment occurs is by "non entry" into the sector by farm children especially on small farms and especially for females. At present, less than one fifth of the EU15 family farm workforce, and less than 10% of farm holders in the EU25 are younger than 35 years. The proportion tends to be slightly higher in more rural regions.
38. In addition, more than a fifth of the EU15 family farm workforce, and more than a quarter of farm holders in the EU25 are over 65 years old. The highest shares of elderly farmers and workers are in IT, PT, LT, GR, SL, and ES. State pension arrangements have a significant impact on farm workforce age structures, whereas early retirement schemes have had relatively little effect. The size of the elderly farmer group has increased in recent years, suggesting that (in the absence of succession arrangements) substantial structural changes may take place in the next 10-20 years.

Part Time Agricultural Employment

39. Another path of adjustment involves combining part-time farming with off-farm employment. Part-time working in agriculture is almost universally important, and is on the increase in most Member States. Across the EU25, 79% of farmworkers are part-time, and 44% work less than 25% of a full-time equivalent. In the New Member States and southern Member States part time workers account for over 80% of the workforce. Further to the north and west the percentage falls below 60%. Part-time working is particularly common within the family worker group, among younger workers, and women.

Gender Structure of the Farm Workforce

40. Just under 40% of the EU regular farm workforce is female, compared with 44% in the general workforce. However, there are substantial differences between the NMS12, where the female share is higher, and the EU15, where in some countries it drops below one third. Since 1990, the share of women has stayed more or less constant and it cannot be expected that it will significantly increase in future. 44% of women in the farm workforce are spouses of the holder, whereas less than one third are holders of farms themselves. Nevertheless, women often have a decisive role in the management of small farms, often looking after the accounts, and taking responsibility for the development of new on-farm gainful activities, such as agri-tourism or direct selling.

Chapter 5: Non-Agricultural Employment

41. The following paragraphs present some of the basic facts about the sectoral structures of rural labour markets in the EU27. Conventional views of rural economies dominated by primary activities are increasingly untenable (paragraph 28). Most accessible rural regions (especially in the EU15) are characterised by structures surprisingly similar to their urban neighbours. Distinctive profiles are more likely to survive only in remoter parts of the EU.

The relative importance of Secondary and Tertiary Employment

42. The average share of employment in manufacturing is now higher in both SR (30%) and PR regions (28%) than in PU regions (26%). Although mainly due to the relative under-development of the service sector in some rural regions, it is also at least partly explained by the declining importance of traditional heavy industries, in favour of small scale “footloose” activities.
43. Tertiary employment, is now (on average) the largest of the three sectors in all three OECD region types across the EU27, although it is less dominant in the SR and PR regions, where it accounts for 63% and 57% of employment respectively, compared with 74% in the PU regions.
44. The share of employment in tertiary activities also exhibits a broadly NW-SE gradient across Europe, the highest concentrations being in the UK, LU, and BE, the lowest in BG, PL, and SI.

Recent trends in the Sectoral Structure of Employment

45. In general terms the most significant recent change in employment has been the rising importance of the tertiary sector. It seems to have been most pronounced in those Member States which experienced the best general macro-economic trends. Several of the countries with high rates of tertiary growth have bucked the downward trend in manufacturing, which has been evident in most of the remaining Member States. Although tertiary employment was the strongest growth sector in the PR regions, its rate of growth here (60% between 1995 and 2001) was lower than in the SR and PU regions (71% and 75% respectively). Within the tertiary sector, employment in financial services has shown particularly positive trends in most Member States.

The Public Sector, Tourism and Self Employment

46. Public sector employment appears (generally speaking) to account for a larger proportion of total employment in rural areas than urban (PU 27%, SR 30%, PR 31%). However this is at least partly a reciprocal effect of the relative underdevelopment of private services (especially in the financial services sector) which remain largely urban-based. Public sector employment is generally more important in the northern Member States than in the South and in the NMS12.
47. Tourism employment is notoriously difficult to define from official statistics, but if the Hotels, Restaurants and Café sector is taken as an indicator, there is evidence of recent (1999-2001) strong growth in the Mediterranean countries, and in LU and NL. Women and younger people have played an important role in this growth.
48. Self employment is slightly more important (on average) in rural regions than urban ones (PU 12%, SR 14%, PR 15%). It is particularly important in the rural regions of the Southern Member States, and is lower in the NMS12. It is most common in the primary sector.

Employment Counter-Urbanisation

49. 14% of PR regions showed no employment growth in any of the three main sectors between 1995 and 2001. This compares unfavourably with 4.5% of SR regions, and 8% of PU regions.
50. There is some evidence to suggest that "employment counter-urbanisation" is taking place, as secondary and tertiary activities, having been given greater locational freedom due to changes in transport travel and communication technologies, move out from PU to SR regions to avoid congestion and to take advantage of better working/living environments. The trend towards outsourcing, and smaller manufacturing establishments serving niche markets (partly a response to globalisation) has also facilitated this locational shift.
51. Secondary and tertiary employment markets tend to operate over more extensive territories than those of agriculture which are spatially more restricted due to farming's long and irregular working hours. Many farm households are integrated into both of these labour markets, through part-time off-farm employment by farmers/farm workers, or through the co-habitation of younger family members not involved in the farm business.

Processes and Consequences of Structural Change

52. Although sectoral structure certainly plays a part in determining the growth rate (or rate of decline) in rural regions, it is certainly not the sole factor. Indeed, rural and urban sectoral distinctiveness is gradually disappearing, and other explanations are therefore of increasing importance. Endowments of "territorial capital", (including levels of workforce training, strength of business networks and quality of governance) are of crucial significance.
53. Basic statistical analysis of relationships between the limited indicators collected for this study suggest the following conclusions:
    - A higher dependence upon the primary sector is associated with higher levels of unemployment, and lower levels of GDP per capita.
    - Regions with lower activity rates and significant levels of unemployment tend to have higher levels of self-employment, suggesting that self employment can be one strategy for coping with a shortage of employment opportunities, rather than an indication of high rates of entrepreneurship.

- There is a clear link between higher rates of participation by young people and females and higher rates of employment, and higher GDP per capita.

These findings underline the continuing validity of rural development policies to support economic diversification and increased participation/inclusion.

Chapter 6: New Employment Opportunities for the Farming Community

54. The important demographic, economic and environmental changes rural areas are facing and the need to ensure future employment in these areas, provide the context for the diversification of the traditional agricultural profession towards both on and off-farm activities. European Farm Structure Survey results suggest that between 2000 and 2003 the percentage of holdings having on-farm "other gainful activities" increased in 10 out of 13 Member States for which data was available.
55. *Farm tourism* is one of the most obvious and important forms of on-farm diversification, and although it tends to absorb underemployed farm household labour rather than creating new jobs, it is particularly effective at retaining economic impacts within the local rural economy. It also often results in the up-grading of farm accommodation and refurbishment of redundant buildings.
56. Within the EU15 the number of holdings involved in farm tourism is now growing relatively slowly. As developments in this sector are still lagging behind in the NMS12, rural development support could provide positive stimuli for its future growth there.
57. *Renewable energy* developments (especially those using various forms of biomass) tend to be relatively intensive in their use of labour. However the benefits, again, are more likely to take the form of increased job security, or reduced underemployment than in the creation of new rural jobs.
58. At present renewable energy enterprises are not a very significant form of on-farm diversification in the EU, the scale of future potential is very dependent upon trends in fossil fuel prices and the development of policy on carbon dioxide emissions.
59. Diversification into *cultural activities* is widely perceived as an important opportunity, though it is very difficult to point to tangible economic benefits. It is closely relayed to the farmer's role as a custodian of the countryside.
60. *Nature and landscape conservation* is an important source of new employment opportunities, there are numerous local and regional assessments of economic impact, however, more comprehensive data is harder to find.
61. *Organic and quality produce* requires additional labour inputs at the production stage (one estimate suggests 10-30% more labour), and for processing. However there is some evidence to suggest that market capacity for future expansion is limited. Farm Structures Survey data suggests that on-farm processing activity is more common in the southern and eastern Member States, but that there has been little or no increase in the proportion of farms involved since 2000.
62. *Teleworking* and various advances in *information technology* offer rural regions distinct opportunities for the creation of genuinely additional jobs, and rural firms with a new capacity to compete with urban firms on equal terms. However it seems likely that infrastructure provision in the countryside may continue to lag behind urban areas, and the skills and training of rural people may be a constraint to the adoption and exploitation of the new technologies.
63. *Health and social services* provide increasing opportunities in rural regions, both because of the increasing numbers of elderly people, and because there is a need to reduce rural-urban disparities of provision. However the scale of the opportunities depends to a large extent upon political traditions in the member state, which determine the scale of the necessary inter-regional transfers of public money. Although the growth of the public sector slowed in some Member States (UK, SE) during the 1990s the overall trend was upwards, and seems likely to continue. Some

concentration of employment in urban areas has taken place, although the need for dispersed, local, delivery of certain services seems likely to ensure that rural areas continue to absorb some of the employment benefits.

64. The above review shows that there are no generally applicable answers, forms of diversification which work well in one area do not necessarily succeed elsewhere. Many of these opportunities depend upon consumption of luxury or semi-luxury goods and services. Women are often key players in the development of both on-farm diversified activities, and off-farm employment.

Chapter 7: Further Labour Supply Factors, Commuting and Human Capital

Commuting

65. An understanding of commuting patterns is a crucial part of a description of rural labour markets for a number of reasons:
    - A substantial daily outflow of commuters to a nearby urban area can mean that an accessible rural area is more part of an urban rather than rural economy.
    - Commuting may also divert demand for key services away from local providers towards urban (workplace adjacent) ones, resulting a decline in local provision which results in deprivation for those whose daily lives are more locally orientated. It may also cause house price inflation, a decline in social cohesion, and a decline of traditional rural culture/way of life.. Policy for accessible rural areas should therefore take cognisance of the potential exclusion impacts of strong net out-commuting patterns.
    - High levels of commuting across boundaries may result in distortions of indicators such as GDP per capita.
66. However there is at present no reliable harmonised data on commuting at NUTS 3 region level. (Indeed it can be argued that this is not a appropriate geography for an analysis of commuting). The best chance to remedy this situation would be to make a relatively minor change to the commuting question in the Labour Force Survey.
67. Available literature suggests a number of generalisations about commuting patterns: Cities and towns tend to have net in-commuting, whilst in the countryside there is net out-commuting. There is generally an inverse relationship between the number of commuters living in “dormitory” areas and their distance from the main employment centres. Commuting distances are generally on the increase, and cars are the most frequent form of commuter travel, whilst the role of public transport is declining. Men are more commonly commuters than women, but women are more likely to use public transport than men. Younger people, those employed in the service sector, and those with higher incomes are most likely to commute.

Human Capital in Rural Europe

68. Human capital is an important qualitative aspect of labour supply, which plays a role in determining rates of inward investment, indigenous entrepreneurship, and capacity to generate or absorb innovations. These have an impact on rates of economic activity and employment.
69. Local education and training provision play a role in determining levels of human capital, but the rate and direction of migration may also be important if the conventional view that it is “selective” is correct. Certainly attending higher education is very commonly associated with migration for the better qualified rural school leaver. After graduation few return to rural areas, where employment opportunities are more limited.

70. The academic literature places emphasis upon less tangible human capital concepts, such are "tacit knowledge"[4], but since these are not amenable to measurement, the analysis of regional data presented in this report is based upon patterns of formal educational attainment.
71. An analysis of Labour Force Survey data reveals that over 40% of the adult population in rural regions of the EU has only primary or lower secondary education. In urban regions the proportion is rather lower, at under 34%
72. In urban areas almost one fifth of the adult population has tertiary education attainment, whilst in the rural areas the proportion is only one sixth.
73. Analysis by member state and by mapping all NUTS 3 regions reveals a clear north-south contrast in levels of educational attainment (ie higher in the north).
74. These patterns suggest that dispersed delivery of education and training, including for mature students, is likely to prove an important means of increasing the rate of entrepreneurship and innovation in rural and peripheral areas. It is therefore encouraging to note that education and training are to be supported under Axis 3 of the new Rural Development Regulation.

Chapter 8: Infrastructure Provision and access to basic Services

The Role of Infrastructure Provision and Access to Basic Services

75. Infrastructure and basic services provision are crucially important for rural and regional development both because they confront quality of life issues which impact upon net migration trends, and because they define the business environment, and its attractiveness for local entrepreneurs and for inward investment.
76. 'In addition to national funding, several European policies, including Cohesion policy, the Trans European Transport Network (TEN-T) programme, Structural Fund programmes and rural development programmes are contributing to the provision of infrastructure and basic services.

Analysis of Access to Health Care, Higher Education, and IT Infrastructure

77. There is little difference in health care provision between urban and rural regions in terms of the ratio of hospital beds per inhabitant. However the inhabitants of PR regions are on average much further from a major hospital than those of either SR or PU regions. The longest travel times are found in the regions of the northern, southern and eastern peripheries.
78. Accessibility to the nearest university is also much lower in PR regions than it is in SR or PU regions.
79. Data issues do not permit an analysis or rural-urban patterns of information technology provision. However there is some data on usage, from which provision may be implied. The geographical pattern is complex, and seem to reflect national differences more than urban-rural differences. Usage is generally higher in the northern Member States than in the southern and eastern countries.

[4] experience gained "on the job", as distinct from that gained through formal education and training

Analysis of Access to Road and Rail Networks

80. Rural-urban patterns of motorway and trunk road provision (at the NUTS 3 level) are very difficult to interpret, and its is probably better to use a peripherality index (see below) to reflect this aspect of locational disadvantage.
81. Similarly rail network patterns are very much influenced by national public transport policy traditions.
82. Accessibility to international airports does, however show a clear differentiation between PU/SR and PR regions, where the average travel time is three times higher compared with PU regions.

Peripherality

83. A peripherality indicator developed for a previous Commission project, and updated for the current report is a much more reliable guide to the link between rurality and problems of accessibility. It is evident that although poor accessibility is often a characteristic of PR regions, there is no direct relationship between rurality and peripherality. They are separate dimensions of differentiation, both of which contribute to a region's economic potential.

The need for better indicators

84. Although the analysis presented in Chapter 8 provides some support for the assertion that quality of life in some rural regions may be affected by poor access to infrastructure and basic services, recent studies carried out at a national or regional level suggest that a rather more detailed and convincing picture could be revealed through development of a database of the locations at which basic services are provided. Analysis using Geographic Information Systems (GIS) techniques could be used to generate powerful and appropriate indicators of rural disadvantage.

Chapter 9 : Progress towards a New European Rural Typology

Delimiting Rural Regions

85. The objectives of this part of the report are:
    - an assessment of the "pertinence" of the OECD definition of rural and urban NUTS 3 regions as a framework for socio-economic analysis
    - a review of alternative rural-urban delimitation methodologies
    - an assessment of these delimitations as frameworks for socio-economic analysis
86. Delimiting rural regions in Europe is difficult because;
    - There is no common concept of "rurality"
    - Rural regions across Europe have many local characteristics,
    - In reality there is no rural-urban dichotomy, but a continuum between two extremes, and a great deal of functional interdependence between rural and urban regions.

    It is therefore unlikely that a single definition will meet the demands of all policy contexts – it is likely that several delimitations must coexist to serve different objectives.

Assessing the OECD Classification

87. The OECD classification has the advantages of simplicity and widespread acceptance. Another of its strengths is the fact that its two-stage approach takes account of the internal structure of each NUTS 3 region.
88. However, a major weakness is the heterogeneity of NUTS 3 regions, in terms of size, and the way in which they relate to cities and their hinterlands. Furthermore the classification takes account only of population density, and does not in any way reflect proximity to urban centres, or variations in economic development. A final issue in relation to the OECD classification is the arbitrary nature of the density criterion, and the threshold used to define the classes in terms of the proportion of regional population living in communes in different density classes. The fact that it takes no account of variation in the absolute size of commune populations, or the degree to which population is clustered or dispersed in SR regions is also questioned.

Some Possible Alternatives

89. In developing alternative procedures for delimiting rural regions at the NUTS 3 level, simplicity, transparency, and "backwards compatibility" with the existing OECD classification are important objectives.
90. In view of the above, the following options were investigated:
    - Option 1: Integration of a peripherality indicator
    - Option 2: Minor adjustments to the density criteria and integration of a peripherality indicator
    - Option 3: Development of an alternative methodology based upon different population density criteria
91. *Option 1* was implemented simply by using the peripherality index to split each of the PU, SR and PR categories into two groups, accessible and peripheral, using the EU average peripherality score as a criterion.
92. Some basic indicators are presented for the resulting classification. These show that the accessible parts of the SR and PR have significantly higher population density and higher levels of GDP per capita than the peripheral parts.
93. In *Option 2* a second criterion is added to the definition of urban communes. It is assumed that urban communes should have more than 1,000 inhabitants. This results in roughly one-third of PU regions shifting into the SR or PR category. A large number of SR regions are also shifted into the PR group. The two Member States most affected by these changes are FR and CZ.
94. *Option 3* introduces a new methodology focusing on both the distribution of communes of different population densities within the NUTS 3 regions, and the share of communes with larger population totals. The latter criterion allows NUTS 3 regions with intermediate population densities to be separated into two groups, those which are relatively homogeneous in density, and those which include both highly urbanised and more rural communes.
95. Four categories of region are thus defined:
    - Mainly rural with limited urban influence
    - Rural with low urban influence
    - Rural with significant urban influence
    - Mainly urban

    Some basic indicators are shown for the four resulting categories. Clear urban-rural gradients of both population density and GDP per capita emerge.

96. To a great extent the choice between these options must reflect the policy context and its objectives. For example although Option 3, being derived from first principles within an EU context may better reflect European concepts of (different kinds of) rurality, Options 1 and 2 have greater "backwards compatibility" in their favour.

Typologies using Labour Market Indicators

97. Having explored the issue of delimitation of rural areas this chapter turns to the task of creating descriptive typologies of NUTS 3 regions using key labour market indicators from the database assembled for this project.
98. In the interests of transparency, and bearing in mind the policy context, a simple disaggregative methodology was considered most appropriate. Five different typologies are presented in this report.
99. The first is a six-fold typology of *demographic change*, defined by the various combinations of positive and negative population change, natural increase and net migration. It shows, (among other details) a high proportion of SR regions in the most positive situation and a high proportion of PR regions with the most negative combination of demographic trends.
100. The second typology presented discriminates between regions in terms of *labour market participation* (economic activity rates, female activity rate, and the share of the economically active population under 25 years). The results show the most positive situation in terms of participation to be in DE, UK, SE and most of FI. IE, ES, IT, whereas most of the new member/accession countries show a more negative picture. France and Portugal present a rather mixed pattern.
101. The third typology adopts a similar approach, but this time focuses on "*performance*", as indicated by unemployment rates, the share of youth unemployment, and the share of long term unemployment. This time the most negative combinations of indicators are found in IT, GR, PL and the Baltic countries. At the other end of the spectrum, with relatively positive performance indicators are the UK, SE, BE, NL, LU, DE, AT, HU, CZ and PT.
102. The fourth typology combines the key *participation and performance* indicators (economic activity and unemployment rates). The most positive combination (high performing-high participation) is most common in the PU regions, whilst almost three-quarters of the "low performing-low participation" regions are classified as SR or PR. There is thus some evidence of broad centre-periphery patterns of variation in economic activity and unemployment.
103. The final typology combines the first (*demographic*) and fourth approach (*activity and unemployment*). In broad terms this typology shows the urban regions in a relatively favourable light: The most positive combination of demographic and labour market indicators accounts for the largest share of PU regions. The rural (SR and PR) regions generally exhibit a rather poorer performance - the proportion with the most negative combination being roughly the same as in the urban group, but the share of regions with the most positive combination being much smaller.
104. It can be concluded that these typologies demonstrate the advantages of simple "multi-criteria" methodologies. They provide a way in which a number of different indicators may be combined to allow the relative strengths and weaknesses of different regions and countries of the EU to be clearly represented and assessed. There is of course much scope for further development of such synthetic performance indicators, but already the typologies illustrate the potential for more appropriate targeting of policy interventions.

Chapter 10: Case Studies : Impact of CAP reform/introduction on Agricultural Employment

105. The objective of the case studies was to analyse the agricultural employment situation and its likely future development in 15 selected NUTS 3 regions. The EU15 case studies also shed light on the rural employment effects of the 2003 CAP reforms. In the NMS12 case studies the focus is on the effects of the implementation of the CAP since accession. Several methodologies were combined in the case studies; background analysis using secondary data, analysis of trends in employment, and interviews with local farmers and other stakeholders/experts.

106. It should be stressed that the findings presented in this chapter were derived by compilation of the opinions of a small number of people, together with the interpretations of the authors, and should therefore be treated with caution. Furthermore, the case studies are not representative for the respective Member State. In contrast they reflect the wide variety of regions in the EU27. Due to the many differences across the case regions and their limited number, it is not possible to distinguish the employment effects according to the PU, SR, PR classification.

(a) EU15 Case Studies

107. The 9 case studies carried out in the EU-15, represented a broad range of natural conditions, socio-economic features, farm structures and farming systems. They were Pinzgau Pongau (AT), Wittenburg (DE), Valencia (ES), South Ostrobothnia (FI), Allier (FR), Noord-Drenthe (NL), Karditsa (GR), SW Ireland (IE) and the Orkney Islands (UK).

108. The historic trend in agricultural employment was consistent across most case studies and showed a steady and uniform decline at approximately 2% per annum irrespective of the CAP regime and its reforms. Indeed, local economic and labour market conditions, including structural changes, were generally perceived to be more important determinants of farm employment trends than either CAP reform. There was, for example, some evidence that the Northern case study regions shed labour at a slightly greater rate than the southern ones and that “pull factors” relating to the state of the regional economy had an effect on the rate of exit.

109. 5 of the regions were strongly characterised by part-time working, the remainder had larger farms and a higher proportion of full time farmers. However, in all regions labour was released through a shift away from full-time and towards part-time activity, and a reduced role for hired staff relative to family labour.

110. Investments of a Pillar 2 nature (to allow efficient part-time farming, high environmental value farming, investment in diversification and training) are considered helpful in creating long term rural employment stability. Where no such developments have taken place, and the rural population is reliant on a high level of direct payments, farm and rural employment is more likely to be lost. Farmers perceptions of direct payments is that they have immediate effects, while Pillar 2 measures have long term effects which are more complex.

111. With regard to the impacts of CAP Reform, it is expected that the implementation options chosen by individual Member States will have a profound effect on farming systems and related employment, and that the largest changes will take place where full decoupling has been adopted immediately. Nevertheless, it should be pointed out that it is still very early to try to measure the likely impact of recent CAP reform on employment.

112. The case studies showed a number of recurrent themes in terms of anticipated changes to farming systems. These include various forms of extensification, – lower stocking rates, reduced fertiliser applications, less labour per unit of output; overall the substitution of land for other inputs

allied to a cut in fixed costs[5]. There may be a more significant reduction in processing/input supply jobs than in farming, as farming shifts to lower output systems. This has a further knock-on effect for the part time jobs in these sectors occupied by farmers and their families, leading to a spiral of change in some areas.

113. As regards young people, the key issue is the decline of the traditional form of succession on medium-small holdings. More inheritors will work away from the farm until the parent retires. This changeover may be associated with a more rapid adjustment to the policy and market environment.

114. The established trend for women is a movement into off-farm jobs. CAP reform has little impact on this trend. However, this may vary by region in response to culture, opportunities and farming systems. For example the cases suggest that in some part-time farming areas women may take over the management role, especially where diversification leads to more interaction with the public.

115. To sum up, it is clear that the CAP Reform adjustment process will vary according to region, farm type and size, but the general trend is expected to be downwards through a shift from full-time to part-time, a loss of hired workers from smaller holdings (and stability on larger holdings which increase in economic size due to amalgamation) and a movement of family labour into off-farm employment.

(b) New Member States and Acceding Countries (NMS12) Case Studies

116. The 6 case studies were carried out in Jihomoravsky (CZ), Latgale (LV), Hajdu-Bihar (HU), Szczecinski (PL), Kosicky Kraj (SK) and Cluj (RO). Again, as in the EU15 case studies these represent a wide range of physical environments, regional economies and farming structures/systems.

117. Though individual "development paths" have differed considerably between regions, agriculture in the NMS12 has been profoundly changed, over the last decade, by these countries' emergence from socialist command economies and accession to the EU. In many areas the outcome has been a sharp reduction in agricultural labour input. However, in some regions restituted farmland has provided a "social buffer" for those who previously worked in other sectors, and who in unemployment have turned to semi-subsistence agriculture.

118. The key features (in relation to employment) which distinguish agriculture in the NMS12 from that in the EU15, are the dualistic farm structure (many small semi-subsistence farms, but also large - perhaps formerly collective - businesses), the low ratio labour/land productivity, and the importance of non-family farms and non-family labor.

119. The future role of semi-subsistence farms for agricultural employment depends much more on the development of other income opportunities than on agricultural policy itself. Although growth rates in the non-agricultural economy have been high, it is uncertain whether this will provide opportunities for rural and off-farm employment for many farm household members due to the fact that their levels of education are often relatively low.

120. On larger holdings, the importance of hired labour (much of it close to retirement age) may appear to provide an opportunity for more rapid adjustment. However it is important to recognise the fact that retaining employment is often a business objective for the manager, and that the employees are often also shareholders in the business. Furthermore there will still be a demand for younger, more highly trained labour, though attracting or retaining such workers will not be easy.

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[5] This assumes land prices will fall, partly because more farmers will retire without a successor.

121. Labour use per hectare is relatively high in the NMS12 case study areas, and there is considerable potential for investment in labour saving machinery. CAP introduction will lead to slightly more investments. This is likely to reduce labour demand as well as improve cost efficiency and output.

122. The introduction of the simplified area payment scheme (SAPS) in all case regions except the Romanian one does not have a direct production (and employment) effect since the payments are fully decoupled. However, the improved liquidity and raised incomes may indirectly create some demand for additional labour.

123. The share of women in the regular labour force is significantly higher in those regions where family labour dominates. On-farm activities are stated to be clearly gender-specific in all case regions. Management, machinery maintenance and fieldwork are typical male activities, while accounting, milking, calf rearing and mostly intensive manual seasonal labour like fruit picking and harvesting is classified as typical female. The share of females in agricultural employment might decrease due to investments in labour-saving technologies and the mechanisation of activities traditionally carried out by women. On the other hand, some interviewees believe that it is easier for men than for women to find off-farm employment and that this points to a possible increase of female labour in agriculture.

124. In the regions where family farms dominate, future employment of young people in agriculture is mainly an issue of succession. In these regions it is expected that less young people will take over the farms, as remuneration is too low, especially on the smaller farms. The availability of off-farm jobs will also influence the share of young people in agriculture.

125. In general, it is unclear at this stage how the expected growth of the whole economy in the NMS12 will interrelate with the employment effects of the introduction of the CAP. This assessment would require an isolation of the CAP impact from the wider effects of simultaneous restructurings. It is very likely that many interviewees mixed up these effects as their personal experience with the CAP is still rather limited.

Some common threads:

126. Despite the variation in local conditions, types and styles of farming and national economic contexts it is striking that two observations seem to hold good for all the case studies:

- Since farming is a complex system it is very difficult to isolate the impact of the CAP on employment, but it would be true to say that, thus far, there has been little evidence that policy changes[6] have altered the long term trend in farm employment[7]. It is still too early to be sure of the exact impact of the most recent reforms, and increased exposure to world market competition. However there is still a perception among farmers and other stakeholders that farm labour trends will continue to be subject to (seemingly inexorable) processes which are driven mainly by macro economic, technological and social change, rather than agricultural policy.
- With the possible exception of some NMS12 regions[8], "downsizing" is effected mainly through "incremental" processes (non-entry of potential successors, a shift to part-time work) rather than sudden redundancies of full-time staff. The impact on local labour markets is therefore quite different to that associated with other forms of structural adjustment (such as the closure of a manufacturing plant), and requires different policy responses, perhaps

[6] Such as the Macsharry and Agenda 2000 reforms.

[7] This does not apply to the more substantial effect of the introduction of the CAP to the NMS12.

[8] Those characterised by large holdings with large numbers of hired staff.

focusing on creating compatible part-time opportunities, assistance in adjusting to different working environments, and so on.

Chapter 11: Conclusions and Recommendations

Patterns of Change in European Rural Labour Markets

127. The empirical material presented in Chapters 2-5 of this report has drawn attention to two large scale processes of change; a long established "urbanisation" trend drawing population and economic activity out of more remote rural areas into urban and accessible rural areas, and a more recent "counter-urbanisation" flow out of urban regions into accessible rural areas. As a result of these two flows the accessible parts of the SR group of regions represent a zone of growth, with an economic structure increasingly similar to that of the PU regions. By contrast the PR regions, especially in the more remote parts of the EU are still being depleted of population and economic activity through cumulative self-perpetuating cycles of decline.
128. Overlaying this broad pattern are various North-South, and East-West differences, based upon natural environment, cultural, social and political traditions. These include contrasts in age structures, gender differences in economic activity, and patterns of human capital. It is extremely important to recognise and to take account of the fact that well known problems, such as demographic ageing, although evident, to some extent throughout rural Europe, are quite variable in their severity. An efficient policy response must take account of this.
129. Indicators of economic activity and employment have revealed two dimensions of regional differentiation, "participation" and "performance". This suggests that it is important to "tailor" regional labour market policy to take account of both aspects, to ensure an appropriate balance between interventions relating to diversification/entrepreneurship and those addressing social inclusion and human capital issues.
130. Although agriculture plays a relatively small part in most rural labour markets, it has a substantial capacity to shed labour. On the basis of recent trends alone, it seems likely that a relatively large number of jobs (possibly several million) will be lost to the sector during the next decade. The shift from production support towards decoupled payments will, if anything, accelerate this trend. Provided overall output is maintained, productivity and competitiveness should increase, causing the farming sector to move in the direction of the Lisbon competitiveness objectives. The less positive implications in relation to the employment objectives are discussed below (paragraph 150ff)
131. The need for life-long education and (re)training initiatives is a recurrent theme throughout the report, but especially in Chapter 7, where analysis of education statistics suggested a significant "deficit" within the rural workforce. Hence, it will be important to provide agricultural and non-agricultural education/training as an attractive and high-quality option for both young people (as a disincentive to out-migration), and to the middle aged (as a means of combating under-employment). This is also an issue addressed by Axis 3 of the new Rural Development Regulation.
132. Another key issue in relation to rural labour markets is the availability of basic services and infrastructure, and their effect on the quality of life of rural residents. This is also an issue addressed by the third axis of the new Rural Development Regulation. The statistics presented in Chapter 8 show that is an appropriate focus for intervention, especially in more peripheral regions. However it is also asserted that there is a pressing need to strengthen the evidence base with more appropriate indicators of accessibility to basic services.

Specific (agricultural) Implications of CAP Reform

(The following points are derived mainly from the case studies, and although this means the evidence base is relatively narrow, it is believed that they have a wider application and validity.)

133. Decoupling of direct subsidies from commodity production is generally perceived as likely to have negative impacts on rural employment in the short term, but positive benefits in terms of competitiveness in the longer term.
134. The value of semi-subsistence farming as a seedbed for entrepreneurs, and, in certain New Member States, as a social buffer, needs to be carefully and sensitively balanced against the long term objective of improving farm structures.
135. To prevent abandonment of marginal areas (which do not have the potential to compete in terms of commodity production) measures should focus upon rewarding the provision of public goods, supporting economic diversification, tackling disadvantages (eg transport) and moderating risks from natural hazards. Most of these imply a stronger shift from Pillar 1 to Pillar 2 expenditure.
136. The lower intensity of production typical of the New Member States should be protected/rewarded through environmental schemes and improved marketing channels which will add value to the produce.
137. Extensification is a widespread response to CAP reform, and consideration should be given to measures which will remove barriers to adjustments of farming systems.
138. In the light of continued concern about age structures in the farming industry, the social costs and benefits of early retirement schemes should be carefully assessed. Since CAP reform can accelerate succession processes, training for mature “returnees” to farming would be appropriate in many regions.
139. Similarly, in some regions CAP reform is providing additional opportunities for women on the farm. These could benefit from appropriate training schemes and support networks.
140. The increasing duality of farm structures (large “professional/competitive” farms and small part-time farms) and the differing needs of each component, should also be recognised in policy design.
141. The benefits of cooperation as a means of acquiring scale economies for part-time farmers need to be better understood, and appropriately supported. Part time farmers could, for instance, benefit from measures to support collective activities, and training in how to balance different demands from on and off-farm work.
142. Adjustment to the relatively rapid creation of a fully decoupled environment needs to be supported by effective farm advisory services and innovative applied research.
143. There is still a great need for dissemination of information and advice regarding the CAP in the NMS12.
144. Farmer confidence was found to be stronger where there were regional value added activities/products. Continued support for these, and associated marketing structures, is required.
145. The case studies highlighted the extent of regional differentiation and the continued need for flexibility and adaptability in farm and rural development policy.
146. The modernisation of agriculture is an important issue in the NMS12 and will require continued support for farm investments. There is also a continuing need to modernise the food processing sector here.

Urban-Rural Employment Disparities and Implications for the Lisbon Objectives

147. The overall employment rate in the EU27 in 2001 was 63.5%. It was slightly higher, on average, in the urban regions of the EU (65.4%), and lower in the rural regions, especially in the PR regions (62.5%). Expressed another way, where comparisons are possible, the majority of Member States had employment rates above the national average in their PU regions, and a majority also had below average rates in their PR regions. The Member States were equally split in terms of the employment rate in the SR regions – in half of them it was above the national average, and in half it was below.
148. This to a large extent reinforces and confirms the broad pattern of SR-PR differentiation already noted above (paragraph 127). It also underlines the fact that the in order to meet the Lisbon objective (70% employment rate overall), without simultaneously increasing rural-urban disparities (and thus undermining cohesion objectives), it is the PR regions of the EU which need to make the greatest progress in terms of their rate of labour market participation.
149. As regards the female employment rate target (60%), the biggest challenges are in the rural regions of some southern Member States (IT, GR,ES) in some of the New Member States (PL, HU) and in scattered rural regions of FR, BE, DE and IE. Again, the simple message is that in order to achieve the Lisbon Target, whilst maximising cohesion, it will be desirable to find policy approaches which address the particular labour market conditions in these regions.

The Role of Agriculture and the Employment Impact of CAP Reform

150. The outlook for rural labour markets, especially those in which farming accounts for a significant share of the workforce, is particularly difficult because the ”release” of underemployment (hidden unemployment) following the exposure to global market forces, will probably act as a brake on progress in terms of employment rates.
151. Such impacts are likely to be concentrated in regions with a greater dependence upon agriculture, and a paucity of alternative opportunities. Generally speaking these will be PR regions, and particularly those which are peripheral. These are also the regions most likely to be affected by the demographic processes of ageing and “masculinisation”.
152. By contrast, the labour markets of the majority of SR regions, especially those which are more accessible, are unlikely to be significantly affected, because agriculture is of minor importance, and their more positive employment trends are driven by activities outside the primary sector, often with close ties to adjacent urban areas.
153. The achievement of the Lisbon employment objective (without increased out-migration) in rural regions where agriculture plays a significant role, will be contingent upon their capacity to develop diversified labour markets capable of absorbing the labour which will leave agriculture, (and other declining primary and secondary sectors).

The Rural Development Policy Response

154. To address the differing needs of PR and SR regions rural development policy needs to find the right balance between recognizing the specific difficulties faced by farm households adjusting to the new policy and market environment, while at the same time acknowledging the fact that new employment opportunities are most likely to be outside the primary sector. Although it must be assumed that the service sector will be the main engine for employment growth in the countryside, due account must also be taken of the continuing relationship between many new rural enterprises

and on-farm work (via the involvement of pluriactive farm households). Specific policies addressing the needs of part-time farm households will have a greater chance of success if they form just one strand of a broader intervention addressing the needs of rural business generally.

155. Within this context the third axis of the 2005 Rural Development Regulation (with its focus on diversification, quality of life and education and training) is clearly extremely important. It provides direct support for the necessary diversification of the rural economy, together with measures to improve the living and working environment, and human capital resources, which may contribute towards a sustainable response to low employment rates. However the challenge to facilitate the movement of underemployed agricultural labour into more remunerative activities is a very substantial one, and careful targeting, and efficient use of the limited resource allocation will be crucially important during the 2007-13 period.

156. Given the recurrent differences between the SR and PR regions (and accessible and peripheral parts of them) it would seem appropriate to consider some means of focusing the Pillar 2 assistance in those regions most likely to respond. It is not clear at present whether this means the “weakest” labour markets, or those showing some signs of vitality already. At the same time equity and cohesion considerations must also be taken into account. However, whatever the answer to this difficult question, the typologies presented in Chapter 9 provide the foundation upon which a resource allocation scheme based on relative labour market performance could be built.

1 INTRODUCTION

1.1 Background to this report

This report is a response to one of the conclusions of the Agriculture Council of July 2003 (11486/03), which called for *"an in depth assessment…of employment prospects in rural areas further to reform of the common agricultural policy and the Union's enlargement process, with particular reference to youth employment and the unemployment of women, and to initiate the discussion on the creation of appropriate statistical tools for rural areas".*

The context for this concern for clarification of the current employment situation across Rural Europe is also spelled out in the Council Conclusion. In policy terms there are three important "drivers":
(i) The target of a 70% employment rate by 2010, (and a female employment rate of more than a 60%), set by the European Employment Strategy (EES), and the acknowledgement by Commissioner Fischer Boel that rural development policies should help towards meeting these objectives[9].
(ii) The continuing reform of the Common Agricultural Policy (CAP), including Rural Development Policy. (The shift from product to producer support presents opportunities for rural employment policy which need to be explored and carefully managed, so that their benefits may be maximised.)
(iii) The enlargement of May 2004. (Which has increased very substantially the rural proportion of the EU area/population, and presents rural development questions of a new kind and degree).

The wider impacts of these policy drivers are manifest through the special relationship between rural employment and a range of (predominantly public, rather than private) "goods" which are provided by the European countryside. These include, *"environmental protection, animal welfare, agricultural product quality improvement, countryside conservation, and protection of the cultural heritage, of biodiversity and of rural tradition and culture…"*[10]. The sustainability of these is seen as depending upon the "*custodianship of the land, which can only be ensured by maintaining a suitable level of employment*" (*ibid*).

The ageing of the rural and farm workforce and the need to accommodate or reduce the flow of young people out of the countryside presents a serious challenge to the sustainability of the European rural economy, and accounts for the emphasis upon demography within the current project. The age structure of the workforce, together with the level of participation by women in many rural regions, also raises important questions in relation to social and economic cohesion.

Clearly these matters are very relevant to the new Rural Development Policy, as set out in Regulation 1698/2005, especially Axis 1 (which suggests a continuation of measures to support young farmers, vocational training, and early retirement) and Axis 3 (vocational training, diversification and support for micro-enterprises). Furthermore the proposed implementation of the new Rural Development Policy in all rural areas within the EU renders the requirement for a standard definition of rurality an urgent one.

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[9] The European Employment Strategy (EES) is one of the main ways in which the EU member states work towards the strategic goal agreed at the 2000 Lisbon European Council – "to become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion". The EES, launched at the 1997 Jobs Summit in Luxembourg, has three overarching objectives: full employment, quality and productivity at work; and social cohesion and an inclusive labour market. Movement towards these objectives is to be achieved both through EU economic policy in a broad sense (including the CAP and RDR), and through more specific employment policies.

[10] Conclusions of the Agricultural Council July 2003 (Com 11486/03).

However the heterogeneity of EU rural space (increased through enlargement) makes the recognition of variety through an objective typology of rural areas a necessary refinement.

1.2 Scope and structure of the report

The central focus of this report is thus upon patterns and trends in rural employment within the EU. This includes overall activity rates, employment and unemployment rates (Chapter 3), changes specific to the agricultural sector (Chapter 4), and developments in the rest of the rural economy (Chapter 5). However the geographical variations in rural employment described in these chapters are partly a consequence of demographic processes (especially migration – both urbanisation and counter-urbanisation, and its impact upon age and gender structures), which are therefore described first in Chapter 2.

Potential new opportunities for rural employment (mainly for the farming population) are explored in Chapter 6, together with a review of best practice in terms of diversification. The readiness and capacity of rural economies to make such adaptations often depends upon levels of education and training within its workforce (human capital), and this aspect is discussed in Chapter 7. The same chapter also discusses another "supply-side" issue, commuting, which has an important role in determining the labour resources available to local entrepreneurs and existing employers. Access to basic services and infrastructure is also generally considered an important precondition for rural entrepreneurship, and this aspect is explored (as far as available data allow) in Chapter 8.

Thus the first 8 chapters of the report build up a thematic description of the key trends and patterns evident in European rural labour markets at the turn of the 21st century. The following chapter (9) utilises the information to synthesise a selection of indicators to produce a new delimitation of rural Europe at the NUTS 3 level, and a typology of rural NUTS 3 regions in terms of their "performance". Chapter 10 moves away from the descriptive approach towards a consideration of policy implications, based upon a separate data source; case studies in 15 regions across the EU. Finally the implications of both the secondary data reviewed in Chapters 1-8 and the primary data presented in Chapter 10 are presented in the form of a set of Conclusions and Recommendations (Chapter 11).

1.3 Underlying concepts

1.3.1 *Rural labour markets as systems*

The report structure above (and indeed the Terms of Reference) is a reflection of an underlying concept of rural labour markets, which is in turn necessitated by the role of the analysis as background and context for an assessment of past (and proposed future) rural policy. It is helpful at this point to make this concept explicit.

A narrow interpretation of the term "labour market" would be associated only with statistical measures of economic activity, employment and unemployment, perhaps including variations in rates between age groups and genders. This report adopts a broader perspective, according to which rural labour markets are viewed as functional systems, in which employment *demand* is driven by regional competitiveness, whilst employment *supply* is partly a function of demography, (including inter-

regional migration), but also of various socio-economic factors which determine participation rates, and of the qualitative aspects of the labour force often referred to as "human capital"[11].

The value of this broader labour market approach is well illustrated with reference to the two-fold role of population migration:

(i) In the short-medium term migration shares with unemployment the role of absorbing imbalances in local supply and demand for labour, and coping with changes in the conditions of job markets. Thus unemployment rates often tell only part of the story, since they may be ameliorated by out-migration, or "inflated" by in-migration over a period of time.

(ii) Since it is selective in its impact on different groups within the population, migration tends to result in second order or "cumulative causation" effects upon regional competitiveness (Chapter 2).

Realistically then, rural labour markets must be considered as "open systems" both in the sense that *segments of the population* are able to move in and out of the workforce, but also in a *geographical* sense, in that there is movement of workers across "permeable" regional boundaries, both on a long-term basis (migration - Chapter 2) and on a daily basis (commuting - Chapter 3). This implies some limitations to an analysis based on data for administrative regions, which at present is the only practicable starting point for the empirical analysis of chapters 2-9 of this report[12]. Specifically these are:

(i) The fact that different forms of economic activity are associated with differing travel to work patterns. Thus it has recently been argued[13] that:

> *"The term 'the labour market' suggests a unity that is absent in practice – rather the reality is one of a multiplicity of porous sub-markets, demarcated by industry, occupation and geographical area. A 'local labour market' is socially constituted. It consists of multiple layers of different geographical scales – reflecting the different commuting propensities of labour market sub-groups - superimposed on one another, such that in reality there is no such entity as a 'rural labour market'"*

This conjures up an image of overlapping/stratified "labour sheds[14]", each reflecting the supply/demand balance, including the propensity to travel to work associated with different occupations or sectors, or indeed, personal characteristics, (such as having dependent children). To the extent that most administrative regions (however defined and at whatever scale) will incorporate the residences and the workplaces of various groups within the workforce, each operating within "catchments" at different scales, it is very difficult to find real world examples of geographically exclusive or self contained labour market areas[15].

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[11] On the *demand side*, it is important to recognise that regional competitiveness is determined not only by "hard" secondary factors (such as the availability, and cost of inputs, and the cost of getting products to consumers), but also reflects a range of less tangible "soft factors", such as the character of local business networks, social capital, and "institutional thickness". For a review of these see Copus A K (2001) From Core-Periphery to Polycentric Development; Concepts of Spatial and Aspatial Peripherality, European Planning Studies, vol 9 No 4 pp539-552. Unfortunately time and space will not allow us to deal with these demand side matters in the current report.

[12] On the issues relating to the use of administrative regions for labour market analysis see Terluin I and Post J (1999) Employment in leading and lagging rural regions of the EU, Agricultural Economics Research Institute (LEI) the Hague p42

[13] Green A E and Hardill I (2003) Rural Labour Markets, Skills and Training, Institute for Employment Research, University of Warwick pii.

[14] Vance 1960, quoted by Green and Hardill o.c. p10.

[15] As McCulloch (2003, quoted by Green and Hardill 2003 p10) suggests: "The local labour market is more accurately seen as consisting of multiple layers of different geographical scales superimposed on one another."…A 'local labour market area' is conventionally defined as a relatively self-contained area in terms of journey-to-work flows within which the majority of residents work (supply-side self-containment) and within which

(ii) The identification of *rural* labour markets on the basis of data for administrative regions, if anything, adds further difficulties, since many "strata" in the complex labour market pattern are naturally centred on towns or cities, and characterised by a daily influx of workers from the surrounding countryside. Only in the more remote, sparsely populated regions can it be said that truly *rural* labour markets exist. In more accessible rural regions a multi-layer situation is more likely, long distance commuting patterns overlaying more localised, rural commuting systems.

Whilst recognising the importance of these conceptual difficulties, the reality is that at present, the only spatial framework for which an adequate range of indicators is available to permit an analysis of patterns and trends in rural Europe is NUTS 3.

1.3.2 *Common themes associated with rural labour markets*

The following chapters reflect certain conventional views[16] of the way in which rural labour markets differ from urban ones[17], these include:

- Activity rates (especially those of women) may be lower than in urban areas (Chapter 3).
- The age structure of the working population often shows an older profile (Chapters 2 and 3).
- Although unemployment rates are not always higher there is generally a degree of "underemployment" which is hard to quantify[18] (Chapter 3).
- There is often a higher incidence of part-time, seasonal or casual employment in rural areas[19] (Chapter 5).
- This is often associated with a relatively high incidence of pluriactivity[20] (Chapter 4).
- Rural areas are often characterised by high levels of self employment (Chapter 5).
- Remote rural areas are often characterised by sustained out-migration of the young and better educated, with associated impacts on age structure and innovation/entrepreneurial capacity (Chapter 2).
- More accessible rural areas often benefit both from the increase in commuting, and employment "counter-urbanisation" as footloose firms (both in the secondary and tertiary sectors) move away from congestion and a poor working environment and take advantage of the availability of car-mobile "incomers"[21] (Chapter 5).

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the majority of jobs are filled by local residents (demand-side self-containment)…However, local labour markets are porous. Their boundaries are not 'fixed frontiers'; rather they may be thought of as 'zones of transition' between different spheres of influence – which may span rural, urban and regional divisions, and which may or may not accord with administrative boundaries."

16 Within the context of the essentially descriptive/inductive approach of this report the author feels it is inappropriate to use the term "hypothesis", which implies a more rigorous deductive approach than was practicable, given the constraints of available data and resources.

17 For a general overview, see Green and Hardill (2003) o.c.

18 Errington A (1988) Disguised unemployment in British agriculture Journal of Rural Studies, Vol 4, Issue 1, pp 1-7.

19 Vidal C (2001) Changes in Agricultural employment, Statistics in Focus, Agriculture and Fisheries, Theme 5 – 14/2001 p6, Ball R M (1987) Intermittent labour forms in UK agriculture: Some implications for rural areas, Journal of Rural Studies Vol 3 No 2 p133-150, Errington A and Gasson R (1996) The increasing flexibility of the farm and horticultural workforce in England and Wales, Journal of Rural Studies Vol 12 No 2 pp127-141.

20 Kinsella J, Wilson S, de Jong F, and Renting H (2000) Pluriactivity as a Livelihood Strategy in Irish Farm Households and its role in rural development, Sociologia Ruralis vol 40 pp481-496, Benjamin C (1994) The growing importance of diversification activities for French farm households, Journal of Rural Studies, Vol10, Issue 4, pp 331-342.

21 Green M B and Meyer S P (1997), An Overview of Commuting in Canada with Special Emphasis on Rural Commuting and Employment, Journal of Rural Studies Vol 13 no 2 p166.

- Although in many ways the urban-rural contrasts in the overall sectoral profile are less marked than might be expected[22], the key rural characteristics are the significant levels of primary sector employment combined with relatively low levels of activity in professional and technical services (Chapter 5).
- Many rural areas now have a relatively high percentage employed in manufacturing, though this may be partly a statistical artefact caused by the relative sparsity of tertiary activities (Chapter 5).
- Variations in levels of "human capital" (Chapter 7) generally mirror those of the sectoral structure, rural areas with fewer "knowledge intensive" industries tend to have lower levels of education and training. Sometimes a vicious circle (a "low skills equilibrium") develops, in which employers begin to compete on the basis of low wage costs, and thus undermine the workforce's rights to training (one of the best means to increase average income levels).
- Some poorly performing rural areas seem unattractive as environments for entrepreneurship because they lack basic services and infrastructure[23] (Chapter 8).

Each of these generalisations are examined in the chapters which follow, allowing a more varied and balanced picture to emerge.

1.4 Geographical Framework

1.4.1 *The OECD Urban- Rural Classification*

In accordance with the Terms of Reference, the OECD urban-rural classification has been utilised as a basic delimitation of rural Europe for the analysis presented in Chapters 1-9 and the Country Profiles (Appendix 1). The OECD scheme distinguishes 2 hierarchical levels of geographic detail, namely *local community* (LAU 1/2) level and *regional* (NUTS 3) level. Local communities are classified as rural or urban, according to their population density (< > 150 inhabitants per sq km). Regions are then classified according to the proportion of population living in rural or urban communes (Table 1.1)[24].

Table 1.1: OECD NUTS 3 Regional Classification Criteria

Region Type	Criteria
Predominately Urbanised (PU)	<15% population in rural communes
Significantly Rural (SR)	15-49% population in rural communes
Predominately Rural (PR)	>50% population in rural communes

Roughly one-third of the 1,214 EU-25 NUTS 3 regions fall into each of the three OECD urban-rural types[25] (Figure 1.1). The distribution of area and population is, not surprisingly, less equal. Predominantly Urban (PU) regions tend to be relatively tightly bounded and densely populated. They therefore account for less than 10% of total area, but almost 45% of EU-25 population. At the other end of the spectrum, Predominantly Rural (PR) regions account for more than half the EU-25 area, but only a fifth of its population. The Significantly Rural (SR) regions occupy almost exactly one third of the

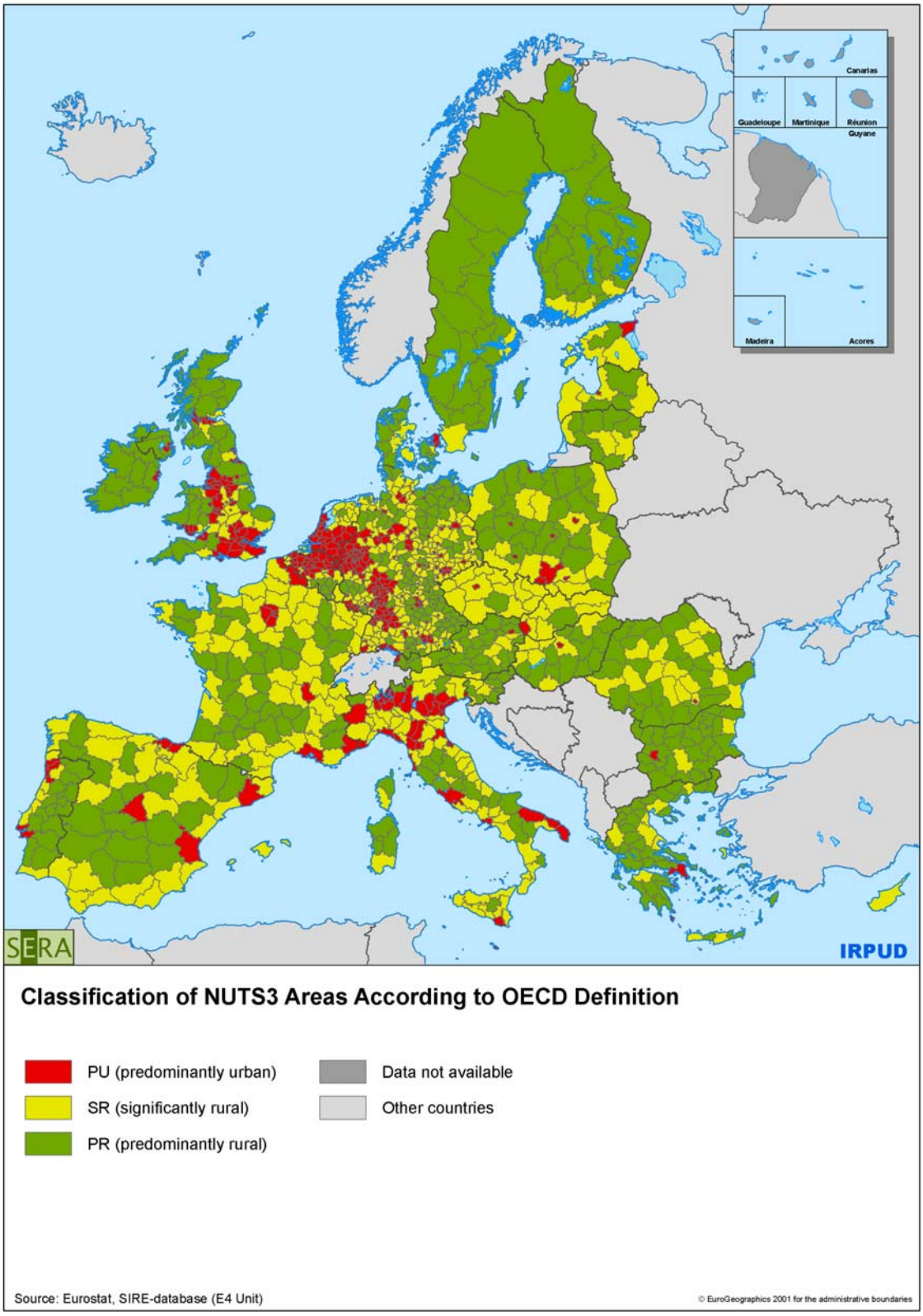
22 Terluin and Post o.c. p20.

23 Terluin and Post o.c. p35-6.

24 The OECD classification has been implemented several times, and different versions exist for different dates. At the time that the majority of the data collection and analysis was carried out the most complete classification of EU NUTS 3 regions was one supplied to the project team by DG Agriculture during February 2005. However this classification was incomplete for UK, SK, LV, BU and RO. Classifications for UK and SK were taken from an older (1993) file supplied by the OECD. Classifications for LV, BG and RO have more recently been taken from a list created by DG Agriculture for the Extended Impact Assessment.

25 Including the acceding countries increases the number of regions to 1284, and the percentage of SR and PR regions (slightly) to 34% each.

European area, and contain the same proportion of its population. The geographical pattern of OECD urban-rural types is shown in Map 1.1.



Map 1.1: Classification of NUTS 3 regions according to the OECD classification

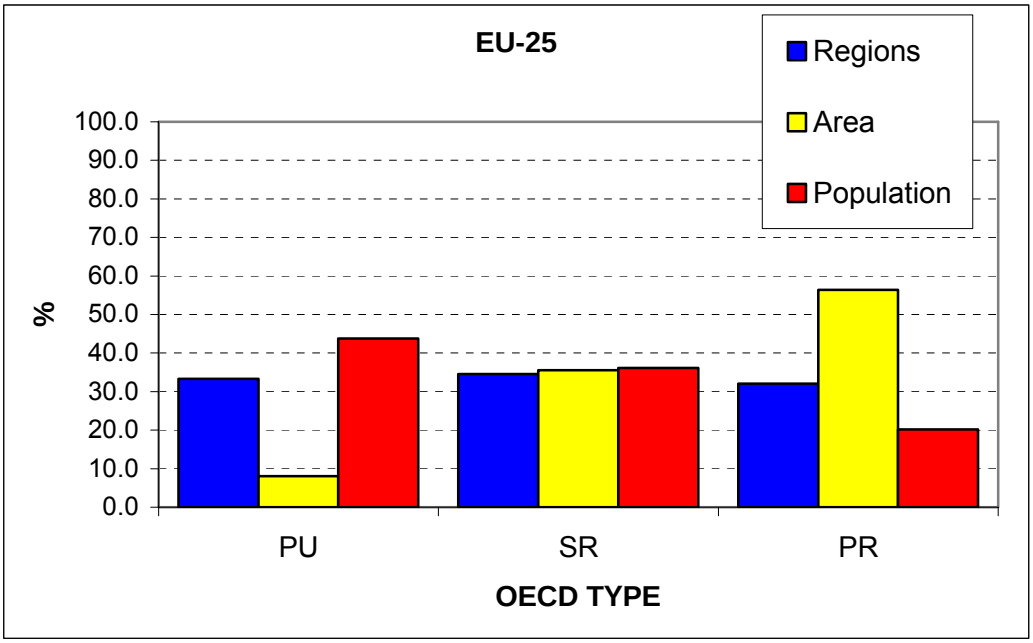


Figure 1.1: Percentage Distribution of EU-25 NUTS 3 Regions according to OECD type
(Source: Eurostat REGIO Database (d3area and d3pop tables))

1.4.2 *Peripherality and Rurality*

Throughout the report, when reviewing the geographical distribution of socio-economic indicators, broad contrasts between the European economic heartlands[26] and the more remote regions on the edges of the Union, have been observed. It has been shown elsewhere, for instance that peripherality accounts for approximately 50% of variation in GDP per worker at NUTS 2[27].

In the interests of clarity it will perhaps be helpful at this stage to stress the distinction between rurality and peripherality, and to introduce a standard definition of the latter. The indicator of peripherality used in this report is an updated version of one estimated by Schurmann and Taalat in 2000[28]. Further methodological background and detailed results are provided in Chapter 8. At this point it is sufficient to stress the fact that whilst the PR regions as a group have a lower average score[29] on this indicator (72% of the EU average), than the SR regions (101%) and the PU group (143%), there is considerable variation within these groups, and between member states.

[26] Such as the Paris region, the Ruhr, SE England, Brussels etc, (sometimes referred to by planners as the "pentagon", "blue banana" etc)

[27] Fürst, F., Schürmann, C., Spiekermann, K. and Wegener, M., 'The SASI Model: Demonstration Examples', SASI Deliverable D15, Final Report, Berichte aus dem Institut für Raumplanung 51, 2000, IRPUD, Dortmund.

[28] Schürmann, C., Talaat, A. "Towards a European Peripherality Index" Final Report, Berichte aus dem Inistitut für Raumplanung 53, IRPUD, November 2000, Dortmund.

[29] The scale of the indicator is such that a lower score is associated with inaccessibility to core regions and vice versa. For a more detailed explanation of the meaning of these "scores" see section 8.8.

1.5 Approaches and conventions used in this report

Clearly a review with such broad scope, both in terms of subject matter and geographical context requires clear guiding principles and an unambiguous methodological approach, so that limited resources are efficiently deployed. Within the current report three broad approaches are used;

- regional analysis based on harmonised indicators,
- conventional literature reviews, and
- case study analysis.

The second of these (mainly evident in Chapter 6) requires no further description, whilst the third is the focus of Chapter 10 below, where an outline of the methodology and the main sources to be used is provided. The first underlies Chapters 2-9. It also provides the basis of the Country Profiles (Appendix 1). The basic conventions which have guided the project team in their use of regional indicators are set out in Appendix 1.1.

The following conventions have guided the project team in their use of regional indicators:

- In order to permit meaningful comparisons between rural areas across the EU-27 harmonised data derived from Eurostat's online REGIO database has been used wherever possible, national data sources playing a "gap filling" role only.
- The Excel database which provides data for the standard tables of the Country Profiles and the statistical maps throughout the report is defined in terms of the 2003 revision of Eurostat's NUTS 3 regions.
- The objective has been to obtain full coverage of all 1,284 NUTS 3 regions in the EU-27 for each key indicator. This makes for more meaningful statistical maps, and reduces the impact of missing values upon multivariate statistical analysis. Where data are available only at a lower level of regional resolution (NUTS 2 or NUTS 1), available data has been apportioned or applied to constituent NUTS 3 regions. Where there are minor gaps in the NUTS 3 data, these have been filled wherever possible with data from an adjacent year, or from the containing NUTS 2 region.
- The analysis is centred on data for 2001, though there is some variation due to data availability. Analysis of past demographic trends relates to change since 1980 and 1990. In other sections of the report the time period varies, and is determined by data availability. Projections of future trends in agricultural employment in Chapter 4 extend to 2014.
- Full metadata is provided, citing sources in terms of Eurostat REGIO database table and variable names, and any adjustment or apportionments carried out.

Throughout the report the main labour market indicators are presented in a standard table format, in which the columns distinguish the three OECD urban-rural types, plus a member state average, whilst the rows show the 25 member states, plus Bulgaria and Romania, and an EU25 average. Each of these tables is presented in cartographic form in an appendix. Where helpful the standard tables are replaced by the maps in the main text, (the parallel table being provided in the appendix). The abbreviations (PU, SR, PR) are used throughout the text to denote the three OECD region types.

2 DEMOGRAPHY

2.1 Introduction:

2.1.1 *Structure of this Chapter*

An appreciation of demographic trends and patterns is clearly an essential first step to describing rural labour markets in Europe. Demography is probably the single most important supply-side determinant of economic activity and employment trends in rural areas. Two major components need to be considered; (i) Natural increase (the balance between births and deaths) (ii) Migration, - which accounts for the majority of regional change in population, and also has important feed-back effects upon natural increase[30]. The latter are a consequence of selective migration, which results in regional variations in age and gender structures, which are themselves a particular focus of this report. However, before discussing the two main demographic components it will be helpful to outline rural-urban distributions across the EU, and to summarise recent trends. The chapter concludes with a simple typology of European regions according to the nature of recent demographic change.

2.1.2 *Broad Historic Trends*

In pre-industrial rural society migratory movements were relatively small, and regional population development was predominantly a function of natural population change. Today, with higher mobility, lower fertility rates, and in many cases natural population decrease, regional population development (with regard both to size and structure) is increasingly dominated by inter-regional migratory movements. At more aggregate levels (European or national) the drop in the Total Fertility Rate (TFR – see below) is the dominant factor behind changes in the age structure (i.e. ageing), though immigration may partly counteract this process.[31]

For much of the twentieth century the regional pattern of population change in most European countries was characterised by a "rural exodus", and increasing urbanisation. Rural populations declined as the young and able left to seek better employment prospects in urban areas. Those remaining formed an increasingly ageing population, with declining local services. This is a well-known story and connected with the advent of industrial society and the urbanisation process.

However, from the 1970s the urban lifestyle has increasingly been rejected in favour of residence in accessible rural areas and commuting (see Chapter 7). During recent decades the numbers of people migrating away from cities into the nearby countryside or rural areas has increased. "Counter-urbanisation" is a common trend in the "well developed" parts of the world, and it has contributed to rising rural populations in many parts of Europe. The rural exodus is now restricted to the remoter and less prosperous regions, and mainly involves young people, who are still attracted to cities as they set out on their careers.[32] .

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[30] See Note 1 in Appendix 2

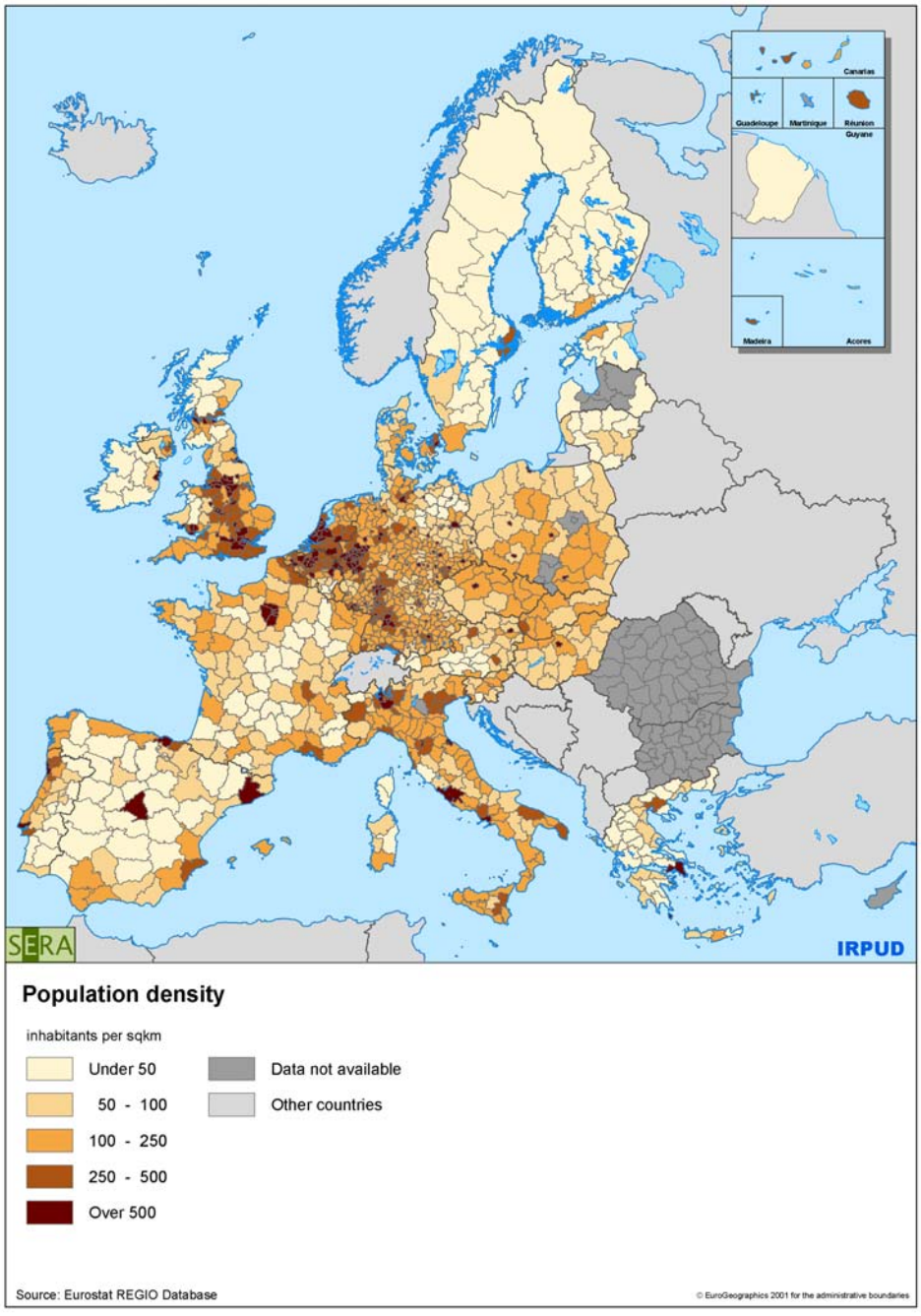
[31] See e.g. *ESPON 1.1.4 o.c.*.

[32] *Champion, A.G., 'Counter-urbanisation: The Changing Pace and Nature of Population Deconcentration'. Edward Arnold (Hodder & Stoughton) London.* See also. ESPON 1.1.4 "Spatial effects of demographic trends and migration", www.espon.lu

It is, however, important to emphasise that the reasons for population increase or decrease vary between differing parts of rural Europe. Although for the majority of the rural areas the most important factor driving demographic change is migration, low fertility rates are an increasingly important feature. During recent decades, the decline in the fertility rates has in many rural regions either reinforced the negative effects of out-migration or counteracted the positive effects of in-migration.

2.2 Broad Rural-Urban Population Patterns

2.2.1 *Rural-Urban patterns of Population Density*



Map 2.1: Population Density at NUTS 3, 2002.

Map 2.1 shows population density across the EU25 at NUTS 3 (Table A2.1 shows the averages by OECD type and member state). Both illustrate the substantial differences between many of the more peripheral rural regions (such as those in the Nordic countries, the north and west of the UK and Ireland, the Iberian interior, the interior of France, Greece, and most of the New Member States) and the more central rural regions.

2.2.2 *The Rural-Urban Distribution of Population across the EU25*

At around the turn of the 20th century more than 450 million people were living in the "new" EU (EU25).[33] Among these, 56 percent lived in NUTS 3 regions categorised as predominantly rural (PR) or significantly rural (SR).

Table 2.1: Population distribution in the EU27, 2003[34]

	PU	SR	PR	All
	% of total population			
EU27	41,6	37,4	20,9	100
AT	22.9	30.7	46.3	100
BE	88.3	11.7		100
BG	15.4	15.0	69.7	100
CY		100.0		100
CZ	11.4	83.5	5.1	100
DE	57.5	29.3	13.2	100
DK	59.0	31.8	9.2	100
EE	13.0	76.5	10.5	100
ES	35,3	49,8	15,0	100
FI		37.8	62.2	100
FR	28.5	54.5	17.0	100
GR	35.6	27.2	37.2	100
HU	16.9	36.0	47.1	100
IE	28.4	0.0	71.6	100
IT	49,8	40,7	9,6	100
LT		55,7	44,3	100
LU		100.0		100
LV	31.7	45.0	23.2	100
MT	100.0			100
NL	82.9	15.8	1.3	100
PL	22.9	36.0	41.2	100
PT	52.0	26.6	21.4	100
RO	8.9	44.0	47.1	100
SE		33.5	66.5	100
SI		38.3	61.7	100
SK	11.1	61.8	27.0	100
UK	69.6	26.7	3.6	100

Source: Eurostat Regio database table 3davg

As can be seen in Table 2.1 the settlement pattern in Europe also varies significantly with regard to rurality and between different countries. More than four persons in ten live in urban areas – for EU27 the share is 41.6 percent. Only one of five persons lives in predominantly rural areas. According to the OECD definition some of the largest shares of rural population in the EU27 are in countries with a high proportion of more peripheral regions – such as Sweden, Finland, Bulgaria, Slovenia and Ireland. The most urban populations are (on the whole) found in the densely populated areas of the central parts of Europe – such as Belgium, the Netherlands, Denmark, Germany and United Kingdom.

[33] In this part of the study, 1,214 NUTS3-regions are the base for descriptions and analyses with regard to the demographic development in all regions as well as concerning PU, SR and PR. In some cases, missing data can result in smaller number of regions.

[34] For UK, 2000.

2.3 Patterns of population change in rural Europe

2.3.1 *Broad patterns of change within the EU15 since 1980*

Table 2.2 summarises the distribution of population between the OECD Urban-Rural region types in the EU15 at 5-yearly intervals since 1980[35]. Whilst the total EU15 population has increased during the two last decades, the proportion living in rural areas (PR+SR) appears to have been relatively constant at a little under 55%[36].

Table 2.2: Percentage of population living in urban and rural regions of EU15 1980-2000

	1980	1985	1990	1995	2000
PU	45,2	45,2	45,2	45,4	45,4
SR	32,2	32,3	32,4	32,5	32,7
PR	22,6	22,5	22,4	22,0	22,0
Total	100	100	100	100	100

Source. Estimations based on Eurostat Regio Database.

However, within rural Europe the direction of population change has varied according to the type and location of rural areas[37]. Overall, SR regions have experienced significantly better population trends (increasing their share of total EU population by 0.5%) than PR regions (reduction in share of 0.6%).

2.3.2 *Change in the EU 25 since 1990*

Again, when the analysis is broadened to include the New Member States (though due to data constraints, over the 1990's only), the absence of substantial change in the broad rural-urban distribution of population is confirmed (Table 2.3[38]). However, here again the proportion living in the SR regions increases slightly, whilst that in the PR regions declines. The SR group also has the lowest proportion of regions with declining population, the smallest share of its population in such regions, and a higher annual average increase. The PR group consistently shows the most negative population change indicators.

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[35] These averages exclude IT, IE and UK where there are gaps in the data. More complete and detailed data (for the post 1990 period only) is presented in the next section.

[36] Since Italy, Poland and United Kingdom are omitted – as a consequence of missing data in the beginning of the period 1980-2000 - the shares of the rural areas are perhaps underestimated. However, if these countries are included the relations will not change in a negative way with regard to the two kinds of rural areas. Instead – and perhaps surprisingly – the share of predominantly urban areas will drop somewhat and the rural ones increase. If Italy and United Kingdom are included the corresponding figures for 2000 are 43,3 % (PU), 35,3 % (SR) and 21,4 % (PR). The PR areas drop in importance but this is compensated by the higher share of the SR areas. This can perhaps be seen as a result of the counterurbanisation process during the 80s and 90s which brought decentralisation of the settlement pattern with out-migration from metropolitan areas to the neighbouring countryside as one result.

[37] See e.g. ESPON 1.1.4 "Spatial effects of demographic trends and migration", www.espon.lu

[38] The EU total population figures in Table 2.3 for 1990 and 2000 do not agree exactly with EU totals recorded elsewhere by Eurostat, since they represent the sum of available data for PU, SR and PR regions. This means that they are an underestimate on the aggregate level, and more so in 1990 than in 2000. This also means that the growth rates shown for the 1990s in Table 1.3 are also probably slightly overestimated.

Table 2.3: Patterns of population change in urban and rural Europe 1990-2000

	PU	SR	PR	Total
1990	187,567	155,308	89,415	432,413
2000	195,567	162,406	90,820	448,794
% of EU25 population 1990	43.4	35.9	20.7	100.0
% of EU25 population 2000	43.6	36.2	20.2	100.0
Average annual % change 1990-2000	0.21	0.34	0.02	0.22
of regions with population decrease	33.1	28.0	36.2	100.0
% of population in declining regions	30.1	24.1	35.2	100.0

Source. Estimations based on Eurostat Regio Database.

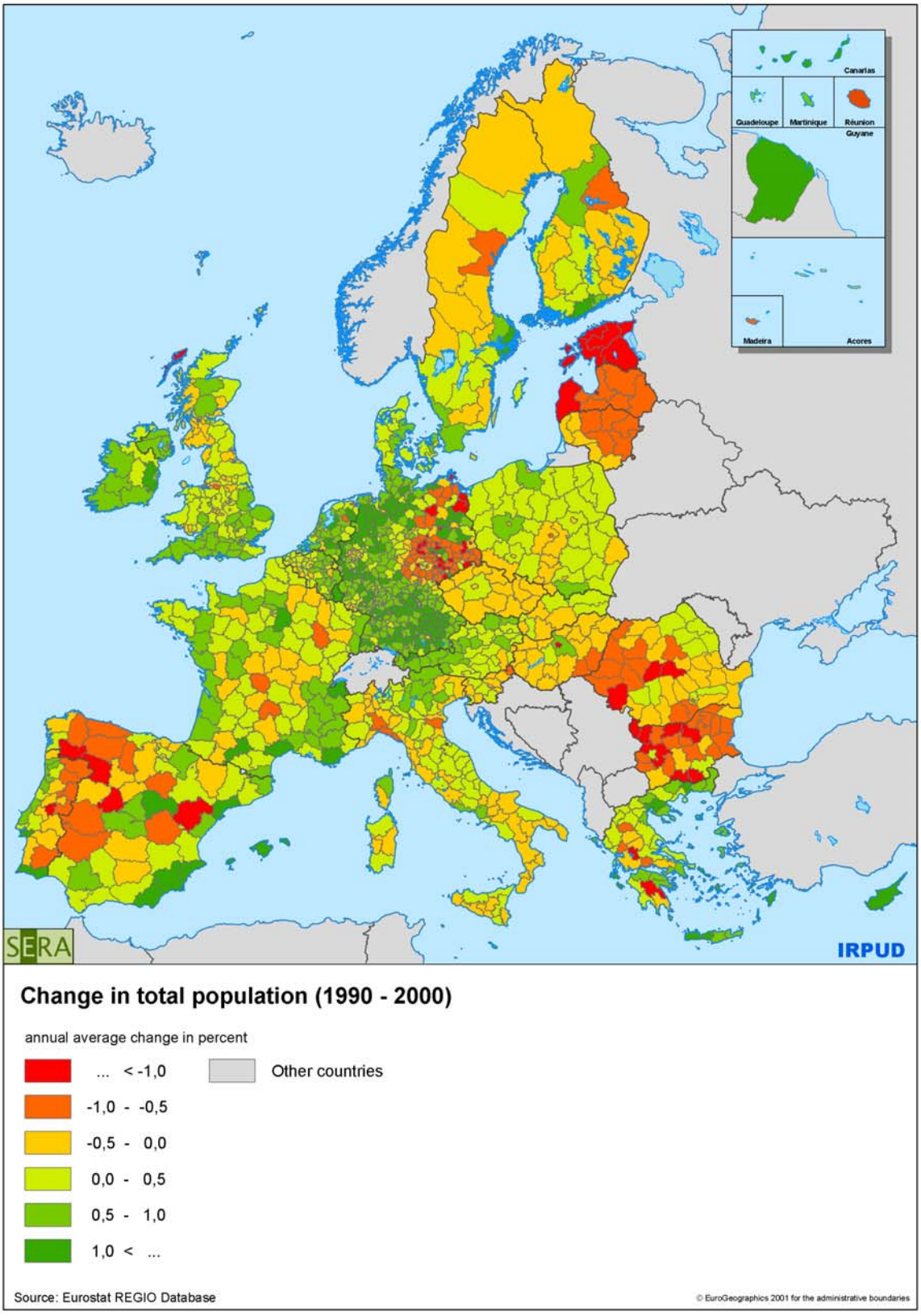
Further detail is provided in Table 2.4, (and Map 2.2) where annual percentage population change during the 1990s is disaggregated by member state. The final column shows that taken as a whole all EU15 member states exhibited population increase during the 1990s. Much of this growth took place in the SR regions. Of the EU15 member states which had both PR and SR regions, only one (BE) saw stronger growth in its PR than in its SR regions. Most of the others not only showed a less positive trend in their PR regions (especially in Spain, Portugal, Greece and the Nordic countries), but in their urban areas too. There is in this sense some broad evidence, across the EU15, for both a drift of population out of the most rural areas, and for counter-urbanisation.

The pattern of population change in the New Member States during the 1990s was very different, most exhibiting negative trends overall. The first half of the decade, in particular, was characterised by a very sharp transformation process that had effects both on the economy and the labour market. This resulted in a drain of people from these countries to other countries both in the West and the East. Both urban and rural regions were affected by this process, but urban regions perhaps most severely.

Table 2.4: Population change (yearly average, %) 1990-2000 in EU27 concerning PU, SR and PR.

	PU	SR	PR	All
	Population change (yearly average, %) 1990-2000			
EU27	**0,21**	**0,34**	**0,02**	**0,22**
AT	0.41	0.44	0.40	0.42
BE	0.25	0.45	0.65	0.28
BG	0.42	-0.37	-0.78	-0.56
CY		1.97		1.97
CZ	-0.31	-0.06	-0.08	-0.09
DE	0.22	0.59	0.47	0.36
DK	0.48	0.51	0.20	0.38
EE	-1.91	-1.17	-1.16	-1.27
ES	0.36	0.58	-0.44	0.33
FI		0.98	0.05	0.38
FR	0.28	0.52	0.13	0.38
GR	1.02	1.01	0.32	0.74
HU	-1.09	0.05	-0.29	-0.33
IE	0.93		0.75	0.80
IT	0.07	0.05	0.00	0.05
LT		-0.60	-0.45	-0.54
LU		1.42		1.42
LV	-1.58	-0.88	-0.74	-1.09
MT	0.77			0.77
NL	0.61	0.90	0.64	0.65
PL	-0.12	0.22	0.29	0.17
PT	0.56	0.55	-0.40	0.33
RO	-0.58	-0.26	-0.34	-0.33
SE		0.89	0.11	0.36
SI		0.08	-0.11	-0.04
SK	-0.06	0.13	0.19	0.12
UK	0.16	0.46	0.29	0.24

Source: Eurostat Regio database, d2jan and xd2jan



Map 2.2: Change in total population 1990-2000. Yearly change (%)

2.3.3 *The relative importance of Natural Change and Migration*

Table 2.5 shows the relative roles of natural population change and net-migration in total population change between 1995 and 2000, by OECD region type. In the SR and PR regions, net-migration had a dominant and positive effect on total population change. Net-migration reinforces the positive effect of the natural population change in SR regions and hampers the corresponding negative effect in PR. The positive natural population change in PU regions is counteracted by negative changes in net-migration but despite this the overall population change is positive.

Table 2.5: Components of total population change 1995-2000 in EU25.

Components	PU	SR	PR
Total population change (%)	0,44	1,59	0,67
Natural population change (%)	0,56	0,28	-0,15
Net-migration (%)	-0,13	1,30	0,82

Source. Estimations based on Eurostat data

Table 2.6 shows the share of regions and population showing total population increase, natural increase and positive net-migration. It confirms the fact that the SR regions had the most positive population development (both when measured in terms of the number of regions showing growth, and in terms of the share of population living in growing regions). By contrast the PU regions had the least favourable characteristics in terms of the number of growing regions, (although not in terms of the share of population living in these regions) – only 54 percent of the PU-regions experienced population increase between 1995 and 2000. Within the PR group of regions the most interesting statistic is the fact that less than 40% of the regions showed positive natural increase.

Table 2.6: Percentage of urban and rural regions with population growth 1995-2000 by components in EU25. Numbers (N) and size (pop) based on 1995 data.

Components	PU pop	PU (N)	SR pop	SR (N)	PR pop	PR (N)
Total population growth, (%)	61	54	70	68	58	58
Positive natural change, (%)	64	51	60	51	57	39
Positive net-migration, (%)	54	57	65	72	56	62

Note: Pop = share of population, N = share of regions
Source. Estimations based on Eurostat data

2.4 Patterns of natural population development in rural Europe

2.4.1 *Basic concepts and inter-relationships*

Natural population change is simply the difference between number of births and number of deaths during a specified period. Changes in the number of births are a consequence of the development of the birth rates and of the size of the cohorts of childbearing age. Assuming in age-specific fertility rates are stable, large cohorts of childbearing age result in large new cohorts and vice versa. Consequently, the number of births tends to fluctuate as a function of the size of the cohorts in cycles of around 25 years.

From a regional perspective, the process natural population development is inseparably linked to migration, age structure and the size of the cohorts. Thus depopulating and long term out-migration areas tend to have large (residual) elderly cohorts, and therefore low rates of natural increase. At the other extreme metropolitan areas and university towns, where the proportion of persons aged 20-30

years is larger as a consequence of in-migration of people in these ages, tend to have high rates of natural increase.

2.4.2 *Key indicators*

Four indicators are useful in the analysis of natural population change:

- Crude birth rate (CBR)
- Crude death rate (CDR)
- Natural population change (CBR-CDR)
- Total Fertility rate (TFR)

Crude birth rates and death rates are expressed per 1,000 head of population. By comparing CBR and CDR (crude birth and death rates) natural population development may be estimated.

Although variations in natural population change are predominantly due to differences in age structure, there may also be regional variations in birth rate which are independent of differences in size of age cohorts. These are measured by the total fertility rate (TFR) [39], a theoretical measure, defined as the number of births related to the number of women in the childbearing ages standardised for different cohort sizes. TFR is thus an indicator of differences in fertility which are independent of age structure (which are also included in the crude birth rate (CBR).

In the following section each of the four natural change indicators will be discussed in turn.

2.4.3 *Crude Birth and Death Rates*

CBR and CDR for the years 1997-1999 are estimated at NUTS3 level and summarised in Table 2.7. Across the EU25 as a whole, PU and SR regions had higher CBR than CDR in all three years. The opposite was the case with regard to PR – here CDR was higher than CBR. In 1999 the difference was particularly large. Whether this implies a trend towards more negative natural population development in the future as a consequence of the ageing process is difficult to say for certain.

Table 2.7: Crude birth rates (CBR) and crude death rates (CDR) 1997-1999 in EU25, PU, SR and PR.

CBR 1997-1999				CDR 1997-1999			
	1999	**1998**	**1997**		**1999**	**1998**	**1997**
Total	10,6	10,7	10,8	Total	10,1	10,0	10,0
PU	10,9	11,0	11,0	PU	9,8	9,8	9,8
SR	10,3	10,4	10,5	SR	10,0	10,0	9,9
PR	10,1	10,3	10,6	PR	10,8	10,8	10,7

Source. Estimations based on Eurostat Regio Database.

[39] TFR can thus be defined in the following way: $TFR_t = \sum_{x=16}^{49} f_x$ where t = year and x = age. The *crude birth rate* is defined as the number of births per thousands of total population. This means that TFR is not – as the crude birth rate – vulnerable to changes in the age structure. This is also the main reason why TFR is to prefer in analyses of the fertility conditions both with regard to time and place, but even with respect to reproduction potentials and prognoses. Crude birth rates – and even *crude death rates* – are comparable measures and valid with regard to natural population development. Instead of crude death rate, *life expectancy* is often used in prognoses. The problem with life expectancy is that it does not exist at regional level within EU. It is, however, possible to estimate it even at regional level but one of the preconditions is that it is possible to calculate the age-specific death rates. Life expectancy is, like TFR, a theoretical construction but with a lesser analytical value from a demographic point of view. It tells more about the living conditions at the moment in the country or the region than about demographic conditions and changes.

Table 2.8: CBR and CDR, by member state and OECD region type 2000

	PU		SR		PR		All	
	Per 1,000							
	CBR	CDR	CBR	CDR	CBR	CDR	CBR	CDR
EU25	10,9	9,8	10,3	10	10,1	10,8	10,6	10,1
AT	10,1	11	9,4	9,4	10	9,5	9,8	9,8
BE	11	10,2	11,4	10,9	12,2	10,7	11,1	10,3
BG	7,7	11,9	8,7	12,8	8	14,2	8,8	13,7
CY			12,4	7,4			12,4	7,4
CZ	7,6	11,4	8,8	10,6	9	10,3	8,7	10,7
DE	9,4	10,4	9,4	10,2	9,2	10,2	9,4	10,3
DK	13,2	11,5	12,7	10,4	11,7	11,5	12,5	11,1
EE	8,3	16	9,1	12,7	10,4	13,8	9,1	13,2
ES	9,7	8,7	9,5	9,3	8,7	10,4	9,5	9,3
FI			10,8	8,6	11,9	10	11,2	9,5
FR	14,5	7,8	12,3	9,2	11	11,3	12,7	9,1
GR	9,5	8,8	9,9	8,7	8,7	10,7	9,3	9,5
HU	7,8	14,7	9,6	13,6	9,7	14,4	9,3	14,2
IE	14,8	7,2			14	9	14,3	8,4
IT	9,7	9,7	9,2	10,5	8,8	10,4	9,4	10,1
LT			10	10,7	10,7	12,3	10,3	11,4
LU			13	8,8			13	8,8
LV	N/A	N/A	8,7	15,1	N/A	N/A	8,7	15,1
MT	N/A						N/A	N/A
NL	12,7	8,9	12,7	8,9	12,1	9,6	12,7	8,9
PL	7,5	10,7	10,3	9,3	10,9	9,9	10,2	9,8
PT	12,1	9,2	11,9	10,7	9,2	13,7	11,4	10,6
RO	7,4	11,1	10,5	11	11,2	12,7	10,4	11,8
SE			11	9,7	9,4	11,2	10	10,7
SI			9	8,7	8,8	10,1	8,9	9,5
SK	7,6	9,2	10,9		10,1	11	10,4	9,7
UK	12,2	10,3	10,8	10,7	10,7	11,6	11,8	10,6

Source: Eurostat Regio database Table d3natmo, xd3natmo.

2.4.4 *Patterns of natural change*

Table 2.6 has already presented an overview of patterns of natural change across rural and urban regions in the EU. Less than 40% of PR regions showed positive natural change between 1995 and 2000. SR and PU regions were roughly equally split between those which showed natural increase, and those which showed natural decrease (although those which showed increase accounted for a larger share of the population).

Natural population change at the member state level, differentiated by OECD type is shown in (Table 2.9). The Eastern European countries generally showed negative natural population development during the second half of the 1990s, as did some “old” EU-member states. Both Germany and Italy had a natural population decrease between 1995 and 2000. In Germany this is probably a result of the low fertility rates in combination with ageing in the former DDR and this explanation is probably also valid for Italy.

Of the OECD types, the PR shows the most negative natural change, both when averaged over the EU27, and at the individual member state level. In 11 out of 22 member states in which the comparison is possible the PR regions had the most negative (or smallest positive) average natural change[40]. At the other end of the scale the SR regions had the most positive overall average natural

[40] Of the 5 member states in which the PR regions had the most positive natural change, 3 (SK, EE, CZ) were new member states, whilst 2 were within the EU15 (AT BE)

increase, and in 9 member states the SR zone showed the most positive natural increase of the three OECD types. The PU group showed a rather mixed pattern – in eight countries the urban regions had the most positive average change, whilst in four they showed the most negative average.

Table 2.9: Natural population change in EU27 1995-2000 distinguishing PU, SR and PR regions

	PU	SR	PR	All
	Natural population change 1995-2000 (% of total population)			
EU27	0.22	0.05	-0.11	0.17
AT	-0.45	0.24	0.72	0.30
BE	0.52	0.30	0.75	0.50
BG	-2.25	-2.09	-3.09	-2.83
CY		2.86		2.86
CZ	-2.12	-0.90	-0.50	-1.03
DE	-0.45	-0.50	-0.56	-0.48
DK	0.68	1.26	0.23	0.68
EE	-3.53	-2.05	-1.67	-2.21
ES	0.38	0.20	-0.65	0.13
FI		1.79	0.62	1.04
FR	3.25	1.52	-0.23	1.72
GR	0.42	0.70	-0.88	0.00
HU	-3.20	-1.51	-1.84	-1.98
IE	4.05		2.58	3.00
IT	-0.03	-0.48	-0.62	-0.27
LT		-0.41	-0.62	-0.50
LU		2.03		2.03
LV*	0.00	-2.30	0.00	-1.02
MT*	(3.04)			(3.04)
NL	1.85	1.81	1.29	1.84
PL*	N/A	N/A	N/A	N/A
PT	1.30	0.56	-2.29	0.30
RO	-2.04	-0.47	-1.00	-0.86
SE		0.87	-0.35	0.04
SI		0.05	-0.24	-0.13
SK	-0.61	0.51	1.39	0.61
UK	1.05	0.10	0.33	0.77

Source: Eurostat Regio database, d3natmo and xd3natmo

* Mt and Pl, no data about births and deaths, Lv has not data concerning all regions (births/deaths)

The interpretation of this pattern probably involves differences in age structure, and life cycle migration. The PR regions tend to have relatively negative rates of natural increase due to their relatively older population and the out-migration of younger people in search of work or higher education (see below). By contrast, the PU and SR regions are the recipients of migrants within the child bearing age groups both from the PR regions and (in the case of SR) the PU (see the discussion of family migration below).

2.4.5 *Total Fertility Rates*

Table 2.10 shows how total fertility rates (TFRs) developed during the 1990s in each of the OECD urban – rural groups of regions[41]. In general it is clear that TFRs declined in all three types of region during the 1990s. (this is the underlying cause of the general ageing of the EU population structure.) However the greatest decline was in the PR group, and the smallest in the PU group. There thus seems to be some evidence of convergence between the three types of areas during the 1990s, resulting in a reversal of the order between the PU, SR and PR region groups. In the beginning of the 1990s the PU regions had the lowest TFR and the PR regions the highest. This is the traditional image of fertility rates in urban and rural areas. By the end of the decade however the order had been reversed – the PU regions had the highest fertility levels while the SR regions had the lowest. This is perhaps surprising as SR regions would generally be seen as the preferred place of residence for young families. However, it may reflect both the fact that most households migrating from PU to SR regions have already completed their families, and that rural women moving to urban areas delay starting a family for career reasons.

Table 2.10: TFR-development between 1990 and 1999 in EU25 with regard to PU, SR and PR. Mean values

	1990	1995	1999
EU25	1.55	1.40	1.43
PU	1.51	1.40	1.46
SR	1.53	1.35	1.40
PR	1.62	1.44	1.44

Sources: Source. Estimations based on Eurostat Regio Database and data from national statistic offices.

2.5 Patterns of migration in rural Europe

In order to provide empirical evidence of the central role played by migration in regional population trends EU25 regional migration patterns for 1995-2000 and 1999-2000 have been estimated[42]. Regression analysis (using the 1999-2000 data) suggests that migration was the prime driver behind regional population change in Europe at this time. The relationship between net-migration and total population development was strong and straightforward; net-migration explains between 83 and 91 percent of the total population development in 1999-2000 (depending on the level of spatial aggregation).[43] The impact of migration on the demographic change is partly direct (in- and out-migration) and partly indirect, (through its impact on the age and gender structure and hence on natural population development).

Looking at country level (Table 2.11, see also Map A2.1) it is obvious that the nations in the former Soviet Union bloc have gone through the worst negative migration development in the last part of the 1990s. Only BG CZ and SL had in-migration surpluses. All other Eastern European countries (except Poland, where the data is too sparse to allow analysis) show negative net-migration figures. Among

[41] See also Note 2 Appendix 2

[42] There are many gaps and inconsistencies in the Eurostat regional migration database, and it has therefore not been possible to create a matrix showing the regions of origin and destination of migrants. Only the net result of in- and out-flows can be established. Net-migration has been estimated using the "demographic equation", in which net-migration is the residual of total population change minus natural population change. This method is very sensitive with respect to the quality of data and the estimates must be interpreted with care.

[43] The R^2-coefficent varies between 0.83 and 0.91 in a cross-section analysis of the four categories Total, PU, SR and PR based on NUTS3 data for the year 1999 and 2000. For the period 1995-2000, the size is around the same but the observations are fewer.

the EU15 countries most show a small positive migration balance. The exceptions are mainly in the south GR, ES, PT, where there are significant levels of net in-migration (presumably driven by the attractiveness of the climate and environment), and Luxembourg, which (for unique reasons relating to its attractiveness as a business and financial centre) boasts the largest positive balance.

Table 2.11: Net-migration in EU27 1995-2000 concerning PU, SR and PR.

	PU	SR	PR	All
	Net-migration 1995-2000 (% of total population 1995)			
EU27	-0.20	1.39	0.46	0.53
AT	1.34	0.06	0.52	0.56
BE	0.44	1.55	2.07	0.62
BG	4.35	0.24	-0.86	0.04
CY		3.76		3.76
CZ	-0.26	0.59	0.08	0.46
DE	0.15	2.51	2.17	1.10
DK	2.50	1.11	0.84	1.41
EE	-4.56	-2.16	-1.94	-2.46
ES	1.62	3.06	0.15	2.10
FI		3.08	-1.27	0.30
FR	-2.02	0.91	1.05	0.09
GR	3.12	2.42	2.40	2.66
HU	-3.12	1.93	-0.22	-0.02
IE	2.09		2.17	2.15
IT	0.45	0.52	0.24	0.46
LT		-2.94	-3.22	-3.07
LU		4.75		4.75
LV*	(-6.86)	(-1.11)	(-3.24)	(-3.49)
MT*				
NL	0.88	2.71	2.38	1.18
PL*	(-0.87)	(0.49)	(0.92)	(0.48)
PT	0.08	4.67	1.15	1.52
RO	-0.44	-0.09	-0.25	-0.20
SE		2.73	-0.78	0.35
SI		0.49	0.13	0.27
SK	0.39	-0.05	-0.47	-0.11
UK	-1.72	1.92	-0.21	-0.71

Source: Eurostat Regio database, d3natmo and xd3natmo.
* Mt and Pl, no data about births and deaths and migration is estimated from total population change data, LV has (births/deaths) data only for some regions, migration is estimated from the existing data.

Any attempt to interpret the pattern of net migration figures by OECD type is complicated by the fact that not only is net migration the balance between two flows (in and out), but in any individual region the in and out flows are likely to be driven by two different spatial processes, a centripetal one (urbanisation) and a centrifugal one (counter-urbanisation), each of which are age selective in their effects. Added to this the inter-regional flows within the member state may be overlain by international flows[44].

One way to make sense of the pattern in Table 2.11 is to compare the three region types across each member state row, identifying the most positive/least negative and most negative/least positive values. The clearest feature which emerges from this is the generally strong position of the SR group. In 15 of 26 countries in which a comparison is possible the SR group has the most positive/least negative migration balance. This is probably mainly because SR regions can receive in-migrants both through urbanisation and counter-urbanisation.

[44] The only way to satisfactorily separate these different processes would be through an analysis of full in-out migration matrices. Unfortunately the available data will not allow this.

In other two OECD types the net migration figure represents a balance between the opposing effects of centripetal and centrifugal movements, and the pattern is more difficult to interpret. In the PU group out-migration seems to dominate in most member states. Thus in 10 countries the net migration balance is least positive or most negative. The largest negative balances are in Hungary and Estonia. (In the latter interregional movements were very much reinforced by a strong outflow to other member states). In five countries (AT, BG, DK, GR, and SK), however, the PU regions show the most positive/least negative migration balances. It is perhaps significant that all of these (except the last) exhibit net in-migration at the member state level.

Net migration is also generally less positive or more negative in the PR regions than in the SR group. In 10 member states this category of region has the least positive/most negative net migration balance. This group includes both EU15 and new member states. In four member states (PL, IE, FR, EE) the PR regions show the least negative/most positive net migration balance. However all of these are questionable, for different reasons, relating to the reliability of the estimates (PL), the small difference between SR and PR figures (FR, EE), or the absence of any SR regions in the member state (IE).

The overall pattern thus seems to be one of net in-migration into the SR regions, at the expense of both PU and PR regions, as a result of both urbanisation and counter-urbanisation patterns, overlain by international flows, predominantly from the new member states into the EU15. All this is subject to a proviso, however. It is evident that some SR regions are genuinely "intermediate" in the sense that they are genuinely rural, but with a relatively high population density. Others contain both sparsely populated areas and medium sized cities. The explanation of positive net migration balances in these two different sorts of SR region will tend to be rather different, (counter-urbanisation in the former, and urbanisation in the latter).

2.6 Age and Gender patterns

2.6.1 *The relative importance of young people in rural Europe*

In Chapter 1 (section 1.3.2) it was noted that one of the conventional views of rural labour markets was that they tended to have an older age profile, due to age-specific migration from rural to urban areas. Table 2.12 shows that between 1995 and 2000[45] the share of population in the 15-24 age group fell in each of the OECD rural-urban region groups. This is apparently the consequence of a simple cohort effect – the cohorts born 1971-1980 were on an aggregated level larger than the cohorts born 1976-1985 (despite a five year overlap). Migratory movements among the youngsters probably disturb this effect to some extent[46], but is seems unlikely that they can explain the difference in size between 1995 and 2000.

[45] The choice of these years is motivated by the fact that to more regions should be omitted if the year 1990 would be chosen instead of 1995. There are, however, still data problems with regard to the age structure from seven of the new Member States for 1995. If the years 1998 and 2002 instead had been chosen data availability would have been slightly better. These years will also be examined in the next report but at a first glance it seems as the result will not be so much different.

[46] See Appendix 2 Note 3

Table 2.12: Share of young people in urban and rural Europe[47] 1995-2000.

Share of young people (15-24)	1995	2000
EU25 (see footnote 22)	13,6	12,5
PU	13,3	12,1
SR	13,9	12,8
PR	13,8	13,0

Source. Estimations based on Eurostat Regio Database.

Somewhat surprisingly, in both 1995 and 2000 there was a slightly larger proportion of 15-24 year olds in the two groups of rural regions than in the predominantly urban ones, or, indeed, in the EU25 as a whole.

Table 2.13 shows the distribution of the population aged 15-24 by member state and OECD urban-rural region type. At the NUTS 3 level at least, there are relatively few countries which show a relative lower percentage of "young workers" in SR or PR regions (compared with the PU regions). Key exceptions are France, Portugal, Bulgaria and Romania.

Table 2.13: % of population aged 15-24, by member state and OECD region type 2000.

	PU	SR	PR	All
	% of total population			
EU25	12.1	12.8	13.0	12.5
AT	11.8	12.0	12.1	12
BE	12.1	12.2	12.7	12.1
BG	15.2	14.9	14.4	14.6
CY		13.9		13.9
CZ	14.1	15.2	15.4	15.1
DE	10.9	11.4	11.7	11.1
DK	11.7	11.7	11.7	11.7
EE	14.3	14.3	14.3	14.3
ES	14.3	14.9	14.6	14.6
FI		12.6	13.0	12.8
FR	13.3	12.9	12.6	13
GR	13.6	14.2	14.1	14
HU	11.3	15.2	14.9	14.4
IE	17.3		17.5	17.5
IT	11.4	12.1	12.5	11.8
LT		14.0	14.0	14
LU		14.2		14.2
LV	14.0	14.0	14.0	14
MT	N/A	N/A	N/A	N/A
NL	11.8	12.4	12.4	11.9
PL	N/A	N/A	N/A	N/A
PT	15.2	14.9	14.8	15
RO	16.7	16.3	16.1	16.2
SE		11.3	11.6	11.5
SI		14.9	14.9	14.9
SK	14.9	14.9	14.9	14.9
UK	12.3	11.8	12.5	12.1

Source: Eurostat Regio database Table d2jan, xd2jan.

The highest percentages of young people (Map A2.2) are in southern Spain, Ireland, the Czech Republic, Slovakia and Slovenia. The lowest proportion is seen in northern Italy – a region

[47] EU 25 excl CZ, EE, LV, LT, SI, SK, PL (age-specific data not available 1995).

characterised by expansion and in-migration but low fertility. In the latter case both the reproduction potential and the supply of labour are dependent on continuous in-migration.

2.6.2 *The relative importance of elderly people*

Table 2.14 shows, however that, on average (across the EU25) almost 17% of the population of PR regions is over retirement age, compared with a little over 16% in the SR regions and under 16% in the PU regions. In the PR regions of FR, GR, ES and PT the proportion of retired people is particularly high at 18-22%. At the other extreme member states such as the UK, BE, CZ, EE, RO, and BG show no evidence of ageing in their rural regions (perhaps for differing reasons[48]).

Table 2.14: % of population aged >65, by member state and OECD region type 2000.

	PU	SR	PR	All
	% of total population			
EU25	15.89	16.30	16.99	16.27
AT	15.24	15.60	15.86	15.64
BE	16.80	17.18	16.42	16.83
BG	15.54	15.06	16.53	16.66
CY		11.22		11.22
CZ	16.54	13.77	14.25	14.12
DE	16.24	16.38	16.05	16.26
DK	15.41	15.41	15.41	15.41
EE	15.73	14.79	15.30	14.96
ES	17.50	16.81	18.64	16.73
FI		N/A	(16.96)	N/A
FR	13.48	16.69	18.72	16.12
GR	15.92	17.34	18.29	16.53
HU	15.22	14.69	14.40	13.48
IE	10.63		11.45	11.21
IT	18.28	18.28	18.47	18.30
LT		12.50	14.42	13.35
LU		14.28		14.28
LV	14.83	14.83	14.83	14.83
MT	12.10			12.10
NL	13.46	14.05	14.33	13.57
PL	N/A	N/A	N/A	N/A
PT	14.31	16.15	21.89	16.46
RO	13.61	13.03	13.25	17.39
SE		15.73	18.06	17.29
SI		13.85	13.85	13.85
SK	12.04	11.50	10.87	11.88
UK	15.38	16.63	15.20	15.71

Source: Eurostat Regio database Table d2jan, xd2jan.

2.6.3 *The children to pensioners ratio*

Table 2.15 shows the ratio of children (0-15) to pensioners (>65). In the majority of EU member states the ratio is highest in the SR regions. The greatest disparities between OECD region types are again in FR, ES, PT, and GR, where the PR regions have a relatively low ratio of children to pensioners. However, the pattern is a complex one, since several member states, both within the EU15 (UK, AT, BE), and the CEECs (RO, HU, SK) have above average shares of children in their PR regions.

[48] In the BE and NL it seems likely that even PR regions may act as dormitory regions for commuters, whilst in the two candidate countries there may well be a life expectancy issue.

Table 2.15: Children to pensioner ratio by member state and OECD region type, year2000

	PU	SR	PR	All
	<15 years/>65 years*100			
EU25	105.4	103.4	101.4	103.9
AT	102.4	112.1	108.3	106.7
BE	103.9	106.3	120.5	104.7
BG	95.9	110.3	96.4	98.2
CY		203.2		203.2
CZ	84.0	123.2	120.2	117.7
DE	96.1	96.7	98.6	96.6
DK	119.4	119.4	119.4	119.4
EE	105.9	123.0	122.4	122.0
ES	80.9	87.0	81.2	83.8
FI		N/A	104.0	104.0
FR	146.1	112.2	95.4	117.0
GR	96.0	89.0	81.8	88.5
HU	101.9	114.2	124.7	116.7
IE	204.1		191.4	194.9
IT	76.2	81.1	78.1	78.4
LT		151.2	144.8	148.2
LU		132.6		132.6
LV	121.2	121.2	121.2	121.2
MT	N/A	N/A	N/A	N/A
NL	137.2	135.5	136.9	136.9
PL	N/A	N/A	N/A	N/A
PT	114.6	104.6	64.6	97.4
RO	105.1	145.2	142.1	140.0
SE		117.2	102.6	107.0
SI		116.3	116.3	116.3
SK	135.9	171.8	196.7	173.8
UK	124.7	112.2	126.1	121.2

Source: Eurostat Regio database Table d2jan, xd2jan.

Table A2.2 (Appendix 2) shows the ratio of young people (15-25) to pensioners. The same member states (FR,ES,PT,GR) have a relatively low ratio in their PR regions on this indicator too.

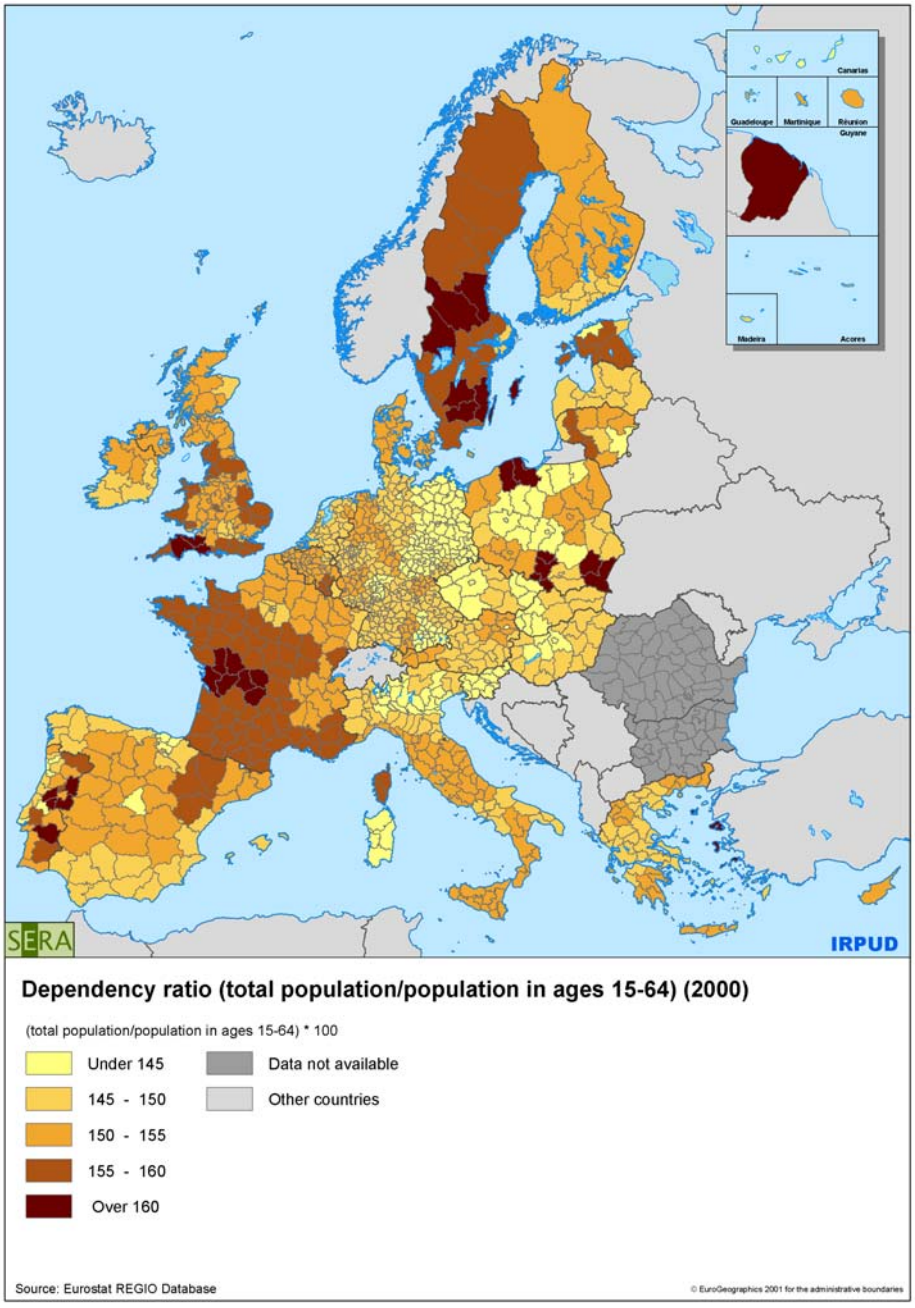
2.6.4 *The dependency ratio*

The dependency ratio (total population divided by population aged 15-64) is an indicator which reflects the relative importance of people outside the normal working age groups. The higher the ratio the greater the proportion of such “dependents” in the population. Table 2.16, Map 2.3, shows that with a few exceptions, rural areas in most member states had higher dependency ratios than urban areas. The ratio is particularly high in PR regions of ES, FR, GR, PT and SE. Some of the differences between member states must reflect differences life expectancy, whilst in some countries (such as the UK) regional patterns reflect retirement in-migration into attractive rural locations as well as the out-migration of young people.

Table 2.16: Dependency rates by member state and OECD region type, year2000

	PU	SR	PR	All
	Total population/population aged 15-64*100			
EU25	148.9	149.8	150.7	149.5
AT	144.6	149.0	149.3	147.8
BE	152.1	154.9	156.8	152.4
BG	143.8	146.2	148.3	146.8
CY		151.6		151.5
CZ	143.7	144.4	145.2	143.7
DE	146.7	147.5	146.8	146.9
DK	149.8	149.8	149.8	149.8
EE	147.9	149.2	156.5	149.8
ES	146.3	147.1	151.0	147.4
FI		147.1	151.6	149.4
FR	149.7	154.8	157.7	153.6
GR	145.4	148.8	160.4	148.0
HU	144.3	145.9	147.8	146.4
IE	147.8		150.1	149.4
IT	147.5	149.5	149.0	147.9
LT		145.8	154.6	149.5
LU		149.7		149.7
LV	148.8	148.8	148.8	148.8
MT	148.1			148.1
NL	146.9	149.5	150.0	147.4
PL	157.5	151.0	145.4	150.2
PT	144.2	149.2	156.3	147.6
RO	138.7	146.5	147.3	146.2
SE		151.9	157.7	155.8
SI		142.8	142.8	142.8
SK	139.7	145.3	146.3	145.4
UK	152.7	153.3	155.4	153.1

Source: Eurostat Regio database Table d2jan, xd2jan



Map 2.3: Dependency Ratios 2000

2.6.5 *Gender structure*

Regional variations in gender structure tend to have complex inter-relationships with age structure. Like the latter they are very much influenced by past and ongoing patterns of (selective) migration. Much of the important variation is manifest at a local level only, and therefore some of the key issues discussed in the literature do not unfortunately show up very clearly in an analysis based upon NUTS 3 data. However interpretation of the patterns revealed by Table 2.17 and Table 2.18 will need to take account of two forms of migration, both of which are present, but in varying relative proportions, in most EU member states.

In the northern member states (especially SE, FI), and neighbouring Norway, the populations of the more sparsely populated and peripheral regions (like the rest of Europe[49]) are characterised by a slightly larger share of women than men (overall). There is often, however a skewed gender structure in the age groups 20-39. The pull factor of a more female-friendly labour market in urban areas and superior educational possibilities for young females are important drivers of a gender differentiated migration pattern.[50]. Although men also participate to some extent in the urbanisation process, women tend to move more readily, and earlier in the life cycle, and this results in a skewed gender structure in the 20-35 band[51]. In Southern Europe – e.g. Italy and Spain – the less densely populated areas also have net outflow of people, but here it extends into the 35-44 age group[52]. In some of the Eastern European member states, and the Baltic countries[53], selective rural-urban migration patterns are strong enough to distort the gender structure of the total population.

The problem of "masculinisation" is undoubtedly more serious at a local, sub-NUTS 3 level in many EU countries. Blekesaune (1999 p25) has noted the relatively high proportion of single farmers in parts of rural Norway. He argues that not having a partner (who can contribute to household income by taking off-farm work) puts such farmers in a more vulnerable economic position.

The second form of migration is that of young families from the urban regions to the countryside (usually SR type regions) in search of higher levels of amenity and quality of life. This "family migration" has the opposite effect on the gender structure to that described above. This tends to be the dominant flow in more accessible and wealthy parts of the EU[54].

One important effect of the first of these migration patterns is that the reproduction potential of the population in sparsely populated and peripheral regions is eroded, as fertile women are underrepresented compared to men. This tends to accentuate the problem of declining TFRs in the such areas. A more subtle impact relates to the role of human capital in endogenous growth processes. Clearly regions with a relatively young and well educated population have an advantage over those in which there is a deficit in the key age groups[55].

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49 Since women live slightly longer (on average) than men, the share of women in the total population is generally a little over 50%.

50 Foss, O., and Juvkam, D.,, 'Patterns of Demographic Ageing and Related Aspects in the Nordic Peripheries'. Nordregio Report 2005:2.

51 See e.g. Bengtsson, T., and Johansson, M., 'Internal Migration'. In Bengtsson, T., (ed) Population, Economy and Welfare in Sweden. Springer Verlag, 1994; Bengtsson, T., and Johansson, M., 'The New Migration Transition – The Case of Post-Industrial Sweden' in Lundh, C., (ed), 'Population, Economy and Welfare'. Scandinavian University Press, 1995; Vandermotten , C., et.al., Migrations in Europe. The Four Last Decades. Società Geografica Italiana, Rome, 2004.

52 Vandermotten, C., et.al, o.c..

53 See e.g. ESPON, 1.1.2 and .1.1.4. o.c.

54 See e.g. See e.g. ESPON 1.1.4 "Spatial effects of demographic trends and migration", www.espon.lu; Champion, T. & Hugo, G (eds.), 'New Forms of Urbanisation Beyond The Urban-Rural Dichotomy. International Union of the Scientific Study of Population'. Ashgate Publishers, England. 2004. Kontuly, T., 'Contrasting the Counterurbanisation Experience in European Nations'. In Boyle, P., and Halfacree, K., 'Migration into Rural Areas. Theories and Issues': John Wiley and sons. 1998. Concerning the development in Sweden this is also an obvious phenomenon, see Johansson, M., 'The Crisis of Small and Medium-Sized Towns – Dual Sweden Revisited?'. Paper presented at the 14th Nordic Demografic Symposium in Tjöme, Norway, May 3-5, 2001. See also Westlund, H, 'An Unplanned Green Wave: Settlement patterns in Sweden during the 1990s'. Environment and Planning A, Vol.34, 2002.

55 This is a similar argument to that of the segmented labour market theory popularised from the early 1970s, in which positive and negative feedback processes were central ingredients. See e.g. Doeringer, P., and Piore, M., o.c.; Vietorisz, T., & Harrison, B., o.c.. Myrdal, G., o.c., talked already 1957 about "spread" and "backwash"

An analysis of NUTS 3 data from the Eurostat Regio database (Table 2.17) shows that at the EU27-level there are no significant differences between the OECD urban-rural types in terms of the gender structure of the population as a whole. Only 0.7% separates the average for the PR regions (50.8%) from the PU regions (51.5%).

Table 2.17:Gender structure 2003, EU27 by member state and OECD region type

	PU	SR	PR	All
	Share of females (% of total population 2003)			
EU27	51.5	51.2	50.8	51.3
AT	52.3	51.8	50.9	51.5
BE	51.1	51.1	50.9	51.1
BG	52.6	51.5	51.1	51.4
CY		50.9		50.9
CZ	52.4	51.2	50.6	51.3
DE	51.4	50.9	50.5	51.1
DK	51.3	50.5	50.1	50.5
EE	55.0	53.8	53.2	53.9
ES	51.3	50.7	50.5	50.9
FI		51.8	50.7	51.1
FR	51.8	51.3	51.1	51.4
GR	51.5	50.6	49.5	50.5
HU	54.4	52.0	52.2	52.5
IE	51.4		49.8	50.3
IT	51.6	51.5	51.3	51.5
LT		53.7	52.8	53.3
LU		50.6		50.6
LV	55.5	53.4	53.0	54.0
MT	50.7			50.4
NL	50.6	50.3	50.2	50.5
PL	53.1	51.1	50.8	51.2
PT	51.9	51.3	51.5	51.7
RO	53.4	51.1	50.9	51.2
SE		50.9	50.2	50.5
SI		51.3	51.0	51.1
SK	52.7	51.3	51.3	51.5
UK	51.5	51.2	51.1	51.4

Source: Eurostat Regio database, d3avg and xd3avg. For MT and UK, data from year 2000 have been used.

There are, however some larger differences between member states, and between OECD types within these member states. The largest gender inequalities are to be found in the Baltic States and in some of the eastern European countries. Thus in Latvia, Estonia and Lithuania the share of females is 54.0%, 53.9% and 53.3% respectively. If the OECD urban-rural types are considered separately the greatest imbalance is in the Latvian PU region of Riga, where 55.5% of the population is female. All five Estonian regions are all among the top 20 in terms of gender inequality, the highest female share (55%) being in the PU region of Kirde-Eesti. Another PU region with a high share of females is Budapest in Hungary, where 54.4 percent of the population are females.

In no EU member state is less than 50% of the population female. At the member state level the most "balanced" populations (in terms of gender) are those of Ireland, Malta, Greece, the Netherlands and Sweden. However when the OECD types are considered separately, two of these countries (Greece and Ireland) have more males than females in their PR regions. The region with the lowest share of females is Evros in Greece with a female share of 47.6 percent in 2003. A number of other Greek regions (mostly within the PR group) have a larger male than female population.

effects with regard to regional convergence and divergence. See also Massey, o.c, and Massey. D., 'The Spatial Division of Labour. Social Structures and Geography of Production'. MacMillan, 1995.

As can be seen in Table 2.18[56] the female share of the 20-39 age group is often slightly lower than in the population as a whole, due to the fact that (unlike the ratio for the total population - Table 2.17) higher female life expectancy has no effect. In most cases the level is below 50 percent and the lowest figures (on a country level) are to be found in Germany and Malta.

Table 2.18: Gender structure in ages 20-39, 2003, EU27 2003 by member state and OECD region type.

	PU	SR	PR	All
	Share of females in ages 20-39 (% of total population in ages 20-39 2003)			
EU27	49.3	49.3	49.5	49.4
AT	50.1	49.1	49.0	49.3
BE	49.3	49.5	49.4	49.3
BG	50.0	49.2	49.2	49.3
CY		51.5		51.5
CZ	50.3	48.8	48.7	49.0
DE	48.8	48.4	48.3	48.6
DK	49.1	49.1	49.1	49.1
EE	51.4	50.4	49.5	50.4
ES	49.4	49.2	49.0	49.3
FI		49.0	48.9	48.9
FR	50.7	49.9	49.6	50.1
GR	50.4	49.3	49.2	49.7
HU	50.6	49.2	48.5	49.1
IE	50.1		50.0	50.1
IT	49.2	49.4	49.5	49.3
LT		49.3	49.9	49.6
LU		49.3		49.3
LV	50.1	50.1	50.1	50.1
MT	48.6			48.6
NL	49.2	48.9	48.4	49.2
PL	N/A	N/A	N/A	N/A
PT	50.3	50.0	50.2	50.2
RO	51.7	49.0	48.9	49.2
SE		49.7	48.5	48.9
SI		49.0	49.0	49.0
SK	50.8	49.1	49.1	49.3
UK	48.8	48.9	49.2	48.9

Source: Estimations based on Eurostat Regio database d2jan, xd2jan, d3avg and xd3avg. N/A (PL) indicates that it is not possible to estimate the shares as a consequence of absence of age-specific data. DK and LV are estimated from age-specific national data. EE, LT and UK are estimated from the population shares at NUTS3 level year 2000.

In all but four of the member states for which there is data the female share of the 20-39 age group is larger in the PU regions than in the PR regions. The regions with the highest proportion of females in this age group are the PU regions of Estonia and Romania. This is a reflection of the relatively high proportion of women in the total populations of these member states, accentuated by rural-urban migration.

In only three member states (IE,LV,PT) is the average percentage of females in the PR regions more than 50%. Four member states (CY, LV, EE, PT) have, on average more women than men in their SR regions.

[56] One of the problems with the analysis of age-specific gender structures is that they are recorded at NUTS2-level only. Apportionment to constituent NUTS 3 regions has been carried out on the basis of shares of total population. It is currently not possible to estimate Poland as a consequence of absence of age-specific data. Denmark and Latvia are estimated from national data. This is also true for Cyprus that consists of only one NUTS3 region that is characterised as SR.

2.7 The likely pattern of future change in rural Europe

2.7.1 *Sustainability from a demographic point of view*

Sustainable demographic development implies a balanced process where no sharp breaks occur. Rapid population increases or decreases are considered inconsistent with a sustainable population development. Other ingredients are that the population structure – e.g. age and gender structure – will not be disturbed in the development process, the reproduction potential is not eroded, that natural population development will not be negative for a long time, and that migratory movements are balanced with respect to different demographic categories.[57] It must, however, be kept in mind that sustainable development is not synonymous with a stagnant population, or a static population structure, neither with increasing population. Instead – even areas with population increase can be in the risk zone as a consequence of low fertility rates, ageing and low reproduction potentials[58]. Furthermore population decrease can be consistent with sustainable population development – it depends on the effects of the changed population size and structure. Depopulation is not, however, in general consistent with sustainability as the base for a future balanced demographic development is thereby eroded[59].

2.7.2 *A typology of regions according to sustainable population development*

In order to classify regions with respect to total population change, natural population change and migration, six different combinations are defined (Table 2.19). In the right hand column, a description of each of these 6 situations is provided (and these are expanded below).

Table 2.19: Schematic typology with regard to sustainable demographic development

	PT (Total Pop. change)	PN (Natural change)	PM (Migra-tion)	
1	PT>0	PN>0	PM>0	**Double positive regions** - In-migration and young population/"high" TFR. High sustainability both in short and long term. The most favourable case
2	PT>0	PN>0	PM<0	**Growth regions with out-migration** - Out-migration and young population/"high" TFR. Short term – sustainability. Long term – eroding sustainability because of lopsided age structure (out-migration).
3	PT>0	PN<0	PM>0	**Growth regions with natural decrease** - In-migration of people with low TFR. Natural population decrease because of lopsided age structure and/or low TFR. Dependent on in-migration. No sustainability in long term – weak reproduction potential
4	PT<0	PN<0	PM>0	**Declining regions with in-migration** - In-migration and old population/low TFR. In-migration of elderly people and/or singles, low reproduction potential. Dependent on in-migration. Low sustainability both in short and long run.
5	PT<0	PN>0	PM<0	**Declining regions with natural increase** - Out-migration but still young population/"high" TFR. Traditionally high fertility regions. Falling TFR -> low sustainability
6	PT<0	PN<0	PM<0	**Double negative regions** - Out-migration and old population/low TFR, depopulation. No sustainability both in short and long term. The worst case.

Source: Typology developed in ESPON 1.1.4

[57] *See ESPON 1.1.4, o.c.*

[58] This is the case in "dynamic" regions as e.g. Northern Italy, Berlin and some parts of the "Pentagon". These kinds of regions are often dependent of a continuous inflow of people to avoid a future "population crisis". As has been shown, many of these regions are today also out-migration areas that accentuate the problems associated with "relative depopulation".

This typology has been applied to the NUTS 3 regions of the EU25 using data for 1995 and 2000, in order to examine the distribution of regions across the three OECD urban-rural types and the 6 types of population sustainability. Table 2.20 gives the distribution of NUTS 3 regions, whilst Table 2.21 shows the distribution of population. Map 2.4 shows the distribution of the six types.

Table 2.20: A typology of urban and rural regions with regard to sustainable demographic development 1995-2000 (% of regions)

	Tot	PU	SR	PR
	Per Cent of Regions			
1 Double positive regions	30.1	32,3	33.2	22.8
2 Growth regions with out-migration	7.6	6.3	9.0	7.8
3 Growth regions with natural decrease	22.5	15.2	25.9	26.7
4 Declining regions with in-migration	11.1	9.1	12.1	12.4
5 Declining regions with natural increase	10.0	12.6	8.7	9.1
6 Double negative regions	18.7	24.5	11.1	21.2

Source. Estimations based on Eurostat data

Table 2.21: A typology of urban and rural regions with regard to sustainable demographic development 1995-2000 (% of population)

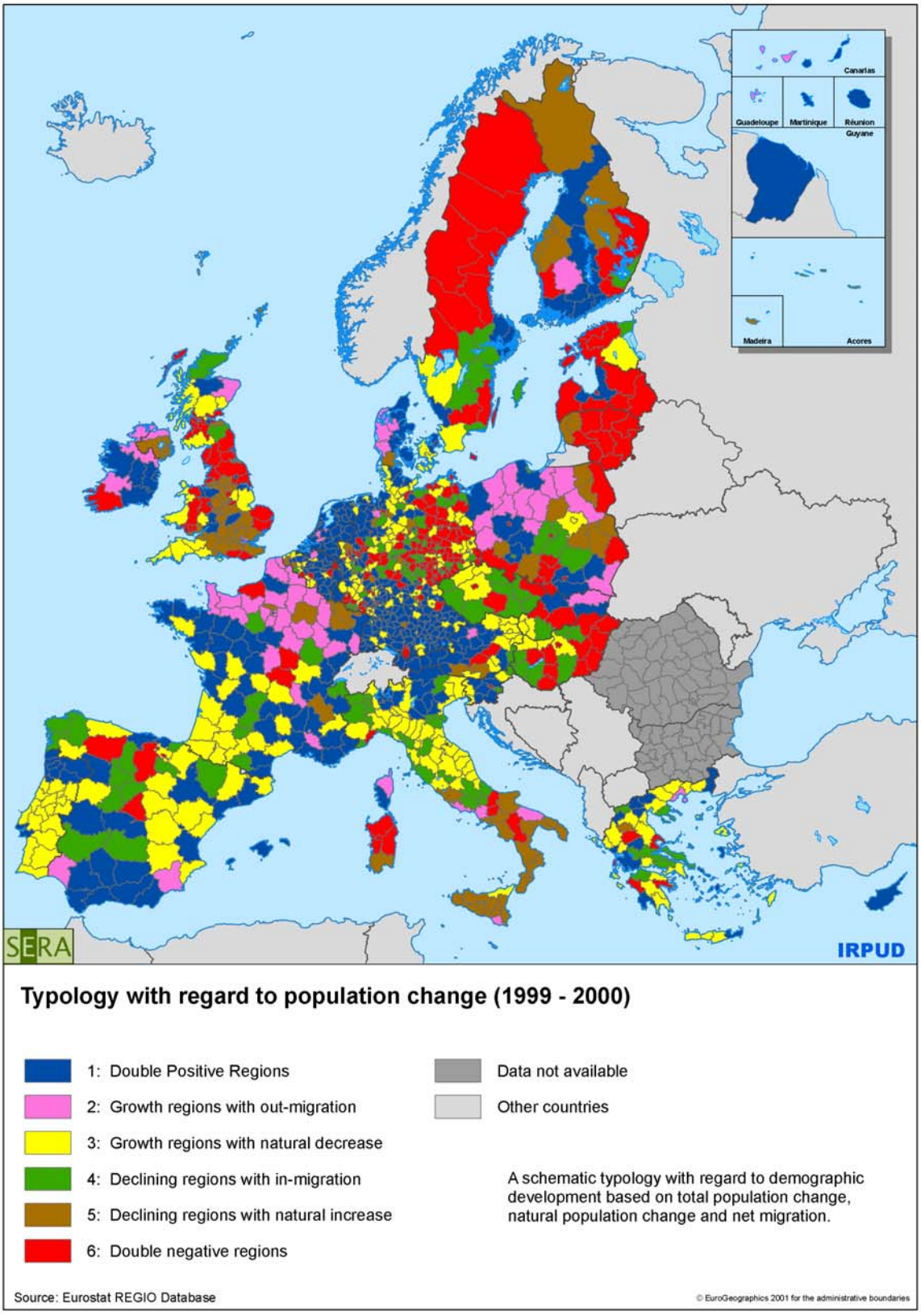
	Tot	PU	SR	PR
	Per Cent of Population			
1 Double positive regions	31,9	35.4	34.3	20.6
2 Growth regions with out-migration	13,6	12.2	15.7	13.0
3 Growth regions with natural decrease	18,0	13.4	19.9	24.2
4 Declining regions with in-migration	9,2	6.9	10.8	11.0
5 Declining regions with natural increase	12,3	14.1	10.6	11.5
6 Double negative regions	15,0	17.8	8.7	19.8

Source. Estimations based on Eurostat data

- **Type 1: Double Positive Regions**

The first three categories of region have all experienced a positive population development in the sense that the population has increased. The most favourable case is the first one, where both natural population change and net-migration were positive and reinforced each other, with the result that population increased. The regions in Type 1 do not necessarily have the fastest population increase – since this is a function of both natural population change and net-migration and their development paths. From a sustainable point of view this case is, however, the most favourable one and the only one that is sustainable in the long term. Long-term sustainability depends to a great extent on the relationship between natural population change and in-migration.

[59] Traditionally out-migration areas such as Northern Sweden, parts of Finland Northern Spain, Southern Portugal and Central France are in the risk zone of be dying-out regions in the future as a consequence of the population structure.



Map 2.4: A typology with regard to population change 1995-2000

Table 2.20 and Table 2.21 show that type 1 is the most frequent type (both with regard to the number of regions and size of population), with the exception of PR, where Type 3 (Growth regions with natural decrease) is dominant. Map 2.4 shows that Type 1 is frequent in the Benelux countries, south-west Germany, western France, northern Italy, around metropolitan areas in the Nordic countries, and regions with good climate and amenities – such as the southern part of Spain. As was indicated above this type is the most favourable one from a long-term sustainability point of view. These rural areas have the same preconditions for a sustainable population development as the urban ones. A larger proportion of SR regions and a larger proportion of SR population is in this favoured position than is the case for PR regions.

- **Type 2: Growth regions with out-migration**

In the second type, the positive effect of natural population change neutralises a negative migration effect. Even in this case, preconditions for a sustainable population development are good – at least in short term - as the population base is still favourable because of natural population increase. In the longer term, one of the likely results of out-migration is a drain of younger people, a skewed age structure, a knock-on effect on reproduction potential, and ultimately a weakening of sustainability.

Type 2 is not frequently represented among either in urban or rural regions, accounting for 6-9% of the regions. This perhaps not surprising, natural increase is rarely as large or larger than change due to net migration. Type 2 regions are concentrated in Poland and central parts of France (Map 2.4).

- **Type 3: Growth regions with natural decrease**

The third type shows the opposite phenomenon. Here, population increase is dependent on in-migration and natural population change is negative. This phenomenon is often the case in “dynamic” regions where many households, especially among the in-movers, consist of singles and small households. The result is weak and eroding reproduction potentials and a low sustainability in long term. This phenomenon is evident, for example in the expanding parts of Northern Italy.

Both SR and PR regions are well represented in Type 3. These regions are similar to those of Type 1, but with lower fertility, sometimes higher mortality rates, perhaps associated with a skewed aged structure[60]. Type 3 areas are concentrated to the Southern parts of Europe.

Types 4-6 are characterised by population decline, though each for slightly different reasons.

- **Type 4: Declining regions with in-migration**

Type 4 is characterised by in-migration coupled with negative natural population change, and is typical for regions which are attractive (in terms of settlement patterns and amenities) for the in-migration of elderly people, but also for areas that are dynamic with a lot of singles and highly educated people among the in-migrants. This results in a negative natural population development that is large enough to counteract the positive sign of net migration. These regions are similar to those of Type 3, which are distinguished by their positive overall balance. Type 4 regions are in a problematic situation in the long term with regard to sustainable population development. The skewed age structure in combination

[60] It must also be kept in mind that many rural regions which traditionally had high fertility rates have experienced a sharp during the 1990s. The fertility gap between urban and rural areas has diminished drastically during the last decades although the gap is not yet completely closed. The lowest levels are to be found in Southern and Eastern Europe (much of which is rural). The highest fertility rates are to be found in the Northern parts of Europe and Ireland – also countries with large rural populations. The pattern of TFRs is thus rather difficult to interpret.

with low fertility rates will eventually result in accentuated depopulation. Where retirement migration is present it will exacerbate the situation.

Rural areas are relatively common in Type 4. Type 4 regions are predominately localised to Southern Europe but even in Eastern Europe there a lot of regions in this category.

- **Type 5: Declining regions with natural increase**

Type 5 regions are similar to Type 2, combining negative net migration with positive natural population change, but in this case the balance is negative. In the long run there is, an obvious risk for this group that migration induced changes in age structure and fertility will result in natural change turning negative, and shifting the regions into Type 6.

Perhaps surprisingly rural regions (especially SR regions) are not common in this category. Type 5 regions are predominantly found in peripheral areas of the EU - parts of Finland, eastern Poland, southern Italy and Spain and in some parts of Scotland.

- **Type 6: Double negative regions**

Type 6, where the natural population decrease reinforces the effects of out-migration is the least favourable in terms of sustainability. This is the infamous “vicious circle” or “negative spiral” process. This is also the worst case and these regions are in a very bad situation with unsustainable population development as a key component of complex development problems. The chances of changing this process are not good.

Almost one fifth of the regions in EU25 are in this situation and the PU and PR groups are particularly implicated. In the PR group 20% of regions are of this type, compared with around 10% in the SR group. Map 2.4 makes it clear that many of these Type 6 regions are located in the European periphery. Large parts of Sweden, Baltic States, Hungary, Northern Spain and even Northern England are in this category.

2.8 Conclusion

Rural regions in Europe are very far from homogenous in terms of population trend and the relative importance of the components of change. In terms of geographical patterns of change three very broad generalizations may be made:

(i) Of the three OECD region types, the SR category has shown the most positive demographic trends in recent decades, being the beneficiary of migratory movements from both the PR (urbanisation) and the PU (counter-urbanisation). The former has tended to be dominant in the more sparsely populated regions of the Nordic countries, and in many of the New Member States. The latter has become the dominant flow in the more densely populated parts of the EU15.

(ii) In terms of age structure there seems to be a north-south contrast, with southern member states exhibiting the greatest signs of demographic ageing in their rural regions.

(iii) In terms of gender, the most important pattern is the “masculinisation” of the more sparsely populated Nordic PR regions, and the less developed PR regions of the New Member States, due to the out-migration of younger women.

In terms of rural labour markets this chapter has very much focused upon the supply side. However many rural development measures (apart from those specifically targeted on farmers) are addressed

to demand side issues, (how to stimulate employment diversification, entrepreneurship, innovation etc). Nevertheless such indirect (demand side) approaches may, for instance, contribute to stemming the tide of youth migration, or encourage return migration at later stages of the family/life cycle. These are key strategic questions for rural development policy. At the same time it must be recognized that benefits are likely to be long-term rather than immediate.

3 ECONOMIC ACTIVITY AND UNEMPLOYMENT IN RURAL EUROPE

3.1 Introduction: The role of Economic Activity, Employment and Unemployment Rates in Rural Labour Markets

This chapter deals with issues of the participation of people in the economy. This participation is affected by the interaction of and labour supply (which is associated with demographic processes including migration, as discussed in chapter 2) and regional labour demand (which is influenced by factors such as structural change, local entrepreneurship, and inward investment). It is important to view unemployment/employment or economic activity within a region alongside the demographic change in the regional labour market. For example the unemployment rate may under-state the seriousness of the economic problem in a rural region if there are high rates of out-migration and low rates of natural increase. This chapter sets out some definitions, then considers activity rates, employment rates, unemployment rates and youth and long-term unemployment. It is followed by a brief discussion and the presentation of a simple typology of rural regions (based upon the same principles as the demographic typology presented in Chapter 2) based upon the relationship between activity, employment and unemployment rates. Due to small sample sizes, sub-regional ILO unemployment rates can be volatile and estimates should be taken as indicative rather than precise.

The chapter indicates that labour market performance varies considerably at national and regional levels. Specific results are that urban (PU) areas have higher economic activity rates than rural regions; and southern and eastern Member States and peripheral regions (generally) have lower activity rates. Employment rates are also high in PU regions and that the gap with rural (PR and SR) regions appears to be widening over time. Unemployment rates are higher in rural regions, and the differences between male and female rates are highest here. Relative differences in regional unemployment rates are higher than differences in employment rates and economic activity across the EU27.

3.2 Defining economic activity, inactivity and unemployment, and average rates for rural Europe

The analysis uses data extracted from the European Union Labour Force Survey (LFS), covering the 25 EU Member States plus Bulgaria and Romania. The LFS's target population is made up of all persons in private households aged 15 and over. Economic activity rates are usually expressed as a percentage of the working age population (WAP), defined, for this study (in order to correspond with Eurostat age bands) as those aged 15-64. The WAP comprises the 'economically active' and 'economically inactive' populations. The *activity* rate is measured as the proportion of 16 to retirement age people who are in employment, registered unemployed, or seeking to enter the labour market as a percentage of the WAP. The economically *inactive* population is defined as: "students, long term sick, permanently disabled, retired people, national armed services and those not seeking to enter the labour market."[61]

It should be noted that different institutional factors may influence unemployment and inactivity rates. For instance, a person who is nearing retirement age in the UK and who loses their job may move

[61] Europa Urban Audit http://europa.eu.int/comm/regional_policy/urban2/urban/audit/edinburgh/edinbu04.htm

from employment straight to disability benefits (and so be counted as moving from employment to being inactive). However, in Germany a similar person may move from employment to unemployment benefits (and so still be counted as being active), before moving to retirement (and being counted as inactive) some time later. So initially this person would be counted as inactive in the UK, but as active in Germany. Hence the employment rates are also shown below (which helps overcomes this problem, but which may not reflect the potential short-term labour supply as well as activity rates).[62]

Its worth remembering, of course, that *intra*-regional variations in activity and employment rates are generally thought to be at least as important as *inter*-regional differences. Thus Green and Hardill write, "Rural areas are diverse. As 'rural' and 'urban' areas have become more similar in employment terms, variations within rural areas tend to be greater than those between rural and urban areas."[63] Unfortunately, due to constraints of data, time and space it is not possible to consider such local variations in this report.

3.3 Economic activity rates

As noted in Section 1.3.2 it is often assumed that economic activity rates, especially those of women, are lower in rural regions. Table 3.1 provides broad confirmation of this, in that urban (PU) regions have the highest average economic activity rates (70.3%) while more rural (PR and SR) regions have slightly lower rates (69.3% and 68.2% respectively).

Table 3.1: Economic activity, inactivity and unemployment estimates, EU25, 2001

	Economically Active 000s	Economically Inactive 000s	Activity Rate (%WAP)	Unemployment Rate
PU	92,752	39,233	70.3	6.5
SR	73,016	34,111	68.2	8.9
PR	41,387	18,371	69.3	8.9

Source: Eurostat Regio database table UN3WPOP

3.3.1 *Rural-urban patterns*

Table 3.2 shows economic activity rates by Member State and urban/rural region type. (Maps A3.1 to A3.3 in Appendix 3 show graphically the regional economic activity rates (total, male, female and those under 25 years) across the EU27).

Generally speaking, southern and eastern Member States tend to have lower activity rates than those in the north and west. The highest rates are in Denmark (81%), Sweden (79.1%) and the UK (76.7%), and Portugal, Netherlands and Finland (around 76%) whilst the lowest are in Malta (59.5%), Hungary (59.9%) and Italy (61.5%). As stated earlier, economic activity rates across the EU27 were, on average, slightly lower in both SR and PR regions of the EU25 (at approximately 68% and 69%) compared to 70% in PU areas. Only in Portugal, Germany, Slovakia, Greece, Poland and Romania did the PR regions have higher activity rates than the national averages.

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62 See Funk, L (2004) Employment Opportunities for Older workers: A comparison of selected OECD-Countries. In: CESifo DICE Report Journal for Institutional Comparisons, 2, pp 22-33.

63 Green and Hardill (2003) op cit., p. ii.

Table 3.2: Economic activity rates by member state and rural/urban type, EU27*, 2001

	PU	SR	PR	All
	% of Working Age Population (WAP)			
EU25	**70.3**	**68.2**	**69.3**	**69.3**
DK	82.3	81.5	79.5	81.0
SE		80.9	78.2	79.1
UK	76.4	79.3	75.8	76.7
PT	75.1	78.0	78.5	76.6
NL	76.8	74.8	74.7	76.4
FI		79.7	73.1	75.6
RO	62.8	73.7	77.1	74.3
CY		72.7		72.7
EE	71.8	72.7	69.5	72.2
DE	71.4	73.0	73.6	72.2
AT	73.0	72.2	71.0	71.8
CZ	76.8	71.0	70.4	71.6
LT		73.8	68.6	71.5
SK	75.5	69.7	71.5	70.6
IE	74.8		67.8	69.9
SI		70.7	69.2	69.8
LV	69.5	69.5	69.2	69.4
FR	70.0	68.7	67.6	68.9
ES	67.9	64.0	61.2	64.9
BE	64.7	64.1	63.2	64.5
LU		64.4		64.4
GR	62.0	64.7	64.6	63.5
PL	57.5	61.4	67.8	63.1
BG	69.6	63.6	61.6	63.1
IT	63.1	60.3	58.7	61.5
HU	64.6	60.3	57.9	59.9
MT	59.5			59.5

*Excluding French Dependencies
Source: Eurostat Regio database table UN3WPOP

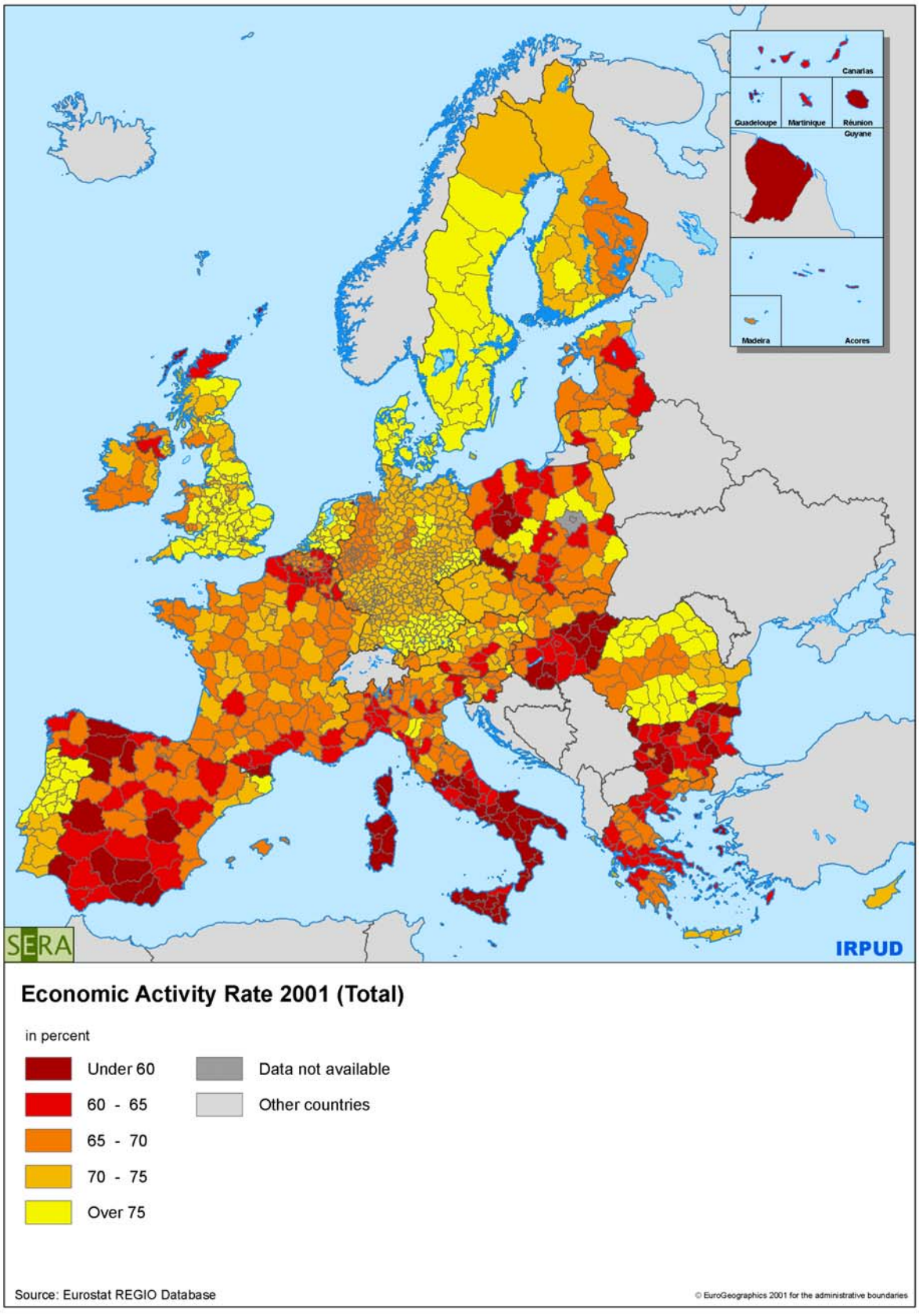
In general, regions close to larger economic centres, like the Pentagon, seem to have relatively higher activity rates than peripheral regions (in, for example: southern Italy, northern Sweden, rural northern UK, eastern Hungary, eastern Finland, parts of Spain (Map 3.1)). This impression is confirmed in Table 3.3, where PR regions with a higher index of peripherality[64] show a lower economic activity rate than less peripheral PR regions as well as SR and PU regions. Also the more accessible PR regions seem to have similar activity rates to the PU regions (Table 3.1).

Table 3.3: Economic activity rates in peripheral and accessible PR regions

	PR (Accessible)	PR (Peripheral)
	Econ. Active as a % of WAP	
Economic Activity Rate 2001	69.7	66.2

Source: Eurostat Regio database table UN3WPOP

[64] See Chapter 8.



Map 3.1: Economic activity rate 2001 (total)

3.3.2 *Recent trends*

Trends in economic activity over time are summarised in Table 3.4. Across the EU25, the economic activity rate has been stagnant in both rural region types but has increased by 1.3% in PU areas over 1991-2001[65].

Table 3.4: Change in economic activity rate EU25 1991-2001

	Change in EA Rate 1991-2001
PU	+1.3%
SR	0%
PR	0%

Source: Eurostat Regio database table WPOP_Q2

The change in the number of working age people economically active by Member State is shown in Table 3.5. There was a change in LFS methodology in 2001, therefore changes are shown from 1991-2001 and from 2001-2003. Where there were substantial missing data for a Member State or for their rural/urban regions, analysis has not been performed.[66] This shows that during 1991-2001 Ireland, the Netherlands, Greece and Spain experienced high growth in the numbers economically active. In general, there were no very large falls, with the exception of Poland between 2001 and 2003, which was mostly due to a sharp fall in PR regions, probably linked to high out-migration in search of employment in other Member States..

Table 3.5 : Change in number of economically active people, 1991-2001, 2001-2003, EU25

	PU		SR		PR		All	
	% change		% change		% change		% change	
	91-01	01-03	91-01	01-03	91-01	01-03	91-01	01-03
AT		-3.6		1.8		2.2		0.7
BE	9.3	2.2	6.8	2.0	14.5	0.3	9.1	2.1
CZ	0.8	0.8		-0.1		-0.9		0.0
DE	0.9	0.3	1.4	0.8	1.8	0.3	1.2	0.4
DK	-1.1	0.5	-1.5	-0.4	-1.3	-0.7	-1.3	-0.2
EE		-4.9		1.5		-5.7		0.0
ES	14.6	10.8	13.6	10.0	5.7	5.5	12.7	9.7
FI			5.5	0.7	-3.4	-0.8	-1.5	-0.2
FR	6.4	-3.2	6.9	3.9	5.9	6.3	6.6	2.1
GR	19.7	3.6		1.5		4.6	19.7	3.4
HU		0.9		2.9		0.7		1.5
IE	35.3	2.3			33.9	6.0	34.3	4.8
IT	3.6	0.9	-2.0	2.4	0.2	1.8	0.9	1.6
LT				-1.4		-0.1		-0.9
LU			12.6				12.6	
LV		7.0		-0.9		-1.4		1.6
MT		0.7						0.7
NL	20.3	2.2	25.5	3.2	26.0	-1.6	21.1	2.3
PL		-4.8		-2.2		-17.4		-10.8
SE			4.0	0.4	-5.2	1.0	-1.4	0.8
SI				-2.6		-0.7		-1.5
SK		-1.2		0.0		-0.8		-0.2
UK		-2.3		-1.6		1.2		-1.6

Source: Eurostat Regio database tables WPOP_Q2, UN3WPOP

[65] However, there is a substantial problem of missing data, relating to economic activity at NUTS 3 level for many Member States in the 1990s. Therefore these figures represent only NUTS 3 regions for which data were available, and should be treated with caution.

[66] Because of this figures for Cyprus and Portugal were omitted. For some other Member States only 1991-2001 or 2001-2003 data was available.

3.3.3 *Gender and age differences*

Comparison of male and female economic activity rates between the rural/urban region types shows a greater difference for males than females (Table 3.6). Overall male activity rates were around 77% in PR and SR regions compared to nearly 80% in urban (PU) regions. For females the rates were virtually the same for PU and PR regions (61%), but slightly lower in SR regions (rates for each Member State, by gender and type of region, are shown in Tables A3.1 to A3.3 in Appendix 3.)

Table 3.6: Economic activity rates (%) by gender, EU25, 2001

	EA rate (male)	EA rate (female)	EA rate (total)
PU	79.8	61.4	70.3
SR	77.4	59.5	68.2
PR	77.2	61.3	69.3
Total	78.5	60.7	69.3

Source: Eurostat Regio database table UN3WPOP:

Traditionally female activity rates have been lower in rural areas. Females working on farms may not be counted as in the labour force, and also there may be fewer paid employment opportunities compared with more urban areas. This may commonly lead to a “discouraged worker” problem - in which significant numbers of women do not actively look for work and are not counted as unemployed (so they are counted as being inactive).

The share of the economically active who are under 25 (Table A3.3 Appendix 3) shows a fundamentally different picture, with low shares in areas such as France, Northern Italy, Greece, but also Sweden and the Baltic states. This may be partly due to a high percentage of students in these Member States, although this is not clear. Rates are generally higher in Ireland (which has a relatively ‘young’ demographic structure), southern Spain, Slovakia, the Netherlands, some parts of UK and Poland and some rural parts of Finland.

3.4 Employment rates

3.4.1 *Rural – urban patterns*

Employment rates are measured as people in employment taken as a proportion of the working-age population (in other words the numbers employed from the European Union LFS divided by the total working age population - see definitions above). Regional and sub-regional employment rates vary significantly between areas and over time. Table 3.7 shows that employment rates are broadly similar, but not identical to, the patterns of activity rates. Overall employment rates for PR and SR regions (63 and 61%) are lower than in PU areas (65%).

The Member States with the highest employment rates were Denmark, Sweden, the Netherlands and Portugal, and the lowest rates overall are in Bulgaria, Poland and Malta. Differences in employment between urban/rural region types are particularly pronounced in:

- Finland, where the employment rate is 65% in PR regions and 74% in SR regions (which include Helsinki);
- Ireland, where the employment rate is 65% in PR regions and 72% in the PU region (which includes Dublin);
- the Czech Republic; Spain; and Slovakia.

In all these Member States, the employment rate in rural areas is substantially lower than that in urban areas, where the influence of the capital (often primary) city dominates. A notable exception to this is found in Romania, where the employment rate is only 57.5% in PU areas but 72.3% in PR areas. Other countries where PR rates exceed PU rates are Portugal, Greece, Poland and, to a lesser extent, Germany.

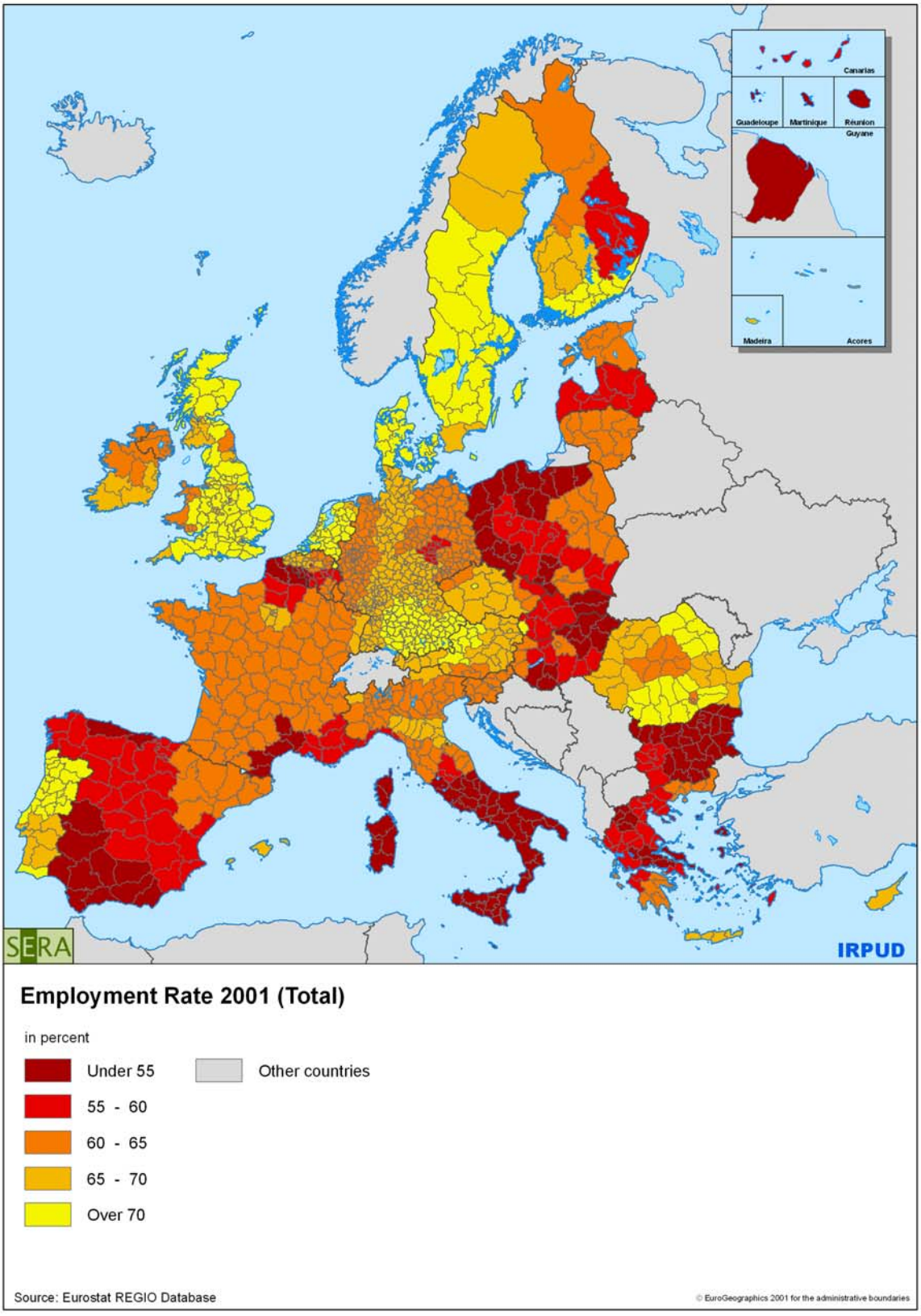
Table 3.7: Employment Rates by Member State, EU27*, 2001

	PU	SR	PR	All
	Per cent of Working Age Population			
EU27	65.4	61.4	62.5	63.4
DK	78.4	77.7	75.9	77.2
SE		77.4	74.2	75.2
NL	75.2	72.5	72.4	74.7
PT	71.7	75.6	75.5	73.6
UK	72.5	75.8	72.0	72.9
CY		70.0		70.0
RO	57.5	68.8	72.3	69.4
AT	69.0	70.0	68.7	69.1
FI		74.1	65.2	68.6
IE	72.1		64.9	67.0
DE	66.2	66.6	66.7	66.4
CZ	73.8	64.8	64.8	65.8
SI		66.4	64.9	65.5
LU		63.0		63.0
EE	62.7	63.4	60.2	63.0
FR	63.7	62.8	62.2	62.9
BE	60.6	58.3	58.8	60.3
LV	60.4	60.3	60.3	60.3
LT		61.2	57.0	59.4
ES	62.3	56.5	53.7	58.1
SK	69.2	55.1	56.7	57.0
GR	55.6	58.1	57.6	56.9
HU	61.7	57.0	54.1	56.4
IT	58.3	53.2	52.1	55.7
MT	54.6			54.6
PL	46.9	50.3	55.2	51.5
BG	55.7	48.9	49.4	50.3

Source: Eurostat Regio database tables E3EMPL95, UN3WPOP
Excludes French dependencies

Map 3.2 shows that employment rates are particularly high in many regions in the Netherlands, Denmark, Sweden, much of the UK, southern Finland, southern Germany, northern Portugal, (and the Algarve) and parts of Romania. In states with high employment rates, the peripheral (generally rural) areas have usually lower rates than core areas. Southern Italy, Bulgaria, much of Spain, some rural parts of Greece, north and west Poland, and parts of northern and southern France, all have low employment rates.

To sum up, where comparisons are possible, the majority of member states had employment rates above the national average in their PU regions, and a majority also had below average rates in their PR regions. The member states were equally split in terms of the employment rate in the SR regions – in half of them it was above the national average, and in half it was below. This underlines the fact that the in order to meet the Lisbon objective (70% employment rate overall), without simultaneously increasing rural-urban disparities (and thus undermining cohesion objectives), it is the PR regions of the EU which need to make the greatest progress in terms of their rate of labour market participation.



Map 3.2: Employment Rate 2001

3.4.2 *Recent trends*

Trends in employment over time are summarised in Table 3.8. This shows the absolute change in percentage points in employment rates. Across the EU25, in the period 1996-2001, employment has increased fastest in urban areas. The employment rate has increased by 3.6% in PU areas, 3.1% in SR areas and 1.9% in PR areas. This suggests a widening urban-rural employment rate gap[67].

Table 3.8:Change in employment rate EU25 1996-2001, by rural/urban type

	Average Change in Employment Rate, EU25, 1996-2001
PU	+3.6%
SR	+3.1%
PR	+1.9%
All	**+2.9%**

Source: Eurostat Regio database table LF2ENACE

3.4.3 *Gender and age structures*

In gender terms similar employment rate patterns held with PR and SR regions for males at 73% and 72% respectively compared to 75% in PU areas. For females the rates were 56% and 55% in the rural areas and 59% in PU areas.

Male rates (Map A3.4 in Appendix 3) tend to be relatively high, except in the new Member States, Southern Italy, Bulgaria, southern Spain, northern France, northern Finland and Romania. Bulgaria and southern Poland have particularly low male employment rates.

Female employment rates (Map A3.5 in Appendix 3) show a different pattern with low rates in most of the southern EU (Italy, Greece, Spain), Poland, Hungary, northern and southern France, Belgium, small parts of western and eastern Germany, and western Ireland.

3.5 Unemployment rates

3.5.1 *Rural – urban patterns*

Table 3.9 shows that the highest overall unemployment rates in 2001 were in Bulgaria (22.6%), Slovakia (19.1%), and Lithuania (19%), whereas the lowest rates were in Luxembourg (1.8%), the Netherlands (2.4%) and Austria (3.3%).

[67] However, there are substantial missing data on employment for many Member States in the 1990s, and therefore these figures represent only NUTS 3 regions for which data were available, and should be treated with caution.

Table 3.9: Unemployment Rates by Member State, EU27, 2001

	PU	SR	PR	All
	% of WAP			
EU25	6.5	8.9	8.9	8.2
LU		1.8		1.8
NL	2.0	3.1	3.5	2.4
AT	4.1	2.8	3.4	3.3
PT	4.2	3.0	4.3	3.9
CY		4.0		4.0
IE	3.0		4.4	4.2
DK	3.8	4.6	5.1	4.7
SE		4.8	5.4	5.3
UK	5.6	4.4	5.2	5.3
HU	4.2	5.4	6.7	6.1
SI		5.6	6.5	6.2
BE	5.9	6.7	7.5	6.3
RO	8.5	6.7	6.4	6.6
MT	6.8			6.8
CZ	3.9	8.3	6.5	7.8
DE	7.2	8.9	9.2	8.2
IT	6.4	10.1	11.4	9.2
FR	8.9	8.8	7.6	9.5
ES	7.8	10.5	9.6	9.8
FI		8.0	10.7	10.3
GR	10.4	9.9	11.0	10.7
LV	11.2	10.9	10.5	10.8
EE	22.6	11.0	12.2	13.6
PL	12.4	18.7	20.2	18.4
LT		13.5	21.4	19.0
SK	8.3	20.3	22.6	19.1
BG	14.2	17.5	23.3	22.6

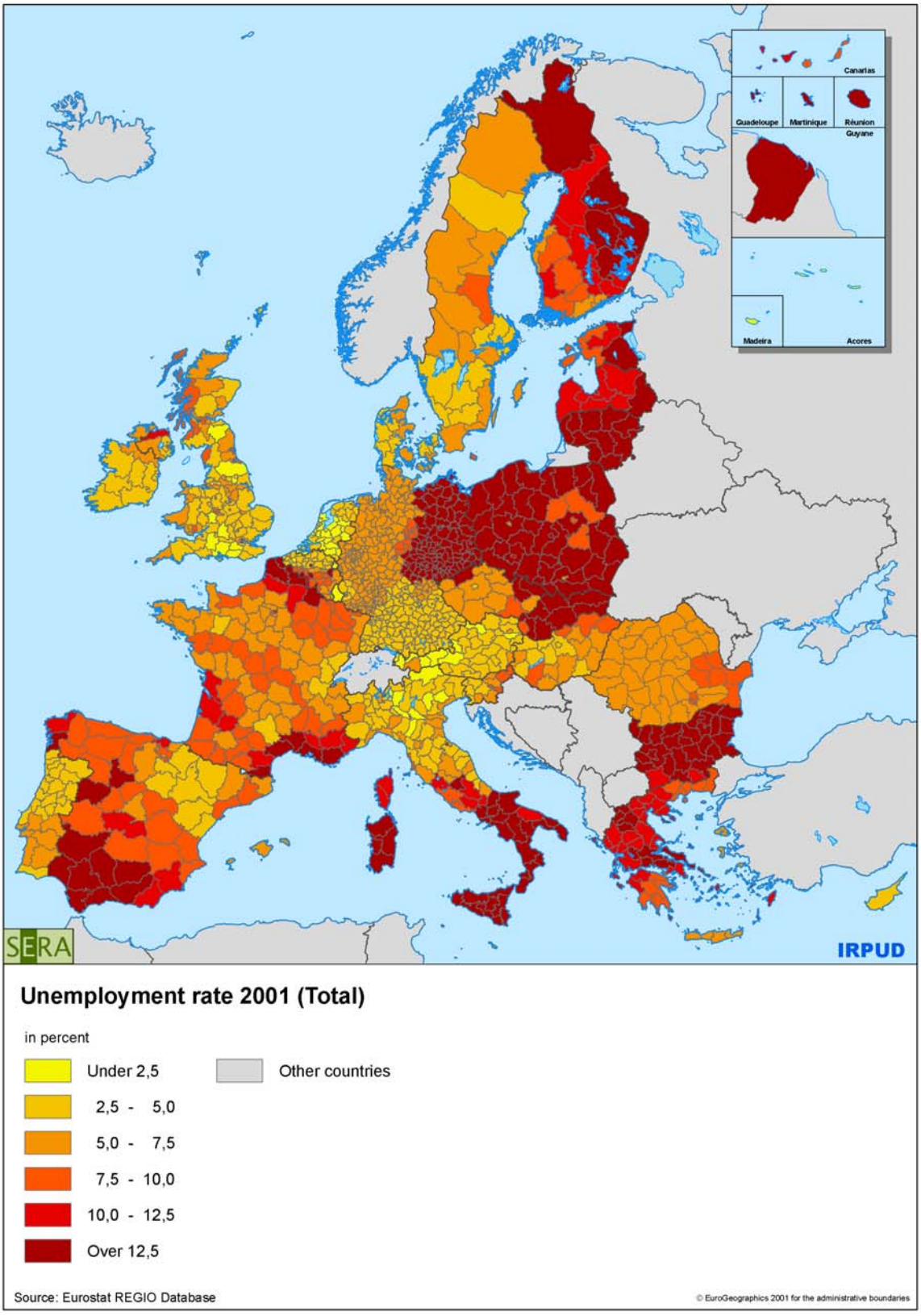
Source: Eurostat Regio database tables UN3PERS, POP_Q2

Unemployment rates[68] across the EU27 were significantly higher in the PR and SR regions (8.9% each) than in PU regions (6.5%). Average rates in the peripheral PR regions were almost 13% compared with a little over 9% in the more accessible PR regions.[69] Unemployment rates are particularly high in peripheral regions of Finland, the Baltic states, Poland, Slovakia, the eastern German Länder, southern Italy, France and Spain, plus parts of Greece and most of Bulgaria (Table 3.9).

There are marked differences in rural-urban patterns between Member States. For example, unemployment in Slovakia is 22.6% in PR areas, but only 8.3% in urban areas and unemployment in Lithuania 21.4% in PR areas, but only 13.5% in SR areas. In only a relatively small number of countries are PR unemployment rates lower than the national average (Estonia, Spain, France, Czech Republic, UK, Latvia and Romania).

[68] The ILO definition of unemployment comprises: Persons are classified as unemployed if: (1) they are without work; (2) they are seeking work; (3) they are available to start working within the following two weeks; (4) they have sought employment at some time during the previous four weeks. Or, are out of work, have found a job and are waiting to start it in the next 2 weeks. Note, non-working individuals are not only asked whether they were searching for work, but also how intensively: somebody who did not take at least one search step during the preceding four weeks is excluded from the unemployed, and from the labour force, even if conditions (1) to (3) are met.

[69] See chapter 8 the peripherality index



Map 3.3: Unemployment rate 2001 (total)

Two patterns are apparent:
(a) Differences between urban and rural areas are more pronounced in areas with a higher overall unemployment rate, often in new Member States.
(b) The differences between unemployment rates in rural and urban areas are relatively greater than the comparable differences in economic activity and employment rates.

3.5.2 *Recent trends*

Trends in unemployment rates over time are summarised below. This shows the absolute change in the unemployment rate. Across the EU25, in the period 1996-2001, unemployment has shown modest increases in all areas. The average rate has increased by 0.8% in PU areas, 0.2% in SR areas and 0.3% in PR areas.[70]

Table 3.10:Average change in unemployment rate, EU25, 1996-2001, by rural/urban type

	Average Change in Unemployment Rate, EU25, 1996-2001
PU	0.8%
SR	0.2%
PR	0.3%
All	0.4%

Source: Eurostat Regio database table RT_Q2

3.5.3 *Gender and age structures*

Male unemployment rates (Map A3.6 in Appendix 3) tend to mirror the pattern of the total rate. However, relatively high female rates tend to be more widespread (Map A3.7 in Appendix 3), including most of Greece, Spain and much of France. For females the rates for PR and SR regions were 10.7% and 10.5% but male rates were relatively lower in PR and SR regions at 7.9% and 7.8% respectively. In PU regions female and male rates were more similar (6.8% and 6.2% respectively).

Unemployment among certain groups is particularly important, especially the young unemployed (under 25 years) who may find getting work difficult due to lack of experience, and long-term unemployed (using the 'ILO definition' of being unemployed and available for work for twelve months or more).

The use of Information and Communication Technology (ICT)-based Public Employment Services (PES) have been suggested as being important to improve services to rural dwellers.[71] One study found that the use of ICT for job seeking remained a marginal activity for most unemployed people, but was much more important in remote rural communities, and that those with low educational attainment, the long-term unemployed, young people and those perceiving their ICT skills to be 'poor' were less likely to use the Internet for job search.[72] Young people and the long-term unemployed were

[70] There are substantial missing data on unemployment for many Member States in the 1990s, therefore these figures represent only NUTS 3 regions for which data were available, and should be treated with caution.
[71] Coleman N, Jeeawody F and Wapshott J (2002) Electronic government at the Department for Work and Pensions: attitudes to electronic methods of conducting benefit business, DWP Research Report 176, London: Department for Work and Pensions.
[72] McQuaid RW, Lindsay C and Greig M (2003) Wired For Work? ICT an Job Seeking in Rural Areas, Report For The Joseph Rowntree Foundation, York Publishing, York. http://www.jrf.org.uk/bookshop/details.asp?pubID=552

less likely to have access to the internet. So long-term and young unemployed are disadvantaged in many ways, including access to new technologies.

Unemployment rates for the under 25s roughly follow overall unemployment rates. Youth unemployment was significantly higher in both PR and SR regions, 17.6% and 16.2% respectively, compared with 10.7% in the PU regions. Analysis by Member State shows that the overall highest levels of youth unemployment were found in Bulgaria (43.4%), Poland and Slovakia (both 38.4%), Lithuanian (35.5%) and the lowest in the Netherlands (5.0%), Austria (5.4%) and Luxembourg (6.3%). In the majority of Member States, unemployment rates were lowest in PU areas and highest in PR areas. In particular, PR areas had much higher rates than PU areas in Slovakia, Poland and Italy, whereas the reverse was true in Estonia. The rate for PR areas was much higher than for SR areas. In general, the largest differences between urban and rural areas were in Member States with a high overall level of youth unemployment.

The rates were high in peripheral regions of Finland, Baltic states, Poland, Slovakia, Eastern Germany, southern Italy, and parts of southern France and Spain, plus much of Greece and most of Bulgaria (Map A3.8 in Appendix 3).

Table 3.11: Unemployment Rates for Under 25s by Member State, EU27*, 2001

	PU	SR	PR	All
	% of Working Age Population			
EU25	10.7	16.2	17.6	15.1
AT	5.6	5.3	5.5	5.4
BE	15.7	19.8	20.7	17.4
BG	30.4	35.9	44.5	43.4
CY		8.2		8.2
CZ	8.7	17.5	12.8	16.6
DE	7.5	8.8	8.4	8.2
DK	5.6	9.2	10.2	9.0
EE	40.9	21.9	24.4	26.2
ES	16.5	20.9	19.4	19.8
FI		21.3	24.5	24.1
FR	17.2	19.4	17.8	20.8
GR	26.9	30.8	30.7	30.7
HU	9.6	11.2	12.1	11.6
IE	5.3		8.1	7.7
IT	18.3	27.8	31.8	25.6
LT		25.6	39.8	35.5
LU		6.3		6.3
LV	21.8	15.9	19.8	19.3
MT	15.6			15.6
NL	4.3	6.3	7.6	5.0
PL	26.2	40.2	41.6	38.4
PT	9.0	7.8	10.7	9.5
SE		11.2	13.2	13.0
SI		16.4	19.1	18.2
SK	21.0	40.2	44.8	38.4
UK	12.5	10.5	12.8	12.3

Source: Eurostat Regio database tables UN3PERS, POP_Q2
*Excludes Romania

Trends in youth unemployment rates over time are summarised below (Table 3.12). This shows the change in percentage points in the unemployment rate. Across the EU25, in the period 1996-2001,

youth unemployment decreased substantially. The average rate fell by 7.2 percentage points in PU areas, 7.9% points in SR areas and 6.9% points in PR areas[73].

Table 3.12: Average change in youth unemployment rate, EU25, 1996-2001, by rural/urban type

	Average Change in Youth Unemployment Rate, EU25, 1996-2001
PU	-7.2%
SR	-7.9%
PR	-6.9%
All	-7.7%

Source: Eurostat Regio database table RT_Q2

3.5.4 *Long-term unemployment*

Long-term unemployment rates[74] were higher in SR regions (47.3% of all unemployed were long-term) compared to both PR and PU regions (43.3% and 45.1% respectively). In some member states at least the explanation of lower rates in PR regions lies in the greater seasonality of unemployment, as a consequence of the relative importance of tourism and agriculture. Overall in the EU27 45.5% of the unemployed were long-term unemployed.

Table 3.13: Long Term Unemployment Rates by Member State, EU27*, 2001

	PU	SR	PR	All
	% of all unemployed who are long-term			
EU27*	45.1	47.3	43.3	45.5
AT	33.5	22.8	22.3	26.5
BE	46.0	61.8	48.6	48.1
BG	58.1	74.0	60.5	62.0
CZ	38.7	52.5	62.4	52.1
DE	48.5	45.6	44.0	46.9
DK	22.8	18.4	18.5	19.6
EE	27.3	55.5	51.2	48.5
ES	37.7	35.8	37.7	36.7
FI		31.8	26.0	27.6
FR	40.1	35.1	36.1	36.8
HU	55.4	46.8	41.7	45.3
IE	33.5		31.9	32.3
IT	57.4	65.7	64.7	62.1
LT		68.4	45.6	56.0
MT	38.2			38.2
NL	33.2	33.2	25.7	33.0
PL	71.7	49.9	43.0	50.2
RO	54.5	48.4	49.4	49.5
SE		19.2	21.6	20.8
SI		78.1	52.1	60.6
SK	42.3	61.6	48.0	58.6
UK	25.1	24.8	26.7	25.3

*Incomplete data for CY, GR, LU, LV, PT.
Source: Eurostat Regio database tables UN2LTU, POP_Q2

Table 3.13 shows that the Member States with the highest rates of long-term unemployment were: Italy (62.1%), Bulgaria (62%), and Slovenia (60.6%), and those with the lowest were Denmark (19.6%), Sweden (20.8%) and the UK (25.3%). In contrast to youth unemployment rates, the long-

[73] There are substantial missing data on unemployment for many Member States in the 1990s, and no data at all for some nations, including Germany and Poland, therefore these figures represent only NUTS 3 regions for which data were available, and should be treated with caution.
[74] Unemployed more than 1 year as a percentage of all unemployed

term unemployment rates in PR areas are not generally higher than in PU areas across the EU27. However, countries such as Slovakia, the Czech Republic, Estonia and Italy had substantially higher rates in SR and PR than PU areas. At the other extreme, Austria, Hungary and Poland, had higher rates in urban areas.

Data are too sparse to provide any meaningful information on the change in long-term unemployment over time by the rural/urban region classification. However a detailed regional analysis for 2001 shows a broadly east-west split (with the Nordic countries and Austria and Cyprus with similar rates to the west) (Map A3.9 in Appendix 3). Most of the eastern countries have high rates, as do the peripheral parts of Finland, France, Italy and Spain.

3.5.5 *Hidden Unemployment*

Hidden Unemployment is unemployment that is not captured by published unemployment figures. This can include those economically inactive who are able to and would like to work but are not seeking work and/or not available for work. Hidden unemployment may be due to the presence of 'discouraged workers', which one would expect to be more common in rural areas. There may also be institutional reasons for people not registering as unemployed – e.g. if they worked on a family farm or other business they may not be eligible for unemployment or other welfare benefits, or they may have inadequate advice about potential social payments. As noted in section 1.3.2 hidden unemployment is often associated with rural regions.

As mentioned earlier, economic inactivity rates are slightly higher in PR and SR areas. Across all EU25 states, the economic inactivity rate is 29.7% in PU areas, 31.8% in SR areas and 30.7% in PR areas. Taking the difference between urban and rural implies that, on average, PR areas have an inactivity rate approximately 1% higher than PU areas, which could be termed a 'rural effect'. There may be a number of reasons for this, for example different industrial structures, more unregistered home working and fewer employment opportunities.

Hidden unemployment can also be manifested in underemployment and low productivity. For example, employment in agriculture is much higher in the new Member States than in the rest of the EU and productivity is lower. As and when productivity rises as a result of increased technology, changes in land holding, (for example the reduction of subsistence type farming), and intensification of production in these rural areas, agricultural employment is likely to fall to levels closer to those found in Western Europe and the hidden component of unemployment may be revealed. Of course, there will continue to be differences in technology, farm structure, types of production/products, and agricultural labour supply between new Member States and the former EU15 for decades to come. Therefore it would be unrealistic to assume that agricultural employment rates will equalise in the short- to medium-run. This section now roughly estimates the degree of hidden unemployment in PR areas.

In order to estimate the hidden component of unemployment, the proportion of economically inactive people who would like to work has been estimated. Across the EU25, 8.6% of inactive people aged 15 or more would either like work but are not seeking, or are seeking work but not available to start within a specified time period (EU 2004, European Labour Force Survey 2003). Applying this percentage to the inactive people in each region will give some indication of the numbers of hidden unemployment due to inactivity in each region (assuming the rate is constant across regions). Across the EU25, this equates to around 3.4m in PU areas, 2.9m in SR areas and 1.6m in PR areas.

In addition to this, hidden unemployment in the form of rural underemployment has been estimated by examining the difference in the percentage of people employed in the primary sector between states with a less developed primary sector[75] and those with a highly developed primary sector. Primary sector employment (NACE a, b) rather than only agriculture (NACE a) was chosen, as data for primary employment is available at NUTS 3 level (necessary to allocate to rural-urban type). Employment in the primary sector (% of employed persons) in 2001 is shown in Table 3.14. These data suggest that the difference between developed and less developed Member States is 9.9% in SR areas and 17.9% in PR areas.

As mentioned above, differences will persist for decades due to the reasons suggested above, however, even if only half of this difference is cut in the short to medium term, nearly 5% of primary sector labour in SR areas and 9% in PR areas of less agriculturally developed stated is 'surplus' and could be argued to represent a form of hidden unemployment. This equates to around 0.48m people across these eleven less agriculturally developed states of the EU25: 0.14m in SR areas and 0.34m in PR areas. The surplus in urban areas is negligible.

These figures may underestimate the true level of underemployment as they ignore possible underemployment in the secondary and tertiary sectors in rural areas, but may also be overestimates, as the age structure of primary employment in all states means that many of these people will move into retirement rather than unemployment.

Table 3.14: Employment in Primary Sector (% of employed persons) 2001

	Developed	Less Developed	Difference	Estimated underemployment
PU	1.2	1.5	0.3	0.2
SR	4.5	14.4	9.9	5.0
PR	6.7	24.6	17.9	9.0

Note: Figures exclude Netherlands, Cyprus, Luxembourg and French and Spanish Dependencies
Source: Eurostat Regio database table E3EMPL95

The level of hidden unemployment will include the inactive component plus the underemployed component, i.e. around 3.4m in PU areas, 3.3m in SR areas and 1.9m in PR areas.

3.6 Two broad themes: participation and performance

The above presentation of available data for economic activity, employment and unemployment has highlighted urban-rural differences, (providing empirical material relating to the first three "conventional views" listed in section 1.3.2).

It has also, in very broad terms, reinforced the impression (noted in Chapter 2) that accessibility to the economic core regions of Europe is an important determinant of labour market "performance" and "participation". Thus, for instance, economic activity rates and employment rates are generally lower in rural regions, (especially in peripheral parts of the EU and peripheral parts within Member States), than they are in the urban "core" regions. Unemployment rates (including those for young people, and the long term unemployed) are generally higher in PR regions (especially the peripheral ones) than in PU and SR regions.

[75] Estimated as Member States with primary sector employment above median value of 5.5%: Estonia, Spain, Finland, Ireland, Greece, Latvia, Lithuania, Hungary, Poland, Portugal, Slovenia.

The foregoing account addresses, in essence, two simple questions about labour markets in rural regions across Europe:
(a) What was the level of participation in economic activity, among the population of working age?
(b) Within that economically active sub-set of the working age population, what proportion were seeking, but unable to find, employment?
The answers to these questions, to a large extent, are linked to the labour market performance of each rural region.

The answer to the first question is predominantly a function of supply side factors, together with the state of the rural economy. The fact that female activity rates are much more variable from region to region than male rates is probably indicative of significant difference in socio-cultural factors in relation to female employment. In some parts of rural Europe (mainly in the South) it is still less common for women to take employment. A second factor on the supply side is demographic age structure: activity rates among older age groups tend to be lower, so where the age structure (of the working age population) is "older", as in many rural areas, economic activity rates will be slightly lower. The third factor - "worker discouragement" may well come into play in regions where, for various reasons, employment opportunities have traditionally been scarce, and a larger proportion of the population is economically inactive simply because they have given up the search for a job.

Table 3.15: Percentage distribution of NUTS 3 regions by participation (economic activity) level

	Low	Medium	High
	Per cent of regions		
PU	15	45	40
SR	27	41	32
PR	33	32	35

Table 3.15 shows the percentage distribution of NUTS 3 regions in three "participation" groups, defined according to economic activity rates. The thresholds separating the three groups are 0.5 standard deviations below and above the EU mean economic activity rate. As one might expect, a high proportion of PU regions (85%) are in the medium and high categories. At the other extreme 27% of SR regions and 33% of PR regions are in the low participation category. While similar percentages of PR and SR regions are in the high participation category (32% and 35% respectively), far fewer PR regions are in the medium band (32% compared to 41% of SR and 45% of PU regions).

Once the economically active proportion of the working age population is determined by the above factors the next issue is the subdivision of the active population into those who do, and those who do not, have employment. Since these are reciprocals of each other, it is only necessary to use one of them as a labour market performance measure. The level of unemployment in a rural area is predominantly a reflection of demand side characteristics - its economic structure and its competitiveness. Levels of "worker discouragement" may have a secondary effect on the supply side, reducing unemployment rates by shifting the "least employable" into the economically inactive group.

Table 3.16 shows the distribution of NUTS 3 regions by "performance", as defined by unemployment rate (again the group defining criteria are 0.5 standard deviations below and above the mean). Here the pattern is even clearer. Thus 41% of PU regions fall into the high performance category compared to 30% in SR and only 16% of PR regions. Low performance regions make up 13% of PU, 14% of SR and 18% of PR regions. The medium performance regions therefore to a large extent (inversely)

reflect the high performance shares, with 46% of PU, 56% SR and 66% of PR regions. It is perhaps worth pointing out that the regions in each cell of Table 3.15 do not necessarily fall in the equivalent cell of Table 3.16 (as the distribution of employment and unemployment vary across regions).

Table 3.16: Percentage distribution of NUTS 3 regions by performance (unemployment) level

	Low	Medium	High
	Per cent of regions		
PU	13	46	41
SR	14	56	30
PR	18	66	16

3.7 A Simple Employment Typology

3.7.1 *Overview*

The above "cameo" picture is admittedly a very great simplification. However, it does have the benefit of suggesting a simple typology of regions which may be seen as analogous to the demographic one presented at the end of Chapter 2.

The two "dimensions" (participation and performance) although clearly related at an aggregate urban-rural level, are not necessary correlated at an individual region level. High participation (economic activity rate) is not always associated with high performance (low unemployment rate), and vice versa. Where the two dimensions both point in the same direction (high or low) the most extreme labour market situations (high economic activity rates with low unemployment, or low economic activity rates with high unemployment) occur. Table 3.17 shows the possible combinations of the two indicators, which define a simple two dimensional employment typology. Note that in the interests of simplicity all medium performing regions are combined into one group, with no distinction according to participation.

Table 3.17: A simple employment typology

PERFORMANCE **PARTICIPATION**	**HIGH** low unemployment rate Index <75	**MEDIUM** Medium unemployment rate Index 75 - 129	**LOW** High unemployment rate Index >129
LOW low economic activity rate (<66.5%)	1. High performing-low participation	2. intermediate	3. Low performance-low participation
MEDIUM medium low economic activity rate (66.5 - 73.5%)	4. High performing medium participation	2. intermediate	5. Low Performing medium participation
HIGH high economic activity rate (>73.5%)	6. High performing-high participation	2. intermediate	7. Low performance-high participation

Table 3.18 presents the statistics for each class, while Map 3.4 shows the spatial distribution of the seven classes throughout EU27. The interpretation of each type of region is not necessarily clear cut.

Table 3.18: Key characteristics of the employment types (ordered according to their significance)

Employment typology Region type		Economic Activity Rate (%)	Unemployment index National average = 100
6. High performing-high participation (197 Regions)	Mean	77.3	55.1
	Std. Deviation	3.7	12.9
4. High performing – medium participation (192 Regions)	Mean	70.6	61.6
	Std. Deviation	2.0	11.6
1. High performing - low participation (77 Regions)	Mean	62.8	49.6
	Std. Deviation	5.6	16.7
2. Intermediate (539 Regions)	Mean	69.7	97.5
	Std. Deviation	6.9	15.5
7. Low performance-high participation (130 Regions)	Mean	75.1	199.9
	Std. Deviation	1.6	33.6
5. Low Performing medium participation (55 Regions)	Mean	70.6	171.9
	Std. Deviation	2.1	43.9
3. Low performance-low participation (93 Regions)	Mean	58.8	181.2
	Std. Deviation	4.7	49.8

Table 3.19: Distribution of employment types per rural/urban region type

		1 High performing - low participation	2. Intermediate	3 Low performance-low participation	4 High performing - medium participation	5 Low Performing medium participation	6 High performing-high participation	7 Low performance -high participation
PU	N° of regions	**28**	**132**	**13**	**89**	**24**	**83**	**36**
	Share	**36.4%**	**24.5%**	**14.6%**	**46.4%**	**42.9%**	**42.1%**	**27.7%**
SR	N° of regions	**36**	**183**	**35**	**62**	**10**	**59**	**51**
	Share	**46.8%**	**34.0%**	**39.3%**	**32.3%**	**17.9%**	**29.9%**	**39.2%**
PR	N° of regions	**13**	**224**	**41**	**41**	**22**	**55**	**43**
	Share	**16.9%**	**41.6%**	**46.1%**	**21.4%**	**39.3%**	**27.9%**	**33.1%**
Total	N° of regions	**77**	**539**	**89**	**192**	**56**	**197**	**130**
	Share	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

3.7.2 *Description of Types*

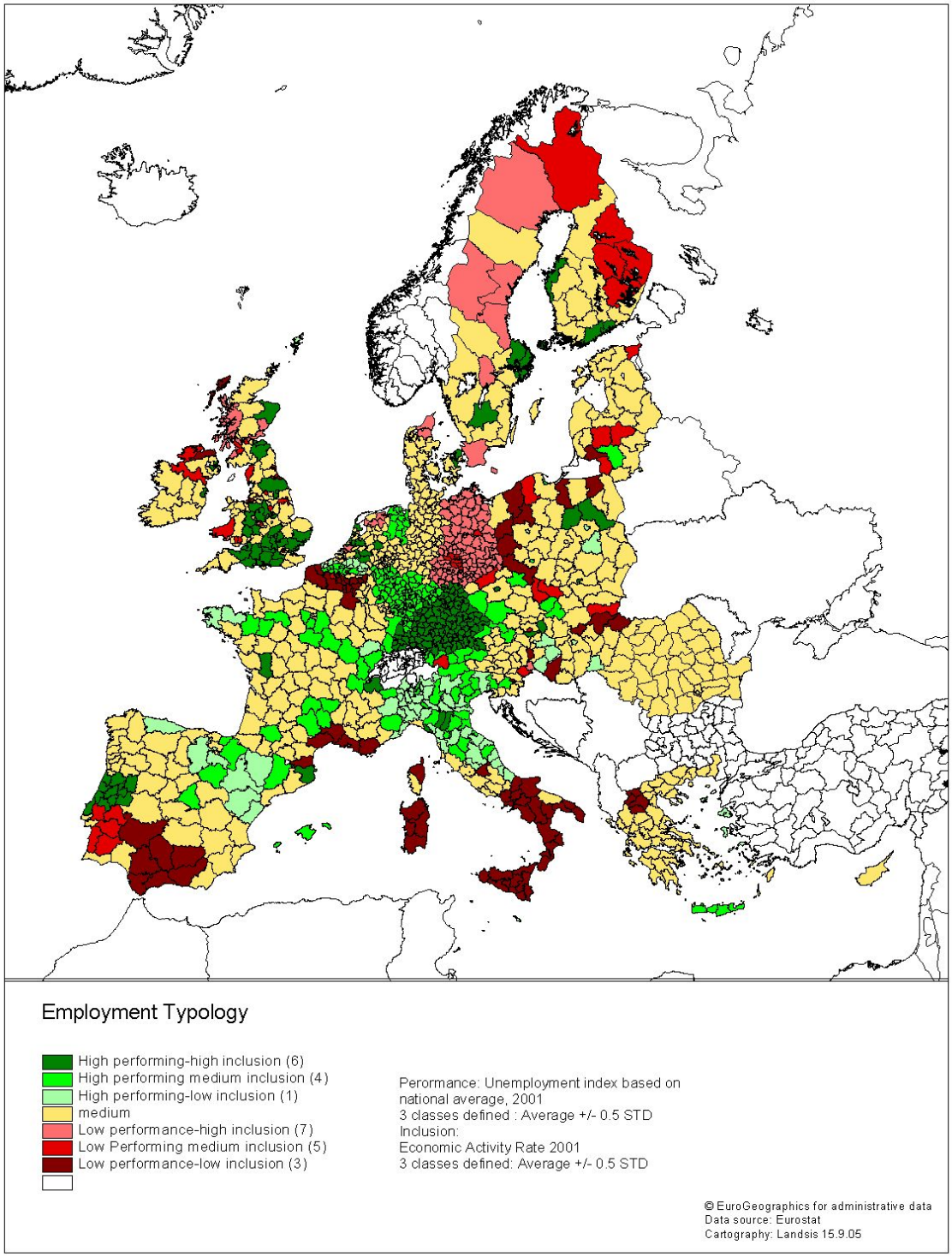
High performing-low participation (type 1 regions)

These regions show low unemployment rates, indicating a relatively well performing economy and labour market, and/or an area with high out-migration of working aged people, but low economic activity rates. One reason for the low economic activity rate is probably the low female participation rate, in many areas of about 52% and possibly an ageing population. From a geographical point of view, these types can be found in eastern parts of Spain and scattered throughout northern Italy and Austria.

Type 1 regions make up only 6% of all NUTS 3 regions, and is most common among the SR group of regions (see Table 3.19).

High performing - medium participation (type 4 regions)

Together with type 6, this region types present low unemployment rates and a medium participation rate. More than 46% out of the 192 regions classified as region Type 4 are concentrated in predominantly urban areas.



Map 3.4: Employment typology

High performing - high participation (type 6 regions)

This is the "best" combination of performance and participation, indicating a buoyant economy with high rates of economic activity and relatively low unemployment. Out of the 197 NUTS 3 regions belonging to this region type, 42% belong to predominantly urban areas. This type is most common in

large parts of the UK, Southern Germany, The Netherlands, Denmark and the southernmost parts of Sweden and Finland.

Intermediate regions (type 2 regions)
These are intermediate regions in terms of performance (unemployment rates) but have various levels of participation (economic activity rates). Type 2 regions form the largest group (539 NUTS 3 Regions, 42%). This type is dominant in France, central parts of Spain, North-West Germany and Denmark, southern parts of Netherlands, Slovakia and Czech Republic, Romania, the Baltic countries and some areas in Sweden and central parts of Finland.

Low performance - high participation (type 7 regions)
These regions have high rates of economic activity, suggesting a high level of participation, but also high unemployment rates, suggesting problematic regional competitiveness. This type is almost exclusively found in eastern Germany (old Länder) and some isolated regions in Poland and Lithuania.

Low Performing - medium participation (type 5 regions)
This type is characterised by a high unemployment rate and a medium percentage of economically active people, and is mainly concentrated in Southern parts of Portugal, the West of the UK, Northern Sweden, eastern parts of Finland and as isolated regions in Poland and the Baltic countries. 43% of this type can be found in predominantly urban areas.

Low performance - low participation (type 3 regions)
This is the least positive combination, with high unemployment and low rates of economic activity, indicating both poor performance and low levels of participation. This region type is more common in Southern Europe (southern Spain, Corsica, Sardinia, along the Cote d'Azur in France, Southern Italy and central Greece) and Poland, Lithuania and Latvia as well as in Northern France. Out of the 89 least performing regions, 39% can be found in the SR regions and 46% in the PR areas.

3.7.3 *Concluding Comment*

This very simple typology clearly does not do justice to the individuality of regions. However, it does capture some of the key issues relating to economic activity and unemployment. It also suggests a very basic dichotomy in relation to policy priorities. Thus policies relating to participation will be very important in relation to regions of types 1 and 3, whilst those focusing more on competitiveness should be considered very carefully in relation to types 3, 5 and 7.

4 AGRICULTURAL EMPLOYMENT

4.1 Introduction

European agriculture currently faces several major global challenges including enlargement, more liberal trading arrangements, environmental issues, changes in consumer preference and in the degree and nature of public support. Historically, one of the main ways the sector has adjusted to these competitive pressures is by continually reducing the amount of labour used by means of adopting new technology and structural adjustments such as larger farming units. The result in many regions is that agriculture now makes up a small part of the total employment. However, even in these regions as well as those where agricultural employment is of much greater importance the inexorable trend of labour moving out of the sector seems to continue. In view of the importance of such changes on rural employment the following analysis investigates in detail the size of the past reduction and potential adjustment over the next decade in the agricultural labour force across all regions of the enlarged EU as well as the nature of these changes as they are affected by age, gender and family connections.

The analysis of agricultural employment is mainly based on data of the European *Farm Structure Survey (FSS)* accessible in the Eurostat online database or directly provided by Eurostat. FSS data comprise regionally differentiated data of all EU25 countries but not as yet Bulgaria and Romania, which therefore cannot be considered in the analysis.[76] Most FSS indicators in this report are mapped and analysed expressed in the unit "persons", but in the text are also compared to "Annual Working Units" (AWU). AWU corresponds to the work performed by one person who is occupied on an agricultural holding on a full-time basis.[77] NUTS-3 data of the *Economic Branch Accounts (ESA95)* within the REGIO database were used to complement FSS data and show the employment share of the primary sector (agriculture, hunting, forestry and fishery) for all countries of the EU27.[78] Some

[76] For definitions see COMMISSION REGULATION (EC) No 1444/2002 of 24 July 2002. Some relevant indicators are not available in the FSS such as the age structure of the *total* agricultural regular labour force or only exist at a country level such as the share of females in the *total* agricultural regular labour force. Only NUTS-2 data are available in the FSS for Belgium, Germany, Austria, the Netherlands and the United Kingdom. Therefore, average figures of PU, SR and PR areas could only be calculated using estimated NUTS-3 values. The absolute figures of NUTS-2 regions have been apportioned to NUTS-3 regions analogous to the distribution of absolute figures of primary sector employment which are available on NUTS-3 for these countries. An exception are the Netherlands, where no NUTS-3 data concerning agriculture and the primary sector are available at all and OECD averages had to be calculated using NUTS-2 values. Time series data since 1990 are only available for the EU15 and are complete only on a NUTS-1 basis, so that no OECD averages could be calculated. Data for Portugal have not yet been available for 2003, so that the figures for 2000 are used.

[77] "Full-time" means the minimum hours of work required by the national provisions governing contracts of employment. 1800 hours (h), i.e., 225 working days (w.d.) of 8 hours each, is assumed with the exception of the following countries: DE 1760 h./220 w.d., ES and FR 1824 h./228 w.d., LV1840 h./230 w.d., BG 1856 h./232 w.d., PT 1920 h./240 w.d., RO 1960 h./245 w.d., AT 2000 h./250 w.d., LT 2032 h./254 w.d., CY 2080 h./260 w.d., PL 2144 h./265 w.d., GR and LU 2200 h./275 w.d. (Information for EUROFARM purposes and/or National Methodological Reports according to personal communication with György Benoist, EUROSTAT - Unit E1 - Structural statistics, agriculture, 21.04.05).

[78] Data of the Branch accounts result from the Structural Business Statistics (EU15) and from the Labour Force Survey (new Member States). Missing data for the Netherlands and Romania were added using data from the Labour Force Survey. In the employment statistics of the Branch Accounts, the persons employed are assigned to that economic sector in which they mainly work, so that many part-time farmers and farm-workers are not included in the agricultural employment figures. Changes over time in numbers employed in the various sectors, and, in particular, in agriculture, are measured on the basis of annual employment estimates (European Commission 2003, "Agriculture in the European Union: Statistical and economic information 2002", Luxembourg,

national sources of data are used too, mostly for agricultural employment data in the new Member States (NMS) since 1990, because such data are not available from Eurostat.

4.2 Share and development of agricultural employment

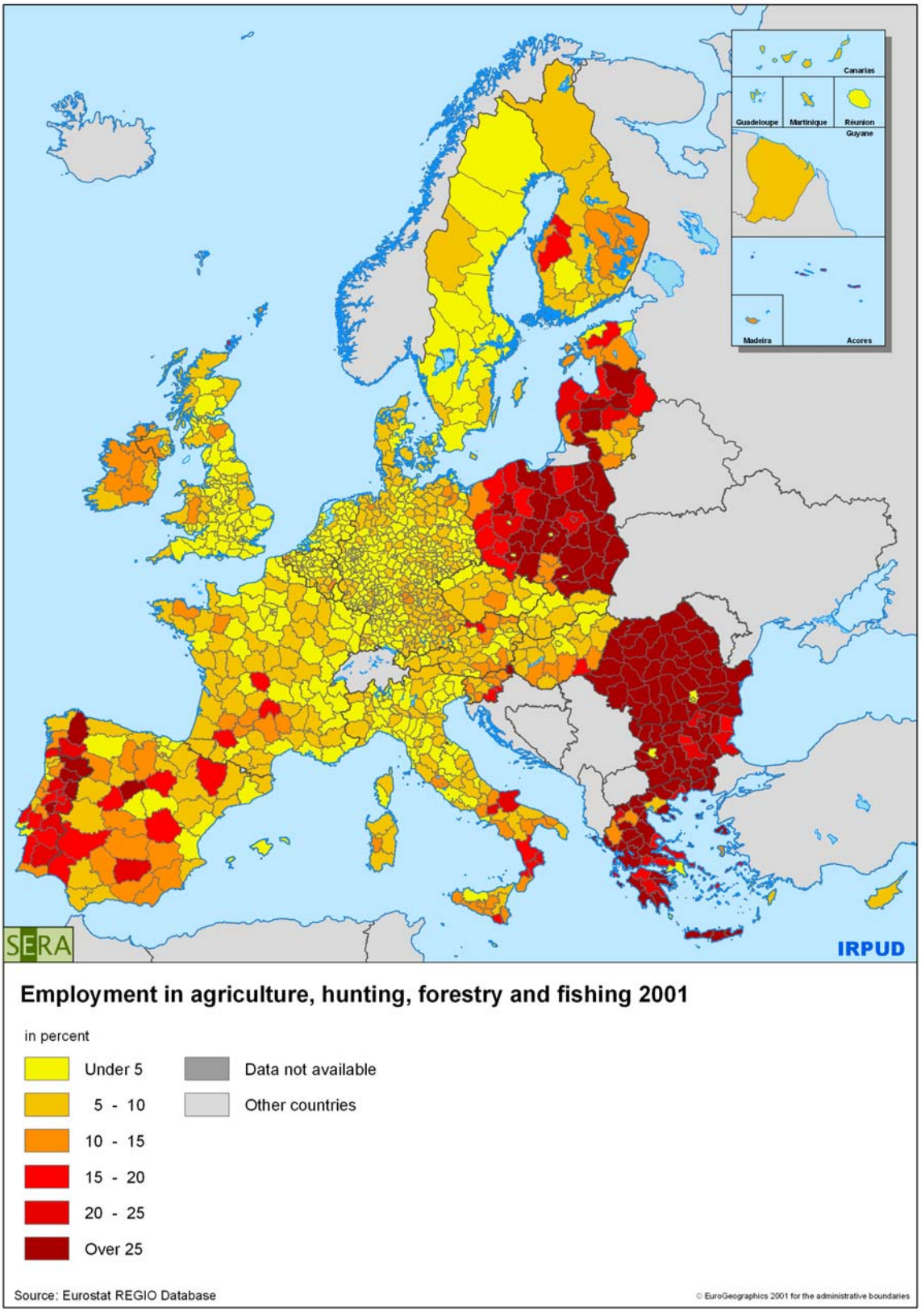
There are significant differences in the importance of agricultural employment in the EU27 between countries and also regionally *within* countries. Regions with a very high share of primary sector employment above 25 % can be found in the Central and Eastern European countries of Romania, Bulgaria, Poland, Lithuania and Slovenia as well as in the Southern part of the EU15 (GR, ES, PT). In the PR regions of Romania more than a half of the workforce is employed in the primary sector, in Bulgaria and Greece it is one third, and in Latvia, Poland, Lithuania and Portugal around one quarter. In contrast, many regions of the EU15 have a low share of employment (below 5 %) in the primary sector, as in Luxembourg, the United Kingdom, Belgium, Germany, Sweden, the Netherlands, France and Northern Italy. But even in these countries there exist regions with a higher significance of this sector (above 5 or 10 %), particularly in the PR regions. On average, the more rural the region the higher the share of primary sector employment (see Table 4.1 and Map 4.1).

Table 4.1: Share of employment in agriculture, hunting, forestry and fishing (persons with main employment in the primary sector) in total employment in % in the EU27, 2001

	PU	SR	PR	All
EU27	1.4	8.3	19.0	7.3
EU25	1.4	6.7	12.4	5.2
AT	0.7	2.7	9.0	4.7
BE	2.0	4.6	7.6	2.4
BG	2.3	21.6	33.0	26.2
CY		9.2		9.2
CZ	0.5	5.2	11.7	4.8
DE	1.0	4.2	6.6	2.4
DK	0.5	3.8	5.8	3.4
EE	2.7	6.2	17.0	6.8
ES	1.5	7.9	16.4	6.6
FI		2.0	8.4	5.6
FR	0.7	4.1	8.2	3.7
GR	1.2	18.4	33.9	16.8
HU	0.6	5.5	10.2	6.6
IE	0.8		10.4	7.1
IT	2.7	7.0	9.1	4.9
LT		10.3	25.5	16.7
LU		1.5		1.5
LV	1.0	20.2	27.8	15.1
MT	2.1			2.1
NL	2.7	4.0	N/A	2.9
PL	1.7	22.0	26.5	17.9
PT	2.3	14.4	23.3	9.8
RO	4.7	36.7	51.5	42.7
SE		1.4	3.4	2.6
SI		5.9	15.5	11.2
SK	1.3	6.0	7.4	5.3
UK	0.7	2.1	5.4	1.6

Note: PT and BG 2000; PL and LV 2002.
Source: Eurostat Regio database.

p.124). According to information from Eurostat, the employment data for the primary sector should be cautiously interpreted and only be considered as approximated values due to the difficulties in collecting reliable and comparable data for fishery and forestry (Personal communication with Michael Goll, Eurostat, 10.05.05). This holds particularly for countries with a large fishing sector like Spain, Portugal, Italy and Greece.



Map 4.1: Share of employment in agriculture, hunting, forestry and fishing (persons with main employment in the primary sector) in total employment 2001

Note: CY, LU, PT, BG 2000 ; LV 2002.

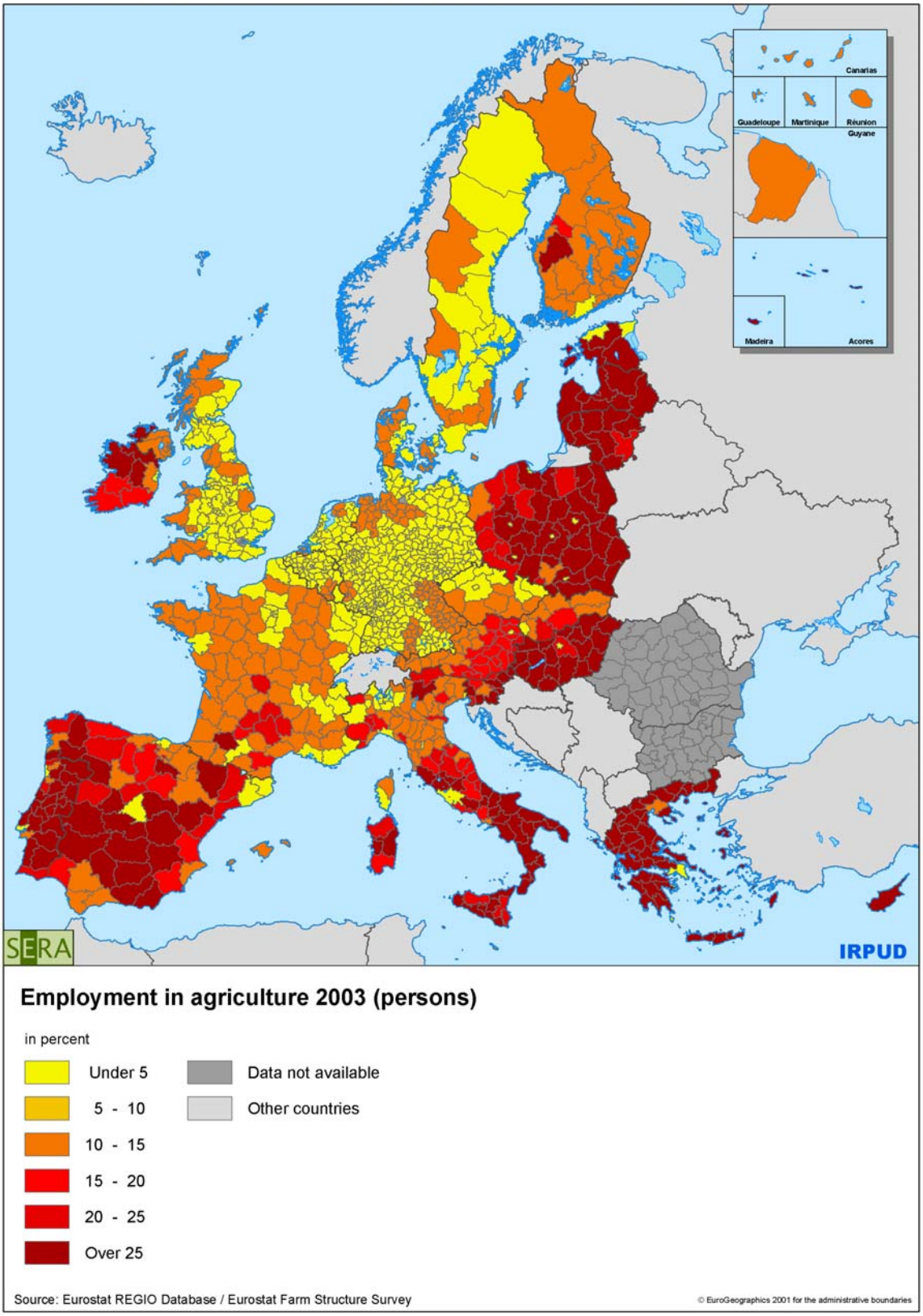
The results from the comparison of the FSS data[79] with primary sector employment data from the Branch accounts[80] generally show a higher share of *persons* employed in agriculture and a slightly lower share of *AWU* (see Table 4.2 and Map 4.2 as well as Map A4.1 in the appendix). For example, on average in the PR regions of the EU25, the share of primary sector employment was 12.4 % in 2001, whereas the share of agricultural employment in 2003 when measured in persons was 25.9 % and 11.6 % when measured in AWU. Thus, in the EU25, there are on average 2.2 times more persons than AWU employed in agriculture with no differences between the OECD categories. The differences between persons and AWU are due to the widespread significance of part-time farming and pluriactivity. The amount of employment in the agricultural sector (based on persons) can thus be easily exaggerated. This is particularly the case in Malta, Cyprus, Greece, Spain, Hungary, Italy and Austria, where the number of persons in agriculture is more than 2.5 times higher than the number of AWU indicating that part-time farming is very common. In contrast, the proportion is only around 1.5 in the Czech Republic, Luxembourg, Belgium, the Netherlands, France, Germany, Ireland and Denmark (less part-time farming). Urban areas have in some countries a higher share of part-time farming than the rural areas of the respective countries (e.g. in DK, GR, PL, UK), whereas in others the share of part-time work in urban areas is lower than in rural regions (e.g. in AT, HU, PT).[81] However, the absolute number of farmers in most city regions (with the exception of the urbanised countries DE, BE and NL) and especially in the capital regions is very low, so that such differences should not be overstated.

Table 4.2: Share of employment in agriculture in total employment in % in the EU25, 2003

	PU		SR		PR		All	
	persons	AWU	persons	AWU	persons	AWU	persons	AWU
EU25	2.5	1.1	13.5	6.1	25.9	11.6	10.4	4.7
AT	0.8	0.4	6.9	2.7	23.1	9.0	11.9	4.6
BE	2.0	1.4	4.9	3.5	7.2	5.1	2.4	1.7
CY			28.8	9.6			28.8	9.6
CZ	0.3	0.2	4.7	3.6	9.9	7.9	4.2	3.3
DE	1.0	0.6	4.6	3.0	7.3	4.9	2.7	1.7
DK	0.6	0.3	3.3	2.1	6.0	3.7	3.4	2.1
EE	4.1	1.7	15.7	6.0	34.2	15.5	16.1	6.4
ES	3.6	1.1	14.9	5.7	41.5	12.8	14.2	4.9
FI			3.3	1.6	10.9	5.7	7.5	3.9
FR	0.7	0.5	5.6	3.6	11.2	7.5	5.0	3.3
GR	3.1	0.8	40.1	13.4	79.8	27.6	38.8	13.2
HU	1.3	0.5	31.7	11.0	58.0	20.1	37.6	13.0
IE	0.5	0.3			21.6	13.5	14.3	8.9
IT	8.2	2.9	22.5	8.0	34.7	11.9	15.9	5.6
LT			24.6	9.4	57.3	23.7	38.4	15.4
LU			2.1	1.5			2.1	1.5
LV	0.0	0.0	38.8	21.4	42.2	22.0	25.8	13.9
MT	12.3	3.0					12.3	3.0
NL	3.0	2.0	4.8	3.1	N/A	N/A	3.2	2.2
PL	3.6	1.3	43.1	20.5	46.2	24.6	33.1	16.6
PT	4.8	2.6	30.5	13.6	54.5	23.2	21.6	9.7
SE			1.5	0.8	4.4	2.0	3.3	1.6
SI			11.9	5.0	32.4	14.1	23.4	10.1
SK	2.4	1.2	14.2	6.5	15.4	7.3	12.1	5.6
UK	0.9	0.4	2.9	1.5	8.0	4.2	2.2	1.1

Note: PT 2000.
Source: Eurostat Farm Structure Survey.

[79] Year 2003 as the most recent available year at the time of analysis.
[80] Year 2001 as the most recent available year at the time of analysis.
[81] Measured by the ratio of persons to AWU.



Map 4.2: Share of employment in agriculture (persons) in total employment 2003

Note: PT 2000. Total employed for AT, CZ, DK, GR, ES, IE, IT, LV, LT, HU, SI, SK, SE and UK year 2001; LU and CY year 2000. Poland: Individual holdings only.

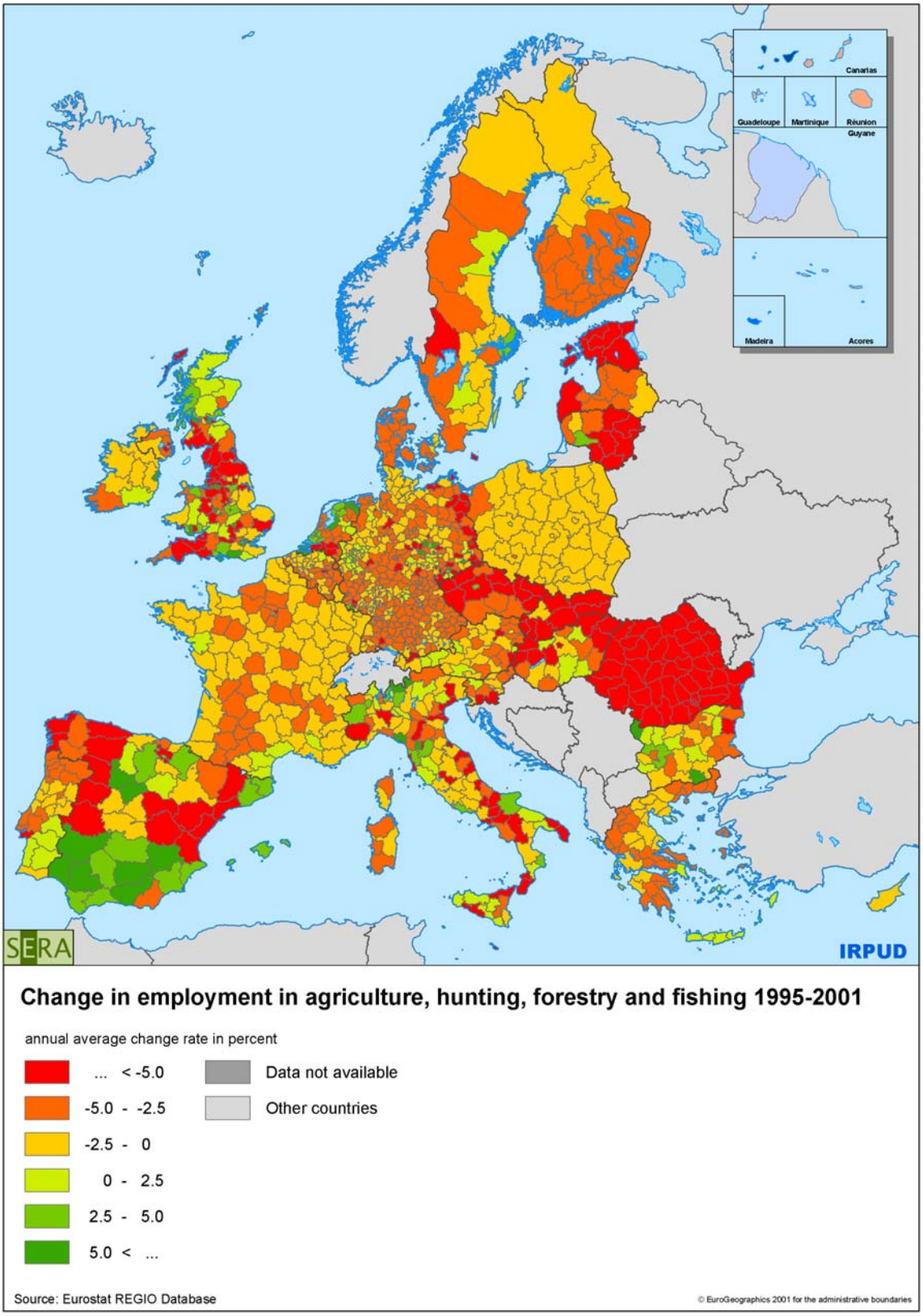
During the last 15 years in the EU15, agricultural employment has generally been characterised by a continuous decline (see Map 4.3 and Table 4.3 for primary sector employment and Table 4.4 as well as Map A4.2 and Map A4.3 in the appendix for agricultural employment). Only a few regions showed an increase as in Spain, Italy, Malta, or the United Kingdom. These regions are simultaneously characterised by rather a growing percentage share of holders aged over 65, of female holders and of part-time working holders, as well as a decreasing share of holders younger than 35. In some of these regions, there is a strong rise in holdings with other gainful activities over the period 2000 and 2003. Thus, it can be reasoned, that the growth of agricultural employment in the respective regions is either not very sustainable (age structure) or is caused by risen additional income possibilities (part-time work, new on-farm gainful activities). The increase of primary sector employment in the Czech and Irish PU regions applies only for the capital city with very small absolute numbers.[82]

Table 4.3: Annual average change in employment in agriculture, hunting, forestry and fishing (persons with main employment in the primary sector) in % in the EU27, 1995-2001

	PU	SR	PR	All
EU27	N/A	N/A	N/A	N/A
AT	-1.7	-0.9	-2.3	-2.1
BE	-1.7	-2.7	-2.6	-2.0
BG	-1.9	-1.6	-0.3	-0.6
CY		-2.0		-2.0
CZ	+3.2	-6.4	-3.4	-5.9
DE	-1.1	-2.9	-3.0	-2.6
DK	-0.7	-3.4	-4.1	-3.8
EE	-11.7	-7.8	-7.1	-7.9
ES	-1.4	-0.8	0.0	-0.6
FI		-4.2	-3.4	-3.5
FR	-2.0	-1.6	-2.1	-1.7
GR	N/A	N/A	N/A	-2.1
HU	-5.5	-3.8	-2.8	-3.1
IE	+7.4		-1.9	-1.7
IT	-2.1	-3.0	-1.1	-2.4
LT		-10.1	-6.9	-8.1
LU		0.0		0.0
LV	N/A	N/A	N/A	-3.7
MT	+4.7			+4.7
NL	N/A	N/A	N/A	N/A
PL	-12.4	-13.2	-11.8	-12.5
PT	-3.7	-2.4	-2.4	-2.6
RO	N/A	N/A	N/A	N/A
SE		-1.8	-2.3	-2.2
SI		N/A	N/A	-1.1
SK	-10.0	-8.9	-7.8	-8.8
UK	-2.0	-2.6	-3.2	-2.7

Note: PT 1995-2000, PL 1998-2002, LV 1995-2002, BG 1996-2000.
Source: Eurostat Regio database.

[82] Prague: 2,760 persons in 2002 – Dublin 3,560 persons in 2002 due to recent Eurostat data.
In Prague, the increase in primary sector employment is just a statistical phenomenon, since the data of the Branch accounts in the NMS are based on samples of the Labour Force Survey, and the number of people working in agriculture within the Prague sample is extremely small (less than 20 persons), so that the primary sector data for Prague are not reliable. The sample size of the Labour Force Survey in Prague is 1,988 households, i.e., 3,819 people aged above 15 years. At an employment rate around 74% and an employment share of the primary sector around 0.5%, this results in an average of 14 persons recorded in the sample as working in the primary sector. Therefore, small deviations in the number of recorded farming people can have considerable effects on the extrapolated total number of employed persons in the primary sector and the change rates in Prague.
In Dublin, the increase in primary sector employment (which is due to recent data of the Branch accounts on a much lower growth rate per year than indicated in Table 4.3, namely +2.4% p.a. between 1995 and 2002) could be caused by the growth of the plant nursery and horticulture sector around Dublin given the marked expansion of house building and affluence over the last 10 years.



Map 4.3: Annual average change in employment in agriculture, hunting, forestry and fishing (persons with main employment in the primary sector) 1995-2001

Note: PL 1998-2001; BG 1996-2000; MT and SI 2000-2001.

Between 1990 and 2003, the persons working in agriculture decreased on average by -2.1 % per year in the EU-11 (EU15 without PT, AT, FI, SE; see Table 4.4). In many countries, the decrease in AWU was stronger than the decrease in persons working in agriculture. This indicates a trend towards more part-time farming in Europe which is confirmed by working time data (cf. section 4.5.1). However, this does not hold for Belgium, Luxembourg, Austria, Italy, France, Germany and Spain, where the decrease in AWU is slower than that in persons.

Table 4.4: Annual average change in farm workforce in the EU15, 1990-2003[1)]

	Persons	AWU	Share of part-time farming
EU11[2)]	-2.1	-2.2	increasing
AT	-2.7	-0.9	decreasing
BE	-2.6	-2.1	decreasing
DE	-4.1	-3.2	decreasing
DK	-3.0	-3.3	increasing
ES	-1.5	-1.3	decreasing
FI	-3.4	-4.1	increasing
FR	-3.0	-2.7	decreasing
GR	-0.1	-1.5	increasing
IE	-1.7	-3.4	increasing
IT	-2.6	-1.7	decreasing
LU	-3.8	-3.6	decreasing
NL	-0.8	-1.7	increasing
PT	-3.8	-4.9	increasing
SE	-1.6	-2.6	increasing
UK	-0.2	-2.2	increasing

Note: [1)] PT 1990-2000; AT, FI and SE 1995-2003. [2)] EU15 without PT, AT, FI and SE.
Data for the NMS and PU, SR and PR categories not available due to data constraints.
Source: Eurostat Farm Structure Survey.

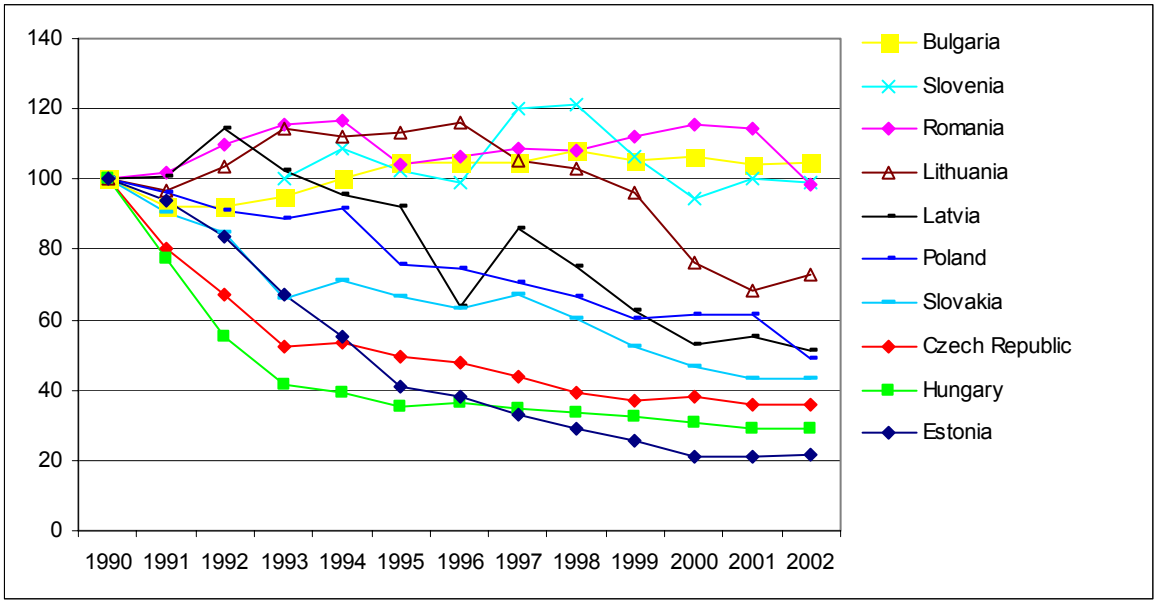
In the Central and Eastern European countries (CEEC) – and in the German new *Bundesländer* – the transformation of the agricultural workforce since 1990 has been much more pronounced due to restructuring processes during transition. Figure 4.1 shows the development of the number of employed persons in agriculture between 1990 and 2002 based on national statistics (such figures are not available from Eurostat). These figures should be interpreted with caution because of statistical problems concerning labour input data in agriculture in these countries such as hidden unemployment, no information equivalent to the AWU and the counting of non-agricultural labour in agricultural cooperatives.[83]

In Hungary, the Czech Republic, Slovakia and Estonia, there was a significant slump in agricultural employment in the first years of the 1990s with annual average change rates of -10 % to -30 %, coinciding with a consolidation of large scale farm structures and the release of non-family labour. This was followed by a more stable period, but with an annual decrease still exceeding that in the EU-15, until about 2000. In Poland, where in comparison with the other CEEC farm restructuring was less pronounced, since family farms had already been the predominant farm type prior to transition, the agricultural labour force was much less reduced. However, it is difficult to exactly determine the extent of the reduction. Prior to the Polish 2002 Agricultural Census on agricultural employment the statistics included farms of less than 1 ha and, thus, probably many (semi-) subsistence farmers with very small plots, which, in fact, were hidden unemployed people (Figure 4.1 uses revised numbers for the years 1995-2001). In Bulgaria, Romania and Slovenia until about 1998-2000 and in the first years of transition also in Latvia and Lithuania, there was an observable increase in agricultural employment. This reflects the creation of small family farms arising from the land privatisation process, migration

[83] Cf. Macours, K. and Swinnen, F.M. (1998), "Agricultural labour adjustments during transition in Central and Eastern Europe", Policy Research Group Working Paper 16, Leuven.

from urban to rural areas and (semi-) subsistence agriculture acting as social buffer during the development of a more market orientated economy.

Figure 4.1: Development of employed persons in agriculture[1)] in the Central and Eastern European countries, 1990-2002 (1990=100)[2)]



Note: [1)] Including hunting and forestry in Slovakia, Lithuania and the Czech Republic; including hunting in Latvia; including hunting, forestry and fishery in Poland and Hungary. [2)] Slovenia: 1993=100.
Source: Calculations based on Statistical Yearbooks of Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic and Slovenia (2003 and earlier). Poland year 1995-2001 (revised figures): Bundesministerium für Verbraucherschutz, Ernährung und Landwirtschaft (2004).

4.3 Determinants of agricultural employment trends

A literature review shows the following general factors which have influenced the agricultural labour adjustment and intergenerational farm transfers in the past and are likely to do this in future:

1) labour saving technical progress,
2) macroeconomic environment (as economic growth and off-farm employment opportunities),
3) farm structure,
4) socio-economic characteristics of the farmer,
5) agricultural support policies.

It is commonly agreed, that *technological change* leads to labour saving processes, which are adopted most quickly by larger farms.[84] Taking Germany as an example, Table 4.5 shows how labour input per hectare and animal respectively has been drastically reduced during the last decades. Although labour saving technical progress was much more pronounced during the 1950s and 1960s, the ongoing reduction is still remarkable. For the CEEC – where agricultural production is generally more labour intensive than in the EU15 – it is expected that farm modernization and the reduction of the labour force will be accelerated by EU accession.[85]

[84] Glauben, T., Tietje, H. and Weiss, C. (2005), "Agriculture on the Move: Exploring Regional Differences in Farm Exit Rates in Western Germany", Review of Regional Research (forthcoming).
[85] Swinnen, F.M. and Dries, L. (2003), "A framework for analysing labour mobility in agriculture and rural areas of transition countries", in OECD (ed.): Agricultural and Rural Development Policies in the Baltic Countries, Paris, pp.115-133.

Table 4.5: Standard working hour requirements per year for selected production processes on German farms with high technical performance, 1950-2000

	unit	around 1950	around 1960	around 1970	around 1980	around 1990	around 2000	around 2000, large field sizes and large herds resp.
Cereals[1)]	h/ha	150	100	27	10	9	7	5.5
Potatoes[2)]	h/ha	320	285	70	50	40	32	22
Sugar beet[3)]	h/ha	460	400	130	70	45	28	25
Hay	h/ha, 1. cut	77	65	18	10	8	7	6
Dairy cows [4)]	h/cow	145	90	75	55	50	45	40
Pig fattening[5)]	h/pig	8	4	2.5	1.2	1	1	1

Note: [1)] Until 1970 including straw collecting, since 1980 without straw collecting. [2)] Since 1970 without sorting. [3)] Until 1970 with beet leaf collecting, since 1980 without beet leaf collecting. [4)] Without roughage fodder harvesting and without manure and slurry application. [5)] Without manure and slurry application.
Source: Henkel (2004, p. 149).

Regarding the *macroeconomic environment* it is frequently argued that particularly economic growth, and its associated increase in non-farm employment opportunities, facilitate labour outflow from agriculture.[86] Empirical results of Andermann and Schmitt (1996) for Western Germany support this view. They identified sector income, farm input and output prices as well as the industrial wage rate and general labour market conditions as explanatory factors for changes in total farm labour. However, in the short term (up to three years), the OECD (1994a)[87] found no significant influence of unemployment rates, industrial employment, real interest rates, agricultural prices and non-farm wages on labour change in eight Western economies. These empirical differences can be explained (besides methodological problems) by non-economic determinants of individual and household decisions, the characteristics of the agricultural labour force (see below), and the long-term planning perspectives of family farms. It is not to be expected that family farmers react in the short-term to better general economic conditions with irreversible farm exit decisions. This time dimension should be kept in mind when arguing that in the CEEC overall economic growth will in future lead to a stronger outflow of labour particularly that working on (semi-) subsistence farms. The developments of small farm households, which have a strong social and food security goals (given recent experiences), will in addition depend on changes in the social security systems.[88] As Pouliquen (2001, p. 85) states: "The social service that semi-subsistence farming renders by supporting hidden agricultural unemployment - instead of the state budget - is considerable. The general concept and the adjustments of this social aid therefore constitute a complex challenge for research and the national and Community administrations involved." In general, the huge net job losses in the first period of transition made it difficult for many CEEC to restructure agriculture and to reduce its employment. In contrast, the sharp fall in agricultural labour in Western Europe during the last 50 years was facilitated by low levels of unemployment and a strong growth in non-agricultural employment.[89]

Furthermore, there are significant differences in the rates of labour force adjustment during transition in the CEEC according to the type of *farming structure* (see section 4.2). Regions which had a relatively low labour intensity at the beginning of transition have reduced labour significantly whereas regions which had a high labour intensity have kept labour. In the Czech Republic, Slovakia and

[86] Swinnen and Dries (2003), o.c.; Glauben, Tietje and Weiss (2005), o.c.

[87] "Farm Employment and Economic Adjustment in OECD Countries", Paris.

[88] Swinnen and Dries (2003), o.c.; Macours, K. and Swinnen, F.M. (2005), "Agricultural Labor Adjustments in Transition Countries", Review of Agricultural Economics 27, pp.405-411.

[89] Pouliquen, A. (2001), "Competitiveness and Farm Incomes in the CEEC Agri-Food Sectors. Implications before and after Accession for EU Markets and Policies.

Estonia, the high share of non-family labour in total agricultural labour has contributed to a faster adjustment of labour inputs to changing economic conditions.[90] Concerning the influence of farm structures in the EU15 countries, Breustedt and Glauben[91] revealed higher farm exit rates in regions with small, less specialized farms. Part-time farming turned out to be a stabilizing factor in this survey, a result which is contradictory to findings of other studies.[92]

Labour mobility out of agriculture is also influenced by the *age and education of farmers*. A better education facilitates enhanced farm management but is also crucial for the prospects of finding work outside of agriculture – in the EU15 as well as in the NMS. Middle-aged farmers without vocational education and off-farm working experience have only limited possibilities and are likely to continue farming until retirement. Therefore, besides retirees leaving the sector, changes in agricultural employment are mainly caused by the entry or exit of young, well educated labour.[93] One of the main ways that adjustment occurs is by "non entry" into the sector by heirs to a farm especially on small holdings.[94] In many CEEC, the low educational level and the rather old age structure of agricultural labour hampers the necessary restructuring process.[95]

Finally, farm workforce development in the EU is also influenced by the CAP which affects agricultural prices and farm income. In general, *agricultural support policies* influence the functioning of markets and attract more resources into agriculture than would be the case in their absence. Therefore, the reform of such policies could exert adjustment pressures, whose nature depends on the pace, range and scope of the assistance reductions.[96] However, the many impact assessments of CAP reforms have usually focussed on production effects[97] and to a lesser extent on income with little attention to employment effects. The shift from income support via price support towards direct payments in the CAP reforms since 1992 will have softened the driving out forces since the degree of support is less output dependent. Estimation results of Breustedt and Glauben indicate that higher subsidy payments and output prices lower the farm exit rates in European countries. According to results of an analysis carried out with the FARMIS model for Germany for the simulation year 2012, the impact of the 2003

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[90] Swinnen and Dries (2003), o.c.; Swinnen, J.F.M., Dries, L. and Macours, K. (2005), "Transition and agricultural labor", Agricultural Economics 32, pp.15-34.

[91] "Driving Forces of Exiting from Farming in Western Europe", Journal of Agricultural Economics, under review.

[92] Stiglbauer, A. and Weiss, C.R. (2000), "Family and non-family succession in the Upper-Austrian farm sector", Cahiers d´économie et sociologie rurales 54, pp.5-26; Tietje, H. (2004), "Hofnachfolge in Schleswig-Holstein", Dissertation, Kiel; Bojnec, S., Dries, L. and Swinnen, J.F.M. (2003), "Human Capital and Labor Flows out of the Agricultural Sector: Evidence from Slovenia", in Proceedings of the 25th International Conference of Agricultural Economists (IAAE), 16-22 August 2003, Durban, South Africa.

[93] Andermann, G. and Schmitt G.H. (1996), „Die Bestimmungsgründe der Beschäftigung in der Landwirtschaft", Mitteilungen aus der Arbeitsmarkt- und Berufsforschung 29, 4, pp. 630-655; Swinnen and Dries (2003), o.c.

[94] Hennessy, T. (2002), "Modelling Succession on Irish Dairy Farms", contributed paper on the 10th EAAE Congress in Zaragoza, August 2002.

[95] Juvančič, L. and Erjavec, E. (2003), "Intertemporal analysis of employment decisions on agricultural holdings in Slovenia", contributed paper on the 25th International Conference of Agricultural Economists (IAAE), 16-22 August 2003, Durban, South Africa; Bojnec, Dries and Swinnen (2003), o.c.; Rizov, M. and Swinnen, J.F.M. (2004), "Human capital, market imperfections, and labor reallocation in transition", Journal of Comparative Economics 32, pp.745-774; European Commission, Network of Independent Agricultural Experts in the CEE Candidate Countries (2004), "The future of rural areas in an enlarged EU", Luxembourg.

[96] OECD (1994b), "Agricultural policy reform: new approaches. The role of direct income payments", Paris.

[97] For a comparison of the production effects according to 7 impact studies see Balkhausen, O., Banse, M., Grethe, H. and Nolte, S. (2005), "Modelling the Effects of Partial Decoupling on Crop and Fodder Area as well as Beef Supply in the EU: Current State and Outlook", contributed paper on the 89. EAAE Seminar "Modelling Agricultural Policies: State of the Art and New Challenges", February 03-05 2005, Parma.

CAP reform on employment is modest.[98] Compared with the reference scenario "Agenda 2000", the CAP reform reduces agricultural labour input only by -0.7%. This has to be seen against a decrease of labour input by -31.5% under the reference scenario Agenda 2000 from the base year 1999/2000 to 2012. The SERA case studies (see chapter 10) judge the impact of the 2003 CAP reform/introduction on agricultural employment to be rather minor overall as well. The impact of the rural development (RD) policy is not uniform among the several measures. Some facilitate rather a growth of agricultural employment, some rather a reduction. Generally, RD policy is assumed to retain agricultural employment but do not create new jobs.[99] Regarding the general job creation in rural areas, regional policies seem to be more effective than most of the existing rural development measures.[100]

4.4 Scenarios of potential future developments of agricultural labour

In summary, employment in agriculture, which in most parts of Europe is mainly characterised by family farms, proves to be a result of a complex interdependent system consisting of the decision making processes of individuals and households as well as the influence of overall structures. The determinants for future developments are of varying importance depending on the considered country and region. It would go beyond the scope of the SERA project resources to attempt to include all influencing factors in a sophisticated model which could forecast future employment figures in EU25 agriculture. The same holds for representative surveys dealing with intergenerational farm transfers which could be used to forecast agricultural employment in countries with family farms. Moreover, the predominance and continuation over time of the exodus of farm labour in most EU regions supports a more simple methodology in the form of trend extrapolations and estimations of the employment effects of labour saving techniques.[101]

Agricultural employment in the EU15 (expressed both in persons and AWU) is extrapolated until 2014 based on past trends. The results have to be interpreted with caution due to their dependence on the considered (short) time period (1990-2003 for most countries) and the neglect of (possible) structural breaks. For the NMS, trend extrapolation is not possible given the short period of time since the transition and the shift in external conditions that this event entailed. Thus three experiments are conducted, which answer questions of the type "What would happen if…" and demonstrate in this way possible future adjustments of agricultural employment under clearly defined assumptions. These scenarios and experiments are supplemented by the analysis of the case studies (cf. chapter 10).

4.4.1 *Results of the trend extrapolation in the EU15*

Two scenarios are considered for the trend extrapolation of the EU15 countries. The first scenario assumes that the linear trend obtained by a regression analysis of FSS data for the period 1990 to 2003 will continue until 2014. In the second scenario, the figures for 2014 are calculated holding the annual average change rate constant at the 1990-2003 level. The results of these scenarios give insights about potential employment figures in 2014, provided that past trends in agricultural

[98] Fasterding, F., Rixen, D. (2005), "Analyse der Beschäftigungsmöglichkeiten im Agrarsektor Deutschlands und Beschäftigungseffekte agrarpolitischer Maßnahmen", Braunschweig.

[99] Tamme, O. (2004), "Evaluation of the employment effects of rural development under the regulation 1257/99 in comparison with CAP-compensatory allowances and premiums", in Bundesanstalt für Agrarwirtschaft (ed.): Proceedings of the 87th EAAE-Seminar (CD), 21-23 April 2004, Vienna/Austria.

[100] Fasterding and Rixen (2005), o.c.

employment will continue. The trend extrapolations result in a decrease of persons in agriculture in the EU15 in the period 2000-2014 of between -28 and -35 % on average, i.e., between 3.8 and 4.8 million people potentially leaving the agricultural sector (see Table 4.6). The decrease per year is smallest in the Netherlands, the United Kingdom and Greece, where persons employed in agriculture according to Eurostat figures fell only slightly in the last 13 years (in some years there was an increase) resulting in very low regression coefficients of the trend extrapolation (UK and GR). In the Netherlands, the low decrease can be partly explained by the prospering horticulture sector, which accounts for nearly one third of the regular labour force in agriculture[102] and whose labour force reveals only a very slight tendency to fall.[103] In contrast, the highest decrease of labour force is observed for Germany, Finland and Luxembourg (besides Portugal, see note 6 in Table 4.6).

Table 4.6: Scenario results: regular persons in agriculture in the EU15 in 2014

	Status quo			First scenario: Linear trend extrapolation[2)]			Second scenario: Change rate p.a. as in column 4[3)]		
	1990[1)]	**2003**[1)]	**1990-2003**[1)]	**2014**	**2003-14**[1)]	**2003-14**[1)]	**2014**	**2003-14**[1)]	**2003-14**[1)]
	in 1000	in 1000	% per year	in 1000	%	% per year	in 1000	%	% per year
AT	547	441	-2.7	333	-24	-2.5	328	-26	-2.7
BE	141	100	-2.6	63	-37	-4.1	75	-25	-2.6
DE	1776	1033	-4.1	366	-65	-9.0	653	-37	-4.1
OBL	1424	901	-3.5	429	-52	-6.5	612	-32	-3.5
NBL	352	132	-7.3	88[7)]	-33[7)]	-3.6[7)]	100[7)]	-24[7)]	-7.3
DK	139	94	-3.0	53	-44	-5.1	67	-28	-3.0
ES	2839	2323	-1.5	1925	-17	-1.7	1961	-16	-1.5
FI	232	176	-3.4	86	-51	-6.3	121	-31	-3.4
FR	1859	1243	-3.1	684	-45	-5.3	884	-29	-3.1
GR	1543	1520	-0.1	1361	-10	-1.0	1500	-1	-0.1
IE	313	249	-1.7	184	-26	-2.7	205	-18	-1.7
IT	5287	3738	-2.6	2419	-35	-3.9	2788	-25	-2.6
LU	9	6	-3.8	3	-50	-6.1	4	-35	-3.8
NL	289	261	-0.8	244	-7	-0.6	240	-8	-0.8
PT	1561	1064	-3.8	286[6)]	-73[6)]	-9.0[6)]	622	-42	-3.8
SE	164	144	-1.6	116	-19	-1.9	121	-16	-1.6
UK	659	644	-0.2	579	-10	-1.0	632	-2	-0.2
EU15	15244	13547	-2.3	8785	-35	-3.0	9777	-28	-2.3
EU14[4)]	14071	11972	-2.0	8812	-26	-2.7	9582	-20	-2.0
EU11[5)]	14855	11210	-2.1	7882	-30	-3.2	8840	-21	-2.1

Notes: [1)] Varying years instead of 1990-2003: EU15 1995-2000; AT, FI, SE and EU14 1995-2003; PT 1990-2000 (incomplete data). DE NBL scenarios 1993-2003 (to exclude the drastic decline in workforce in the early 1990s due to transformation processes). [2)] R^2: AT=0.74, BE=0.99, DE=0.93 (ABL=0.98, NBL=0.88 1993-2003), DK=0.83, ES=0.89, FI=0.93, FR=0.94, GR=0.25, IE=0.91, IT=0.96, LU=0.94, NL=0.80, PT=0.85, SE=0.83, UK=0.09, EU15=0.98, EU-14=0.97, EU-11=0.98. [3)] With the exception of German NBL where the change rate 1993-2003 (-2.48) is used. [4)] EU15 without PT. [5)] EU15 without AT, PT, FI, SE. [6)] This result is technically correct, but obviously not plausible. Omitting the 1990 figure from the trend extrapolation, i.e. extrapolating the period 1993-2000 results in more plausible 626000 persons in 2014 (change 2000-2014: -60% and -3.72% p.a.). [7)] The scenarios of the German New *Bundesländer* (NBL) are based on the time period 1993-2003 in contrast to the scenario of Germany as a whole and the German Old *Bundesländer* (OBL) (1990-2003). Therefore, the values of the German OBL and NBL cannot fit with the figures presented for overall Germany.
Source: Calculations based on Eurostat Farm Structure Survey.

[101] Cf. e.g. Landesamt für Verbraucherschutz und Landwirtschaft Brandenburg (ed.) (2002), "Analyse des landwirtschaftlichen Fachkräfte- und Bildungsbedarfs im Land Brandenburg", Teltow, with an overview of forecasting approaches by Theodor Fock.

[102] Statistics Netherlands: www.cbs.nl.

[103] According to a forecast by the Landbouw Economisch Institute (LEI) in Wageningen, employment in the horticulture complex of the Netherlands is expected to decrease by only -0.4% AWU per year between 2003 and 2015. In contrast, the LEI researchers expect a reduction of employment in the total agro-complex by -1.2% AWU per year in the same period. Source: LEI (2005), "Prospects for the agricultural sector in the Netherlands", Wageningen, www.lei.dlo.nl/wever/docs/Voorpagina/060216%20Prospects%20agriculture%20english.pdf.

On average, agricultural employment expressed in AWU will fall more than when expressed in persons, indicating an ongoing tendency towards part-time farming (see Table 4.7). The scenario results show a decrease of AWU of between -35 and -47 % in the EU15 in the period 2000-2014, i.e., between around two and two and a half million full time working people potentially leaving the agricultural sector. It is against this background that concerns expressed about the likelihood of future potential agricultural shortages in ageing societies with few young people entering the sector can be better understood as shown for example in studies for Eastern Germany.[104]

Table 4.7: Scenario results: regular AWU in agriculture in the EU15 in 2014

	Status quo			**First scenario: Linear trend extrapolation[2)]**			**Second scenario: Change rate p.a. as in column 4[3)]**		
	1990[1)]	**2003[1)]**	**1990-2003[1)]**	**2014**	**2003-14[1)]**	**2003-14[1)]**	**2014**	**2003-14[1)]**	**2003-14[1)]**
	in 1000	in 1000	% per year	in 1000	%	% per year	in 1000	%	% per year
AT	185	172	-0.9	159	-7	-0.7	156	-10	-0.9
BE	92	70	-2.1	50	-29	-3.0	56	-21	-2.1
DE	1013	662	-3.2	268	-60	-7.9	462	-30	-3.2
OBL	706	556	-1.8	331	-40	-4.6	455	-18	-1.8
NBL	307	106	-7.8	60[7)]	-43[7)]	-5.0[7)]	77[7)]	-27[7)]	-7.8
DK	91	58	-3.3	28	-52	-6.4	40	-31	-3.3
ES	954	803	-1.3	683	-15	-1.5	694	-14	-1.3
FI	128	92	-4.1	35	-62	-8.4	58	-37	-4.1
FR	1176	821	-2.7	491	-40	-4.6	606	-26	-2.7
GR	630	517	-1.5	381	-26	-2.7	418	-19	-1.5
IE	245	156	-3.4	68	-56	-7.3	106	-32	-3.4
IT	1664	1323	-1.8	901	-32	-3.4	1089	-18	-1.8
LU	6	4	-3.6	2	-50	-6.1	3	-33	-3.6
NL	216	173	-1.7	143	-17	-1.7	144	-17	-1.7
PT	784	476	-4.9	6[6)]	-99[6)]	-26.8[6)]	237	-50	-4.9
SE	83	68	-2.6	45	-34	-3.7	51	-25	-2.6
UK	446	334	-2.2	230	-31	-3.3	262	-22	-2.2
EU15	6630	5688	-3.0	3041	-47	-4.4	3713	-35	-3.0
EU14[4)]	6093	5255	-1.8	3813	-27	-2.9	4288	-18	-1.8
EU11[5)]	6534	4923	-2.2	3247	-34	-3.7	3878	-21	-2.2

Notes: [1)] Other periods than 1990-2003: EU15 1995-2000; AT, FI, SE and EU14 1995-2003; PT 1990-2000 (incomplete data). DE NBL scenarios 1993-2003 (to exclude the drastic decline in workforce in the early 1990s due to transformation processes). [2)] R^2: AT=0.57, BE=0.91, DK=0.66, FI=0.95, FR=0.86, DE=0.68 (ABL=0.66, NBL=0.79 1993-2003), GR=0.83, IE=0.97, IT=0.72, LU=0.99, NL=0.91, PT=0.78, ES=0.93, SE=0.98, UK=0.81, EU15=0.98, EU14=0.85, EU11=0.94. [3)] With the exception of German NBL where the change rate 1993-2003 (-2.48) is used. [4)] EU15 without PT. [5)] EU15 without AT, PT, FI, SE. [6)] This result is technically correct, but obviously not plausible. Omitting the 1990 figure from the trend extrapolation, i.e. extrapolating the period 1993-2000 results in more plausible 280000 AWU in 2014 (change 2000-2014: -64% and –3.71% p.a.). [7)] The scenarios of the German New *Bundesländer* (NBL) are based on the time period 1993-2003 in contrast to the scenario of Germany as a whole and the German OBL (1990-2003). Therefore, the values of the German OBL and NBL cannot fit with the figures presented for overall Germany.
Source: Calculations based on Eurostat Farm Structure Survey.

4.4.2 *Results of the experiments in the NMS*

To forecast agricultural employment *in the NMS* in the year 2014 is much more speculative than in the EU15. In general, the inflow of CAP subsidies and rural development funds after EU accession is likely to raise farm incomes at least for a few years and therefore slow down the shedding of labour. On the other hand, the stronger need to restructure and increase productivity in agriculture as well as the increase in job opportunities in the rest of the economy may well result in further employment reduction in agriculture. The experience from the accession of Spain, Portugal and Greece reinforces the expectation of an increase in the outflow of labour from agriculture in the NMS (cf. Table 4.8). "Whatever benefits may come from CAP subsidies, they are unlikely to offset the pressures and

[104] Landesamt für Verbraucherschutz und Landwirtschaft Brandenburg (ed.) (2002), o.c.

incentives for further, and significant, cuts in the agricultural labour force. The experiences also suggest that an increase in labour outflow may take place in those countries, where labour reductions have been relatively small".[105] However, the effects will also depend on farm sizes with the small-scale farm sector in many NMS as a rather special case. Most of such small farms or household plots always depended on off farm employment even before transition.

Table 4.8: Development of agricultural employment in Greece, Portugal and Spain before and after their EU accession

	Share of agricultural employment before accession	Average annual change in agricultural employment 5 years before accession	Average annual change in agricultural employment 1-10 years after accession
Greece	29 %	n.a.	-2.8 %
Portugal	17 %	-1.7 %	-4.7 %
Spain	14 %	-3.5 %	-5.3 %

Source: Swinnen and Dries 2003, p.130.

The three applied experiments (see Table 4.9 and Table 4.10) do *not* forecast the future size of the agricultural labour forces in the NMS, but provide a simple logical framework to show the dimensional bounds of a potential reduction of the agricultural labour force for the period 2003-2014 given certain assumptions. The first experiment takes into consideration that the capital stock of many farms in the NMS is outdated and, thus, agricultural production is generally more labour intensive than the EU15 average. It is expected that modernisation of the farming sector in the NMS will be accelerated by EU accession and the ratio of agricultural labour input and agricultural land will tend to converge. The first experiment therefore explores the question "What would happen, if the NMS reached by 2014 the EU-14[106] labour-land-ratio of 2003, i.e. 42 AWU/1000 ha UAA?"[107] It should be stressed once again that this is not thought to be a realistic assumption for all NMS because differences in production structures (e.g. the relevance of livestock or vegetables production), and economic aspects (e.g. price ratios, opportunity costs of land and labour) are not considered. Moreover, the assumption of an accelerated reduction in the farm workforce due to a big difference between the EU15 level and the level of a single country is not a sufficient explanation that changes will occur. Greece, for example, has the highest AWU/UAA ratio in the EU15 countries, but has one of the lowest rates of reduction of the farm workforce between 1990 and 2003. Agricultural employment in the first experiment is calculated by multiplying the utilised agricultural area (UAA) in 2003 with 42 AWU/1000 ha (see Table 4.9). The change in Bulgaria and Romania is calculated with national data (persons per 1000 ha) due to missing FSS data (see Table 4.10). The second and third experiments are based on experiences of the Southern Enlargement. Despite the specificity of the Eastern enlargement, some lessons from previous accessions can be drawn in which Portugal, Spain and Greece are the most comparable ones regarding the significance and structure of the agricultural sector.[108] In the second experiment, the annual average change rate of agricultural employment in Spain and Portugal within the first 10 years after accession (approximately -5 %) is adopted to the NMS. The third experiment uses the Greek rate (approximately -3 %) where structural adjustments were lower (cf. Table 4.8).

[105] Swinnen and Dries (2003), o.c., p. 130.

[106] PT is missing due to a lack of data for 2003.

[107] In this case agriculture in the NMS would still be more labour intensive since in the EU15 technical progress is likely to further reduce the labour-land ratio. For example, from 1995 to 2003 this ratio decreased in the EU-14 from 46 to 42 AWU/1000 ha.

[108] Cf. Wehrheim, P. (1998), "Agrarpolitische Lehren aus bisherigen EG (EU)-Erweiterungsrunden für die Integration der Länder Mittel- und Osteuropas (MOE) in die EU", Berichte über Landwirtschaft 76, 3, pp. 366-381;

In the three experiments, the reduction of the agricultural labour force (measured in AWU) in the NMS ranges from -28 % assuming a development comparable with Greece to -59 % assuming that the NMS would reach by 2014 the EU-14 labour-land-ratio of 2003. This means that 1-2 million AWU (i.e. about 2-4 million persons) may potentially leave agriculture by 2014 in the NMS10. In addition, a further 1-2 million persons may leave the sector in Romania and Bulgaria.

Table 4.9: Agricultural employment (in AWU) in the NMS in 2003 and results of the experiments for 2014

	UAA 2003 in 1000 ha [1]	of which arable land (%)	of which permanent grassland (%)	of which vegetables + perm. crops (%)	**Status quo**		**First Experiment:** What would happen, if the NMS reached by 2014 the EU-14 labour-land-ratio of 2003, i.e. 42 AWU/1000 ha UAA?			**Second Experiment:** What would happen, if the regular labour force in the NMS was reduced by 5 % p.a. until 2014, a change rate similar to Spain and Portugal within 10 years after their EU accession?			**Third Experiment:** What would happen, if the regular labour force in the NMS was reduced by 3 % p.a. until 2014, a change rate similar to Greece within 10 years after its EU accession? (lower structural adjustment)		
					AWU per 1000 ha UAA 2003	Regular labour force **2003** in 1000 AWU	Regular labour force **2014** in 1000 AWU	Change 2003-2014 in %	Change 2003-2014 in % per year	Regular labour force **2014** in 1000 AWU	Change 2003-2014 in %	Change 2003-2014 in % per year	Regular labour force **2014** in 1000 AWU	Change 2003-2014 in %	Change 2003-2014 in % per year
CY	136	64	1	30	211	29	6	-79	-14	17	-43	-5	21	-28	-3
CZ	3668	75	24	1	42	156	154	-1	0	89	-43	-5	112	-28	-3
EE	698	78	n.a	2	53	37	29	-21	-2	21	-43	-5	26	-28	-3
HU	5865	77	18	5	87	511	246	-52	-6	291	-43	-5	366	-28	-3
LV	1582	60	39	2	86	137	66	-52	-6	78	-43	-5	98	-28	-3
LT	2531	59	38	2	86	217	106	-51	-6	123	-43	-5	155	-28	-3
MT	11	86	0	29	415	4	0.5	-89	-19	2	-43	-5	3	-28	-3
PL [2]	16169	78	20	3	134	2161	679	-69	-10	1229	-43	-5	1546	-28	-3
SK	2236	62	36	2	51	115	94	-18	-2	65	-43	-5	82	-28	-3
SI	509	34	61	6	179	91	21	-77	-12	52	-43	-5	65	-28	-3
NMS10	**33406**	**74**	**24**	**2**	**104**	**3458**	**1403**	**-59**	**-8**	**1967**	**-43**	**-5**	**2474**	-28	-3
EU14 [3]	126112	56	29	8	42	5255									

Note: [1] UAA = Utilised agricultural area, in Estonia 2002. [2] Individual holdings only.
[3] EU15 without PT due to missing FSS data for 2003.
Source: Calculations based on Eurostat Farm Structure Survey.

Patier, E.D. (2000), „Experience of EU accession for the agricultural sector: Spain and Portugal“, in Burrell, A. and Oskam, A. (eds.): Agricultural Policy and Enlargement of the European Union, Wageningen.

Table 4.10: Agricultural employment (in persons) in Bulgaria and Romania in 2003 and results of the experiments for 2014

	UAA 2003 in 1000 ha [1]	of which arable land (%)	of which permanent grassland (%)	of which vegetables + perm. crops (%)	**Status quo**		**First Experiment:** What would happen, if the NMS reached by 2014 the EU-14 labour-land-ratio of 2003, i.e. 91 persons/1000 ha UAA?			**Second Experiment:** What would happen, if the regular labour force in the NMS was reduced by 5 % p.a. until 2014, a change rate similar to Spain and Portugal within 10 years after their EU accession?			**Third Experiment:** What would happen, if the regular labour force in the NMS was reduced by 3 % p.a. until 2014, a change rate similar to Greece within 10 years after its EU accession? (lower structural adjustment)		
					Per-sons per 1000 ha UAA 2003	Agr. empl. **2003** in 1000 per-sons	Agr. empl. **2014** in 1000 per-sons	Change 2003-2014 in %	Change 2003-2014 in % per year	Agr. empl. **2014** in 1000 per-sons	Change 2003-2014 in %	Change 2003-2014 in % per year	Agr. empl. **2014** in 1000 per-sons	Change 2003-2014 in %	Change 2003-2014 in % per year
BG	5326	61	34	5	144	769	485	-37	-4	438	-43	-5	550	-28	-3
RO	14717	64	33	5	205	3011	1339	-56	-7	1713	-43	-5	2154	-28	-3
NMS2	**20044**	**63**	**33**	**5**	**189**	**3780**	**1824**	**-52**	**-6**	**2151**	**-43**	**-5**	**2704**	**-28**	**-3**
EU14[2]	126112	56	29	8	91	11531									

Note: [1] UAA = Utilised agricultural area. [2] EU15 without PT due to missing FSS data for 2003.
Source: Calculations based on national Statistical Yearbooks and Eurostat Farm Structure Survey.

Some country-specific aspects are discussed below.

Agricultural land use in *Malta* and *Cyprus* is characterised by very high shares of vegetables and permanent crops in the total utilized agricultural area. In Malta, this share reached 30 % and in Cyprus 29 % in 2003 compared to 8 % in the EU-14. Therefore, the assumptions underlying the first experiment are unrealistic for these two countries. Since farm structures are comparable with those in Greece, experiment 3 could be assumed to be most appropriate.

Agriculture in the *Czech Republic* and *Slovakia* is dominated by large-scale farms with a relatively low labour intensity. Since the average labour-land ratio in Czech agriculture already in 2003 equals the EU-14 average, the first experiment yields no further reduction of agricultural employment until 2014. To a lesser extent this also holds for Slovakia. Taking the 2003 labour-land ratio of the German new *Bundesländer* (19 AWU/1000 ha), which have a very similar farm structure, as a reference point for the Czech Republic and Slovakia in 2014, the average change rate would be 5-6 % per year. Thus, for these two countries the results of the second or third experiment seem to be far more realistic than those of experiment 1.

For *Estonia* and *Hungary*, both characterised by a very pronounced dualistic farm structure and a sharp reduction of agricultural employment since the beginning of transition, experiment 1 results in annual average change rate of -2 and -6 %. Something in-between these range could be realistic for both countries.

Latvia, *Lithuania*, *Poland* and *Slovenia* are characterised by rather small family farms. The reduction of farm workforce during transition was rather low, so that restructuring is badly needed. However, the annual average change rates of -6 to -12 % of experiment 1 seem to be unrealistically high. It is not likely that off-farm income opportunities will grow so fast to allow such a rapid decrease of agricultural family labour. Family farm structures normally show a tendency to persist and to change slowly (cf. section 4.3). The opportunity costs of agricultural labour – i.e., the income that could be obtained from

the best forgone employment opportunity outside agriculture – which are a decisive driving factor for the future development of agricultural employment, are often close to zero or at least rather low. They are negatively correlated with the age of the farmer and positively correlated with the educational level, the size of the farm holding and the existence of non-agricultural jobs. The future development of particularly (semi-) subsistence farms, which account in Poland for more than one third of holdings above 1 ha in the year 2002,[109] depends also on the social security systems. The results of experiment 2 and 3 which take into account the experience of Spain, Portugal and Greece during their first decade after joining the EU shows that a potential reduction of from -3 to -5% per annum is quite possible.

Bulgaria and *Romania* are expected to accede to the European Union in 2007. The farm structure is dualistic with many (semi-) subsistence farms which emerged through privatization and which serve as social buffer. Whether a large number of them will exit the farming sector in future will therefore strongly depend on the non-farm income opportunities and from the benefits provided by the social security systems. There has been no rapid change in either in recent years.

4.5 Structure of agricultural labour force

The structure of agricultural labour force – e.g. the share of non-family labour force, the share of part-time farming and the age structure of labour force – influences the adjustment processes of agricultural employment (cf. section 4.3). The farm family is by far the most important source of farm labour in the EU25 with an average 93 % (90 %) share in PR (SR) regions (measured in persons). This implicates complex household decision making in the development of agricultural employment. However, there are differences between countries. In most countries, the share of the family labour force in the regular agricultural labour force measured in persons is above 75 %. Exceptions are particularly the Czech Republic, where this share is only 35 %, but also France[110], the Netherlands, Slovakia, Eastern Germany and South-East England (cf. Table 4.11 and Map A4.4 in the appendix). The high share of non-family labour in these countries can contribute to a faster adjustment of labour input to changing economic conditions, since the farm holder himself is not directly affected by the dismissal of employees and employed farm workers are emotionally less connected with the farm enterprise. As expected, the share of the family labour force measured in AWU is lower in most countries (4 %-points on average) because of the prevalence of part-time family workers compared to non-family workers. Sole holders have a share of nearly 50 % in the regular agricultural labour force with their lowest share in Eastern Germany, the Czech Republic, Slovakia and the Netherlands (cf. Table 4.12 and Map A4.5 in the appendix).

[109] Agricultural Census 2002 cited in Żmija, J. and Tyran, E. (2004), "Agriculture in Southeastern Poland – Main Problems of the Systemic Transformation Process", in Petrick, M. and Weingarten, P. (eds.): The Role of Agriculture in Central and Eastern European Rural Development: Engine of Change of Social Buffer? Studies on the Agricultural and Food Sector in Central and Eastern Europe, Vol. 25, Halle, pp.73-82.

[110] In France, the high share of non-family workers is mainly caused by the legal conversion of family farms to limited liability companies in 1985 when the legal form "exploitations agricoles à responsabilité limitée (EARL)" was created (Agreste Primeur No. 93 (2001), "Premiers resultats du recensement agricole 2000"). Thus, the former family labour force now employed in "EARL" is not registered as such any longer in Eurostat statistics.

Table 4.11: Share of family labour force in regular agricultural labour force (persons) in % in the EU25, 2003

	PU	SR	PR	All
EU25	88.1	89.9	93.2	91.1
AT	79.8	95.3	95.4	95.1
BE	84.4	89.2	92.6	86.0
CY		92.9		92.9
CZ	9.7	35.5	34.0	35.1
DE	84.0	80.7	80.7	81.5
DK	81.6	70.7	81.0	77.8
EE	81.4	86.2	75.9	83.9
ES	93.2	90.3	92.8	91.6
FI		87.5	91.1	90.4
FR	63.2	63.2	68.6	65.4
GR	94.8	98.2	98.7	98.4
HU	72.2	90.2	93.1	92.1
IE	76.7		94.4	94.2
IT	95.5	96.6	96.9	96.4
LT		94.2	95.0	94.7
LU		90.4		90.4
LV	0.0	92.0	90.5	91.5
MT	94.5			94.5
NL	64.1	78.1	N/A	67.0
PL	98.3	99.2	98.9	99.0
PT	93.0	95.4	93.6	94.3
SE		75.4	84.2	82.8
SI		98.2	98.4	98.3
SK	53.6	69.4	72.6	69.3
UK	73.3	73.9	80.4	77.5

Note: PT 2000.
Source: Eurostat Farm Structure Survey.

Table 4.12: Share of farm holders in regular agricultural labour force (persons) in % in the EU25, 2003

	PU	SR	PR	All
EU25	46.4	46.8	48.4	47.5
AT	36.0	37.9	38.8	38.6
BE	49.9	53.9	60.4	51.5
CY		51.9		51.9
CZ	4.6	21.8	20.7	21.6
DE	41.2	38.9	38.9	39.4
DK	54.0	47.6	52.7	51.1
EE	40.4	40.1	33.8	38.8
ES	54.2	45.9	46.4	46.9
FI		41.1	42.1	41.9
FR	40.5	41.0	44.5	42.4
GR	55.3	53.4	54.5	54.2
HU	41.7	52.0	52.1	52.0
IE	43.5		54.4	54.3
IT	50.9	52.2	54.1	52.2
LT		49.1	50.8	50.2
LU		42.8		42.8
LV	0.0	49.6	50.6	49.9
MT	59.7			59.7
NL	29.9	36.7	N/A	31.4
PL	54.2	50.4	50.1	50.4
PT	31.5	38.0	40.5	38.5
SE		41.2	44.1	43.6
SI		36.9	36.3	36.5
SK	25.1	27.7	33.1	28.4
UK	40.3	40.4	43.2	42.0

Note: PT 2000.
Source: Eurostat Farm Structure Survey.

Seasonal workers, which are often employed in the fruit and vegetable sector, have with 6.3 % of *total* agricultural labour force in AWU on average a small importance in the EU25 – but a higher significance in Spain (19.5 %), Greece (16.1 %), Cyprus (10.8 %), Italy (10.3 %), France (10.2 %) and Portugal (9.2 %).[111] The structure of the regular agricultural labour force has stayed relatively constant since 1990 except for a slight fall in the share of family labour.

4.5.1 *Working time*

Part-time farming plays an important role in European agriculture. In 2003, in the EU25, only 21 % of the employed persons on farms worked full-time, whereas 44 % of the agricultural workforce was employed less than 25 % of the time available for a full time worker. However, there are big differences between countries, but few differences amongst the three OECD categories. While most of the NMS and the Southern European Member States have high shares, above 80 %, of part-time farming, it is less than 60 % in the Czech Republic, Belgium, France, Denmark, Luxembourg, Ireland and the Netherlands. The regional distribution of part-time farm holders in the EU25 shows a similar picture (see Table 4.13 and Table 4.14 as well as Map A4.6 and Map A4.7 in the appendix). Another indicator for part-time farming is the comparison of agricultural employment expressed in persons with that expressed in AWU. Table 4.15 shows for the EU24 (EU25 without PL due to missing data), that differences between persons and AWU are greatest for "other family members" (indicating a high share of part-time work particularly of the younger generation) and lowest for non-family workers. It also shows that women work more often part-time on the farm than men.

Table 4.13: Share of part-time regular labour force in total regular agricultural labour force (persons) in % in the EU25, 2003

	PU	SR	PR	All
EU25	77.5	79.6	79.6	79.3
AT	68.0	78.7	78.4	78.3
BE	48.8	46.8	44.0	48.1
CY		88.0		88.0
CZ	34.9	44.6	42.5	44.3
DE	67.9	65.9	64.1	65.8
DK	N/A	51.1	55.3	54.4
EE	82.8	84.6	73.1	82.2
ES	88.6	80.6	84.9	83.1
FI		74.3	68.6	69.7
FR	44.2	52.8	50.8	52.3
GR	95.5	91.7	91.2	91.5
HU	84.0	91.8	92.0	91.9
IE	52.7		58.1	58.0
IT	84.6	87.8	87.3	86.8
LT		98.6	97.1	97.7
LU		56.8	0.0	56.8
LV	0.0	79.7	82.1	80.6
MT	91.4			91.4
NL	58.4	59.4	N/A	58.6
PL	86.4	78.9	72.4	75.7
PT	73.9	85.9	90.3	86.7
SE		73.6	78.4	77.6
SI		92.8	88.9	89.8
SK	76.8	80.8	81.8	80.8
UK	70.1	71.4	67.5	68.3

Note: PT 2000.
Source: Eurostat Farm Structure Survey.

[111] Data about seasonal workers are rather limited within the Farm Structure Survey, so that analysis in the

Table 4.14: Share of part-time sole holders in total sole holders (persons) in % in the EU25, 2003

	PU	SR	PR	All
EU25	74.1	79.3	79.4	78.6
AT	59.7	61.1	61.3	61.2
BE	35.2	32.5	32.8	34.5
CY		88.8		88.8
CZ	37.5	64.4	67.0	64.6
DE	57.5	57.8	55.9	57.1
DK	71.9	59.3	54.6	56.4
EE	85.2	90.9	86.7	90.0
ES	90.5	78.1	82.1	81.1
FI		63.4	54.5	56.1
FR	37.9	51.1	45.5	49.1
GR	95.3	89.6	88.5	89.0
HU	95.8	95.4	93.8	94.3
IE	45.5		43.6	43.6
IT	82.4	85.2	84.6	84.4
LT		98.6	97.5	97.9
LU		42.6		42.6
LV	0.0	80.2	83.3	81.3
MT	90.7			90.7
NL	35.1	34.2	N/A	34.9
PL	N/A	N/A	N/A	N/A
PT	61.2	80.5	90.0	83.6
SE		68.1	72.4	71.7
SI		89.1	83.7	84.9
SK	92.0	93.1	90.8	92.7
UK	70.5	70.3	64.1	67.1

Note: PT 2000.
Source: Eurostat Farm Structure Survey.

Table 4.15: Comparison of persons working as regular labour in agriculture with annual working units in the EU24, 2003[1)]

	Sole holder		Spouse		Other family members		Non family labour		Total regular labour	
	male	female	male	female	male	female	male	female	male	female
Persons in 1000	5594.7	1954.3	862.2	2731.5	2174.1	1061.9	1259.1	501.6	9890.2	6249.3
AWU in 1000	2742.6	688.2	283.8	992.2	694.0	283.1	995.9	361.7	4716.3	2325.2
AWU in % of persons	49.0	35.2	32.9	36.3	31.9	26.7	79.1	72.1	47.7	37.2

Note: [1)] EU24 = EU25 without PL due to missing data; PT 2000.
Source: Calculations based on Eurostat Farm Structure Survey.

In most countries, where data were available, the share of part-time work increased slightly between 1990 and 2003. However, part-time farming showed a slightly falling trend in Belgium, Luxembourg, Austria, Italy, France, Germany and Spain. Most studies consider part-time farming as the first step out of agriculture, i.e., a high share of part-time farming leads to increasing farm exits. However, there is also evidence that part-time farming can be a stabilising factor of employment (see section 4.3).

4.5.2 *Age structure and employment trends for young people*

The farm workforce is increasingly getting older in the EU25, but with significant differences between countries. When comparing the age structure of the family labour force in agriculture with the one of the total employed persons documented in the Labour Force Survey, the former shows a clearly overaged structure. In 2000, in the EU15, 23 % of total family labour force was on average above 65 years (for comparison, in total employment, this share was only 1 %) and 21 % was aged between 55-64 (11 % in total employment). In contrast, the share of the family labour force of less than 35 years was on average 18 % (36 % in total employment) and in the age group 35-44 around 17 % (28 % in

whole chapter is focused on *regular* agricultural labour force.

total employment) (see Table 4.16). The ratio of young people <35 in agriculture rises with increasing size of family farms (16 % on holdings with less than 5 ha and 24 % on holdings with more than 50 ha in the EU15), presumably because better prospects are expected by young people working on such farms.

Table 4.16: Share of different age groups of family labour (persons) in % in the EU15 and Slovenia, 2000[1)]

	Less than 35	Between 35 and 44	Between 45 and 54	Between 55 and 64	65 and over	Total
EU15	18.0	17.3	20.6	20.8	23.4	100.0
AT	28.0	20.9	17.6	17.5	16.0	100.0
BE	15.8	24.4	22.7	20.1	17.0	100.0
DE	22.2	23.3	19.9	20.9	13.7	100.0
DK	14.4	19.0	25.5	22.6	18.4	100.0
ES	20.7	18.1	19.6	20.4	21.2	100.0
FI	26.3	22.3	27.4	15.9	8.1	100.0
FR	13.1	20.4	27.7	18.6	20.2	100.0
GR	16.8	16.3	19.7	22.5	24.6	100.0
IE	27.5	19.6	22.0	16.0	14.9	100.0
IT	12.9	14.8	20.6	21.7	30.0	100.0
LU	19.2	21.6	21.6	18.5	19.0	100.0
NL	23.2	22.5	22.2	20.4	11.8	100.0
PT	23.5	11.9	16.4	21.0	27.1	100.0
SE	14.7	21.0	26.4	20.0	17.8	100.0
UK	19.5	18.6	23.3	20.8	17.8	100.0
SI	31.7	16.4	16.3	15.3	20.3	100.0

Note : DK 1997; SE, UK 1995. No regional data and data for NMS available.
Source: Eurostat Farm Structure Survey.

The age structure of farm holders is generally more unfavourable than the one of family labour. In 2003, 27 % of the sole holders in the EU25 (measured in persons) were on average aged above 65 years and 22 % aged 55-64, compared to only 9 % aged less than 35 years and 19 % aged 35-44. Since 1990, the share of farm holders >65 has been increasing in most countries of the EU15,[112] particularly in Portugal, Italy, Greece and Spain. Simultaneously, the share of young farm holders decreased in all countries of the EU15. This trend is most significant in the United Kingdom (since 1990), Austria, Belgium, Finland and Sweden (since 1995). For the NMS, where time series are lacking, similar tendencies since 1989 can be assumed as reported by a Czech study.[113]

The highest share of sole holders >65 years of above one third have Italy, Portugal, Lithuania, Greece, Slovenia and Spain (see Table 4.17 and Map A4.8 in the appendix) as well as Bulgaria and Romania. In the Southern Member States (PT, ES, IT, GR), the share of total population >65 is above average as well, whereas the total population of Lithuania and Slovenia has a rather young age structure (cf. section 2.7). There is no direct correlation between the share of elderly farm workforce and the total population aged >65.

[112] Exceptions are Austria, Belgium, Denmark, Finland, Germany, Ireland and Sweden. No time series for NMS.

[113] Horská, H., Spěšná, D., Drlík, J., Koutný, R. and Ratinger, T. (2004), "Social Aspects of Agricultural Employment in the Czech Republic", in Petrick, M. and Weingarten, P. (eds.): The Role of Agriculture in Central and Eastern European Rural Development: Engine of Change of Social Buffer? Studies on the Agricultural and Food Sector in Central and Eastern Europe, Vol. 25, Halle, pp.119-144.

Table 4.17: Share of farm holders >65 in total farm holders (persons) in % in the EU25, 2003

	PU	SR	PR	All
EU25	31.8	27.7	25.6	27.2
AT	11.3	8.7	8.5	8.6
BE	21.4	17.8	18.4	20.4
CY		20.7		20.7
CZ	12.5	18.6	16.9	18.3
DE	6.8	6.1	4.9	5.9
DK	24.6	19.1	15.0	16.3
EE	33.0	28.6	26.0	28.3
ES	39.5	31.7	34.2	33.6
FI		9.1	6.0	6.5
FR	16.7	16.6	15.9	16.1
GR	39.6	35.1	35.5	35.5
HU	26.8	29.7	30.1	30.0
IE	21.1		20.3	20.3
IT	40.4	40.7	39.7	40.4
LT		38.6	37.2	37.7
LU		17.4		17.4
LV	0.0	27.2	27.3	27.2
MT	23.0			23.0
NL	16.9	15.2	N/A	16.5
PL	17.7	16.1	13.5	14.8
PT	34.4	34.3	40.9	37.8
SE		19.9	18.2	18.4
SI		37.6	33.0	34.0
SK	34.8	26.5	27.9	27.0
UK	29.2	30.5	27.7	28.6

Note: PT 2000.
Source: Eurostat Farm Structure Survey.

The share of elderly farm workforce (>65) is often influenced by the pension scheme in the respective countries. In Poland, there is a special farmer's pension, which has contributed to the retention of the small farm structure. In some CEE countries like Romania, pensions are too low for many pensioners to make their living and they have to seek additional income e.g. in agriculture.[114] In other countries like Germany eligibility for the pension scheme for agricultural sole holders requires that the pensioner passes on the farm to a successor. Therefore, the share of holders >65 is very low. Contrary to the pension systems, the accompanying measure "*early retirement*" seems to have had a rather limited impact on the structural and generational change in agriculture in the EU (see appendix Note 4.1). Measured in AWU, the share of holders >65 years was in the EU25 on average 20 % (compared to 27 % in persons) indicating, that old people are in general more involved in part-time work. However, there are country-specific differences. In six countries, the share of holders >65 in AWU is only slightly lower (HU, SK, IE) or even higher than in persons (CY, PT, EE).

The share of sole holders of less than 35 years is lowest in the United Kingdom, Slovenia, Italy and Portugal (<5 %). Only three countries have a share of young sole holders above 12 % (PL, DE, AT). The more rural the region, the younger the farm holders (see Table 4.18 and Map A4.9 in the appendix). Measured in AWU, the share of holders <35 years is 11 % (compared to 9 % in persons) on average in the EU25 indicating a slightly lower involvement of young sole holders in part-time work. However, there are eight countries, where the opposite is the case (EE, CY, LV, LT, HU, DE, IE, SE).

[114] See European Commission, Network of Independent Agricultural Experts in the CEE Candidate Countries (2003), "Social Security Systems and Demographic Developments in Agriculture in the CEE Candidate Countries", Halle, for an overview on social security systems relevant for agricultural labour force in the NMS.

Table 4.18: Share of farm holders <35 in total farm holders (persons) in % in the EU25, 2003

	PU	SR	PR	All
EU25	5.4	8.4	9.7	8.7
AT	11.7	13.4	12.7	12.8
BE	8.2	9.8	9.2	8.6
CY		6.5		6.5
CZ	0.0	9.3	9.9	9.4
DE	11.2	12.1	13.0	12.1
DK	5.8	8.0	8.7	8.4
EE	7.0	9.2	11.3	9.5
ES	3.3	6.7	6.5	6.2
FI		8.8	10.1	9.9
FR	10.0	10.1	10.6	10.3
GR	4.4	7.0	7.6	7.3
HU	5.5	5.0	6.2	5.8
IE	9.8		11.1	11.1
IT	3.7	3.8	4.5	3.9
LT		6.5	7.4	7.1
LU		8.3		8.3
LV	0.0	8.8	8.3	8.6
MT	5.9			5.9
NL	7.2	6.6	N/A	7.0
PL	11.6	15.7	17.1	16.3
PT	4.6	4.9	3.5	4.2
SE		6.1	6.1	6.1
SI		3.7	3.9	3.9
SK	3.6	5.4	5.9	5.5
UK	3.2	2.8	3.8	3.4

Note: PT 2000.
Source: Eurostat Farm Structure Survey.

The above all suggests, that one of the main ways that adjustment of agricultural employment occurs is by “non entry” into the sector by young people and heirs to a farm especially on smaller holdings. Holders and farm workers of the older age groups, which are increasingly overrepresented in the European agricultural workforce, have only limited possibilities to find work outside of agriculture, particularly if they have also low (vocational) education and off-farm working experience. Agricultural restructuring can be facilitated by these age groups mainly by retiring (cf. section 4.3). In fact, the high share of holders >65 years in many regions shows that the issue of too many farmers is likely to “pass away” naturally within a generation if their children do not take over the farm. The influence of the present age structure on the future development of the number of the persons employed in agriculture can be demonstrated by the results of a study for Germany: The projection of the regular agricultural labour force by means of demographic models revealed a reduction of -60 % between 2001 and 2021 due to the existing age patterns provided that the present behaviour of entry and exit does not change.[115]

4.5.3 *Employment trends for women in agriculture*

In 2003, the share of women in the regular agricultural labour force measured in persons was on average 39 % in the EU24.[116] This was below the general share of women in total employment, which stood at 44 % according to LFS series. However, there exist significant differences between the Member States ranging from below one third in Malta, Ireland, Denmark, the United Kingdom, Spain and France to more than 40 % in most of the NMS (LT, LV, EE, PL, SI, HU, CY, SK), Romania, Portugal, Austria and Greece. In two countries, Lithuania and Latvia, women account for more than

[115] The model used the calculated relative frequency of net inflow and outflow in and out of the respective age groups for the base period 1999 to 2001. Source: Fasterding and Rixen (2005), o.c.
[116] EU25 without Poland due to missing data.

50 %. Measured in AWU the share of women is on average 6 %-points lower and reaches an average of 33 % in the EU24 indicating a higher incidence of part-time farm work of women in comparison to men (see Table 4.19). Professional qualifications and off-farm employment among female spouses of sole holders have been rising in recent decades together with the changing perceived roles of women as shown by a study for Lower Saxony (DE) [117] (cf. chapter 10). Since 1990, the share of women in the agricultural workforce has stayed more or less constant. It cannot be expected that it will significantly increase in future. Rather the analysis of the family labour force by age groups reveals, that in all countries the share of women in the age group <35 years is below the respective country average which suggests that young women are more likely to leave the farm family. The highest share of women can be generally observed in the age group 45-54 years (see Table A4.1 in the appendix). Women have a major and specific role as spouse to sole holders, in which they have a share of 76 % on average in the EU24, whereas the share of women in sole holders and in the regular non-family labour force is each around one fourth (see Table 4.19 and Table 4.20). About 31 % of women in agriculture work as sole holders, compared with 57 % of men (see Table 4.21). The share of women in sole holders is particularly low in Western Germany, the Netherlands, Ireland and Denmark (<10 %). In contrast, it is more than one third in the Baltic States, Austria and Northwest Spain (see Table 4.20 as well as Map A4.10 in the appendix). These differences between countries are much higher than differences between PR, SR and PU regions.

Table 4.19: Share of females in different labour force categories in % in the EU27, 2003[1)]

	Total regular labour force		**Spouse**	**Family labour force**	**Non-family labour force (regular)**
	persons	AWU	persons	persons	persons
EU25[2)]	38.7	33.2	76.0	40.0	28.5
AT	43.1	42.5	63.4	43.9	27.0
BE	34.4	30.3	87.4	35.0	30.4
CY	41.0	35.7	74.3	41.5	34.6
CZ	34.2	32.9	77.8	31.9	35.5
DE	37.9	32.4	92.3	38.3	35.9
DK	26.9	22.5	86.5	27.7	24.3
EE	48.5	46.7	67.9	49.2	45.1
ES	32.0	25.3	60.2	33.5	16.2
FI	37.1	34.4	89.1	36.7	40.1
FR	32.5	28.2	65.5	33.0	31.6
GR	41.0	34.8	74.8	41.5	10.5
HU	44.3	38.2	92.0	46.1	23.4
IE	26.0	23.1	90.8	26.8	13.8
IT	39.1	32.4	70.2	39.7	21.8
LT	51.8	50.6	70.7	52.7	36.6
LU	35.0	27.5	78.9	36.7	18.5
LV	50.9	51.5	66.2	51.5	45.1
MT	22.2	14.3	83.3	22.6	15.2
NL	35.5	27.6	94.0	35.8	34.8
PL	47.0	N/A	N/A	N/A	N/A
PT	46.9	45.4	83.7	47.9	31.5
SE	33.6	25.9	84.8	34.7	28.4
SI	46.4	43.6	83.8	46.6	35.7
SK	40.9	34.1	93.1	45.9	29.7
UK	30.6	24.2	88.1	32.9	22.9
BG	39.0	N/A	N/A	N/A	N/A
RO	45.0	N/A	N/A	N/A	N/A

Note: [1)] PL, PT, RO, BG 2000. [2)] Without PL due to missing data up to the time of calculation.
Source: Eurostat Farm Structure Survey. PL, RO, BG: European Commission (2002).

[117] Cf. e.g. Fahning, I. (2001), "Frauen sind ein Gewinn! Beitrag der Frauen am landwirtschaftlichen Gesamteinkommen", Hannover.

Table 4.20: Share of female farm holders in total farm holders (persons) in % in the EU25, 2003

	PU	SR	PR	All
EU25	24.5	28.2	26.2	26.8
AT	19.8	32.9	34.0	33.5
BE	14.0	15.1	19.4	14.7
CY		25.6		25.6
CZ	12.5	19.0	15.9	18.7
DE	9.0	9.2	8.5	8.9
DK	16.0	9.5	8.3	9.2
EE	43.5	40.9	34.6	39.8
ES	23.3	29.4	27.5	28.0
FI		11.5	10.8	10.9
FR	19.3	22.8	22.1	22.1
GR	32.0	28.2	28.3	28.4
HU	26.8	22.9	24.6	24.1
IE	8.1		9.0	9.0
IT	30.1	29.7	31.3	30.1
LT		46.8	45.8	46.2
LU		19.4		19.4
LV	0.0	44.7	49.0	46.3
MT	12.6			12.5
NL	7.4	5.9	N/A	7.0
PL	36.2	32.3	27.9	30.1
PT	26.1	24.3	21.9	23.2
SE		10.9	11.9	11.7
SI		20.5	26.4	25.0
SK	25.9	18.3	17.8	18.4
UK	16.3	17.2	14.5	15.5

Note: PT 2000.
Source: Eurostat Farm Structure Survey.

Table 4.21: Breakdown of female, male and total regular agricultural labour force by labour categories in % in the EU24, 2003[1)]

	Females		Males		Total	
	Persons	AWU	Persons	AWU	Persons	AWU
Sole holder	31.3	29.6	56.6	58.2	46.8	48.9
Spouse	43.7	42.7	8.7	6.0	22.3	18.2
Other family	17.0	12.2	22.0	14.7	20.1	13.5
Non-family	8.0	15.6	12.7	21.1	10.9	19.4
Total regular	100.0	100.0	100.0	100.0	100.0	100.0

Note: [1)] EU24 = EU25 without PL due to missing data; PT 2000.
Source: Calculations based on Eurostat Farm Structure Survey.

When looking at the share of women in different labour force categories it should be noted, that women are not only as sole holder but also as spouses in charge of the farm management along with their husband. Women have generally numerous responsibilities on the farm ranging from child care, housekeeping, care for elderly and the communication with friends and relatives up to taking care of the garden and livestock as well as accounting. Moreover, women have particularly a decisive role in the management of small farms and the development of new on-farm income opportunities as agri-tourism or direct selling (cf. chapter 10).[118] On small holdings of less than 5 ha the share of women in sole holders is highest among all size classes (32 % in EU25), whereas their share in holdings above 100 ha is the lowest (8 % in EU25) in nearly all countries (see Figure A4.1 in the appendix). To support the innovative strength and managerial skills of women, advanced training possibilities can be instrumental as already offered to some extent e.g. by rural women associations.

[118] Cf. e.g. Fahning (2001), o.c.

4.6 Summary and conclusions[119]

Within rural Europe (SR and PR regions) the primary sector has in most regions a share of less than 10 % in employment, in one third of the rural regions even of less than 5 %. These low shares in employment reveal, that the significance of agriculture for rural labor markets proves to be rather limited in most rural areas. However, in some regions – particularly in the Central and Eastern European countries of Romania, Bulgaria, Poland, Lithuania, Latvia and Slovenia as well as in the Southern part of the EU15 (GR, ES, PT) – the primary sector has still a high significance for the rural labour markets with shares in employment above 25 %. Moreover, agriculture has in all rural regions an important function for landscape conservation, regional identity and traditions as well as part of the rural economy with many links between agriculture and other sectors.

The most significant trend of agricultural employment in the EU15 is its continuous reduction by -2 to -3 % per year within the last decade. There are only very few regions with an increase of persons working in agriculture (in GR, ES, UK, SE and IT) which have rather a growing percentage share of holders who are aged over 65, female and working part-time, and which show partly a strong rise in holdings with other gainful activities.

The development in the CEEC, which on average had in 1989 a much higher share of agricultural employment than the EU15, was quite different due to the transition processes. In Hungary, the Czech Republic, Slovakia and Estonia – as well as the German new *Bundesländer* – there was a significant slump in agricultural employment in the early 1990s with annual average change rates of -10-30 %, coinciding with a consolidation of large scale farm structures and the release of non-family labour. In Poland, where in comparison with the other CEEC much less farm restructuring took place, since family farms had already been the predominant farm type prior to transition, the agricultural labour force was much less reduced. In Bulgaria, Romania and Slovenia until about 1998-2000 and in the first years of transition also in Latvia and Lithuania, there was an observable increase in agricultural employment connected with the emergence of small family farms through the land privatisation process, migration from urban to rural areas and (semi-) subsistence agriculture acting as social buffer. In many CEEC, there is now a dualistic structure of holdings with a small number of large enterprises cultivating a significant share of the agricultural area and producing much of the formally marketed production alongside a large number of rather small (semi-) subsistence farms.

Agricultural labour adjustment in the EU15 as well as the NMS has been influenced by labour saving technical progress, the macroeconomic environment (as economic growth and off-farm employment opportunities), farm structure and restructuring, socio-economic characteristics of the farmer and agricultural support policies. The predominance of family farms in most countries of the EU27 means that intergenerational farm transfer is a most significant process in the structural adjustment of the agricultural labour force and involves complex decision making processes of farm households.

It would go beyond the scope of the SERA project resources to attempt to include all influencing factors in a sophisticated model which could forecast future employment figures in EU27 agriculture. Therefore, scenarios based on trend analysis (for the EU15) and experiments based on comparative technical standards between the EU15 and the NMS as well as on experiences of agricultural labour force reduction in Greece, Spain and Portugal after their EU accession (for the NMS, BG and RO) have been evaluated. The results show that whereas the absolute and relative size of the agricultural

[119] For further analysis and conclusions on agricultural employment see chapter 10 (Case Studies) and chapter 11 (Policy Conclusions).

work force may be small in many regions, the sector's potential to shed labour is significant. If current trends continue it is broadly to be expected within the EU15 that the equivalent of some 2 million people on a full time basis (corresponding to some 4 million persons) may leave the sector by 2014. In addition, 1-2 million full-time working people (AWU) may potentially leave the sector within the NMS10, and 1-2 million persons in Bulgaria and Romania.

The analysis points to some hypotheses as to how these changes may occur. The low and decreasing proportion of young people in most regions suggests that one of the main ways that adjustment occurs is by “non entry” into the sector by farm children and other young people especially into small farms. This trend is particularly pronounced for females. Moreover, the high share of holders >65 years in many regions shows that the issue of too many farmers could naturally “pass away” within a generation when older farmers retire provided their children do not take over the farm. However, because of a lack of opportunities or ability to work elsewhere in the economy, young people may be forced to enter the sector in many peripheral rural regions of the CEEC.

Another way of how adjustment takes place is by combining part-time farming with off-farm employment. An increase in the share of part-time farming can be observed in many countries of the EU15 and can be also assumed for the NMS. In 2003, part-time farming among the regular agricultural labour force was particularly high (>80 %) in the Southern European countries (CY, ES, GR, IT, MT, PT) and many of the CEEC (EE, HU, LT, LV, SI, SK). The general high importance of part-time farming within the EU is mirrored in the big differences between counted persons and AWU in agriculture in all countries. The amount of employment in the agricultural sector (based on persons) can thus be easily greatly overstated. Most studies consider part-time farming as the first step out of agriculture, i.e., a high share of part-time farming leads to increasing farm exits. However, there is also evidence that part-time farming can be a stabilising factor of employment. On part time farms the need for technological and organisational development is not removed, since the time requirements for off-farm employment have to be met as well as those for the nurturing of the farm family.

Women are particularly involved in part-time farming. Professional qualifications and off-farm employment among female spouses of farm holders have been rising in recent decades in Western Europe together with the changing perceived roles of women. The share of women in agriculture is 39 % in the EU24 with a higher share in the CEEC, Portugal, Austria and Greece. Since 1990, their share has stayed more or less constant and it cannot be expected that it will significantly increase in future. Women work mainly as spouse of the sole holder, a description, which does not really meet the dimension of work and responsibility women bear – ranging from child care, housekeeping, care for elderly and communication to taking care of the garden and livestock as well as accounting. Moreover, women have particularly a decisive role in the management of small farms and the development of new on-farm gainful activities (cf. chapter 6 and 10) as agri-tourism or direct selling. To support the innovative strength and managerial skills of women, advanced training possibilities and consulting services should be provided.

The general finding that the share of agricultural employment is greatest in poorer peripheral rural regions within the EU suggests both a low rate of past adjustment and a lack of alternative employment opportunities. It is probably also the case that the farm labour force has been ill fitted for finding work opportunities in other sectors of the economy especially in the service sector where most growth has occurred, a fact that is compounded by the preponderance of rather old workers in Southern Europe and some NMS. The potential for a marked reduction in these regions in the agricultural labour input is high, especially if their economies grow and increase the opportunity cost of

labour. However, the reduction of agricultural 'over-employment' in the affected regions – particularly in the (semi-) subsistence sector in the CEEC – and the development of a sustainable labour market in rural areas throughout Europe will probably need rather general programmes of vocational training, (regional) economic development, social security and housing policies which facilitate off-farm employment and professional migration, than most of the existing 'rural development' measures, which however may play an important role in developing competitive holdings.

To a certain extent, the agricultural sector can also in future safeguard jobs and apprenticeship for young people in rural areas. Hence, there should be efforts to organise agricultural education and training in such a way, that it is an attractive and high-quality option for young people. Particularly young women have to be recruited to prevent a reduction of the share of women in agriculture and to lower their migration to the cities. However, for most of the young people in rural areas diversification and non-agricultural jobs and training opportunities will be more crucial for their decision to stay.

5 NON-AGRICULTURAL EMPLOYMENT

5.1 Introduction

This chapter provides a description of non-agricultural employment in rural areas, and sets out empirical evidence for generalisations about the relationship between sectoral structure and levels of "employment performance" as measured by the typology of employment performance presented at the end of Chapter 3.

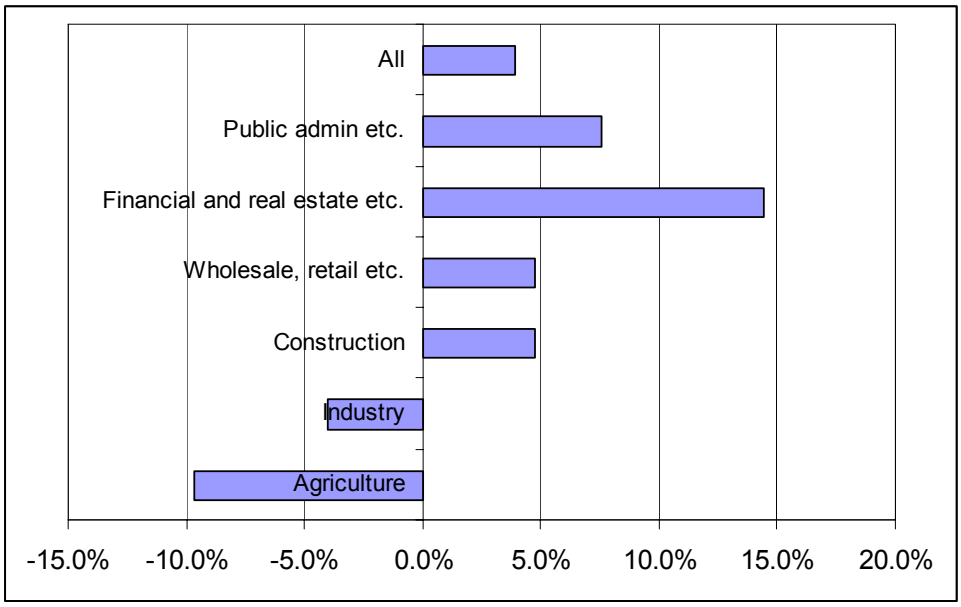
The section is organised as follows: some general trends, described in the literature are first describe, this is followed by a broad overview of sectoral employment structure by member state, then a presentation of available data on rural/urban patterns of secondary employment across Europe; a similar overview of tertiary employment; and more specific discussions of public sector and tourism sector employment and of self-employment. Next, available data on employment trends are presented, and the chapter concludes with the statement of some simple hypotheses, which are tested by statistical analysis.

5.1.1 *Key trends affecting sectoral structure*

Some key trends which have impacts upon rural economies, particularly in the western EU may be summarised as follows:

- A decline in agriculture and other land-based employment.
- Counter-urbanisation both in terms of population and economic activity (although not necessarily in more remote rural areas).
- Increasing service sector employment (in rural areas there has been a decline in the relative share of some growing sectors in Banking and Financial Services).
- Exposure to global markets and therefore pressure on global tradable sectors, particularly manufacturing.
- Competition with low wage countries creating pressure for footloose industrial firms (especially in manufacturing) to move from both urban and rural areas, especially in higher wage economies.
- In both urban and rural areas, Industrial firms becoming more flexible, service intensive and customer oriented and need medium skilled labourers rather than unskilled workers.
- Increased levels of mobility, car ownership and commuting, and the growth of dormitory settlements, often in rural areas and small towns near cities.
- Increased level of participation of women in the workforce, across urban and rural areas.
- Decline of rural service provision, and employment related to them: particularly shops, post offices, schools etc.
- A higher proportion of micro businesses and other SMEs than in urban areas.

Figure 5.1: Summary of Change in Employment by Sector, EU25, 1999-2003



Source: Eurostat Regio database table LF2ENACE

The trend in employment by sector suggests the continued growth of service employment and decline of agriculture and secondary industries in the future. The employment change for each main industrial sector for the EU25, for the period 1999-2003, is summarised in Figure 5.1 (further details of changes are considered below). Of course past trends are influenced by factors such as business cycles and will not necessarily continue in the future.

5.1.2 *Employment Counter-urbanisation*

The fact that overall employment rates are rising in the SR regions, at a rate close to that of the PU regions (Chapter 3), suggests that labour markets around medium sized cities and towns are often relatively dynamic. This lends some support to the idea of counter-urbanisation of (secondary and tertiary) economic activity in response to factors such as urban congestion, high land prices, a greater degree of locational freedom (due to improved transport and other infrastructure and new information and communications technology), land availability and the attraction of high amenity working environments in the rural-urban fringe.[120]

The average size of European manufacturing establishments has been reduced in recent years, due partly to global competition leading to a focus on niche products (with larger standardised products now produced elsewhere in the globe) and partly to more flexible production technologies and processes. This may have been relatively more favourable to rural areas, especially when combined with residential attractiveness and the greater locational freedom noted above.

Much of the apparent ruralisation of business activity is about movement to out-of-town business parks and small towns in locations easily accessible (by car) to larger urban areas by strategic roads. This means that low income groups without access to a car, such as some women, lone parents and

[120] See also the argument about global competition and niche production below.

part-time workers are particularly at risk from transport-induced exclusion from the new employment opportunities in rural areas.[121]

5.1.3 *Sectoral structure and employment trends*

The mix of different industrial sectors in a region is often an important determinant of growth, the acquisition of skills, investment and new technology. Regions well represented in fast growth sectors (such as business services and so-called knowledge industries in recent years) are likely to be more dynamic than regions with a high proportion of employment in declining or low growth sectors. However, low growth or low productivity may exist across all industries in a region, so the problem is not solely one of industrial mix.

This is the rationale for shift share analysis, which attempts to isolate the different components of employment change (national trends, local sectoral differences, and "other" local differences). Thus Bryden *et al.* 2005, found that in 7 out of 9 member states for which data were available (SE, NL, IE, FI, ES, DK and DE) rural regions performed relatively badly during the late 1990s because their sectoral profile had a high proportion of low growth activities. A different combination of member states (UK, SE, IT, FI, ES, DK and DE), exhibited negative change components in their rural regions which could not be attributed to either national economic trends or to local sectoral structure[122].

In terms of productivity, existing EU level research suggests regional specialisation appears to have a very minor role in explaining interregional inequality in productivity. Regions with low employment growth appear to have relatively low productivity across all sectors.[123] In the UK Morris (2001) found that the broad manufacturing/services split explains little of the difference in outputs between UK regions. However, at the sub-sectoral level, especially within the service sector, differences in structure can be important in explaining differences in growth performance[124]. Furthermore regions with differing initial industrial structures in the early 1980s had very different growth patterns in the following decades.[125]

Whether the future of rural areas is largely determined by their employment structure, or by their endowment of "territorial capital"[126], one thing is clear: the distinctiveness of rural and urban economies is becoming eroded, whilst at the same time the economies of individual rural areas are developing along a variety of trajectories.

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[121] Countryside Agency (2005) *Relationship between transport and the rural economy*, CA, London. http://www.napier.ac.uk/depts/eri/Downloads/transportruralecon.pdf.

[122] The interpretation of these "negative differentials" depends on the specifics of the region's involved but may include a variety of characteristics in the local business environment, including, perhaps the quality of human capital, infrastructure, wage costs, quality of governance, external economies etc.

[123] Esteban, J.M.(2000): "Regional Convergence in Europe and the Industry Mix: A shift-share analysis". Regional Science and Urban Economics, 30, pp. 353-364

[124] Morris, B. (2001) *Can differences in industrial structure explain divergences in regional economic growth?* Mimeo, Bank of England. and HM Treasury (2001) Productivity in the UK: The Regional Dimension. London, GSO.

[125] Overman and Puga (1999) *Unemployment Clusters across European Regions and Countries*. Mimeo, London School of Economics.

[126] I.e. the distinctive combination of traditional "hard" resources (land, labour, capital, distance from markets and so on) and "soft" factors such as human and social capital, entrepreneurial culture, business networks, quality of regional governance etc.

5.1.4 *Limitations of the available NUTS 3 data*

The distinction between Primary/Secondary/Tertiary sectors has been debated for decades.[127] The service sector is now extremely broad and includes very diverse industries and occupations, from medical doctors to shop workers etc. Given this complexity it is very disappointing that the level of detail (in terms of NACE classification) in the regional employment data available from Eurostat (e3emply95 table) is so low. It is important to keep in mind that this is a constraint to the work reported below, and that although structures and trends may appear broadly similar between urban and rural regions, even very detailed sectoral employment data may not pick up important issues in rural secondary and tertiary employment change.

5.2 The importance of Secondary and Tertiary Activities in Rural Europe

There are only 10 regions in the EU25 in which primary sector activities employ a majority of the workforce. These are Chelmsko-zamojski, Lomzynski, Bialskopodlaski, Ostrolecko-siedlecki, and Krosniensko-przemyski (Poland); and Karditsa, Lakonia, Aitoloakarnania, Ileia, and Rodopi (Greece).Additionally, there are 35 where they account for more than one third, and 85 where they occupy more than a fifth[128]. Secondary and tertiary employment is overwhelmingly the most important sectors for employment, even in PR regions. Even in the more peripheral PR regions the primary sector only reaches an average share of 19% (compared with 11% in the more accessible regions).[129] Generally speaking, (and in the PU regions in particular) service sector employment is increasing, while that of manufacturing is stable or decreasing. However, tertiary sector employment has "traditionally" been less important in PR than in the PU and SR regions. When expressed in percentage terms this gives the impression that manufacturing is actually growing, in some areas, when it may not be. The gradual decline in primary employment, combined with stability in the service sector may result in an increased percentage share of secondary employment in some rural areas. So it is useful to distinguish relative from absolute growth. Trends in sector shares should thus be interpreted carefully.

5.2.1 *Links with the Primary Sector*

Although (as we have seen in Chapter 4) agriculture is not directly involved in the employment growth of the SR regions, it is indirectly linked to many secondary or tertiary industries - in three principal ways:

(i) **Transaction links**. These are commonly referred to as "upstream" (i.e. supplying the agricultural sector with inputs, seeds, fertilizers, machinery etc.) and "downstream" (processing and marketing agricultural products).

(ii) **Second jobs**: Agriculture and the rest of the rural economy are also inextricably linked together through pluriactivity. As we have already seen in Chapter 4, full-time working within agriculture is now relatively uncommon – many, if not most, farmers and farm households, are also active in secondary or tertiary labour markets.

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[127] See for instance, Singlemann, J. (1978) *From Agriculture to Services: The Transformation of Industrial Employment*. Beverly Hills, CA: Sage Publications.

[128] REGIO table e3empl95.

[129] The multi-modal index of accessibility developed for Espon project 1.2.1 was used, accessible and peripheral regions being distinguished by a threshold of 50% of the EU average.

(iii) **Spin-offs to other industries.** The attractiveness of the countryside due to its maintenance by the agricultural industry (including attractions such as working farms, mills etc.) may increase tourism and make the area more attractive for the in-migration of people and businesses.

5.2.2 *Implications for the geography of rural labour markets*

It seems likely that secondary and tertiary activities operate within geographically more extensive labour market areas than agriculture (which due to the long and irregular hours involved, and the need, - especially on livestock holdings - to be "on call", has a predominantly local focus). Those farmers and farm workers who spend a significant proportion of working time on the farm are likely to be more restricted in their choice of supplementary employment, both in relation to types of activity and in terms of travel-to-work range. Generally speaking self-employment, or working for a locally-based SME, are more compatible with farming than employment by a larger company. Those who are essentially "life-style" or "hobby farmers", together with non-farming members of farm households, probably have the option (skills and qualifications permitting) to look further afield, and across a broader range of occupations. This again points to the fact that rural labour markets tend to be segmented along sectoral/occupational lines, and that even different individuals within the same household may operate within different geographical "layers".

5.2.3 *Sectoral Structures at the Member State level*

A recent Eurostat publication[130] shows that employment shares in secondary (largely "manufacturing") and primary ("agriculture, fishing and forestry") industries remain substantially higher in the new Member States than the EU15, while the services sector share remains particularly underdeveloped (Table 5.1).

[130] Employment in Europe 2004.

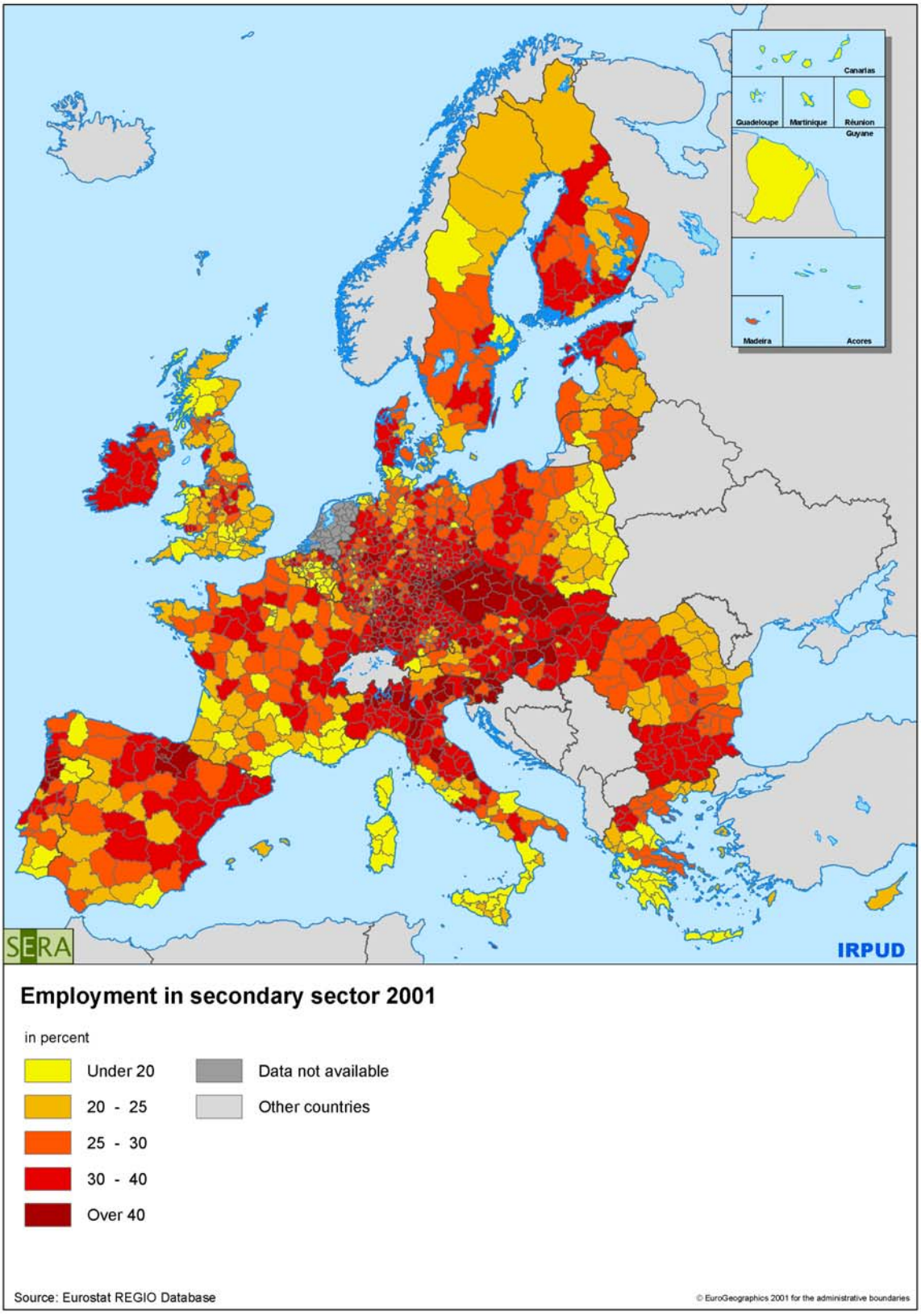
Table 5.1: Employment structure 2003, by member state and OECD type

	Total Agriculture, Fishing and Forestry	Manufacturing	Total Secondary	Health & Social Work	Total Tertiary
	% of total employment 15+				
AT	5.5	19.3	28.7	8.6	65.6
BE	1.7	17.8	24.9	12.9	73.1
CY	5.2	11.0	22.9	4.4	71.2
CZ	4.5	27.8	39.9	6.3	55.6
DE	2.4	23.0	31.4	10.9	66.1
DK	3.3	15.8	23.1	18.3	73.4
EE	6.3	22.0	31.3	5.8	62.5
ES	5.6	17.8	30.8	5.9	63.6
FI	5.3	19.0	26.7	14.8	68.0
FR	4.5	17.1	24.8	11.4	70.7
GR	16.3	12.8	22.0	4.3	61.7
HU	5.4	23.6	33.4	6.9	61.2
IE	6.4	16.0	27.8	9.5	65.8
IT	4.7	22.4	31.8	6.0	63.4
LT	18.7	18.0	27.2	6.7	54.1
LU	2.0	10.3	20.1	7.9	77.9
LV	14.6	16.4	26.8	6.3	58.6
MT	2.5	19.3	29.9	6.5	67.6
NL	2.9	13.9	21.0	15.0	76.1
PL	18.2	19.2	28.5	5.9	53.2
PT	12.9	20.1	32.9	5.8	54.2
SE	2.5	16.2	22.6	16.0	74.8
SI	8.4	29.7	37.1	5.3	54.4
SK	6.0	26.2	38.1	6.7	55.8
UK	1.2	14.9	23.5	11.3	75.2
EU25	**5.3**	**19.1**	**28.3**	**9.5**	**66.4**

Source: Employment in Europe 2004. Eurostat, LFS spring results.
Note data for NL and LU refer to 2002

5.3 Employment in the Secondary Sector

In 2001 the percentage employment in secondary industries in rural EU27 regions was higher than in urban regions, with SR at 29% and PR at 28%, compared to the urban average of 25% (Table A5.1 in Appendix 5). Hence, secondary (and specifically manufacturing) employment appears to be relatively more important in rural areas than in urban areas. However, this is probably at least partly a consequence of the relative absence of tertiary employment, which was around 60% in rural regions, compared with 66% in the urban parts of the EU.



Map 5.1: Percentage employed in the secondary sector 2001

The geographic pattern of rural manufacturing broadly reflects that of the history of industrialisation. Interesting exceptions include all of Ireland (where manufacturing employment has grown greatly in recent decades at least in part as a consequence of inward investment from the USA) and southern Germany (linked partly to growth in high technology industries, rather than the traditional heavy industries of the Ruhr etc.)(Map 5.1). Thus, the decline of heavy and traditional industries (e.g. steel, textiles) and the growth of light industry and high technology manufacturing in formerly less industrialised areas, has resulted in a more diffuse spread of secondary industry employment across all rural-urban types of region.

New Member States in the east have the highest percentage employed in the secondary sector, while north western Member States have the lowest (Table A5.1 in Appendix 5). The highest concentration of secondary employment is found in the Czech Republic (40.4%), Slovenia (37.5%) and Slovakia (34.5%), and the lowest in Cyprus (19.4%), the United Kingdom (20.4%) and Belgium (22.3%), against the EU average of 26.7%.[131]

Member States where secondary employment has a high percentage in PR relative to PU areas include the Czech Republic, Hungary, Ireland and Denmark. In contrast, Estonia, Portugal, Poland and Greece have a higher secondary share of employment in PU areas. It is worth noting that there appears to be a positive relationship between the share of secondary employment and the rate of long-term unemployment, as described in Chapter 3. This may reflect the restructuring and decline of secondary industries, leaving many former workers with limited transferable skills and other job opportunities, so they become long-term unemployed and eventually inactive.

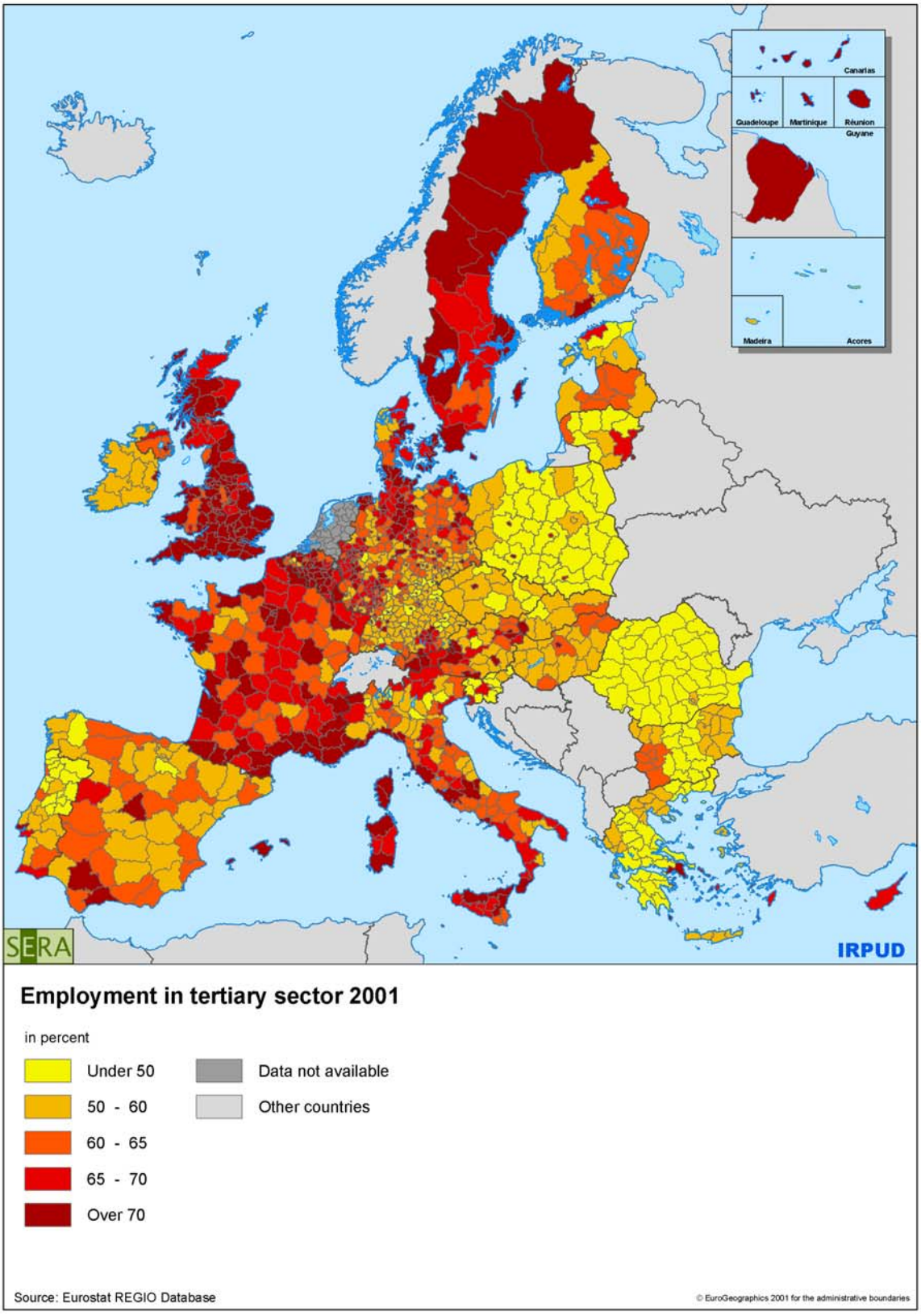
Examining employment in the secondary sector by age, Ireland has the highest proportion of people aged 15-24 employed in the secondary sector, Slovenia the highest proportion of those aged 25-49, and Sweden the highest proportion of those aged 50 and over (Table A5.2 in Appendix 5). Of course, this partly reflects the demographic structure of each country. Analysing the breakdown of secondary sector employment by gender shows that the new Member States tend to have the highest percentage of females employed in the secondary sector (Table A5.3 in Appendix 5). Specifically, Spain, the Netherlands and Greece have the highest proportion of males employed in the secondary sector, and Bulgaria, Romania and Lithuania the highest percentage of females.

5.4 Employment in the Tertiary sector

Tertiary sector or services employment is the most significant area of employment in most parts of the EU, although employment in some growing tertiary sector areas (especially Banking and Financial Services) tends to be relatively less important in rural than in urban areas. Technological developments have also allowed the mix of industrial sectors in many rural areas to become broadly similar to that in urban areas, with the service sector being by far the largest employer[132]. However, as has already been pointed out, the tertiary sector is very broad including skilled professionals such as surgeons and many lower skill staff such as in call centres, and the composition of the sector varies considerably from region to region.

[131] Note that, as with all statistics, differing sizes and boundaries of regions may influence the results.

[132] Although the service sector still often accounts for a lower share in rural areas (especially the PR) than in urban areas – see the discussion in section 6.3 above.



Map 5.2: Percentage employed in the tertiary sector 2001

Tertiary employment rates across the EU27 are lower in rural areas at 57.1% and 63.3% in PR and SR regions respectively, compared to 74.1% in PU regions (Table A5.4 in Appendix 5) Tertiary sector growth has tended to be associated with metropolitan functions, in particular the growth of financial markets, knowledge-based industries, and public services such as education and healthcare.

Tertiary employment, as a percentage of all employment, of course inversely reflects primary and secondary employment (Table A5.4 in Appendix 5). Member States in the north-west have the highest percentage employed in the tertiary sector, while new Member States in the east have the lowest. The highest concentration of tertiary employment is found in the United Kingdom (78.4%), Luxembourg (75.5%) and Belgium (75.3%), and the lowest in Bulgaria (46.1%), Poland (47.3%), and Slovenia (51.3%) against the EU average of 67.5%. Across all Member States, urban (PU) areas have a higher percentage employed in tertiary industries than PR or SR areas, the urban relative to rural concentration being especially large in the Czech Republic, Poland, Greece, Hungary and Ireland. This may reflect a concentration of tertiary employment in capital cities compared with relatively underdeveloped peripheral areas in these Member States.

Examining employment in the tertiary sector by age, shows that of those aged 15 and over, the breakdown is similar to that of secondary sector employment (Table A5.5 in Appendix 5). Ireland has the highest proportion of people aged 15-24 employed in the tertiary sector, Romania the highest proportion of those aged 25-49, and Sweden the highest proportion of those aged 50 and over. Again, this partly reflects the demographic structure of each country.

Analysing the breakdown of tertiary sector employment by gender shows that the new Member States tend to have the highest percentage of females employed in the tertiary sector (Table A5.6 in Appendix 5). Specifically, Greece, Italy and Spain have the highest proportion of males employed in the secondary sector, and Lithuania, Latvia and Estonia the highest percentage of females.

5.5 Public Sector Employment

Public sector employment is more prevalent in rural areas, as shown below, although the difference between the percentage employed in the public sector in rural and urban areas is not as great as might be expected. There are several possible explanations for this. Although urban areas (especially capital cities) tend to have more central government posts, analysis by the English Countryside Agency has shown that if local public administration is included, the proportion of people employed in public services in rural areas is similar, at around 25%.[133] Larger cities also have high levels of private enterprise, particularly Foreign Direct Investment which “dilute” the share of total employment made up of the public sector. Hence a relatively high share of public employment may indicate a ‘weakness’ of the local private employment base or an over concentration in public jobs in some regions.

Variations in the share of public employment differ between types of rural areas partly due to statistical effects (the reciprocity of percentage shares). For example, remote rural areas sometimes appear to be highly dependant on public sector employment simply because their secondary and private tertiary sectors are relatively small. In other rural areas (for example in some of the New Member States) public sector shares are relatively less important because the primary sector continues to dominate, or (in dynamic accessible SR regions) because private enterprise (secondary and tertiary) has recently become increasingly prominent.

[133] Countryside Agency (2004) *The State of the Countryside*, Countryside Agency, London.

Table 5.2: Number and % Employed in Public Sector (NACE L-P) EU27*

Rural Classification	Numbers employed in public sector	Total Numbers Employed	% Public
PU	24,014	90,050	26.7%
SR	19,336	64,645	29.9%
PR	11,853	38,410	30.9%
All regions	55,204	193,105	28.6%

Source: Eurostat Regio database tables E3EMPL95, LF2ENACE
*Excludes Romania

Analysis across the EU27 shows that public sector employment[134], as a percentage of total numbers employed, is 28.6% (excluding NL and RO) and 24.5% in the 10 New Member States (Table 5.2). Data are available for employment at National and NUTS2 level, for most countries, although there are gaps in data, most notably for the Netherlands. The following table provides a summary at national level broken down by type of region. This shows that Sweden (37.9%), Denmark (35.5%) and France (34.4%) have the highest proportion of public sector employees, and Slovenia (21.8%), Poland (22.3%) and Bulgaria (22.9%) the lowest. There appears to be a 'north-south divide' with northern Member States tending to have higher levels of public sector employment than southern or New Member States. As stated earlier, across the EU27, rural (PR and SR) areas have a higher percentage of public sector employment than urban (PU) areas (Table 5.3). This difference is particularly evident in Belgium, Germany and Denmark. The exceptions are Greece and Hungary, where urban areas have a slightly higher percentage of public sector employment than rural (PR or SR) areas.

Table 5.3: Public Sector Employment, EU27*, 2001

	PU	SR	PR	All
	% of Total Employment			
EU27*	26.7	29.9	30.9	28.6
AT	25.9	21.9	28.5	25.6
BE	31.8	45.7	49.4	33.6
BG	22.6	23.1	23.0	22.9
CY		30.3		30.3
CZ	24.4	23.0	23.1	23.2
DE	25.5	35.3	35.6	29.1
DK	30.7	38.0	37.9	35.5
EE	29.8	26.7	30.1	27.4
ES	24.9	25.8	26.7	25.6
FI		29.1	35.7	32.9
FR	30.6	35.8	37.5	34.4
GR	27.3	20.8	22.1	23.8
HU	27.8	27.0	26.6	27.0
IE	22.8		28.8	26.7
IT	23.1	27.4	28.3	25.1
LT		25.2	27.6	26.2
LU		25.4		25.4
LV	24.5	26.8	28.1	26.1
MT	27.6			27.6
PL	19.5	23.2	23.2	22.3
PT	24.2	25.3	27.4	25.1
SE		35.1	39.4	37.9
SI		20.8	22.6	21.8
SK	22.7	28.2	29.0	27.2
UK	30.0	33.6	36.6	31.5

Source: Eurostat Regio database tables E3EMPL95, LF2ENACE
*Excluding NL and RO

[134] Public administration and defence, compulsory social security; education; health and social work; other community, social and personal service activities; private households with employed persons.

There are major differences in the services and sectors covered by public sector in different countries in terms of both who provides the service (employment) and who funds the service (e.g. health services may be made up of predominantly public sector employees in one country, but predominantly non-governmental or private sector in another, even if funded mainly by the state in each case). Although not necessarily always using public employees, Health and Social Services are largely funded by the public sector in most Member States (Table A5.7 in Appendix 5). These sectors have been growing in recent years (and over recent decades) in many, but not all, Member States.

5.6 Tourism

The growth of spending on leisure and recreation activities has significantly boosted the size and importance of the rural tourist industry. Tourism directly employs over 9 million people across the European Union - 6% of total employment - and a much higher percentage in some regions. It also indirectly supports millions of jobs in connected services.[135] Hotels and Restaurants are an obvious beneficiary of tourism and a sector that can be analysed to approximate the 'tourism sector'. Employment in the hotels, restaurants and cafes sector (HORECA)[136] has been rising faster than employment across all sectors during 2001-2003.[137] Employment in tourism across Member States shows that the countries with the highest percentage of HORECA employment (as a % of service employment) in 2001 were Greece (10.6%), Spain (10%) and Portugal (9.7%). The largest absolute percentage HORECA growth rate was in Luxembourg (+39.9%), Italy (+14.7%) and the Netherlands (+13.1%) (Table A5.8 in Appendix 5).

In addition, research has shown that more women (53%) than men (47%) are employed in the HORECA sector, and the growth rate for female employment is higher. People in the 15-24 and 25-34 age groups account for a disproportionately high percentage of employees compared with economies as a whole, making up over 50% of HORECA employees in Denmark, Ireland, the Netherlands, Finland, Sweden and the United Kingdom.[15]

5.7 Self-employment and micro-enterprises

There are many different meanings of the terms enterprise and entrepreneurship. For example, entrepreneurship may mean: a function in the economy such as innovation; a new business start-up; an owner-manager of a small business; a set of personal characteristics, and; a form of behaviour.
New firm formation is often linked to the introduction of new technologies, innovative ways of working and increased competitive pressure on other firms. Current thinking views the benefits of entrepreneurship as an agent of change in a knowledge based economy, implying a link between entrepreneurial activity and economic performance, measured by employment growth, income, wages, business survival and productivity. However, it should be recognised that many new firms or SMEs contribute relatively little innovation to the economy compared to large firms.

The European Union definition of small and medium sized enterprises (SMEs) includes those with fewer than 250 employees (CEC, 1996). This group is further disaggregated into micro enterprises

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135 European Commission (1998) *The Euro and the Tourism Industry,* DG X, XXIII.

136 NACE Section H, division 55.

137 Eurostat (2003) *Rising Employment in Hotels and Restaurants,* Industry, trade and Services Statistics in Focus, Theme 4- 6/2003.

(with fewer than 10 employees), small enterprises (with 10-49 employees) and medium sized enterprises (with 50-249 employees). Micro enterprises would include self-employed people working for themselves with no employees (see below). Sometimes the term small, medium and micro sized enterprises (SMMEs) is used rather than SMEs. Many firms subcontract much of their work and so have relatively few employees, but have a large turnover etc. So employment by itself is not always an adequate basis for defining SMEs. Hence turnover, assets and ownership are also included in the EU definition.

At a European level, micro-enterprises, as defined above, are the most common form of business unit, accounting for 17.8m out of 19.3m (92%) of business units in the EU19 in 2003 (European Commission, 2003) and 39% of employment (Table 5.4).[138] As would be expected, turnover per enterprise at 440,000 Euro per annum is smaller than any other size group. However, despite the theoretical links between enterprise creation and productivity, figures also suggest that productivity measured in terms of value added per person and profitability (gross operating surplus) are also lower than for larger businesses, even when adjustments for industrial sector are taken into account. It is also worth noting that employment rates tend to be lower in areas with low densities of large-scale enterprises (European Commission, 2001).[139]

Table 5.4: The roles of SMEs, Europe-19, 2003

		Small, micro and medium sized enterprises				**Large Scale Enterprises**	**Total**
		Micro	**Small**	**Med**	**Total**		
Number of enterprises	*000*	17,820	1,260	180	19,270	40	19,310
Employment	*000*	55,040	24,280	18,100	97,420	42,300	139,710
Occupied persons per enterprise		3	19	98	5	1,052	7
Turnover per enterprise	*000*	440	3,610	25,680	890	319,020	1,550
Value added per enterprise	*000*	120	1,180	8,860	280	126,030	540
Share of exports in turnover	*%*	9	13	17	12	23	17
Value added per occupied person	*000*	40	60	90	55	120	75
Share of labour costs in value added	*%*	57	57	55	56	47	52

Source: European Commission (2003)

Across the EU19, micro-enterprises tend to dominate the construction, wholesale trade, retail, personal services and the hotel and restaurant sectors. Conversely, larger firms dominate the extraction, transport and producer service sectors. Among New Member States and candidate countries, the size profile of businesses is larger on average, however, this masks differences between the former Communist states, where larger enterprises dominate (although increasingly less so) and the Mediterranean states, which have a higher proportion of micro-enterprises.

A large share of small businesses is comprised of self-employed people. The self-employed can be defined as those who, in their main employment, work on their own account, whether or not they have employees. In some cases self-employed people are considered to be entrepreneurs, although as discussed earlier, many self-employed may not act innovatively or exhibit strong growth. Self-employment (in terms of business owners per 1000 workforce) increased steadily from 1990 to 2000 in

138 European Commission (2003) SMEs in Europe 2003, 2003 Observatory of European SMEs, No.7.
139 European Commission (2001) High Density of SMEs in Southern Europe, Eurostat Statistics in Focus, Theme 4, 17/2001.

many countries including Belgium, Spain, UK, Germany and the Netherlands. However, from around 2000 it has levelled off or declined slightly in each of these countries, so the future trend is uncertain. Table 5.5 shows that within the EU25, self-employment was relatively more important in the PR and SR regions (at 14.8% and 13.9% of the economically active population), than in the urban regions (12.5%) and the EU25 average of 13.4%. The level of self employment appears to be linked to the degree of rurality.

Table 5.5: Self-employment in EU25, 2001

	Numbers Self-employed (000)	Numbers Econ Active	% Self-employed
PU	11,668	93,675	12.5%
SR	10,185	73,696	13.9%
PR	6,400	43,957	14.8%
All	28,253	211,328	13.4%

Source: Eurostat Regio database tables LF2ESTAT, UN3WPOP

More detailed analysis by Member State (Table 5.6) reveals that the highest rates of self-employment, as a percentage of the economically active population, are found in Greece (28.3%), Portugal (24.3%) and Italy (21.4%), and the lowest in Estonia, Luxembourg and Slovakia. Overall, southern Member States appear to have higher rates of self-employment. Across the EU25, self-employment is usually higher in rural areas, particularly so in Greece, Portugal and Spain. However, there are exceptions: for example in the Czech Republic and Slovakia self-employment is highest in PU areas. A general trend appears to be that those Member States with the highest overall levels of self-employment also have a higher percentage of self-employment in rural areas compared with urban areas. This may be due partly to the high self-employment rates amongst farmers.

The self-employment rates by industrial sector for Member States are shown in Table 5.7. These are measured as the number of people self-employed as a percentage of all employed in that sector. It should be noted that the numbers self-employed in Table 5.7 are based on European LFS Series Quarterly Survey Results,[140] whereas the numbers self-employed in Table 5.5 and Table 5.6 above and in the Member State profiles are sourced from the Regional Employment – LFS series[141] and are not directly comparable. To ensure complete data, sectors have been grouped, and public administration (NACE L) excluded, as values were too small to be reliable in most cases, and less than 1% for all Member States.

Table 5.7 indicates that self-employment in the primary sector was higher than in any other sector across the EU27, and was highest in Luxembourg (75%), followed by Portugal (66.7%), and lowest in the Czech Republic (14%) and Slovakia (5.8%). Self-employment in the secondary sector was lower overall and highest in Greece (14.1%) and the UK (12%) and lowest in Bulgaria (1.7%) and Austria (1.2%). Self-employment in Services (excluding Public Admin) was highest in Greece (25.8%) and the Czech Republic (17.1%) and lowest in Latvia (3.8%) and Austria (4.1%). Self-employment in Other Services[142] was low across the EU27, but highest in Greece (9.9%) and Belgium (8.8%), and lowest in Lithuania (2.4%) and Denmark (2.6%). Overall, there appears to be no pronounced north-south or east-west concentration of self-employment in any of the sectors.

[140] Table: ESGANA Self-employment by sex, age groups and economic activity.
[141] Table LF2ESTAT.
[142] Education, Health and social work, Other community, social, personal service activities, Activities of households, Extra-territorial organizations and bodies.

Table 5.6: Self-employment by Member State, EU27*, 2001

	PU	SR	PR	All
	% of Economically Active			
EU27*	12.5	13.8	14.6	13.4
AT	8.8	11.5	11.2	10.7
BE	12.4	12.4	14.5	12.5
BG	7.8	12.0	11.0	10.6
CY		19.6		19.6
CZ	18.8	12.6	12.2	13.4
DE	9.4	9.0	8.9	9.2
DK	7.8	7.8	8.0	7.9
EE	6.5	6.4	6.7	6.5
ES	13.7	16.6	19.3	15.9
FI		9.5	12.5	11.3
FR	7.3	9.2	10.6	8.8
GR	19.2	33.6	34.9	28.3
HU	13.6	12.5	12.8	12.8
IE	13.9		17.1	16.1
IT	21.4	21.3	22.4	21.4
LT		13.5	14.5	13.9
LU		6.6		6.6
LV	8.9	8.9	9.0	8.9
MT	11.1			11.1
NL	10.6	10.8	12.0	10.7
PL	18.1	21.3	19.3	19.8
PT	19.4	29.5	28.9	24.3
SE		10.8	9.4	9.9
SI		10.7	10.9	10.8
SK	10.4	6.0	6.8	6.7
UK	10.6	10.7	11.5	10.8

*Excludes Romania Source: Eurostat Regio database tables LF2ESTAT, UN3WPOP

Table 5.7: Self-employment by industry sector, EU27*, 2003

	a_b	c_to_f	g_to_k	m_to_q
	Agriculture, hunting, forestry and fishing	Industry	Services (excl. public admin)	Other services
	% of all employed			
EU27*	**48.6**	**6.8**	**10.6**	**6.0**
AT	57.8	1.2	4.1	3.3
BE	35.6	4.8	11.5	8.8
BG	45.2	1.7	10.1	3.7
CZ	14.0	11.0	17.1	8.4
DK	25.7	3.3	4.9	2.6
EE	24.2	4.8	7.0	
ES	38.6	7.9	15.1	5.3
FI	63.3	5.4	6.6	4.9
FR	49.5	3.6	4.9	4.4
GR	58.3	14.1	25.8	9.9
HU	22.5	5.0	10.5	5.3
IE	63.7	8.1	7.5	5.6
IT	25.4	7.6	15.7	8.1
LT	64.7	2.9	9.8	2.4
LU	75.0	2.8	6.3	4.3
LV	24.6	1.9	3.8	3.6
MT	NA	9.1	11.7	NA
NL	34.6	4.8	6.5	6.4
PL	66.2	5.2	13.9	4.4
PT	66.7	8.4	16.1	8.3
RO	50.2	2.5	6.5	3.8
SE	42.0	4.6	7.6	3.3
SI	37.3	3.3	6.6	2.8
SK	5.8	7.0	10.3	2.8
UK	37.8	12.0	8.5	7.9

Source: Eurostat Regio database tables LF2ESTAT, UN3WPOP
*Figures not available for Germany and Cyprus

5.8 Trends in Employment

The most obvious trend in almost all Member States is the growth in tertiary employment. This is highlighted in Table 5.8, which shows the change in employment for 22 of the EU27 states for which data were available from 1999-2003 (note that this short time period does not control for the effects of Business Cycles). This shows that the largest percentage growth in tertiary employment has been in Cyprus (18.7%), Ireland (18.2%) and Spain (18%) – three Member States for whom tourism is an important industry, which may explain some of the growth. Only Romania (-2.9%) and Lithuania saw a small decline (-1.9%) in tertiary employment over this period. The sharpest drop in secondary employment has been in Denmark (-9.7%), Germany (-7.7%), Romania (-7.5%) and the UK (-6%). However, substantial secondary employment growth has occurred in Spain (13.2%), Cyprus (10.2%) and Ireland (9.9%) – all countries also with a high proportion of tertiary employment growth. This suggests that sectoral employment growth may be the result of wider economic growth within a Member State rather than a result of any substantial shift in industrial structure, and also that some of the tertiary sector growth may be dependent upon the secondary sector growth.

Data for more disaggregated industrial sectors for individual Member States are given in Table A5.9. in Appendix 5. These show the percentage change in employment in each of 6 broad industrial sectors (listed in the table headings with NACE code) over the period 1999-2003. This highlights some of the employment trends that have taken place:

- Employment in (secondary/manufacturing) industry has fallen in the majority of States, particularly in north and west Europe
- All the other sectors have seen a rise in employment in the majority of States and represent the most likely source of new employment opportunities

Employment in financial intermediation, real estate etc. (NACE j and k) in particular has increased in every Member State over the period.

Table 5.8: Change in Employment by Sector, EU27, 1999-2003

	Secondary	Tertiary	All Sectors
	% change		
EU27 (22 states)	-1.7	7.7	3.9
AT	-5.2	3.6	0.0
BE	-5.3	4.4	1.6
CY	10.2	18.7	17.2
CZ	-2.5	2.7	-0.3
DE	-7.7	4.1	-0.5
DK	-9.7	4.5	0.5
EE	5.2	5.2	2.5
ES	13.2	18.0	14.6
FI	-2.5	7.1	2.9
GR	0.5	5.5	2.8
HU	0.5	7.8	3.4
IE	9.9	18.2	13.1
IT	4.0	9.0	6.6
LT	0.1	-1.9	-3.7
LU	-6.0	9.9	6.8
LV	8.7	8.3	3.6
PT	-2.7	8.4	3.9
RO	-7.5	-2.1	-14.0
SE	-4.2	10.8	6.4
SI	0.2	5.7	1.3
SK	1.1	4.4	1.3
UK	-6.1	7.8	3.9

Source: Eurostat labour market database table EGANA

Comparing the annual average change rates of the primary sector with those of the secondary and tertiary sector reveals, for the EU-27[143] between 1995 and 2001 the tertiary sector is the most dynamic one – i.e. has the highest annual average rate of change for all three sectors – in 69 % of the 1280 regions (Table 5.9). Those regions with a decreasing employment in the tertiary sector are mainly located in the New Member States, Eastern Germany and Greece. Only around 12% and 11% of regions had higher rates of employment growth in the secondary and primary sectors respectively. In general, secondary employment increased in 40 % of the regions and agriculture in 18 % of the regions. In 9 % of the regions no sector showed any growth – mainly located in the New Member States and Eastern Germany. In 3 % of the regions – located in Bulgaria, Poland, Slovenia and Eastern Germany – employment decreased in all sectors with agriculture being the one with the slowest decline. SR regions correspond to these shares.

In PR regions, the tertiary sector had the highest growth rate in 60 % of the regions. In SR and PU regions tertiary industries had the highest growth rates in 71% and 75% of regions respectively, somewhat more than in the PR regions. The primary sector employment trend was also below average in PR regions. This sector was the most dynamic in only 7 % of the PR regions, and its share of employment only increased in 13 % of the PR regions. In contrast, in 48 % of the PR regions secondary employment grew and in 19 % it was the most dynamic sector (in SR and PU regions the secondary sector grew at the highest rate less often – in 11% and 3.5% regions respectively). These results emphasise the limited role of agricultural employment in developing rural regions. In only a few regions was agriculture a driver of rural employment growth - where they experience specialisation and a transfer of agricultural activity – e.g. fruit and vegetables in Spain. The share of PR regions with no employment growth at all is with 14 % (much higher than in SR with 8% or PU regions with 4.5% exhibiting no growing sectors).

Table 5.9: Breakdown of PU, SR and PR regions in the EU-27 by sector with the highest annual employment growth in %, 1995-2001

	Percentage share of regions with the highest positive annual average change rate in				
	Tertiary	**Secondary**	**Primary**	**No sector**	**Total**
AT	**91.4**	**2.9**	**5.7**	**0.0**	**100.0**
PU	100.0	0.0	0.0	0.0	100.0
SR	75.0	0.0	25.0	0.0	100.0
PR	96.0	4.0	0.0	0.0	100.0
BE	**79.1**	**18.6**	**2.3**	**0.0**	**100.0**
PU	88.9	7.4	3.7	0.0	100.0
SR	80.0	20.0	0.0	0.0	100.0
PR	33.3	66.7	0.0	0.0	100.0
CY	**100.0**	**0.0**	**0.0**	**0.0**	**100.0**
CZ	**57.1**	**14.3**	**7.1**	**21.4**	**100.0**
PU	0.0	0.0	100.0	0.0	100.0
SR	58.3	16.7	0.0	25.0	100.0
PR	100.0	0.0	0.0	0.0	100.0
DE	**85.4**	**2.1**	**6.4**	**6.2**	**100.0**
PU	82.5	1.6	10.1	5.8	100.0
SR	86.8	2.5	5.0	5.7	100.0
PR	89.0	2.2	1.1	7.7	100.0
DK	**93.3**	**0.0**	**0.0**	**6.7**	**100.0**
PU	100.0	0.0	0.0	0.0	100.0
SR	100.0	0.0	0.0	0.0	100.0
PR	87.5	0.0	0.0	12.5	100.0
EE	**60.0**	**0.0**	**0.0**	**40.0**	**100.0**
PU	0.0	0.0	0.0	100.0	100.0
SR	66.7	0.0	0.0	33.3	100.0
PR	100.0	0.0	0.0	0.0	100.0
ES	**17.3**	**53.8**	**28.8**	**0.0**	**100.0**
PU	14.3	42.9	42.9	0.0	100.0
SR	22.2	51.9	25.9	0.0	100.0
PR	11.1	61.1	27.8	0.0	100.0

[143] EU-27 without the French overseas departments (no OECD codes).

	Percentage share of regions with the highest positive annual average change rate in				
	Tertiary	**Secondary**	**Primary**	**No sector**	**Total**
FI	**50.0**	**50.0**	**0.0**	**0.0**	**100.0**
SR	100.0	0.0	0.0	0.0	100.0
PR	41.2	58.8	0.0	0.0	100.0
FR	**92.7**	**7.3**	**0.0**	**0.0**	**100.0**
PU	100.0	0.0	0.0	0.0	100.0
SR	95.9	4.1	0.0	0.0	100.0
PR	86.1	13.9	0.0	0.0	100.0
GR	**52.9**	**17.6**	**13.7**	**15.7**	**100.0**
PU	0.0	0.0	100.0	0.0	100.0
SR	46.2	15.4	15.4	23.1	100.0
PR	56.8	18.9	10.8	13.5	100.0
HU	**20.0**	**75.0**	**0.0**	**5.0**	**100.0**
PU	0.0	0.0	0.0	100.0	100.0
SR	14.3	85.7	0.0	0.0	100.0
PR	25.0	75.0	0.0	0.0	100.0
IE	**37.5**	**50.0**	**12.5**	**0.0**	**100.0**
PU	0.0	0.0	100.0	0.0	100.0
PR	42.9	57.1	0.0	0.0	100.0
IT	**62.1**	**20.4**	**17.5**	**0.0**	**100.0**
PU	75.0	9.4	15.6	0.0	100.0
SR	62.7	17.6	19.6	0.0	100.0
PR	40.0	45.0	15.0	0.0	100.0
LT	**40.0**	**0.0**	**10.0**	**50.0**	**100.0**
SR	33.3	0.0	0.0	66.7	100.0
PR	42.9	0.0	14.3	42.9	100.0
LU	**100.0**	**0.0**	**0.0**	**0.0**	**100.0**
LV	**16.7**	**0.0**	**0.0**	**83.3**	**100.0**
PU	0.0	0.0	0.0	100.0	100.0
SR	33.3	0.0	0.0	66.7	100.0
PR	0.0	0.0	0.0	100.0	100.0
MT	**100.0**	**0.0**	**0.0**	**0.0**	**100.0**
NL	**62.5**	**0.0**	**37.5**	**0.0**	**100.0**
PU	77.8	0.0	22.2	0.0	100.0
SR	33.3	0.0	66.7	0.0	100.0
PR	0.0	0.0	100.0	0.0	100.0
PL	**24.4**	**0.0**	**2.2**	**73.3**	**100.0**
PU	50.0	0.0	12.5	37.5	100.0
SR	28.6	0.0	0.0	71.4	100.0
PR	13.0	0.0	0.0	87.0	100.0
PT	**70.0**	**30.0**	**0.0**	**0.0**	**100.0**
PU	100.0	0.0	0.0	0.0	100.0
SR	66.7	33.3	0.0	0.0	100.0
PR	60.0	40.0	0.0	0.0	100.0
SE	**81.0**	**4.8**	**9.5**	**4.8**	**100.0**
SR	50.0	0.0	50.0	0.0	100.0
PR	84.2	5.3	5.3	5.3	100.0
SI	**58.3**	**16.7**	**0.0**	**25.0**	**100.0**
SR	50.0	0.0	0.0	50.0	100.0
PR	62.5	25.0	0.0	12.5	100.0
SK	**100.0**	**0.0**	**0.0**	**0.0**	**100.0**
PU	100.0	0.0	0.0	0.0	100.0
SR	100.0	0.0	0.0	0.0	100.0
PR	100.0	0.0	0.0	0.0	100.0
UK	**64.7**	**3.8**	**27.8**	**3.8**	**100.0**
PU	58.0	3.7	37.0	1.2	100.0
SR	88.9	0.0	11.1	0.0	100.0
PR	67.6	5.9	14.7	11.8	100.0
BG	**7.1**	**3.6**	**35.7**	**53.6**	**100.0**
PU	100.0	0.0	0.0	0.0	100.0
SR	50.0	0.0	0.0	50.0	100.0
PR	0.0	4.0	40.0	56.0	100.0
RO	**47.6**	**38.1**	**0.0**	**14.3**	**100.0**
PU	100.0	0.0	0.0	0.0	100.0
SR	43.8	37.5	0.0	18.8	100.0
PR	48.0	40.0	0.0	12.0	100.0
EU-27[1)]	**68.6**	**11.6**	**10.9**	**9.0**	**100.0**
PU	75.2	3.5	16.8	4.5	100.0
SR	71.2	11.4	9.2	8.2	100.0
PR	59.9	19.1	7.1	13.9	100.0

Note: [1)] Without French overseas departments (no OECD codes).
Source: Calculations based on EUROSTAT REGIO database.

5.9 Conclusions

Any conclusions based upon the empirical data presented in this chapter are inevitably a little tentative given the difficulty of interpreting sectoral employment percentages, and the inadequacy of time series data. However it does seem reasonable to conclude that a form of "employment counter-urbanisation" is taking place in some parts of the EU, particularly in the northern and western member states. This has resulted in expansion of secondary and tertiary employment in the more accessible SR regions, especially those which are perceived to offer attractive quality of life. However, the relatively crude sectoral data available at NUTS 3 does not allow this process (which mainly relates to a "new economy" subset of industries) to be separated from the decline of traditional manufacturing, or the expansion of public services which, among other things, is a response to demographic ageing. The first of these is particularly important in some of the New Member States, whilst the public sector has been shown to be much more important in rural areas of the Northern Member States than those of the South.

Self employment is most commonly associated with the primary sector, and is most common in the southern member states of the EU15. The New Member States present a rather mixed situation in this respect, due to differences in previous structures and in adjustment processes.

The most important conclusion to be derived from the analysis of recent sectoral employment trends is that continued decline in the primary sector is inevitable. The drivers for future growth will be in the secondary and tertiary sectors. This is perhaps not very surprising. However it has important policy implications. These include the continued need to encourage and invest in all forms of economic diversification, even in remote rural areas where alternatives to primary activities seem scarce. The apparent importance of "quality of life" factors and counter-urbanisation further suggest a targeting principle - lower levels of assistance should be offered to attractive accessible (SR) areas, coupled with a focus on exploiting the potential quality of life advantages of declining peripheral (PR) regions.

5.10 Some Simple Hypotheses derived from Chapters 3 and 5

Before discussing what hypotheses may be derived from the above review of available data on non-agricultural employment, it has to be acknowledged that it has been seriously hampered by the inadequate level of detail in the official statistics and the absence of time series data to allow Business cycles and other changes over time to be accounted for. The conclusions which can be drawn, and (testable) hypotheses which can be deduced (presented in two groups below) are of necessity quite simple and "broad-brush". The data limitations also mean that much of the analysis is cross sectional, rather than reflecting the dynamics of change over time. The direction of causation between variables may also be uncertain given the data.

1. Over the last half century in most EU countries, the tertiary sector has grown faster than both the primary and secondary sectors. In recent decades both primary and secondary sectors have been generally associated with decline in employment, or slow growth in some cases, while the tertiary sector has shown higher growth. Hence one may anticipate a direct relationship between primary/secondary activity and unemployment, and an inverse relationship with the percentage tertiary employment. One might further anticipate a negative correlation between

primary/secondary employment rates and GDP per capita, and a positive correlation with tertiary employment, although this depends on the relative productivity in each sector.

2. Secondly, it may be hypothesised that higher levels of inclusion and participation by people in the economy (higher female activity rates, lower female, youth and long term unemployment) may lead to more positive overall labour market indicators, and more positive regional economic performance.

Both of the above hypotheses may be tested, using regional data assembled for this project using regression analysis (Appendix 5 Note 5.1). The results may be briefly summarised as follows:

(a) The relative importance of primary industries does seem to have a broadly negative effect upon employment rates, and is associated with higher levels of unemployment (Hypothesis 1).

(b) This relationship carries over into a significant impact upon regional economic performance, in terms of GDP per capita, in other words lower employment rates and higher unemployment are associated with lower GDP per capita (Hypothesis 1).

(c) Regions with low rates of economic activity and significant levels of unemployment tend to have a higher dependence upon self-employment (suggesting that self employment is often a response to lack of employment opportunities rather than an indication of high levels of entrepreneurship). This may also reflect the link between self employment and primary sector employment, which, as stated above, is associated with lower rates of economic activity and employment.

(d) There is a clear relationship between female and youth employment and general economic performance (GDP per capita), suggesting that employment and unemployment rates are strongly influenced by the degree of involvement of women and young people under 25. The participation of women and young people tends to be lower where primary and secondary industries are important (Hypothesis 2).

These findings tend to underline the continuing need for rural development policies to support economic diversification and increased participation/inclusion. This is not a very surprising finding, but it is reassuring that these two fundamental principles of EU rural policy may be validated by empirical analysis.

6 NEW EMPLOYMENT OPPORTUNITIES

6.1 Introduction

As noted in the introduction to this report, the decoupling of farm payments, the conditions attached to the requirement for 'good agricultural and environmental practice', and greater market access, represent changes that are expected to impact upon the trend in the decline in the agricultural workforce. How these factors might impact upon the wider rural employment situation is unclear.

Business confidence in the farming sector, when coupled with favourable cash flow, drives investment decisions and hence the demand for investment goods, some of which will be produced in the local rural economy. The certainty of future expectations in the farming sector, is currently likely to be somewhat low thus impacting on employment opportunities in the local rural economy.

Some of the requirements for maintaining agricultural land in good agricultural and environmental condition within a free internal market will encourage a redistribution of agricultural enterprises across the EU so that they can be met at lower cost. For example, intensive animal enterprises may shift from regions where there are high costs of disposing of manure to other regions where such manure can bring positive benefits to soil management. If such relocation takes place then in some regions new agricultural employment opportunities could be a main driver of rural employment and wider development. Generally, further pressure on margins brought about by greater competition will encourage greater specialisation of production in specific regions. The issue of how the latest CAP reform might impact on farm employment is addressed in depth by this study through country case studies (Chapter 10 and Appendix 10).

Opportunities for alternative rural employment are likely to be financially more attractive with reduced price support and internal market protection for agricultural products, two things that have previously kept resources such as buildings, machinery and family labour in the agricultural sector. These resources may well be transferred to activities such as alternative energy generation, tourism, conservation and the environment, and the provision of social services, which is assisted in many situations by the new information technologies and more optimistic demand prospects. These opportunities are made additionally attractive due to the continued decline in the proportion of consumer expenditure on food, in many cases now below 10%, and as globally sourced produce becomes the norm.

Research from various countries has shown that women play an important role in the development of new income opportunities on the farm. It is often the farm wife who takes the first step and builds up new on-farm business of non-agricultural farm activities. Furthermore, an increasing number of farm women work off the farm. By engaging in new economic activities, both on and off the farm, farm women contribute considerably to the survival of family farms and the viability of the rural economy[144].(footnote is on the next page)

The range of enterprises within a rural economy exhibits a surprising amount of diversity and individuality, as shown in the general statistics, even for PR regions. Thus, anticipating new employment opportunities can only be based on fairly well known trends. How these will work through

in any locality will be a unique experience. Many rural enterprises are location-specific, for example, the growth of certain crops depends on particular agri-climatic conditions. Location also drives the type of services that are on offer. For example, location by a major road or near to a thriving city will provide opportunities not open to more remote rural areas. Tourism depends on the proximity of the coast or a particular kind of landscape or climate. The reader is referred to appendix ten of this study for location specific predictions of employment change arising from CAP reform.

New employment opportunities should not be viewed as a panacea for the rural labour market. Existing enterprises will need to adjust to the increasing requirements for consideration of quality, service, due diligence, safety, transparency, ethics and environmental impact, as well as to the opportunities to do things better using new technology and through better access to information and the global market.

Some of the main employment opportunities in rural areas are based on the provision of goods and services that have a luxury element or depend on demand from relatively affluent members of society. Examples include sport, recreation and tourism, quality food and drink, crafts, and second and retirement homes. The more successful these are, the greater the potential multiplier effects within the local economy, and hence the greater the effect on employment in rural areas. A number of these sectors are considered in more detail below. Thus, this section presents a literature review of various new employment opportunities for rural areas across EU-25 plus Romania and Bulgaria. As such it addresses the issue of structural adjustment and focuses upon possible solutions to the structural unemployment which results from the decline of the primary and secondary sectors (see chapters 4 & 5). It covers new employment opportunities relating specifically to farm holdings (for example, agri-tourism) as well as other rural, non-agriculturally-related activities such as landscape management and social services.

In 2003 9% of the EU-25 farm holdings (almost 600,000) had some non-agricultural activity (forthcoming Eurostat publication). Some limited data are presented here showing the extent of changes in other gainful activity undertaken on farm holdings. Table 6.1 shows that between 2000-2003 the percentage of farm holdings with other (i.e. non-agricultural) on farm gainful activity (OGA) increased in 10 member states and decreased in three. Data is not available for both years for the remaining countries. It is clear from Map A6.1 (Appendix 6) that holdings with OGA in 2003 are found on a large percentage of farms in a number of member states, notably, parts of France and Finland, and much of Germany and the Netherlands. However, in other member states the percentage of holdings with other gainful activities is much less significant, notably for much of Spain, Italy, Greece, Poland and Ireland.

[144] Bock, B., 2004. Fitting in and Multi-tasking: Dutch Farm Women's Strategies in Rural Entrepreneurship. *Sociologia Ruralis* **44**:3, 245-260

Table 6.1: Percentage farm holdings with other gainful activity, 2000, 2003

Member State	Percentage 2000	Percentage 2003
Austria	18.45	18.73
Belgium	3.21	3.96
Bulgaria	-	-
Cyprus	-	6.13
Czech Republic	-	8.71
Denmark	11.42	16.44
Estonia	-	7.89
France	26.05	27.60
Germany	-	20.20
Greece	1.84	1.27
Hungary	-	10.46
Ireland	3.95	5.88
Italy	13.00	6.67
Latvia	10.95	3.30
Lithuania	-	1.64
Luxembourg	7.47	11.02
Malta	-	5.22
Netherlands	3.19	31.65
Poland	-	3.27
Portugal	9.88	-
Romania	-	-
Slovakia	-	4.57
Slovenia	-	4.43
Finland	21.99	26.37
Spain	-	3.24
Sweden	7.53	13.40
UK	9.58	18.31

The following sub-sections provide similar OGA data about the extent of the opportunities for employment growth for specific sectors of rural employment. In addition, diverse member state publications provide further data. The latter are summarised in Table A6.1 (Appendix 6). The information presented covers the sectors of renewable energy, nature conservation, organic products and processing, and local food and cultural activities. There is also some information on jobs relating to information technology, although in this context it is not a sector but an enabling infrastructure relevant for the development of other sectors. The overall picture is that renewable energies are predicted to provide considerable new employment opportunities for rural areas. The examples suggest that organic farming, marketing of organics, and processing of local food already provide additional employment opportunities but that these represent small overall numbers of jobs. The many examples shown for nature conservation work, relating to both protected areas such as national parks, and schemes targeting specific species and habitats, suggest this area of employment can provide significant numbers of jobs at the level of member state, and small but significant numbers of positions at the local and regional level.

It is against this brief description of the background to rural business that new farm and rural employment opportunities are described for agri-tourism, renewable energy, culture, quality and organic products, nature and landscape management and information and technology services.

6.2 Agri-tourism

6.2.1 *Definitions and activities*

"The term agritourism refers to all tourism and recreation activities connected with a working farm or any agricultural, horticultural, fishery or agribusiness operation"[145], and involves the use of farm resources for non-farm activity. Traditionally, the term applied to activities such as pick-your-own fruit farms, farm walks, farmhouse tea rooms selling homemade produce, and farm gate sales, but is now used to describe any tourist activity taking place on a farm, and may have little or no connection to the farming environment. It includes overnight stays on the farm, for example, in bed and breakfast accommodation.

6.2.2 *Drivers*

- Declining agricultural incomes across the European Union
- The changing nature of farm support
- The availability of funds such as the EAGGF that specifically encourage the development of agritourism activities
- The desire of some farm women to achieve a professional status within the farm business and create new activities on-farm for which they are responsible[146]
- Growth in short break holidays
- Growth in demand for activity based holidays
- A reaction by some social groups against mass package tourism
- Urban dwellers seeking a holiday that is a connection to a different way of life

6.2.3 *Significance of the sector*

Tourism businesses generally can be good at providing local employment and economic benefits, both directly and indirectly. Rural tourism businesses and especially farm tourism businesses are likely to bring employment benefits specifically to farming families, thus helping to maintain the viability of farm holdings[147]. In so far as mainly local resources are utilised the local multiplier effects are likely to be positive.

Countries such as the UK, France, Germany and Austria have well-developed agritourism industries in terms of farm-based accommodation, with something like 20,000 to 30,000 farm holiday destinations in each country[148]. In Wales, farm tourism currently contributes at least £10 million per year to the

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145 Przezborska, L., 2003. Relationships between rural tourism and agrarian restructuring in a transitional economy: The case of Poland. In: Hall, D., Roberts, L. & Mitchell, M., 2003. New directions in rural tourism. Ashgate, Aldershot, England. Pp205-222

146 Ake Nilsson, P., 2001. Staying on farms: An ideological background. Annals of Tourism Research, 29 (1), 7-24

147 Atlantic Consultants, 2002. Farm tourism within the context of rural tourism. Final Report. South West Tourism Research Department

148 Busby, G. & Rendle, S., 2000. The transition from tourism on farms to farm tourism. Tourism Management, 21, 635-642

incomes of some 1600 farming families, typically representing between 15% and 50% of their annual incomes[149].

However, Sharpley found that although the development of agritourism in Cyprus brought new employment opportunities, these were limited[150]. Similarly, surveys conducted with agritourism enterprises in Scotland found that relatively few employment opportunities had been created by the development of farm-based tourist accommodation, although work was created for spouses and offspring[151]. Investment and income from agritourism also enables unused cottages to be restored and farmhouse facilities upgraded. These factors provide contracts for building and plumbing firms in rural areas and thus support employment. Visitors to farms also spend widely within the immediate rural community, thus contributing to economic activity and employment creation or retention in rural areas. It is estimated that two-thirds of farm guests spend twice as much again in the local area as they spend on their accommodation[152].

6.2.4 *Future opportunities and conclusions*

A study of agricultural experts in new member states investigated their assessment of the potential of agritourism as an alternative income generation activity, and hence employment creation[153]. Findings revealed that expectations in Latvia were high – the prospects for agritourism were ranked as five in four regions and four in one region, on a scale from five (good) to one (poor). In Lithuania, the prospects for agritourism were similarly judged to be good. In other CEE countries, results were more regionally variable. For example, in the five regions of Estonia, prospects were ranked differently in each. Of 16 Polish regions, the prospects for agritourism were not ranked at five (good) in any, and in three regions prospects were ranked only one (poor). Although some regions of Hungary, Slovenia and Bulgaria were thought to have good prospects, results were by no means consistent across all regions. These results suggest that in some of the new member states the development of agri-tourism may present opportunities for new employment if their economies continue to grow. However, agri-tourism is regionally based and there is potential competition between different localities and countries.

FSS data from 2000 and 2003 show very little change in the percentage of farm holdings within the EU with tourism as an additional gainful activity. Ten countries for which data was available for both years show a small increase (Table 6.2). A further four countries show a decrease and data is not available for both years for the remaining countries. See also Map A6.2 (Appendix 6) for holdings with tourism as OGA, 2003. Tourism activities are shown to be significant for farm holdings in a number of member states, for example, parts of Spain and Italy and much of the UK and Ireland. In Italy the farm tourism

149 Youell, R., 2001. Foot and mouth disease - impact on the tourism industry in rural Wales. University of Wales, Aberystwyth

150 Sharpley, R., 2002. Rural tourism and the challenge of tourism diversification: the case of Cyprus. Tourism Management, 23, 233-244

151 Gladstone, J. & Morris, A., 1998. The role of farm tourism in the regeneration of rural Scotland. Paper presented at 'Rural tourism management: sustainable options' conference, SAC, Auchincruive, Ayr, Scotland, UK, 9-12 September 1998

152 Rilla, E., no date. Unique Niches: Agritourism in Britain and New England. University of California Cooperative Extension, Novato, California

153 European Commission, 2004. The Future of Rural Areas in the CEE new Member States. European Commission DG Agriculture, Brussels

sector has a growth rate of about 3% a year[154]. Currently there are over 13,000 farm units offering visitor facilities to tourists, providing an annual income of 850million Euros.

Table 6.2: Percentage farm holdings with tourism as OGA, 2000, 2003

Member State	Percentage 2000	Percentage 2003
Austria	8.21	7.92
Belgium	0.81	0.87
Bulgaria	-	-
Cyprus	-	0.04
Czech Republic	-	0.93
Denmark	0.83	0.96
Estonia	-	0.78
France	2.12	2.91
Germany	-	3.44
Greece	0.09	0.06
Hungary	-	0.16
Ireland	1.01	0.89
Italy	0.23	1.38
Latvia	0.20	0.36
Lithuania	-	0.05
Luxembourg	1.78	2.86
Malta	-	-
Netherlands	2.32	3.15
Poland	-	0.23
Portugal	0.12	-
Romania	-	-
Slovakia	-	0.23
Slovenia	0.80	1.09
Spain	-	0.83
Finland	3.45	3.38
Sweden	1.67	2.97
UK	4.48	8.22

6.3 Renewable energy

6.3.1 *Definitions and activities*

Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market defined renewable energy sources as:

> *Renewable, non-fossil energy sources, specifically wind, solar, geothermal, wave, tidal, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases.*

The directive further defined 'biomass' as:

> *The biodegradable fraction of products, waste and residues from agriculture (including vegetal and animal substances), forestry and related industries, as well as the biodegradable fraction of industrial and municipal waste.*

Renewable energies therefore encompass energy produced from a wide range of non-fossil technologies. These can be used for electricity production, transport fuels and direct heating.

[154] Agra Informa, 2005. Rural Europe, June 2005, p19. www.agra-net.com

6.3.2 *Drivers*

- Initial rationale related to security of energy supply, as fossil fuel reserves deplete
- Kyoto agreement underpins political commitment to non-fossil fuels
- Environmental impact of fossil fuels, leading to a search for greener energies
- Awareness that renewable energies can offer benefits, relating to regional development, employment creation and security
- Recognition that biomass industries can benefit areas where agricultural sector has experienced decline in jobs[155]
- Programmes and support measures at both European and Member States level[156]

6.3.3 *Significance of the sector*

To date, the most significant agricultural land use associated with renewable energy production in the EU is crop area devoted to bio diesel (mainly oilseed rape) and ethanol crops (mainly sugar beet, and cereals). In 2003, an estimated 1.6 million ha of agricultural land in the EU-15 were devoted directly to the production of renewable energy from primary biomass sources. The production of bio diesel from oilseed crops has increased more than ten-fold in the period 1994–2003. To date, seven EU-15 Member States have either none or negligible crop production for bio fuels, and 86% of total bio fuel crops are produced in four EU-15 Member States[157]. These four are Germany, Italy, France, and Spain. In rural areas the renewable energy of considerable significance is biomass. Research suggests that biomass projects provide higher levels of employment, especially during the operations phase, than other mature renewable technologies. The 2004 Renewable Supply Chain Gap Analysis estimated that an average of six jobs are created per megawatt (MW) for biomass, comparing favourably to other technologies[158]. Any activities that increase development of biomass not only safeguard existing employment in the wood fuel industry, for example relating to forestry operations and fuel transportation, but also provide opportunities for expansion and new opportunities in other rural sectors[159].

6.3.4 *Future opportunities and conclusions*

Renewable energy industries require a wide range of facilities and resources. The skills necessary to develop and maintain fuel supply from energy crops are of particular significance to rural areas.

Rural employment arising from biomass occurs from the supply of three different fuels. These fuels are energy crops, forest residues and agricultural wastes. The latter can also be subdivided into liquid and solid wastes, for example, slurry and straw or olive husks, respectively. However, the growth in agricultural employment for the renewable energy sector does not necessarily mean that new people are brought into agriculture, as some of the growth will be from increased utilisation of part-time and

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155 MITRE, no date. Meeting the targets and putting renewables to work. Overview report. DG Transport and Energy, European Commission, Belgium.

156 European Commission, DG Energy and Transport, 2005. Overview: Energy for the future: Renewable sources of energy. European Commission, Belgium

157 European Environment Agency, 2005. Agriculture and environment in EU-15— the IRENA indicator report. Office for Official Publications of the European Communities, Luxembourg

158 British Biogen, 2004. Renewable supply chain gap analysis. DEFRA, London

seasonal agricultural workers. However, agricultural employment security will be improved, as the energy sector will enable the development of long term contracts and steady incomes within a high risk and low income sector.

Employment opportunities are mainly linked to biofuel processing and the provision of agricultural and forestry feedstocks. Direct employment relates to feedstock production, processing and logistics, as well as biofuel processing. These jobs are mainly in rural areas. The number of jobs created directly by biofuel production will very much depend on the size of the plant; smaller plants have higher labour input per tonne of biofuel than larger plants, which can be expected to be more efficient. the highest direct employment effects are realised when biomass is used for biofuel production and the lowest effect is realised when biomass is used for heat generation[160]. The labour input is generally higher when biofuel production is based on annual energy crops (for the EU mainly cereals, sugar beet, oilseeds) rather than on perennial crops (e.g. short rotation coppice).

Renewable energy sources are generally more labour intensive than conventional sources of power, and so are more likely to generate additional employment opportunities[161], however, this may make this sector less competitive. The EU is agreed on the need to increase energy creation from renewable resources by 2010. Modelling by Forum for the Future shows that for the UK, for example, a 10% renewable energy target would lead to an employment increase of 3,000 jobs by 2010[162]. This does not take into account manufacturing jobs that could also be created. Under the 10% scenario, 65% of new jobs would come from energy crops and agricultural and forestry wastes, as these are relatively employment intensive. A study by ADAS predicted that the 2010 target would lead to 2465 full-time rural jobs in the UK[163].

Another study looking at the prospects for renewables and employment generation was carried out for the European Commission across the EU[164]. The scenario looked at doubling renewable capacity in the EU by 2020 and associated employment generation. In Denmark, for example, the model projected the creation of 73,000 jobs. This is likely to be due more to manufacturing of renewable energy equipment than energy production itself.

The MITRE report[165] also modelled future employment creation within the renewables sector across the EU-15 and included figures specifically on the agriculture sector. Under current renewable energy policies, they predicted that by 2010 agriculture would have employment growth of 346,000 (FTE) arising from the development of renewable energies. This represents approximately 30% of gross employment creation in the sector. They also provided separate figures for the 15 member states. Member state figures ranged from 500 FTE/year net employment growth in the agricultural sector in Luxembourg, to 76,000 FTE/year in France. Although the latter may look significant, in both examples, the potential employment growth represents less than 0.3% of the total economically active population.

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159 Scottish Executive, 2005. Promoting and accelerating the market penetration of biomass technology in Scotland. Scottish Executive, Edinburgh

160 Commission Staff Working Document. Annex to the Communication from the Commission. An EU Strategy for Biofuels. Impact Assessment. {COM(2006) 34 final}

161 TUSDAC, 2001. Employment Creation and Environmental Policy: a literature review. TUSDAC, London

162 Ekins, P, Hough, C and Russell, A., 1999. The 20% Solution: Meeting the Government's Targets on Climate Change. Forum for the Future. Policy Briefing. November 1999/PB4

163 ADAS, 2003. Renewable energy and impacts on rural development and sustainability in the UK. DTI, London

164 European Commission, 1999. The Impact of Renewables on Employment and Economic Growth. Project for the ALTENER programme, co-ordinated by a consortium led by ECOTEC Consulting

Policy reviews conducted in 2004 provide some figures for some new member states. For example, increasing the share of renewable energies in energy production in the Czech Republic to 3.5% from the present 2%, was estimated to create 10,000 new jobs[166]. In current market conditions the proposed 10 year investment program in renewable energies in Slovenia was estimated to result in 3,000 new jobs (direct and indirect) in agriculture and industry[167]. In Poland realisation of the renewable energy strategy objectives has been estimated to create 30,000-40,000 new jobs annually[168]. These estimated figures for new member states, although suggesting significant potential for employment growth, do not distinguish between rural and urban labour.

FSS data from 2000 and 2003 reveals slight increases in the percentage of farm holdings with renewable energy as other gainful activity, for seven member states (Table 6.3). One member state reveals a decrease from 2000 to 2003 and data is not available for both years for the remaining countries. See also Map A6.3 (Appendix 6) for farm holdings growing energy crops as percentage of holdings with OGA, 2003. Renewable energy activities (in this case the growing of energy crops) are shown as not yet being a significant diversified activity for agricultural holdings across the EU.

Table 6.3: Percentage farm holdings with renewable energy as OGA - 2000, 2003

Member State	Percentage 2000	Percentage 2003
Austria	0.39	0.99
Belgium	-	-
Bulgaria	-	-
Cyprus	-	-
Czech Republic	-	0.03
Denmark	1.03	1.39
Estonia	-	0.01
France	0.03	0.04
Germany	-	1.65
Greece	-	-
Hungary	-	0.01
Ireland	-	0.14
Italy	0.01	0.11
Latvia	-	0.03
Lithuania	-	-
Luxembourg	0.36	2.04
Finland	2.09	2.12
Malta	-	-
Netherlands	-	3.00
Poland	-	0.02
Portugal	-	-
Romania	-	-
Slovakia	-	-
Slovenia	-	0.02
Spain	-	0.01
Sweden	0.26	0.61
UK	0.16	0.04

In sum there would appear to be relatively large and well dispersed opportunities for growth in employment in renewable energy supplies throughout the EU. Growth is, as yet, in the early stages

[165] MITRE, op. cit.

[166] EREC, 2004a. Overview of new member states policy activities: Czech Republic, Renewable Energy Policy Review. EREC, Belgium

[167] EREC, 2004b. Overview of new member states policy activities: Renewable Energy Policy review, Slovenia. EREC Belgium

[168] EREC, 2004c. Overview of new member states policy activities: Renewable Energy Policy review, Poland. EREC Belgium

but suggests there is potential for development to take off quite quickly given current energy prices and changes in support incentives.

6.4 Culture

6.4.1 *Definitions and activities*

In rural areas cultural activities are closely related to tourism, heritage and local and historical identity. Cultural activities are knowledge and labour-intensive and so create employment and wealth. They grew exponentially in the 1990s. Today, globalisation offers new challenges and opportunities for their development[169]. So far, there are no common definitions, nor a single standardised system of descriptions for traded cultural services. In this report culture, cultural activities and cultural industries are taken to include activities such as architecture, music, the visual arts, cinema, theatre, dance, books and heritage, as well as crafts and design.

6.4.2 *Drivers*

- Growth in demand for leisure as incomes rise
- Development of specialist holidays
- Demand for visitor experiences based on historical and cultural features

6.4.3 *Significance of the sector*

There is currently a lack of information relating to the significance of this sector to employment in rural areas. The cultural, arts and heritage sector is linked to tourism, local, quality products and landscape protection to such an extent that it is difficult to disaggregate employment impacts. Nevertheless, there is anecdotal evidence that interest in this area is growing and the expectation is that the significance of the sector to employment creation in rural areas will increase in future.

6.4.4 *Future opportunities and conclusions*

A number of examples are presented here to illustrate the kinds of opportunities that cultural activities can present to rural areas.

Under a Leader+ project of the LAG Central Carinthia, the Klien St. Paul project experiments with the concept of space. The project aims to realise an idea that is a synthesis of the arts, of architecture and industry to which economy and tourism can be added. The project consists of combining historical cultural monuments with contemporary works of art and attracts many visitors. The objectives of the project are to permanently establish an art village (industrial museum, valley museum, art studio, art trail), to network the art village with locations of works of art in the region, to develop guided tours and workshops for pupils, to conduct partner projects with business establishments and to integrate art into every-day life (tourism, business establishments).

Lech International Art and Environment Symposium is another LEADER+ project in the Lech Valley in the Tyrol. A series of events has been organised in the Lech valley in the Tyrol since 2000. The first

[169] http://www.unesco.org/culture/industries/trade/html_eng/question1.shtml#1.

LIKUS event was 'ArtFlow', followed in 2002 by 'Perceptions of nature'. A series of lectures and a multimedia show form part of the programme. All events aim at starting a process that will lead to a lasting change of perception and a heightened awareness of art and environment in the Tyrolean Lech valley.

In the Austrian federal province of Vorarlberg there are four valleys (Montafon, Klostertal, Großes Walsertal, Bregenzerwald) and four municipalities adjoining the valleys that are part of the Local Action Group (LAG) "Natural and Cultural Heritage Vorarlberg". One LAG project from this region deals with the development of a timber brand for regional woodworking businesses. The organisation acts as a joint procurement and marketing organisation for 15 woodworking businesses in the Großwalsertal valley. The use of regional woods and ecologically-sound processing methods are the distinguishing features of the products. This combination of regional emphasis and environmental good practice is a feature of rural cultural enterprises[170].

The examples given above demonstrate how cultural activities linking art and environment, art and landscape or art and regional heritage can become important cultural activities in rural areas, creating opportunities for tourism and business that are unique to the location.

In a more general sense the rural landscape of the EU can be considered as a component of rural culture and heritage. Tourists and others are attracted by, and are willing to pay for, beautiful surroundings. Thus the appearance of the countryside, as it is affected by the predominant form of land use (agriculture), sets the basis for the success of many of these complementary employment generating activities both directly and indirectly. Therefore, it may not be useful to consider 'culture' as a separate sector since it can be closely related to both nature and landscape management, and the production and promotion of local, quality produce, both of which are considered below.

6.5 Nature and landscape management

6.5.1 *Definitions and activities*

Direct employment in conservation and landscape management offers opportunities for people with many kinds of expertise, such as countryside management, biological and environmental sciences, visitor services and environmental education, as well as managerial and administrative jobs. It also supports the general rural tourism sector. Employment in nature conservation is found throughout Europe, but reflects variations in landscape, habitats and biodiversity. Many jobs are in remote rural areas with declining employment in agriculture and few alternative jobs. In such areas, conservation offers valuable diversification opportunities. The natural environment sector includes activities relating to the conservation and enhancement of the natural heritage, including nature and landscape, habitats and species[171].

6.5.2 *Drivers*

- Policy objectives relating to environmental regeneration can contribute to the sustainable economic and social well-being of the countryside
- Agricultural policy, eg introduction of agri-environment schemes

[170] LEADER Case study Vorarlberg (Austria) "Nature and Life in Bregenzerwald" – LEADER II

[171] Rayment, M., Dickie, I., 2001. Conservation works… for local economies in the UK. RSPB

- Demand from hunters, birdwatchers, walkers, riders sightseers, and others can create opportunities for species and habitat management e.g. birds provide significant benefits to local economies by attracting visiting bird-watchers
- Growth in rural tourism and rural pursuits

6.5.3 *Significance of the sector*

Nature conservation supports employment and plays an important role in the development of rural economies. 'Working with nature in Europe', a report by BirdLife International and the RSPB, examined the links between nature conservation, employment and the economies of rural areas. The case studies chosen included areas of corncrake habitat, farming and tourism in Ireland, olive growing in Portugal, the Spanish dehesas, natural forestry in Germany, and ecotourism, farming and fishing in a Greek wetland. A number of key themes emerged from the report. For example, many of the jobs associated with conservation-related activities were located in remote rural areas where there were few alternative employment opportunities and limited scope for diversification. Tourism arising from conservation and land management activities often provided secondary employment opportunities, that in many areas had a much larger economic impact than land management itself[172].

Although job creation is not generally a specific aim of agri-environment schemes, evaluation confirms that better environmental management of farmland requires extra labour. For example, evaluation of the Environmentally Sensitive Area scheme (ESA) in the UK showed a small increase in farm labour and a substantial increase in contractor labour. Evaluation of a similar scheme in Wales showed that the increase in labour was due mainly to the capital works programme. Specifically, the activities of hedge maintenance and stone wall repair were covered and shown to be labour intensive. The English Countryside Stewardship Scheme (CSS) (a voluntary scheme) has also been shown to create new jobs for farmers, contractors and other small rural businesses[173]. Also, livestock farmers in the Netherlands with agri-environment scheme management agreements had higher labour use[174].

The Tir Cymen scheme in Wales was created to encourage environmentally sustainable farming in three areas of rural Wales. Over the 1992-1995 period, 204 casual jobs and 62 person years of environmental work were created[175.] In a more recent survey 92% of Welsh farmers reported that signing a Tir Gofal management agreement had created additional work on the farm. This amounted to, on average, 65.6 extra person days per year. Of these, 49% was carried out by contractors, 42% by the farming family, 6% by existing employees and 2% by new employees[176].

6.5.4 *Future opportunities and conclusions*

Environmental protection and management are important for a healthy rural economy as well as for meeting conservation objectives. Environmental land management schemes offer direct employment and conservation benefits, as demonstrated by the numerous studies referred to above and also

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172 Cuff, J. & Rayment, M., (eds) 1997. Working with nature in Europe: Economies, Employment and Conservation in Europe. RSPB Policy Research Department, Beds

173 Barry, R, Jenkins, T, Jones, E, King, C and Wiltshire, V (1998) Green Job Creation in the UK. National report submitted as part of the 'Awareness Campaign for Green Job Creation in the European Union. Supported by the European Commission DGX1 Unit A2 Project no: 306/68/24.4.96. Compiled by the Association for Energy Conservation, Friends of the Earth, GMB, UNISON.

174 http://europa.eu.int/comm/agriculture/envir/programs/evalrep/text_en.pdf

175 ADAS (1996) Tir Cymen Socio Economic Assessment Final Report. Countryside Council for Wales.

support economic activity in the large rural tourism sector. A report recommending that the Tir Cymen approach be extended to the whole of Wales predicted that it would cost £23 million per year and would generate 1,230 person years in full time jobs.

Like the agricultural sector, forestry has experienced rapid productivity gains in recent years, and a decline in employment. One estimate states there are 45,000 farm woodlands in the UK that provide a negligible financial return to farmers because they are under managed[177]. Woodland management schemes are a means of enhancing their economic and environmental value whilst also creating jobs. For example, the Marches Woodland Initiative in the UK was a five year partnership set up in 1997 that has created jobs for local forestry contractors. It is estimated that around 15 new jobs have been created – one for every 50ha of woodland brought into management[178]. Reintroducing coppicing could also create jobs directly in woodland management and indirectly in carpentry and production of building materials, fencing and furniture.

What has been demonstrated is that the management of nature and landscape for conservation requires a labour input, and hence has the potential to increase employment opportunities in rural areas across Europe. In addition, if improvements are achieved then an indirect or secondary result will be extra employment through an increase in tourism or promotion of local, sustainably produced produce.

6.6 Quality and organic products

6.6.1 *Definitions and activities*

Quality and organic products both occupy niche sectors of food sales and are generally associated with premium prices, local or regional, small scale production, and in some instances local distribution networks. The term organic produce is self-explanatory but quality produce is rather more complex. Here it is taken to refer to products of particular regional origin, products produced and sold with an emphasis on traditional production methods, and also products that emphasise certain environmentally friendly or ethically sound production methods.

6.6.2 *Drivers*

- Demand from consumers for safe food, particularly for their children.
- Consumer demand for healthier food of higher nutritional value, produced by more environmentally friendly methods
- Demand for products produced in a particular region or by a traditional method[179]
- Promotion of organic farming by NGOs[180]
- Food branding
- Strategies relating to the development of organic farming
- Organic conversion subsidies

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176 Agra CEAS Consulting, 2005. Socio-economic evaluation of Tir Gofal. Welsh Assembly Government

177 Secrett, C (1999) Making the environment work. Economic Report, Volume 14, No 4. September

178 Brooke, C and Rayment, M (1999) The Environment and Regional Economy. Opportunities for the Regional Development Agencies. RSPB.

179 European Commission DG Agriculture, no date b. Food quality in all its aspects. European Commission, Belgium

180 Soil Association, 2002. Action Plan to develop organic food and farming in England - Summary and extracts. Briefing paper. Soil Association, Bristol, UK

- EU funding streams eg Processing and Marketing Grant Schemes (pillar 2) [181]
- EU schemes such as PDO (Protected Designation of Origin), PGI (Protected Geographical Indication) and TSG (Traditional Speciality Guaranteed) [182]

6.6.3 *Significance of the sector*

A survey was conducted as part of the OMIaRD[183] study of Organic Marketing Initiatives (OMIs). Of those OMIs analysed, 72% had an annual turnover between 125,000 and 2,125,000 Euros in 2000. The remaining 28% had turnovers ranging from 2,124,000 to over 8,000,000 Euros. In general, turnover in Austria tended to be lower (below 1,125,000 Euro), while in France and the Mediterranean countries the OMIs generally had a higher turnover, as did the Scandinavian countries (more than 1,125,000 Euro). Information on employment demonstrated that most had very few employees. On the other hand, a small number had in excess of 120 employees. Nevertheless, the typical OMI was found to be a very small business with fewer than six employees, founded by farmers before 1995[184].

In terms of employment opportunities, it has been claimed that organic farms employ between 10%-30% more people than non-organic farms[185], suggesting that production and sales of organic produce does offer the possibility of job creation[186]. In Denmark, increased employment has been reported when farmers convert from conventional to organic production. Specifically, there was a significant increase of 38% in hired labour for established organic farms[187]. However, the organic produce premium that is needed to pay for this extra labour is eroded as organic production increases, hence late-comers to organic production may not be able to afford the same levels of on-farm employment. There is already evidence of this in the UK organic milk sector.

The area under organic farming in 2002 covered 4.8 million ha in EU-15, an increase of 112% compared to 1998. In 2002, the area under organic farming reached 3.7% of total UAA in the EU-15, up from 1.8% in 1998. A quarter of the organic farming area in the EU-15 in 2002 was in Italy. The United Kingdom had the second largest area, followed by Germany, Spain and France. Member States with an increase in area under organic farming above or close to the EU-15 average were the United Kingdom, Luxembourg, Portugal, Belgium, Spain, France and Italy [188].

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[181] Scottish Executive, 2004. Annual rural report 2004. Scottish Executive, Edinburgh, UK

[182] European Commission DG Agriculture, no date a. Quality products catch the eye: PDO, PGI and TSG. European Commission, Belgium

[183] Organic Marketing Initiatives and Rural Development, 2002b. The survey of organic marketing initiatives. OMIaRD

[184] Organic Marketing Initiatives and Rural Development, 2002b. The survey of organic marketing initiatives. OMIaRD

[185] Note that the latest results from FSS 2003 show the opposite: organic farming was less labour intensive

[186] Scottish Parliament Rural Development Committee, 2003. Rural Development Committee 2nd Report 2003, Stage 1: Report on the Organic Farming Targets (Scotland) Bill. Scottish Parliament, Edinburgh, Scotland

[187] http://europa.eu.int/comm/agriculture/envir/programs/evalrep/text_en.pdf

[188] European Environment Agency, 2005. Agriculture and environment in EU-15— the IRENA indicator report. Office for Official Publications of the European Communities, Luxembourg

6.6.4 *Future opportunities and conclusions*

The report produced for the OMIaRD initiative identifies three main factors that may increase market share of organics (and thereby employment opportunities, up to a point), as follows:
1. A higher share of total organic food sales in non-specialist food shops, e.g. supermarkets;
2. Lower consumer price premiums;
3. A high level of consumer recognition of a common national label for organic products[189].

The market share of organic food will be a key factor for the future development of the sector. In 2001, organic production accounted for 2% of EU-15 total production of milk and beef, but less than 1% of total production of cereals and potatoes. Organic food products accounted for 1–2% of total EU-15 consumption, with organic beef and cereals having a higher share than milk and potatoes[190].

Labour input on organic farms in Switzerland and Germany is on average 20% higher than on comparable conventional farms. Therefore policymakers expect positive impacts on organic farming and related rural employment to arise from CAP reform. However, the overall impact on agricultural employment is expected to be minor due to the small size of the sector[191].

Overall, with respect to rural development, organic farming is expected to have little direct effects on unemployment rates, although small scale marketing and processing initiatives may contribute directly to rural employment. However, indirect effects such as increased employment in tourism due to a positive "ecological" image of a region may be of importance[192].

On-farm processing of food products can be taken as being closely related to the production of 'quality' produce. FSS data from 2000 and 2003 showed very little change in the percentage of farm holdings with processing as other gainful activity (Table 6.4). Seven member states show an increase from 2000 to 2003 but a further six show a decrease. Data is not available for both years for the remaining countries. See also Map A6.4 (Appendix 6) for farm holdings with processing as OGA, as a percentage of all OGA, 2003. This shows that processing represents a more significant diversified activity on farms in the east and south of the EU, than the north and west.

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189 Organic marketing initiatives and rural development, 2002a. September 2002 Newsletter. University of Wales, Aberystwyth.

190 European Environment Agency, 2005. Agriculture and environment in EU-15— the IRENA indicator report. Office for Official Publications of the European Communities, Luxembourg

191 Stolze, Matthias (2002) Direct payments coupled to labour force – socio-economic consequences to organic farming – . Paper presented at "Cultivating organic communities" 14th IFOAM Organic Worl Congress, Canada, Victoria, 21.-28.08.2002; Published in Proceedings of the 14th IFOAM Organic World Congress, page 279. IFOAM.

192 Häring, A. M.; Dabbert, S.; Offermann, F. and Nieberg, H. (2001) Benefits of Organic Farming for Society. Paper presented at The European Conference – Organic Food and Farming - Towards Partnership and Action in Europe, Copenhagen, Denmark, 10.-11.05.2001; Published in Proceedings of the European Conference – Organic Food and Farming. The Danish Ministry of Food, Agriculture and Fisheries.

Table 6.4: Percentage farm holdings with processing as other gainful activity – 2000, 2003

Member State	2000 Percentage	2003 Percentage
Austria	7.56	7.96
Belgium	1.02	0.88
Czech Republic	-	1.06
Cyprus	-	5.46
Bulgaria	-	-
Denmark	0.34	0.32
Estonia	-	0.53
France	8.64	8.59
Germany	-	9.16
Greece	0.94	0.72
Hungary	-	4.13
Ireland	0.02	0.08
Italy	11.47	4.46
Latvia	-	0.24
Lithuania	-	0.13
Luxembourg	2.85	3.27
Malta	-	5.04
Netherlands	1.36	1.47
Poland	-	2.63
Portugal	8.89	-
Romania	-	-
Slovakia	-	1.22
Slovenia	1.03	1.08
Spain	-	1.88
Finland	2.01	1.52
Sweden	0.87	1.46
UK	0.39	0.84

6.7 Information and technology services

6.7.1 *Definitions and activities*

Although in the current context this is not strictly speaking an employment sector, there are a number of ways in which the development of information and technology services may generate employment opportunities for all sectors in rural areas. Here, consideration is given to teleworking, telecottages and telecentres, all of which can be rural based. Rural teleworking refers to the use of technology that enables businesses to offer jobs outside urban areas, and individuals the option of working within their rural community. There are a variety of models of rural telework - from individuals who work from home-based offices, to telecentres where employees from a range of companies work in a shared facility[193]. Where telecentres also serve as a community IT resource, providing access and training on computers and the Internet, they may be called telecottages. The development of telecottages started in Sweden and the idea has since spread to other European countries, notably in the UK where there are at the least 200 telecottages. Telecottages tend to emphasise social support for their users, few of whom will work full time at the telecottage. Users may be self-employed or working for an SME[194]. A simple definition of a telecottage is that it is an office, usually in a village, equipped with computers and electronic communications equipment for use by individuals and businesses in the area[195]. Such developments, along with the growth of broadband provisions based on investment in digital networks, plus the availability of mobile phones have made it imperative for rural businesses of all types to have access to such facilities if they are to compete on equal terms with urban based enterprises. Direct

[193] Washington State University, no date. Rural Telework Project. Washington State University.
[194] Simmins, I., no date. What is the difference between a "Telecottage" and a "Telecentre"? ETO

employment opportunities through information and technology services in rural areas may also encompass SME IT companies, such as web designers, IT trainers etc.

6.7.2 *Drivers*

- Growing awareness of environmental degradation, relating to commuting,
- Financial and social costs of travelling long distances to work
- Advances in technology and changes in consumer and business demand that have made remote transactions and interactions possible
- Demographic changes in some rural areas, with IT literate, entrepreneurs moving out of urban centres in search of a better quality of life[196]
- Growth in the service sector and the creation of more information-based work have provided potential to decentralise work opportunities[197]
- Growth in self-employment and contract working (outsourcing)
- Improved infrastructure
- Demand for flexible work patterns[198]

6.7.3 *Significance of the sector*

More flexible ways of working, made possible through telework can increase employment opportunities, particularly for those with families or those who have long journeys to work. In turn this can ease pressure on infrastructure, facilitate regional development, and help employees improve the balance between work and home life. For business, these new ways of working can offer new business opportunities, improve productivity and maintain competitiveness[199].

In figures quoted by the DTI (UK), for 10 EU countries the proportion of employees working as home-based teleworkers and supplementary teleworkers was highest in Finland (10.8 per cent and 6.0 per cent respectively) and lowest in Spain (2.3 per cent and 0.6 per cent respectively). Other large economies such as Germany and France were well below the average of the ten EU countries studied[200]. It is not clear what proportion of teleworkers were rural-based.

In the UK, official government statistics for 2003 showed that telework had doubled in the previous six years. The total grew from 1.01 million in 1997 to 2.113 million people or just over 7.5% of the workforce[201]. In 1998 there were 150 telecottages in the UK, 25% of which were in small villages and 25% in other rural areas.

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195 http://www.freesearch.co.uk/dictionary/telecottage

196 Scottish Natural Heritage, no date. Response from SNH to Rural Affairs Committee Inquiry into the Impact of Changing Employment Patterns in Rural Scotland. SNH, Scotland

197 Berry, S., 2004. Rural Jobs, Sustainability and Telematics. National Rural Enterprise Centre, University of Essex

198 Leicestershire Economic Partnership, 2004. ICT in Rural Areas A Paper for the Rural Community Council EMAN Conference May 2004. Leicestershire Economic Partnership

199 DTI, no date. Telework guidance. DTI, London

200 Hotopp, U., 2002. Teleworking in the UK. DTI, London

201 Leeds Equal Telework, 2003. Telework Statistics Increase Again. Leeds Equal Telework

6.7.4 *Future opportunities and conclusions*

Rural telework benefits rural communities by providing jobs, thereby reducing out-migration. It also provides year-round employment and helps to diversify the economy in regions experiencing declining job opportunities in manufacturing and agriculture. Teleworking offers potential for generating sustainable employment in rural areas without damaging the environment. However, in order to realise this potential, rural people need access to IT infrastructure and skills. If these needs are not met, IT development will simply fuel migration to urban centres.

If rural businesses are to share fully in the growth of the information sector, they will need access to broadband networks and at a similar rate to urban firms. Yet rural areas are already behind and, without market intervention, this gap seems likely to remain. In IT jargon, they will have "poor connectivity". Another potential issue is poor access for rural businesses to IT training and support services[202].

In chapter 8 we discuss the importance of infrastructure to rural areas. One crucial aspect of infrastructure is telecommunications and the role of IT. These have an important role to play in such decisions as business location. Thus, while the personal decisions of entrepreneurs, and so-called "soft" factors, play an important role in business location choice, it is indisputable that several aspects of infrastructure constitute important location decision criteria. Tele-communication infrastructure is among the infrastructure and service factors most frequently quoted in business surveys as being important for location decisions. There are clearly implications for (rural) economic development and employment opportunities that arise from choice of business location.

6.8 Employment in health and social services in rural areas

6.8.1 *Definitions and Activities*

Public services are services provided by national and local government to its citizens[203]. They include education, health and administration. Health care refers to the delivery of medical services by specialist providers, such as doctors, nurses and midwives and environmental health officers. Health care and social services may be government, self and/or insurance-financed. Their delivery may be through public, private and/or third sector organisation.

6.8.2 *Drivers of change*

- Rise in old age dependency rates
- Life expectancy is growing
- As incomes grow, demand for healthcare rises disproportionately greatly
- Diversifying health services are creating new opportunities[204] for employment growth
- Out-migration (see chapter 2) especially of the young, leaving an increasingly older population behind

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202 Wilson, B. & King, S., no date. Information and Communications Technology (ICT) in rural areas. Countryside Agency, Cheltenham, UK

203 http://encyclopedia.laborlawtalk.com/Public_services, accessed 05/06.2005

204 Report of the High level group on the future of social policy in an enlarged European Union.

- In-migrants may be older than out-migrants, increasing the speed of 'ageing' of the population

6.8.3 *Significance of the sector*

Although the expansion of services employment (in particular the domination of employment in social services by females) is a feature of all advanced societies, the pace of such expansion seems to be related both to the type of welfare state, and to the stage of development of the economy. The nature of the welfare state regime might influence women's employment prospects directly in the sense that a relatively large welfare state increases the demand for female labour. Overall, countries with a relatively low female employment rate tend to have relatively underdeveloped social welfare services or low shares of private service work.

Taking services to people is an option for improving access to services, and thus creating demand and employment, for example, through medical clinics served by nurse practitioners in villages or consultants travelling to Islands. In addition, the use of ICT (Information and Communication Technology) such as telemedicine and teleconferencing for services may improve access in rural areas.

Employment opportunities in the social service sector often depend on substantial transfers from national budgets, in line with minimum standards for social security and education. Rural employment in the service sector, is thus exposed to any rationalisation and centralisation of provision. Nonetheless, the provision of such services can help to underpin a vibrant local economy through greater local taxation levels.

It is estimated that in the period 1990-2000 the numbers of people working in health and social work in the EU grew steadily from 13 to 15 million in total, an increase from 9 to 9.5% as a proportion of total employment.

Public services, including education, health and public administration sectors grew rapidly during the 1980s, but that growth appears to have been curtailed or even reversed in many regions in the 1990s. This can be attributed to changes such as privatisation, de-regulation, or the introduction of cost-driven management practices in this area[205], as well as the growth of specialisation (and associated economies of scale) which favour larger health units – usually in larger towns and cities.

In the more remote rural areas there are problems of encouraging healthy living and the supply of quality health care[206]. Changing policies and practices regarding public services including transport, telecommunications, housing, health and education, often impact particularly severely on rural areas and especially the less well off and less mobile people[207].

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[205] Bryden, J. M (2000) Western Agri-Food Institute Colloquium on Rural Adaptation to Structural Change. May-June 2000.

[206] Bryden, J. M. (2003) Rural Development Situation and challenges in EU-25, EU Rural Development Conference, Salzburg 2003.

[207] Terluin, I. J. and Post, J. P and Sjöström, Á. (1999) Comparative analysis of employment dynamics in leading and lagging regions of the EU, 1980-1997, The Hague: Agricultural Economics Research Institute (LEI).

Terluin, Post and Sjöström (1999) in their study of leading and lagging rural regions in the EU[208] found a number of regional variations. Rural regions showed considerable employment growth in the non-agricultural sectors, and they identified that in many regions the setting up of public services (like hospitals and schools) had boosted employment.

Terluin *et al*. (1999) provided examples of rural leading and lagging regions that have successfully used the provision of public and health services as a way of promoting diversification and enhancing employment opportunities. For instance, in the region of Nièvre in France, regional and local authorities have undertaken the function of maintaining basic rural activities and public services among other things. Pluriactive farmers in Pesaro in Italy have integrated their farm activities with activities in services and in particular, public services.

6.8.4 *Future opportunities and issues*

In general health and social care sectors are expanding, based upon ageing demographic structures, but also other factors such as greater wealth and perhaps to a small extent on social changes such as a reduction in family care for relatives. Employment opportunities across a wide range of skill levels exist, although they are likely to be concentrated more in larger urban areas.[209] National health and social policies may not take full account of the rural dimension and hence may increase centralisation and limit services situated in rural areas. If ageing national populations put pressure upon public finances, there may be pressure to increase centralisation and reduce services provided in rural areas. Centralisation reflects a common dilemma in the provision of facilities for most public services namely that the larger the establishment or plant, the lower the unit costs and the greater degree of specialisation and variety of service that can be provided. Given the demand for and the necessity of dispersed settlement patterns one way to resolve this issue is to change the way in which rural services are provided including local rural healthcare provision, e.g. through ICT.

Today, people aged 65 and over represent 16% of the total population while those below 15 represent 17%. By 2010 these ratios will be 18% and 16%. The most dramatic increase will occur in the number of 'very old' people (aged over 80), which will rise by almost 50% over the next 15 years[210] and for the EU will amount to 20 millions in 2015 and 27 millions in 2030. Despite the younger population structure in some of the new member states (population aged 65+ amounts to 13% while children below 15 years constitute 19%)[211] the effect on the Union's ageing process will be short lived. This demographic change will clearly create additional demand for public and social services.

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[208]Terluin, I. J. and Post, J. P and Sjöström, Á. (1999) Comparative analysis of employment dynamics in leading and lagging regions of the EU, 1980-1997, The Hague: Agricultural Economics Research Institute (LEI).

[209] Some of the predominantly rural areas may include such larger urban or service centres, but in general this is unlikely to be the case.

[210] The social situation in the European Union in 2004, Overview, European Communities.

[211] The social situation in the European Union in 2004, Overview, European Communities.

In providing public services, it must be recognised that in order to be efficient, rural regions often require modes and technologies distinct from those in regions with greater agglomeration economies. Explicit consideration of rural characteristics and needs is demanded e.g. in providing public transport, health care, education, or sewage treatment (ibid, 4).

A number of best practice examples of new employment creation are included in Appendix 6.

7 FURTHER LABOUR SUPPLY FACTORS, COMMUTING AND HUMAN CAPITAL

7.1 Introduction

This chapter presents available information on two "supply side" labour market issues, commuting and human capital. Commuting patterns affect the *quantity* of labour available and active within a rural region, in most cases negatively. Thus for rural regions with net out-commuting (the most common situation for accessible SR regions) the size of the workforce as measured by the number of economically active or employed will over-estimate the volume of economic activity taking place within the region's boundaries[212]. By way of contrast the human capital characteristics of a rural region's workforce (in terms of education, training, skills and tacit learning) have a *qualitative* impact upon the labour resource available for entrepreneurship and expansion of existing activities.

7.2 Commuting Patterns

7.2.1 *The importance of commuting patterns*

According to the final report of Espon 1.1.2[213] (Urban-Rural Relations in Europe) "Commuting is one of the biggest forces of change in the countryside." A knowledge of commuting patterns is a valuable addition to the context of rural development policy for several reasons:

(a) Regions which are apparently very rural in terms of land use/cover may nevertheless, because they act as a dormitory for large numbers of commuters to nearby urban regions, in economic terms be closely integrated into the urban/global economy, with rural/land-based economic activities playing a minority role. This explains the recent interest in integrating commuting data into the definition of rural areas, both in the US[214], and in Scotland[215].

(b) The level of commuting activity has a number of implications for the society and economy of the domicile region. For instance, lunchtime shopping activity within the work-place area may draw demand for, and investment in, services away from rural regions in favour of urban ones. The consequent deterioration in provision usually has a number of negative social exclusion effects, particularly for those continuing to both live and work locally, (and who only have access to services within the domicile region). Other impacts may be house price inflation (beyond the means of indigenous residents employed locally), and disruption of traditional community cohesion[216].

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[212] From another perspective this is an example of the poor fit between administrative boundaries and functional labour market areas, OECD (2002) Redefining Territories: The Functional Regions, OECD Urban, Rural and Regional Development No 2 p1, Horner M W and Murray A T, (2002), Excess Commuting and the Modifiable Areal Unit Problem, Urban Studies, Vol 39 No 1 pp131-139, Anderson A K (2002) Are Commuting Areas Relevant for the Delimitation of Administrative Regions in Denmark?, Regional Studies Vol 36 No 8 pp833-844.

[213] Bengs C and Schmidt-Thomé K (2005), Final Report of Espon project 1.1.2. Urban-Rural Relations in Europe p81

[214] Morrill, R, Cromartie J, and Hart G (1999). Metropolitan, Urban, and Rural Commuting Areas: Toward a Better Depiction of the United States Settlement System, Urban Geography 20: 727-748

[215] Scottish Executive Environment and Rural Affairs Department (SEERAD) (2005), Migration and Commuting in Urban and Rural Scotland. Scottish Executive, Edinburgh

[216] Smailes P J (2002) From Rural Dilution to Multifunctional Countryside: some pointers to the future from South Australia, Australian Geographer, Vol 33 No 1 pp 79-95

(c) Where commuting patterns cross regional boundaries they result in a well known "statistical artefact" in the GDP per capita data. The region receiving the commuters has its GDP per head artificially inflated at the expense of the "domicile" region. The commuters are recorded in the numerator of the former, and the denominator of the latter. This statistical quirk has implications for policy targeting, since GDP per capita has in the past played a role in determining the level of Structural Fund assistance allocated to each region.

7.2.2 *Some Commonly Observed Trends and Patterns in Commuting*

Several EU member states have recently published commentaries on their commuting statistics[217], and there is also a relatively modest academic literature[218]. There is a surprising degree of unanimity between them. The following main points emerge:

- Unsurprisingly, cities and towns tend to have a net in-commuting balance, whilst in rural areas the out-commuting flows are generally dominant.
- The majority of commuting flows are over modest distances, a minority travel much further
- Cars are the most common mode of travel, and most forms of public transport (rail, bus) are growing more slowly or in decline.
- Commuting distances are increasing, mainly in response to changing residential preferences.
- Men are more commonly commuters than women
- Women are more likely to use public transport
- Younger people are more likely to commute than older ones.
- People with higher incomes are more likely to commute than others
- Rates of commuting vary a great deal according to industry, generally service industry employees are more likely to commute than primary sector or manufacturing workers.

7.2.3 *Assessing the role and importance of commuting in Rural Regions of the EU*

The researchers responsible for Espon project 1.1.2 found that although a number of EU member states collect data on commuting, the conspicuous absence of harmonisation of approach makes the data very difficult to use[219]."

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[217] Sources: Federal Statistical Office, Germany, Press Release 22 March 2005 http://www.destatis.de/presse/englisch/pm2005/p1380024.htm; Statistics Norway, Population and housing census http://www.ssb.no/english/subjects/02/01/fobpend_en/; Statistics Netherlands, Web Magazine 16th February 2004, http://www.ssb.no/english/subjects/02/01/fobpend_en/

[218] Aguilera A (2005) Growth in commuting distances in French polycentric metropolitan areas: Paris, Lyon, Marseille, Urban Studies Vol 42 No 9 pp1537-1547, Renkow M and Hoover D (2000) Commuting, Migration and Rural-Urban Population Dynamics, Journal of Regional Science, Vol 40, Number 2 pp261-287, Song Lee B, McDonald J F (2003) Determinants of commuting time and distance for Seoul residents: the impact of family status on the commuting of women, Urban Studies, Vol 40, No 7 pp1283-1302, Cristaldi, F (2005) Commuting and Gender in Italy: A Methodological Issue, The Professional Geographer, Vol 57, No 2 pp 268-284, Scottish Executive Environment and Rural Affairs Department (SEERAD) (2005), o.c., Turner, A., Boyle, P. and Duke-Williams, O. (1999), Commuting Patterns in Rural Areas. Working Paper CAX 58. Countryside Agency, Cheltenham, Ohman M and Lindgren U (2003) Who is the long-distance commuter? – Patterns and driving forces in Sweden, Cybergeo, 243 (http://193.55.107.45/articles/243res.htm)

[219] "*The scarce availability of comparable data on commuting patterns hampers the analysis of functional urban regions in Europe. Major steps are required in order to improve the situation. The data collected by the national*

Two possible sources of commuting data are available within the Eurostat REGIO database. The first is a measure of the proportion of residents of working age who travel across a NUTS 2 boundary to work, which is found in Labour Force Survey table *lf2ecomm*. 2001 data was used for the following analysis. Table 7.1 and Map A7.1 (Appendix 7) show the pattern of this indicator across the EU25 member states.

Table 7.1: % of employed working in another NUTS 2 region 2001

	PU	SR	PR	All
	Average % of employed working in another NUTS 2 Region			
EU27*				
AT	14.56	19.03	**22.95**	21.57
BE	28.99	20.98	**40.41**	28.72
BG				
CY				
CZ	2.94	**4.15**	2.87	3.97
DE	9.74	**11.79**	11.01	10.74
DK				
EE				
ES	1.10	1.71	**2.91**	2.04
FI		1.37	**2.72**	2.52
FR	3.59	**7.72**	6.14	6.65
GR	0.16	0.14	0.20	0.18
HU	1.39	4.63	**4.83**	4.59
IE	0.30		**11.69**	10.26
IT	3.14	3.48	**4.39**	3.55
LT				
LU				
LV				
MT				
NL	11.73	**16.64**	8.52	13.13
PL				
PT	1.40	1.91	**3.70**	2.69
RO				
SE				
SI				
SK	1.83	**8.37**	6.91	7.37
UK	**18.25**	14.35	12.40	16.23

Source: Regio database lf2ecomm table

Apart from the fact that (with the exception of the UK) the largest percentages are found in either SR or PR regions, the pattern is fragmentary and not easy to interpret. This is a very good example of what happens when an indicator which is correct in principle is applied to an inappropriate regional geography. It is a classic instance of the Modifiable Areal Unit Problem (MAUP). Across most of the EU-25 the NUTS 2 regions are too large to allow this indicator to pick up commuting except around the edges of the regions. Local labour markets, including relatively extensive commuting zones, are often wholly contained within NUTS 2 regions. Conversely the highest percentages of cross border workers are found in areas (such as the BENELUX and the English Midlands, where the NUTS 2 regions are relatively small.

The second possible way to derive a commuting indicator from REGIO data is to compare residence based LFS employment data (*lf2emp*) with workplace based data from the National Accounts (*e3mply95*). The results are shown (in the form of a ratio of the LFS total workforce figure to the National Accounts total employment figure for each NUTS 3 region) in Table 7.2 and Map A7.2

statistical institutions based on population censuses should be discussed with the aim to reach a European consensus on basic concepts and definitions " Bengs and Schmidt-Thomé, 2005 o.c. p28

(Appendix 7). Unfortunately the pattern which results is not easy to explain, and does not accord well with expectations. There are a number of rural areas where the ratio is rather higher than one might expect, and other regions which might be expected to be characterised by net in-commuting but where the ratio is relatively low. It can only be assumed that this is a consequence of combining two un-related data sets, one collected through a standard EU-wide survey, the other compiled from contributions from the member state statistical services. Indeed since (with one or two exceptions) the national totals differ it seems unwise to place any interpretation on the differences for the OECD types.

Table 7.2: Average ratio of LFS employment to national accounts employment 2001

	PU	SR	PR	All
	Average ratio of LFS employment to national accounts employment			
EU27*				
AT	1.03	0.99	0.97	0.98
BE	0.97	0.95	0.88	0.95
BG				
CY				
CZ	1.16	0.98	0.99	0.99
DE	1.07	1.03	1.01	1.04
DK	1.02	1.02	1.02	1.02
EE	1.00	1.00	1.00	1.00
ES	0.74	1.02	1.01	0.98
FI		1.01	0.99	0.99
FR	1.06	1.04	1.05	1.05
GR	0.99	1.01	1.02	1.02
HU	1.03	1.01	1.01	1.01
IE	1.01		1.00	1.00
IT	1.09	1.09	1.08	1.09
LT		1.03	1.03	1.03
LU				
LV	1.00	1.00	1.00	1.00
MT				
NL				
PL	1.06	1.05	1.02	1.04
PT				
RO				
SE		1.03	0.99	0.99
SI		0.99	0.99	0.99
SK	1.23	0.91	0.92	0.95
UK	1.04	1.01	0.96	1.02

Source: Regio database lf2emp and e3mply95 tables

Thus both the potential REGIO database sources for a commuting indicator seem to have their own problems. However the Labour Force Survey indicator might be rendered much more useful simply by reducing the size of the region to which the question relates, from NUTS 2 to NUTS 3 or, better still, to LAU 2[220].

7.3 Defining Human Capital, and its role in Rural Labour Markets

Regional rates of economic development are determined at least in part, by the availability of various forms of resources. Traditionally, economists emphasised the importance of sources of material inputs, availability of suitable premises or land, the amount and cost of labour and so on. In more recent years, with the shift away from manufacturing towards services, and in particular the

[220] In the opinion of the researchers an indicator based upon a comparison of residence and workplace employment counts is always likely to be subject to additional data collection error, unless considerable efforts are made to standardise definitions, procedures etc.

recognition of the propulsive role played by "knowledge intensive" activities, the concept of "human capital" has become increasingly important.

Essentially "human capital" relates to education, training, and the possession of various forms of knowledge. Human capital is an important qualitative aspect of labour supply which plays a role in determining rates of inward investment, indigenous entrepreneurship, and capacity to generate or absorb innovations, and therefore has a knock-on impact upon rates of economic activity and employment[221]. Skills composition is a major factor in explaining regional variations in productivity,[222] and will depend on local education/training provision and traditions, as well as in-migration. However, higher skilled workers and graduates often move to larger, more prosperous urban areas, so there is always a risk of losing them from rural regions.[223]

Variations levels of in human capital were identified in section 1.3.2 as one of the "conventional views" of rural-urban labour market differentiation. The analysis which follows assembles the best available NUTS 3 data in order to assess the validity of this generalisation.

Although the academic literature places considerable emphasis upon less tangible human capital attributes, such as "tacit knowledge" based upon "learning by doing", rather than formal educational qualifications, the former are very difficult to measure, and not amenable to the sort of regional analysis being undertaken in this project. The discussion will therefore review available information on regional patterns of educational attainment within the working age population.

Levels of formal education and qualifications are conventionally defined by the International Standard Classification of Education (ISCED), published by UNESCO in 1997 (Table 7.3).

Table 7.3: The UNESCO ISCED classification of levels of education

ISCED 0	Education preceding the first level (pre-primary)
ISCED 1	Education at the first level (primary)
ISCED 2	Education at the lower secondary level
ISCED 3	Education at the upper secondary level
ISCED 4	Post secondary, non-tertiary level.
ISCED 5A	Programmes at the tertiary level equivalent to university programmes.
ISCED 5B	Programmes at the tertiary level focusing on practical, technical or occupational skills
ISCED 6	Advanced research programmes at the tertiary level, equivalent to PhD programmes.

7.4 Analysis of Labour Force Survey Data

The best source of harmonised regional information on the educational attainment of the workforce are the Eurostat Regio tables "lfapedu" and "xlfaedu", which derive from the Labour Force Survey

[221] Aghion, P., Caroli, E., and C. Garcia-Penalosa (1999): Inequality and Economic Growth: the perspective of the new growth theories. Journal of Economic Literature, 37, 1615-1660; Bassanini, A. and S. Scarpetta (2001): Does Human Capital Matter For Growth In OECD Countries? Evidence from Pooled Mean-Group Estimates. OECD; Temple, J. (2000): Growth Effects of Education and Social Capital in the OECD Countries. OECD

[222] Vanhoudt, P., Matha, T., and B. Smid (2000): Vanhoudt, P., Matha, T. and Smid, B. (2000), How productive are capital investments in Europe?, EIB-Paper "Regional convergence in Europe: Theory and empirical evidence", 5(2), pp. 81-106

[223] Braunerhjelm, P., Faini, R., Norman, V., Ruane, F. and P. Seabright (2000) Integration and the Regions of Europe: How the right policies can prevent polarization. CEPR Monitoring European Integration

(LFS). These show ”population aged 15 and over by sex, age and highest level of education attained”, according to three categories of “attainment”;

1.) ISCED 0-2 (i.e. up to lower secondary),
2.) ISCED 3-4 (upper secondary and post-secondary non tertiary), and
3.) ISCED 5-6 (tertiary academic and vocational).

Data is unfortunately only available at NUTS 2 level, but at this level there is a low proportion of missing data. Data for 2001 is used in the following analysis.

7.4.1 *Analysis by OECD Urban-Rural Types*

Perhaps surprisingly, the (unweighted) average percentage of working age population with only primary or lower secondary education, across all EU-25 NUTS 3 regions, is more than 38% (Table 7.4). In the rural regions this percentage rises to almost 41%, whilst in the urban regions it falls to 33.5%. A test shows that this difference is significant at the 99.9% level. Within the rural regions there is a slight (but still significant) difference between the Significantly and Predominantly Rural group of regions, the latter having a slightly greater proportion of working age people with only a basic education.

At the other end of the educational spectrum, the average incidence of working age persons with Tertiary education across all EU-25 Nuts 3 regions was 16.5%. In urban areas the proportion rose to almost 19%, whilst in the rural regions it fell to a little over 15%. The proportion was slightly higher in the Significantly Rural regions than in the Predominantly Rural group. Again both the urban-rural and within rural differences were statistically significant at the 99.9% level.

The intermediate educational level (upper secondary and non-tertiary post secondary) follows a similar urban-rural pattern to that of the tertiary level.

Table 7.4: Highest educational attainment by OECD urban-rural type, 2001

	Average % of working age population with ISCED level as highest educational attainment (2001)		
OECD Type	**0-2 (Primary/lower secondary)**	**3-4 (Upper secondary/non-tertiary post secondary)**	**Tertiary (academic/ vocational)**
Predominantly Urban	**33.50**	**47.83**	**18.68**
Significantly Rural	40.10	44.36	15.54
Predominantly Rural	41.15	43.62	15.22
All Rural	**40.61**	**44.01**	**15.39**
All NUTS 3 Regions	**38.35**	**45.45**	**16.53**

The figures presented in Table 7.4 seem to show a very clear difference between rural regions and urban regions in terms of human capital resources. Urban regions appear to have significantly higher levels of educational attainment. There are two possible explanations for this:

(a) Selective migration of young well educated people in search of urban employment and lifestyles (see Chapter 2)
(b) Urban regions are often centres for tertiary education (Chapter 8), and students are often reluctant to return to rural areas after graduating.

7.4.2 *Member State Analysis*

Table 7.5-Table 7.7 show patterns of human capital by Member State, and by OECD type. Clearly there are two components of variation, between member states, and between rural-urban types. Thus Portugal, Italy, Malta, Greece and Spain all have more than 60% of their working population educated at only primary level, and less than 25% with tertiary education. At the other extreme the Czech Republic, Estonia and the UK have less than 25% with only primary education, and Cyprus, Denmark, Estonia, Finland and the UK have more than 20% with Tertiary level education.

The largest differences in the percentage with only primary education are in the Czech Republic, Romania and Greece, where the PR rate is 50% higher than the PU rate. The disparity is also substantial in Bulgaria and Slovakia. In Germany the relationship between PU and PR rates is reversed (though the difference is small). In most SR regions the percentage with only primary education is intermediate between that of the PU and PR regions. The two exceptions are the UK, where the SR rate is the lowest of all three OECD region types, (presumably due to the preference of graduates for semi-rural life), and France, where the SR rate is slightly higher than that of the PR regions.

Table 7.5: Percentage of working age population with Primary/Lower Secondary Education only, by Member State and OECD Type

	PU	SR	PR	All
	Average % of working age population with ISCED 0-2 as highest level of educational attainment			
EU27*	**33.50**	**40.09**	**41.12**	**38.23**
AT	30.48	32.62	34.31	33.70
BE	49.45	51.85	50.78	50.19
BG	13.26	27.52	22.38	22.42
CY		44.63		44.63
CZ	15.26	25.19	23.29	24.34
DE	28.19	26.47	26.98	27.32
DK	N/A	N/A	N/A	26.18
EE	N/A	N/A	N/A	24.13
ES	58.80	66.20	68.72	66.07
FI		36.44	40.10	39.55
FR	43.29	48.68	48.49	46.07
GR	43.62	66.96	67.09	66.60
HU	31.30	38.28	41.77	40.02
IE	40.08		43.52	43.09
IT	63.55	64.24	65.09	64.19
LT		N/A	N/A	33.03
LU		47.22		47.22
LV	N/A	N/A	N/A	34.28
MT	81.27			81.27
NL	40.11	42.71	43.62	40.98
PL	29.89	31.87	33.41	32.31
PT	81.18	84.79	84.79	83.95
RO	12.63	33.06	35.77	34.19
SE		23.78	28.78	28.31
SI		N/A	N/A	32.87
SK	19.57	28.35	28.65	27.29
UK	18.71	17.38	18.93	18.59

Source: Eurostat Regio tables lfapedu and xlfaedu

Mapping the percentage of working age people whose highest educational attainment is primary level reveals a very clear N-S contrast (Map A7.3 Appendix 7). The highest incidence is in Portugal and west-central Spain, north-east and central Greece, where over 70% of the working population lack

higher secondary education. The proportion is over 50% across the rest of Spain and Greece, throughout Italy, and large parts of France and Belgium. At the other extreme, less than 25% fall into this category in all regions of the UK, and around Sofia (BG). Incidences of under 25% characterise some regions of Northern Sweden, East Germany, Slovakia, the Czech Republic, and Bulgaria.

In terms of the percentage of the working age population whose highest level of education was secondary. the difference between the rural and urban regions is generally smaller. The main exception is Greece where the rural population has a significantly lower proportion of people with secondary education.

Table 7.7 shows the percentage of the working age population with tertiary level education or training. There are large differences in level between member states, reflecting differences in education system, and probably also differences in definition and data collection. It is perhaps more reliable to make rural-urban comparisons within countries. Here again the PR regions of Greece, Portugal, Spain, Bulgaria and Romania stand out as having a significantly lower incidence of tertiary education. The SR regions generally have similar percentages to the PR, except in the Netherlands, France, Slovakia the Czech Republic and the UK, where the SR regions have a slightly higher concentration of better educated people than the PU regions.

Table 7.6: Percentage of working age population with Secondary Education only, by Member State and OECD Type

	PU	SR	PR	All
	Average % of working age population with ISCED 3-4 as highest level of educational attainment			
EU25	**47.83**	**44.38**	**43.66**	**45.30**
AT	55.43	56.82	55.39	55.72
BE	30.39	29.51	29.61	30.08
BG	55.62	52.79	55.58	55.39
CY		34.37		34.39
CZ	63.94	67.38	67.20	67.12
DE	53.71	54.61	54.57	54.21
DK	N/A	N/A	N/A	51.21
EE	N/A	N/A	N/A	51.60
ES	19.82	16.49	15.36	16.54
FI		36.23	37.51	37.32
FR	33.10	35.53	36.09	34.04
GR	40.37	23.85	24.17	24.41
HU	51.54	51.17	49.44	50.15
IE	37.64		36.95	37.03
IT	29.14	28.69	28.21	28.74
LT		N/A	N/A	49.91
LU		38.39		38.39
LV	N/A	N/A	N/A	51.41
MT	11.06			11.06
NL	39.88	41.56	41.73	40.43
PL	60.87	59.18	57.65	58.70
PT	11.98	10.17	9.93	10.47
RO	65.33	57.90	56.22	57.07
SE		50.65	52.48	52.30
SI		N/A	N/A	56.29
SK	61.47	65.05	64.60	64.55
UK	56.52	56.71	56.57	56.56

Source: Eurostat Regio tables lfapedu and xlfaedu

Unsurprisingly the geographical pattern of incidence of tertiary education (Map A7.4 Appendix 7) is almost a mirror image of that of the primary/lower secondary. Thus under 10% of the working population of Portugal, Italy, most of Poland, Hungary and Romania, and parts of Greece had any

post-secondary education. The incidence is 10-20% in most of Spain and most of France (the exceptions including Madrid and Paris, most of the Netherlands and Belgium, and the old German Lander. Scandinavia and Ireland present a rather mixed picture.

In summary, the above analysis suggests three overlapping patterns in the LFS human capital data:

(a) At the highest level of generalisation there are clear N-S contrasts.

(b) However the maps make it clear that this macro-pattern is at least in part generated by member state differences in the current education system, and in its recent historical development.

(c) The third "layer" of the pattern is urban-rural differentiation already identified in the analysis by OECD type. This is particularly evident in Map A7.4 (Appendix 7), where urban regions such as Paris, Toulouse, Madrid, Berlin, Helsinki, Stockholm and SE England stand out as human capital "hotspots".

Table 7.7: Percentage of working age population with Tertiary Education, by Member State and OECD Type

	PU	SR	PR	All
	Average % of working age population with ISCED 5-6 as highest level of educational attainment			
EU27*	**18.67**	**15.53**	**15.22**	**16.48**
AT	14.09	10.56	10.30	10.58
BE	20.16	18.64	19.61	19.73
BG	31.11	19.69	22.03	22.19
CY		21.00		21.00
CZ	20.80	7.43	9.51	8.53
DE	18.10	18.92	18.45	18.47
DK	N/A	N/A	N/A	22.61
EE	N/A	N/A	N/A	24.27
ES	21.38	17.32	15.92	17.38
FI		27.33	22.39	23.13
FR	23.61	15.79	15.42	15.89
GR	16.01	9.19	8.74	8.99
HU	17.16	10.56	8.79	9.83
IE	22.28		19.53	19.88
IT	7.31	7.07	6.70	7.07
LT		N/A	N/A	17.07
LU		14.39		14.39
LV	N/A	N/A	N/A	14.31
MT	7.67			7.67
NL	20.01	15.73	14.65	18.59
PL	9.24	8.96	8.94	9.00
PT	6.83	5.04	5.28	5.58
RO	22.04	9.04	8.02	8.74
SE		25.56	18.74	19.39
SI		N/A	N/A	10.84
SK	18.95	6.60	6.76	8.16
UK	24.77	25.91	24.50	24.86

Source: Eurostat Regio tables lfapedu and xlfaedu

The Recent PAIS II report on Rural Indicators for Eurostat[224] presented member state data on human capital for 11 of the EU15 member states. In each case the indicator was the percentage of the

[224] Bryden J, Copus A K, Mitchell M, Loughrey Y (2005) Rural Development Indicators, Part 3 of the Final Report for the PAIS (Proposal for Agri-Environmental Indicators) Project for Eurostat

population (or workforce) which had education to ISCED 5-6 level. The findings very much mirrored those reported above[225].

7.5 Conclusions

The above analysis of commuting and human capital patterns suggests the following points for action:

(a) The usefulness of LFS commuting data could be greatly enhanced simply by relating it to travel across the boundaries of smaller regions, such as NUTS 3 or LAU 2.

(b) Rural policy design should take specific account of the fact that the incidence of commuting in SR regions implies negative social exclusion effects on the non-commuting population.

(c) The clear urban-rural disparities in terms of education and training are partly a consequence of selective migration, and this lends support to Axis 3 measures which may encourage young, well educated people to stay in rural areas, both because of the positive effects upon demographic structures and trends, and because of the potential benefits in terms of entrepreneurship and innovation.

(d) To the extent that patterns of human capital reflect the location of higher education establishments, consideration should be given to measures to support more dispersed provision and distance learning.

(e) To the extent that many mature workers in rural areas have only basic levels of education, consideration should be given to the access of such people to higher levels of learning especially in peripheral and southern regions.

[225] In 6 of these member states there was clear evidence of higher levels of education in urban areas than in rural regions. In Denmark and Ireland the pattern was rather unclear, in the former perhaps due to the relatively small size of the country, and in Ireland perhaps because the NUTS 3 regions are relatively large. In Austria the pattern was reversed, whilst in Spain the accessible rural regions around Madrid (presumably its commuting zone) showed the highest concentrations of more highly educated people.

8 INFRASTRUCTURE PROVISION AND ACCESS TO BASIC SERVICES

8.1 Introduction

8.1.1 *The impact of infrastructure and basic services on rural development*

The availability of infrastructure and basic services constitutes an important determinant of the successful economic development and quality of life of a region. Good business-related infrastructure supply is a precondition for a vigorous economy, and household-related services are crucial for the retention of the existing population and attraction of new residents. Infrastructure and access to basic services is a particularly significant issue in rural areas, especially in regions affected by negative population trends, out-migration (Chapter 2) or structural economic change (Chapters 4-5). Poor basic services or inadequate infrastructure often reinforce to the cycle of decline already described in a demographic context in Chapter 2. This is because, as the population base dwindles, infrastructure and basic services suffer under-investment as the regional tax revenue base contracts, and because local demand falls short of certain "critical mass" thresholds associated with economies of scale. Diseconomies due to population sparsity, and the increasing demand for services for elderly people, may exacerbate the problem.

The chapter which follows attempts to describe patterns of basic service and infrastructure provision across the rural areas of the EU27, insofar as currently available data allows. Indeed it must be acknowledged that the review has been rather more successful in terms of infrastructure than in relation to basic services, simply because detailed, harmonised regional data on basic services across the EU is rather scarce at the present time. Fortunately this was anticipated in the terms of reference, which suggested the following themes:

- Transport infrastructure and potential accessibility
- Health services
- Education supply and childcare
- Accessibility to urban centres
- Other relevant indicators, including provision of internet services

The chapter therefore begins with a review of patterns of provision of health care and (higher/tertiary) education. This is followed by a discussion of available indicators relating to information and communications technology (ICT), and an assessment of transport infrastructure (roads, railways, airports) in the rural regions of Europe. The final section of the chapter is a presentation of the peripherality index which is a useful proxy for the complex urbanisation and counter-urbanisation processes described in chapters 2-5, and which is therefore incorporated in the enhanced versions of the OECD rural urban classification of NUTS 3 regions (chapter 9).

8.1.2 *Technical definitions of infrastructure and basic services*

In political and social science, economics and planning literature, the term 'infrastructure' is defined in various ways, sometimes very broadly, sometimes very precisely. Jochimsen[226] divides infrastructure into three categories: material, institutional and personal. This definition has been widely adopted and

[226] Jochimsen, R., 'Infrastruktur', In: Akademie für Raumforschung und Landesplanung (ARL) (Ed.), Handwörterbuch der Raumordnung, 1995, Hannover

transferred to many different fields of science. According to Jochimsen material infrastructure comprises mainly 'hard' infrastructure installations which serve the community in the fields of energy supply, transport, telecommunication, facilities to preserve natural resources and transportation routes as well as buildings and facilities of the public administration, education, research and healthcare facilities. The categories of institutional and personal infrastructure include normative and organisational aspects and policies as well as human capital and immaterial infrastructure. The following sections will only focus on the first type of infrastructure since the last two categories seem to be too broad and are difficult to operationalise within the present context.

According to the European Commission services of general interest cover "both market and non-market services which the public authorities class as being of general interest and subject to specific public service obligations"[227]. "While the provision of services of general interest can be organised in cooperation with the private sector or be entrusted to private or public undertakings, the definition of public service obligations and missions remains a task for the public authorities at the relevant level"[228, 229].

8.1.3 *Business and household related infrastructure*

Two dimensions will be considered in the following analysis: business related infrastructure, and household related infrastructure.

The location choice of businesses varies from one branch to another and often depends on the personal decisions of entrepreneurs. Within recent research projects so-called "soft" location factors such as business networks, social capital or regional governance have been identified to play an important role for (rural) economic development[230]. However, it is still indisputable that several aspects of infrastructure and access to basic services constitute important location decision criteria. Among the infrastructures and services most frequently quoted in business surveys are: transport infrastructure, (tele-) communication infrastructure and various public utilities. In addition the availability of highly skilled staff, (which as a rule is related to existence of adequate regional educational facilities), is often an important influence on the location decision.

With respect to households, infrastructure and basic services are closely associated with aspects of quality of life. Although quality of life is also determined by a number of other factors, the provision of infrastructure and access to basic services plays an important role in a regions' ability to keep citizens and to attract new ones. The main components of these infrastructures and services are healthcare, education, and basic local retail opportunities on the one hand, and adequate transport infrastructure, public transport services and telecommunication on the other. Most quality of life analyses take these aspects into account through appropriate indicators, for example, number of people per doctor, health care coverage, access to basic health and education, primary and secondary enrolment ratios,

[227] European Commission, 'White Paper on services of general interest' (COM(2004) 374 final), 2004a, European Commission. Luxembourg
[228] European Commission, 2004a, o.c.
[229] see also Appendix 8, Note A8.1 on subsidiarity and fiscal federalism
[230] Lindner, C., Lückenkötter, J., Panebianco, S., Schlusemann, B., Spiekermann, W., Wegener, M., 'Cartographic and Statistical Analysis of Patterns of Aspatial Peripherality', Deliverable 28 of AsPIRE Project, 2004, IRPUD, Dortmund

highways and waterways per 100,000 inhabitants, number of airports, telephones, televisions and radios per 1,000 inhabitants, number of people per motor vehicle[231].

8.1.4 *European policy context*

It is important to recognise that different sorts of infrastructure, and basic services, are covered by different EU legislation, different policies, and different Directorates of the Commission. For example, large scale transport Infrastructure is primarily the concern of DG Regio, through Structural Funds and Cohesion policy and DG TREN with its Trans European Network (TEN) Programme. Small scale local "basic services and infrastructure" in rural areas are covered by the Rural Development Regulation, managed by DG Agriculture. It will perhaps be helpful at this point to provide a reminder of the main features of these different policy contexts.

The improvement and development of European transport infrastructure is part of the EU cohesion policy, intended to contribute to one of the fundamental objectives laid down in the EC Treaty: strengthening the EU's economic and social cohesion (Article 16) by reducing developmental disparities between its regions. The guidelines for the Trans-European Transport Network (TEN-T) define objectives for future development to address the issue of increasing traffic, in particular due to the growing share of heavy goods vehicles, which has resulted in increased congestion and bottlenecks on international transport corridors[232]. "The guidelines focus upon the optimization of the capacity and efficiency of existing infrastructure, intermodal connectivity, and the mitigation of environmental impact, as well as upon the provision of new infrastructure"[233].

"Services of general interest", and their relevance for European spatial development and the European community are recognised by the EC Treaty (Article 16). Here, services of a general (economic) interest are characterised to promote social and territorial cohesion. The access, quality and affordability of such services shall be guaranteed especially considering the specific needs of certain categories of the population as well as the complete territorial coverage of essential services in remote or inaccessible areas[234]. However some would argue that the current EU policy (as published in the EC White paper on services of general interest) is moving towards further liberalisation of the basic services provision (by proposing a horizontal framework directive for basic service provision). The consequence may be competitive commercial provision of basic services. This may pose particular problems in rural areas, where some basic service provision currently rely heavily on subsidies. Under the proposed framework this may be considered as a distortion of competition. In the worst case the end result might be a significantly lower level of basic service provision in rural areas[235].

"Basic service" provision is covered by one of the measures in the Rural Development Regulation (Reg 1257 1999). Here the focus is upon small scale investments in basic services essential for modern living (water supply, sewerage, electricity, etc), but which may be difficult to provide

[231] Hagerty, M. R., Cummins, R. A., Ferriss, A. L., Land, K., Michalos, A. C., Peterson, M., Sharpe, A., Sirgy, J., Vogel, J., 'Quality of Life Indexes for National Policy: Review and Agenda for Research', In: Social Indicators Research 55, 2001, pp. 1-96

[232] European Commission, 'Amended proposal for a Decision of the European Parliament and of the Council amending Decision No 1692/96/EC on Community guidelines for the development of the trans-European transport network' (COM/2002/0542 final - COD 2001/0229/), 2002a, Brussels

[233] European Commission, 'Commission Staff Working Paper on Trans-European transport Network', 2004b, Brussels, p. 17

[234] European Commission, 'Services of general interest in Europe' (COM(2000) 580 final), 2000, Luxembourg

[235] Machold, I., Tamme, O., ‚Abgefahren? Infrastruktur im ländlichen Raum' In: Raum Forschung 59, Mag. Peter Schneidewind (Austrian Institute for Regional Studies and Spatial Planning (ÖIR)) (Ed.), 2005, Vienna

economically in depopulating or sparsely populated areas. In 2001 (the most recent year for which monitoring data is available) this measure accounted for €63.5m, 0.8% of total public expenditure on rural development by the EU[236]. The largest expenditures were in Spain (€20m.), France (€18m.), Italy (€9m.) and Germany (€7m.). This measure is also retained in the 2007-13 programme, as part of axis 3, to which at least 10% of "Pillar 2" expenditure is allocated.

8.1.5 *Indicator set and data availability*

As has already been mentioned, the analysis of regional (NUTS 3) infrastructure endowment and supply of basic services on a European level today is severely hampered by inadequate data availability. This applies in terms of the types of infrastructure and basic services data for which is available, but also in terms of the spatial coverage and resolution of datasets available from Eurostat's Regio database. Thus several aspects which are undoubtedly important when considering rural infrastructure and basic services, such as childcare, cultural facilities or retailing cannot be taken up within the course of this analysis. For transport infrastructure, IRPUD's GIS database incorporates comprehensive data on European transport networks which has been built up through numerous research projects and is continuously updated. For aspects of health and education infrastructure data generated during a study on mountain areas in Europe commissioned by DG Regional Policy constitutes an alternative source[237]. Data on other types of material infrastructure, such as energy supply, or waste disposal will not be analysed within this study.

The indicators calculated and analysed below comprise:

- In the field of healthcare; the density of hospitals (BSI1a), the number of hospital beds per head of population (BSI1b), the number of doctors per inhabitant (BSI1c) and the average car driving time to the nearest hospital (BSI1e).
- For education; the average car driving time to the nearest university (BSI2).
- ICT is represented by the share of private (BSI3a) and business internet users (BSI3b).
- In the field of transport infrastructure; the density of motorways (BSI4a) and trunk roads (BSI4b), the per head provision of trunk roads (BSI4c), the density of railways (BSI5), the number of all airports (BSI6a), the number of TEN/TINA airports (BSI6b) and the average car driving time to the nearest airport (BSI6c).
- An indicator on peripherality (BSI7a).

For a detailed table on chosen indicators, definitions and data sources please refer to Note A8.2 (Appendix 8). Due to reliability issues of some of the underlying data the figures presented here should be regarded as indicative only. However they can provide a general idea of basic services and infrastructure availability across the EU 27.

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[236] EU Rural Development Monitoring Data, Synthesis report for 2001, Commission Staff working document, SEC (2003) 1482 ,http://europa.eu.int/comm/agriculture/rur/eval/1482_en.pdf

[237] Nordregio, 'Mountain areas in Europe – Analysis of mountain areas in EU Member States, acceding and other European countries', Nordregio Report 2004:1, 2004, Nordregio, Stockholm

8.2 Patterns of healthcare provision in rural Europe

8.2.1 *Some practical issues underlying the indicators*

The healthcare indicators on hospitals and hospital beds are derived from the Mountain Study database (see above). Unfortunately only hospitals with more than 300 beds are included. This threshold is an important limitation, especially in predominantly rural areas, since healthcare facilities are likely to be on a relatively small scale there. The average driving time to the nearest hospital provides a better impression of the geographical variations in access to health care. This indicator is based on the hospital locations derived from the Mountain Study and accessibility calculations based on the IRPUD European transport networks data. However, the indicators presented here should be handled with care because of reliability issues of the underlying hospital data.

8.2.2 *Patterns of healthcare provision*

A comparison of hospital locations with the different OECD region classes provides a first overview of healthcare provision in EU27 (Map A8.2 Appendix 8). As expected, larger facilities tend to be located predominantly in urban regions, particularly in central Europe. Here, most of the significantly rural and even predominantly rural areas tend to have smaller hospitals (except in AT). In southern parts of Europe particularly in ES and GR (but not IT), predominantly rural regions have significantly lower densities of hospitals (Map A8.3 Appendix 8). The larger northern regions including most parts of SE, FI and IE also show quite low density values. The ratio between available hospital beds and inhabitants can be seen as a crude indicator of the adequacy of provision (Map A8.4 Appendix 8)[238]. Again, in central Europe the level of service seems to be quite high compared with Ireland, northern Scandinavia, ES or GR. FR with its slightly lower density of hospitals compensates with larger sized facilities.

When considering the figures shown in Table 8.1 the handicaps of rural areas are clear. PU regions (EU27 average) show an approximately five times higher density of hospitals compared to SR regions and an approximately 20 times higher density than PR regions. However, considering the hospital bed - inhabitant ratio rural regions show surprisingly small disparities compared to urban ones, especially considering that these figures only include hospitals with more than 300 beds. Combining these two indicators leads to the conclusion that the per-head provision in urban and rural Europe is almost the same for most parts of the EU27 while situation with respect to accessibility is more likely to involve major differences, as indicated by the hospital density indicator.

In order to provide more insight this accessibility aspect, the average car driving time from each region[239] to the nearest hospital has been estimated. This indicator reflects both the regional transport network and the hospital locations.

In general, the calculation's results reveal a broad contrast between the regions of the BENELUX countries, DE and FR which show (on average) lower travel times regions in Scandinavia, IE, ES, GR

[238] However since there is no necessary link between NUTS 3 boundaries and hospital "catchment areas", and the situation is made more complex by the fact that more sophisticated treatments are only available at regional or national centres, this indicator should be very carefully interpreted.
[239] i.e. the region's geometric centre (or 'centroid')

and most the new member states (Map A8.5 Appendix 8). IT differs from its southern European neighbours in that here average travel times are relatively low.

Table 8.1: Healthcare indicators (excerpt) by country and OECD class

	PU			SR			PR			ALL		
	BSl1a*1	BSl1b*2	BSl1e*3	BSl1a*1	BSl1b*2	BSl1e*3	BSl1a*1	BSl1b*2	BSl1e*3	BSl1a*1	BSl1b*2	BSl1e*3
EU27	**7,29**	**4,83**	**15**	**1,25**	**4,00**	**23**	**0,31**	**3,39**	**66**	**1,12**	**4,19**	**48**
AT	14,91	7,87	12	1,30	6,80	23	0,24	1,94	43	0,66	4,78	39
BE	3,76	3,61	15	1,12	2,37	16	0,30	2,32	33	2,39	3,42	19
BG	11,90	6,43	11	0,92	4,85	32	0,36	3,27	27	0,55	3,98	27
CY				0,87		17				0,87		17
CZ												
DE	6,29	5,11	10	1,21	3,49	15	0,44	2,22	26	1,95	4,30	18
DK	9,14	4,61	25	1,34	4,22	16	0,58	3,80	23	1,18	4,17	21
EE												
ES	6,90	3,50	32	1,18	3,23	41	0,32	2,55	45	1,12	3,22	43
FI				0,27	3,98	27	0,09	4,20	118	0,10	4,12	112
FR	5,64	4,48	15	0,95	4,58	20	0,50	5,75	21	0,98	4,75	20
GR	6,04	4,04	21	0,62	3,64	31	0,08	1,05	69	0,38	2,82	59
HU	53,33	12,51	16	0,77	4,56	26	0,60	6,33	16	0,96	6,74	20
IE	5,42	2,55	7				0,09	1,10	56	0,16	1,51	56
IT	8,40	5,38	14	3,00	4,57	17	0,98	4,78	20	3,66	4,99	17
LT												
LU				1,16	2,68	14				1,16	2,68	14
LV												
MT	6,33	3,57	1							6,33	3,57	1
NL	3,42	3,11	10	0,92	2,51	12	1,79	3,53	0	2,48	3,02	11
PL	26,73	6,89	6	1,19	3,34	20	0,52	2,57	33	1,41	3,80	27
PT	5,20	2,63	16	0,43	1,82	31	0,12	1,36	66	0,57	2,12	54
RO	109,55	8,06	34	0,83	5,27	23	0,44	4,53	27	0,70	5,17	26
SE				0,40	2,02	27	0,07	2,68	151	0,08	2,46	146
SI				1,17	4,95	20	0,49	3,62	29	0,69	4,18	26
SK	5,85	9,14	0	1,09	5,27	5	0,63	4,57	24	1,20	5,62	9
UK												

*1 Number of hospitals per 1000 sqkm, 2001 *(hospitals >300 beds)*

*2 Number of hospital beds per 1000 inhabitants, 2001 *(only hospitals > 300 beds included)*

*3 Average car driving time to nearest hospital, 2001 *(to nearest hospital > 300 beds in minutes)*

Source: Eurostat Regio database, Mountain Study database, IRPUD Transport Networks

Comparison of the average travel times in the three OECD rural-urban categories reveals very clearly that residents of rural regions are required to make longer journeys to hospital than those who live in predominantly urban regions. The figures in Table 8.1 also show that PR regions, with an average travel time of 66 minutes, are more than four times further away from hospitals in terms of car driving time than PU regions (where the average is 15 minutes). The average for the SR regions is 23 minutes.

Counter-intuitive results for some member states (such as ES) require further analysis (and local knowledge), and serve as a reminder of the need for caution in interpreting the results.

8.3 Education

8.3.1 *Education Provision Indicators*

A "good practice" example of an analysis of patterns of rural educational provision (using a Geographic Information System –GIS) is described in Note A8.3 (Appendix 8). Such an analysis is possible where both the location of schools, colleges and nurseries, and the detailed distribution of population, is known. This must be the case in many EU member states. Unfortunately there is as yet no collated (and harmonised) data set for Europe. When such data becomes available a simple ratio of schools to school-age population is unlikely to reveal much rural-urban variation, since education is, in the majority of EU member states a public service, provided to all (though with some differences in definitions of school age). The main difference between rural and urban areas in most EU countries will therefore be in terms of the social cost of longer journey times in rural areas, where schools are more widely spaced, and perhaps also in terms of a narrower range of options at the higher secondary level, (because rural schools are smaller). An analysis of these aspects would require detailed GIS analysis, and a pan-European analysis would be a substantial undertaking – well beyond the resources of this project.

Significant rural-urban variation in local education provision (in sense of the ratio of "places" to children/young people) is to be expected only at the two ends of the age range, where statutory, universal, public provision is less common. Unfortunately data on the provision of pre-school childcare and education is not currently available. In fact, the only EU-wide education provision database known to the project team is that compiled by the recent 'Mountain Study'[240] sponsored by the European Commission. This is a list of universities participating in the 'ERASMUS'[241] program[242]. Since the provision of higher education is neither entirely public sector, universal, or necessarily local to the "clients" the indicators described below are especially interesting in a rural policy context, since they reflect ease of access (in a geographical sense) rather than variations in level of provision. This is clearly very important in terms of human capital, and relates to the issues of innovation rates and "entrepreneurial culture".

8.3.2 *Access to Higher Education in Rural Europe*

The map on the location of universities participating in the ERASMUS programme (Map A8.6 Appendix 8) clearly shows that universities (unsurprisingly) are mainly concentrated in urban regions. Thus the densely populated urban areas of NL, BE, DE, as well as the northern parts of IT and the South of England, with their large agglomeration areas, are endowed with a rather dense network of university locations. For the rest of Europe many countries with large shares of significantly and predominantly rural regions have rather few university locations outside agglomerations. Extremes include northern Scandinavia and GR where almost no universities are located outside the (coastal) agglomerations.

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[240] Nordregio, 'Mountain areas in Europe – Analysis of mountain areas in EU Member States, acceding and other European countries', Nordregio Report 2004:1, 2004, Nordregio, Stockholm

[241] ERASMUS - European Community Action Scheme for the Mobility of University Students

[242] A few higher education institutions may not be registered for the Erasmus programme. A rough indication of the extent of "coverage" may be gained by comparing the number of Erasmus universities (2,199, source: http://europa.eu.int/comm/education/programmes/socrates/erasmus/erasmus_en.html) with the membership of the European Universities Association (775 source: http://www.eua.be/eua/en/members.jspx)

From a European perspective the average travel time to nearest university indicator reveals no clear pattern in terms of countries leading and others lagging behind (Map A8.7 Appendix 8). Moreover the pattern of the spatial distribution of university locations is – of course – more or less visible. In western and northern Europe PR regions mostly show long travel times. Also SR regions tend to yield significantly higher values than the agglomeration areas. In the new member states the general pattern is the same with the exception that some of the SR regions show quite low travel times (mainly explained by the university locations in these countries). The figures shown in Table 8.2 give the same evidence. On average the driving time in PR regions is more than three times as high as for PU regions.

Table 8.2: Average driving time to nearest university, 2001

	PU	SR	PR	ALL
	from regions centroid to nearest university > 1000 students in minutes			
EU27	**29**	**41**	**98**	**73**
AT	59	34	63	57
BE	19	30	54	29
BG	11	32	69	65
CY		17		17
CZ	11	29	72	33
DE	28	37	52	41
DK	34	18	51	41
EE	73	20	81	37
ES	45	44	87	64
FI		29	150	141
FR	22	41	73	53
GR	31	43	91	78
HU	16	47	70	61
IE	7		80	79
IT	38	50	64	51
LT		26	77	59
LU		17		17
LV	9	90	89	89
MT				
NL	27	46	33	34
PL	9	50	67	59
PT	15	37	74	61
RO	34	41	77	63
SE		26	177	171
SI		23	54	45
SK	23	32	24	30
UK	21	26	65	50

Source: IRPUD trans-European networks GIS database, University locations: DG Regio, Mountain Study database

8.4 ICT

8.4.1 *ICT and rural development*

Today, information and communication technologies (ICT) are essential almost all branches of the economy. At the same time ICT are assumed to be able to diminish the role of traditional location

factors, a thesis which is not undisputed within regional science[243]. However, recent research has found a positive correlation between ICT variables and regional GDP[244].

An important event relating to the provision of ICT-related infrastructure was the abandonment of the former universal service obligation associated with the liberalisation of EU telecommunication policies, which created a highly dynamic telecommunications environment[245]. This has raised specific challenges for rural, sparsely populated areas, which are in danger of being left behind in the roll out of infrastructural innovations like broadband access, and thus partially excluded from potential opportunities associated with ICT technologies[246]. However one should be aware "that the provision of adequate telecommunications infrastructure is but the first step of a series of necessary 'translations' before rural areas become effective participants in the digital economy. Apart from infrastructure, a number of variables have been identified as impacting on levels of usage, such as company size, sector, and particularly the attitude of owner-managers"[247].

From the household perspective ICT may hold specific potentials with respect to e-government, e-commerce and other well-established services such as online banking. These can be assumed to be of potential interest especially for people living in rural and remote areas which have to deal with rather high travel times to centres where such services are located. However one must not forget that these technologies will not benefit all people equally: many elderly people are currently excluded from the use of such services due to poor IT skills.

8.4.2 *Internet Usage in Rural Europe*

Available indicators tend to reflect uptake and usage than provision. Nevertheless they may also give at least an indirect impression of rural-urban variations in provision across Europe.

When considering incidence of internet users (per 1,000 population) the overall pattern shows a north-west to south-east decline in internet usage, with the New Member states at a generally lower level (Map A8.8 Appendix 8). A specific urban-rural pattern is immediately perceptible. However having a closer look at UK, Benelux, FR and DE reveals a modest increase in internet usage within agglomeration areas compared with more sparsely populated ones (presumably due to differences in availability). By contrast the very sparsely populated areas of Scandinavia show relatively high usage. The countries of Southern Europe namely PT, ES, GR and particularly the New Member Sates, RO and BG are lagging behind at country level. Although this indicator is actually on internet usage it can be assumed that these countries are also lagging with respect to provision of adequate up-to-date infrastructure especially in rural regions. Table 8.3 shows very low shares for the PR regions (as well as for SR) of these countries for both internet indicators. The pattern of website usage by firms is almost identical to the pattern of the internet usage indicator with some exceptions in ES, FR and DE (Map 8.9 Appendix 8, Table 8.3). The figures on DSL (Digital Subscriber Line, a digital broadband internet connection via the ordinary telephone line) subscription point in the same direction

[243] Rietveld P and Vickermann R, 2004, Transport in regional science: The "death of distance" is premature, *Papers in Regional Science* 83 p229-248
[244] Lindner, C., Lückenkötter, J., Panebianco, S., Schlusemann, B., Spiekermann, W., Wegener, M., o.c.
[245] ESPON, 'ESPON project 1.2.2 Telecommunication Services and Networks: Territorial Trends and Basic Supply of Infrastructure for Territorial Cohesion', Amended Final Report, 2005; ESPON, Luxembourg
[246] Copus, A. K., 'Aspatial Peripherality, Innovation & The Rural Economy (AsPIRE)', Final Report, 2004, SAC, Aberdeen, pp.63ff.
[247] Copus, A. K., o.c.

considering the national perspective. The old member states and particularly the Scandinavian countries exhibit higher shares of DSL subscribers than the New Member states. Besides this the figures also show distinctions between urban and rural regions with the urban regions leading in terms of shares of DSL subscribers. Comparing the figures in table 8.3 one has to consider that the urban – rural classification underlying the DSL subscriber data slightly differs from the one applied within this study.

Table 8.3: ICT indicators by country and OECD class

	PU			SR			PR			ALL		
	BSI3a[*1]	BSI3b[*2]	DSL SUB[*3]	BSI3a[*1]	BSI3b[*2]	DSL SUB[*3]	BSI3a[*1]	BSI3b[*2]	DSL SUB[*3]	BSI3a[*1]	BSI3b[*2]	DSL SUB[*3]
EU27	**35,93**	**56,44**		**26,40**	**47,18**		**21,97**	**42,07**		**28,00**	**48,47**	
AT	45,45	63,90	7,28	29,19	51,25	6,14	29,02	51,06	2,73	29,99	51,84	5,46
BE	35,24	56,05	8,56	29,70	51,79	11,31	25,00	47,57	11,45	32,53	53,88	9,76
BG	10,60	31,00		10,80	31,35		10,97	31,54		10,94	31,51	
CY												
CZ	23,30	46,00		14,03	35,71		13,10	34,60		14,63	36,36	
DE	37,22	57,69	10,16	32,65	54,05	8,50	31,15	52,81	2,39	34,32	55,37	8,13
DK			14,13			10,75			10,63			11,74
EE			7,44			6,41			3,55			6,33
ES	27,51	49,84	0,75	19,60	41,84	0,00	16,74	38,75	0,00	19,68	41,85	0,42
FI			15,26	38,23	58,23	13,99	27,09	49,11	9,08	28,85	50,55	12,72
FR	48,05	65,30	12,01	28,79	50,88	10,30	26,91	49,32	8,01	30,29	51,95	10,67
GR	24,30	46,90		6,54	23,98		7,76	25,69		7,77	25,67	
HU	19,00	41,50		14,64	36,41		12,32	33,44		13,47	34,89	
IE	39,60	59,90	6,10			1,01	31,67	52,96	0,46	32,66	53,83	2,86
IT	31,19	52,79	9,95	27,21	49,13	6,93	24,83	46,94	3,13	27,98	49,84	7,88
LT												
LU			7,47			6,96			6,09			7,04
LV												
MT												
NL	37,20	57,90	11,47	32,08	53,78	11,47	28,80	51,10	11,47	35,46	56,49	11,47
PL	9,04	28,27		7,55	25,07		7,42	25,16		7,72	25,63	
PT	16,30	38,07	6,39	11,87	31,92	3,96	10,48	29,78	1,76	12,06	32,08	4,14
RO	12,70	33,90		1,89	9,93		0,98	7,06		1,61	8,79	
SE			10,42	47,40	65,05	9,63	36,04	57,13	5,55	37,12	57,89	9,26
SI												
SK	19,00	41,50		12,28	33,42		12,40	33,60		13,14	34,45	
UK	38,45	58,71	9,55	38,84	59,23	4,16	32,96	54,49	1,13	37,10	57,70	7,21

[*1] Share of internet users per inhabitant, 2003 *(internet users per 100 inhabitants)*

[*2] Proportion of firms with own website, 2003 *(as % of total)*

[*3] Share of population having subscribed to DSL internet, 2004 (as % of total)

Source: ESPON Database / DSLSUB: DGINFSO

8.5 Trunk road infrastructure

8.5.1 *Some issues to consider when interpreting the indicators*

Regional transport infrastructure plays an important role in regional economic development and quality of life. However the impacts of transport infrastructure on regional development are complex. For example the development of high speed transport infrastructure like the TEN-T/TINA network constitutes one element of the EU cohesion goals, connecting larger agglomerations, reducing (trans-)

national travel times. Critics say that these agglomerations benefit much more from such high speed infrastructures than the surrounding regions do, and thus spatial disparities are actually increased[248]. Even so EU policy considers the TEN road network to play an important role in granting the free movement of goods and inhabitants/people as, for example, 40% of all road freight traffic is carried on TEN roads[249]. In 1999, the EU had a primary road network of 320,000 km (motorways, highways, main or national roads)[250]. The TEN road network as defined in the guidelines comprises motorways and high-quality roads, existing, new or adapted. In total it contains 75,200 km accounting for less than a quarter of EU primary roads. The total length of already existing ones has increased from 39,000 km in 1996 to 44,000 km in 2001[251].

8.5.2 *Motorway and trunk road densities*

In rural regions road-bound individual transport tends to be a rather important mode since public transport systems often lack a critical mass of customers (inhabitants) in order to operate economically. The local road network grants access to basic services for the rural population. Motorways permit high speed travelling within regions and beyond, thus allowing for a variety of quite different activities for regional businesses as well as for households. The density of motorways gives a first impression of the regional endowment of this kind of infrastructure. However this indicator is not capable of assessing the quality or level of service since it does not take account of whether there are junctions to allow access the network. Furthermore, in some member (particularly the UK) there is no clear differentiating between motorways and other trunk roads.

The density of motorways (per square km) within the EU27 (Table 8.4, Map A8.10 Appendix 8) shows that most of the NUTS 3 regions of the East (New Member States) and North (Scandinavia) have very low densities. By contrast BE, DE, AT, IT, and some parts of FR exhibit very high motorway densities. In ES and PT the contrast is between high densities around the coastal regions and low densities in the interior, while in the UK to a certain extent the pattern is reversed, since here the motorway network is focused on cities, such as London and the SE, the Midlands, South Wales and the Scottish Central Belt, with the peripheral regions showing much lower densities.

Including all trunk roads (which generally offer more access nodes to local traffic than motorways) changes the pattern of road density to some extent (Table 8.4, Map A8.11 Appendix 8). The central European regions characterised by high motorway density still show high values for all trunk roads, but in considerable parts of Europe regions lacking motorways show quite high values for trunk roads. This applies in particular to the new member states, but also to GR. Low density values for trunk road infrastructure can still be observed in some of the western and central regions of ES, the North of Scotland and Scandinavia, and also in RO.

Map A8.12 (Appendix 8) shows the ratio between the length of the regional trunk road network and the regional population. The average ratio for Europe is 0,84 km/inhabitant (Table 8.4). Most urban

[248] Schürmann, C., Spiekermann, K., Wegener, M., 'Accessibility Indicators', Berichte aus dem Institut für Raumplanung 39 / Deliverable 5 of project Socio-Economic and Spatial Impacts of Transport Infrastructure Investments and Transport System Improvements (SASI), 1997, Dortmund
Vickermann, R., 'The transport sector, new economic geography and economic development in peripheral regions', In: New Contributions to Transportation Analysis in Europe, 1999, pp. 45-66, Amsterdam
[249] European Commission 2004b, o.c., p. 8
[250] European Commission, 'European Union Transport & Energy in figures - statistical pocketbook 2002', 2002b, DG Energy and Transport in cooperation with Eurostat.
[251] European Commission, 2004b, o.c.

regions have under-average ratios. Lower values indicate that either road density is relatively low (see for example RO) or the population figures are comparatively high (for example NL) compared to other regions. Higher values on the other hand indicate that either the road density is relatively high or the population density is relatively low in comparison to other areas. Average results therefore are a result of a balanced ratio of both factors. In this case Northern Scandinavia and Northern Scotland, which both have a relatively low density of trunk roads show relatively high values for this indicator as they are also both characterised by very low population densities. On the other hand some regions in AT and GR show relatively high densities of trunk roads in combination with low population density.

Table 8.4: Trunk road infrastructure indicators by country and OECD class

	PU			SR			PR			ALL		
	BSl4a*1	BSl4bc*2	BSl4c*3	BSl4a*1	BSl4bc*2	BSl4c*3	BSl4a*1	BSl4bc*2	BSl4c*3	BSl4a*1	BSl4bc*2	BSl4c*3
EU27	**0,045**	**0,204**	**0,313**	**0,015**	**0,108**	**0,911**	**0,004**	**0,076**	**1,718**	**0,011**	**0,096**	**0,837**
AT	0,055	0,354	0,222	0,037	0,185	1,258	0,012	0,131	2,294	0,017	0,145	1,506
BE	0,076	0,332	0,635	0,042	0,235	1,383	0,023	0,163	2,991	0,057	0,273	0,805
BG	0,005	0,133	0,151	0,007	0,091	0,757	0,001	0,075	1,360	0,002	0,077	1,087
CY				0,007	0,038	0,497				0,007	0,038	0,497
CZ	0,035	0,330	0,141	0,006	0,086	0,719	0,012	0,087	1,157	0,006	0,087	0,676
DE	0,066	0,259	0,362	0,026	0,148	0,963	0,017	0,124	1,476	0,030	0,162	0,669
DK	0,071	0,305	0,380	0,029	0,229	1,601	0,016	0,185	2,585	0,022	0,203	1,625
EE		0,091	1,724	0,000	0,123	3,703		0,111	7,050	0,000	0,118	3,798
ES	0,020	0,114	0,242	0,009	0,083	0,948	0,005	0,047	1,800	0,008	0,068	0,829
FI				0,010	0,140	1,578	0,001	0,059	5,131	0,002	0,065	3,792
FR	0,042	0,151	0,217	0,021	0,094	0,861	0,008	0,068	1,491	0,017	0,086	0,784
GR	0,018	0,102	0,099	0,006	0,123	1,264	0,003	0,113	2,670	0,004	0,115	1,374
HU	0,055	0,341	0,103	0,007	0,082	0,726	0,003	0,075	0,944	0,005	0,079	0,723
IE	0,047	0,216	0,177				0,001	0,073	1,821	0,002	0,075	1,350
IT	0,034	0,193	0,459	0,024	0,139	0,906	0,009	0,115	1,738	0,022	0,145	0,763
LT				0,016	0,104	1,246	0,003	0,092	2,532	0,007	0,096	1,816
LU				0,033	0,264	1,531				0,033	0,264	1,531
LV	0,110	0,272	0,111	0,001	0,115	4,688		0,127	6,012	0,001	0,122	3,334
MT												
NL	0,082	0,207	0,322	0,032	0,145	0,682	0,052	0,099	0,544	0,063	0,182	0,381
PL	0,004	0,178	0,167	0,002	0,108	0,865	0,001	0,107	1,335	0,001	0,109	0,904
PT	0,053	0,146	0,191	0,017	0,124	0,874	0,010	0,075	2,164	0,015	0,092	0,813
RO	0,058	0,384	0,045	0,001	0,049	0,471	0,000	0,043	0,614	0,001	0,046	0,501
SE				0,027	0,148	0,870	0,002	0,049	3,214	0,003	0,053	2,430
SI				0,027	0,172	1,225	0,008	0,143	1,764	0,014	0,151	1,537
SK	0,040	0,149	0,511	0,004	0,075	0,680		0,083	1,186	0,005	0,079	0,724
UK	0,033	0,197	0,244	0,017	0,134	0,594	0,002	0,068	1,104	0,011	0,105	0,432

*1 Density of motorw ays, 2004 *(km/sqkm)*

*2 Density of all trunk roads, 2004 *(km/sqkm)*

*3 Trunk road netw ork per inhabitant, 2002 *(trunk roads by region in km / population by region in thousand)*

Source: IRPUD trans-European networks GIS database, Eurostat Regio database

In general these indicators draw attention to the difficulty of establishing any kind of “need baseline” in relation to infrastructure supply: Even if the spatial density of infrastructure provision is low (compared to agglomerations) the per-head provision (or amount of investment spent) can be significantly higher than in agglomerations. This applies particularly for trunk road infrastructure provision in rural regions (Table 8.4). However this does not tell us very much about the supply/demand balance in terms of accessibility of rural residents to the goods and services they need to give them an acceptable standard of living. Such indicators cannot, unfortunately, help us to answer such questions as “How

much improvement in accessibility would be required to halt out-migration from remote regions?". The answer would, of course, be a complex one, involving weighing a variety of aspects of quality of life, of which accessibility is just one, (albeit probably an important one).

8.6 Rail infrastructure

8.6.1 *Railway networks characteristics*

Railway networks are both an element of the public transport system, and may also transport inputs and outputs for regional businesses. Depending on its structure the railway network may be primarily adapted to serve the first or the latter purpose, or both. Effective rail-bound public transport in general is quite dependent on the network's access nodes, constituted by railway stations, and the frequencies of trains departing from there to attractive locations. Service provision is of course problematic in sparsely populated rural areas or regions with a negative population development (see Chapter 2) which tend to lack the critical mass of users to justify stops. This explains the gradual loss of railway lines and stations from rural Europe over the recent decades. Over the last 30 years 600 km of railway tracks have been closed down, on average, per year, whereas the motorway network has increased by 1.200 km per year[252]. The EU 15 member states have a rail network of around 156,000 km[253], of which 78,000 km are designated in the guidelines as trans-European railway network. More than half of the rail freight traffic is moved on these lines[254].

8.6.2 *Rail densities across Europe*

The density of the railway network is quite variable across the EU27 (Map A8.13 Appendix 8). Countries like DE, CZ, SK or HU, and also western parts of PL, have a quite dense railway network. FR and IT show quite high densities in some regions. On the whole it is remarkable that the New Member States (with the exception of the Baltic countries) show above average endowment with railways. For the rest of Europe the density of the railway network tends to be rather low, especially in IE and Northern Scandinavia, ES and GR.

The figures contained in Table 8.5 reveal that – unsurprisingly – railway densities in European PU regions are approximately three times as high as in PR regions. The overall average value resides between those of SR and PR regions. While individual values for some countries like UK, PL for instance follow this pattern, others like EE or LT tend to be more homogeneously endowed with railway network, but often at a generally low density. This may point at different 'traditions' in terms of the countries' railway usage and the retention of public sector rail systems. It must nevertheless be kept in mind that this indicator does not reveal the actual quality of supply since it does not contain information on the access nodes (i.e. stops) to the railway network, or the frequency or price, of service.

[252] European Commission, 'White Paper on European transport policy for 2010: time to decide', 2001, European Commission, Directorate-General for Energy and Transport, Luxembourg
[253] European Commission, 2002b, o.c.
[254] European Commission, 2004b, o.c.

Table 8.5: Density of railway network, 2004

	PU	SR	PR	ALL
	in km per sqkm			
EU27	**0,1140**	**0,0574**	**0,0352**	**0,0488**
AT	0,1903	0,0853	0,0591	0,0662
BE	0,1398	0,0745	0,0603	0,1073
BG	0,0681	0,0477	0,0295	0,0316
CY				
CZ	0,2132	0,1039	0,0794	0,1024
DE	0,1645	0,1048	0,0819	0,1085
DK	0,1517	0,0578	0,0462	0,0543
EE	0,0230	0,0197	0,0243	0,0209
ES	0,0606	0,0275	0,0204	0,0261
FI		0,0317	0,0171	0,0182
FR	0,1126	0,0559	0,0391	0,0516
GR	0,0302	0,0196	0,0173	0,0182
HU	0,3337	0,0797	0,0766	0,0791
IE	0,1007		0,0208	0,0218
IT	0,0820	0,0555	0,0441	0,0584
LT		0,0297	0,0232	0,0255
LU		0,0906		0,0906
LV	0,1455	0,0303	0,0296	0,0306
MT				
NL	0,0892	0,0517	0,0228	0,0738
PL	0,1404	0,0712	0,0571	0,0644
PT	0,0619	0,0373	0,0293	0,0335
RO	0,3165	0,0435	0,0371	0,0398
SE		0,0621	0,0257	0,0273
SI		0,0590	0,0471	0,0506
SK	0,0937	0,0639	0,0659	0,0655
UK	0,1297	0,0654	0,0315	0,0572

Source: IRPUD trans-European networks GIS database

8.7 Airports

8.7.1 *Basic Structures*

The airports network is by nature very different from transport infrastructure consisting of surface links. Airports are "intermodal nodes on a route network requiring virtually no en-route surface infrastructure"[255]. Airports allow for high speed long-distance travel. They constitute the nodes for a flexible network of flights which connect places on different levels. International airports connect major cities with each other and tend to predominantly serve trans-national traffic while smaller regional airports mainly serve national and sub-national traffic needs. Recently also smaller airports are being discovered by budget airlines and allow for cheap international flights from locations at the border or outside the agglomeration areas. However the airports designated in the TEN/TINA networks maintain strategic importance since they are part of the European transport outline plans and thus receive special funding. The guidelines for the trans-European network define 330 airports comprising the TEN airport network. "The 40 or so largest airports handle three quarters of all passengers and about

[255] European Commission, 2004b, o.c., p. 16

90 percent of extra-Community international traffic. They are thus regarded as International Connecting Points, although they also take most of the intra-Community traffic as well. A further 80 or so Community Connecting Points, generally handling between one and five millions passengers per annum, account for almost all the remaining international and intra-Community traffic. The remaining 200 airports in the network tend to be quite small, but fulfil a vital Regional and Accessibility Point role, often in relatively remote areas, although they take only five per cent of Community traffic"[256].

Access to one of these regional airports is clearly a significant determinant of rural quality of life, although the cost of flights to the nearest "hub" is another important consideration which is rather difficult to assess with available indicators.

8.7.2 *European patterns*

In general, Europe's large airports or 'hubs' are (of course) located within or nearby larger agglomerations (Map A8.14 Appendix 8, Table 8.6). The rural areas of the EU are predominantly served by smaller airports normally used to connect to these national hubs and thus establishing a clear hierarchy in this part of the transport networks[257]. Thus in UK, BE, NL, LU, DE, AT and IT larger airports situated close to agglomerations dominate the pattern, while in the Northern parts of Scandinavia, smaller airports which serve predominantly national flights (and thus substitute for other elements of national high speed transport networks) are more common. In PL, SK and HU as well as RO and BG there are just a small number of larger airports.

The TEN/TINA classifications consider functional differences by distinguishing between internationally, community and regional connecting points. For instance the Scandinavian airports predominantly serve national connections, whereas IE, Scotland, FR and GR also have large numbers of regional airports mostly situated in peripheral regions (cp. Map A8.15 Appendix 8, Map 8.1). ES and PL are characterised by few TEN/TINA airports located in their interior regions.

The average car driving time to the nearest airport is a product of both the airport's location and the quality of the regional road network linking it. For the purpose of the analysis of the accessibility of airports only facilities with international flights (according to the TEN/TINA classification) were included for the calculation of this indicator. Map A8.16 (Appendix 8), Table 8.6 reveals a broad core-periphery pattern with generally lower car driving times to the nearest airport within the European core regions. Looking at the averages of the OECD region classes one can see that the values of both PU and SR regions are below the overall average for EU27 regions. As expected PR regions exhibit an average travel time which is three times higher than PU regions. The general pattern in Map A8.16 (Appendix 8) Table 8.6 confirms these figures. Within the old Members States the rural areas of FR, ES and GR show particularly high driving times while the values for the UK, Benelux and DE are slightly lower. Within the New Member States PR and SR regions are generally characterised by even higher average driving times. The Scandinavian periphery has to be seen from another viewpoint: since this indicator only includes airports with international flights according to the TEN/TINA classification the important regional airports of Scandinavia are not included here.

[256] European Commission, 2004b, o.c.
[257] European Commission, 2001, o.c.

Table 8.6: Indicators related to airports by country and OECD class

	PU			SR			PR			ALL		
	BSI6a*1	BSI6b*2	BSI6c*3	BSI6a*1	BSI6b*2	BSI6c*3	BSI6a*1	BSI6b*2	BSI6c*3	BSI6a*1	BSI6b*2	BSI6c*3
EU27	**227**	**86**	**43**	**437**	**119**	**100**	**466**	**121**	**162**	**1130**	**326**	**132**
AT	2		94	7	6	93	1		106	10	6	104
BE	14	4	28	2		39	3		59	19	4	37
BG	3		283	5		170	28		188	36		188
CY				6	1	46				6	1	46
CZ	2	1	22	25	2	122	2		110	29	3	120
DE	61	21	44	58	3	59	49	6	72	168	30	61
DK	2	1	34	5	4	19	10	3	55	17	8	44
EE			73	9	4	89	2		76	11	4	85
ES	8	4	50	35	18	95	4	1	177	47	23	131
FI				5	2	33	31	20	233	36	22	219
FR	17	6	31	104	28	84	50	10	116	171	44	94
GR	6	1	35	13	7	101	33	18	130	52	26	121
HU	1	1	15	11	1	118	12	1	149	24	3	137
IE	3	1	11				18	6	78	21	7	77
IT	31	15	44	30	14	72	12	5	97	73	34	72
LT				7	3	50	5		117	12	3	93
LU				1	1	21				1	1	21
LV	1	1	15	4	3	152	2		108	7	4	130
MT	1	1	1							1	1	1
NL	14	4	54	2	1	91	1		96	17	5	68
PL	10	5	61	29	3	157	41		183	80	8	171
PT	5	2	33	14	8	46	7	2	124	26	12	99
RO			46	16	1	256	14		284	30	1	273
SE				13	3	34	77	32	207	90	35	199
SI				3	1	33	4	1	100	7	2	80
SK	2	1	23	7	2	155	2		137	11	3	146
UK	44	17	37	26	3	45	58	16	81	128	36	66

*1 Number of all airports, 2004 *(total)*

*2 Number of TEN/TINA airports, 2004 *(total)*

*3 Average car driving time to nearest airport (with international flights), 2003 *(from region's centroid in minutes)*

Source: IRPUD trans-European networks GIS database / Hospital locations: DG Regio, Mountain Study database

8.8 Patterns of accessibility/peripherality

8.8.1 *The concepts of accessibility and peripherality*

One of the specific handicaps often associated with rurality is a lower level of accessibility, which is the main product of a transport system[258]. Accessibility is a key aspect of the residential attractiveness of regions, - in terms of both quality of life and cost of living, - and is therefore indirectly related to migration patterns. It also has a very important role to play in the aggregate economic performance of regions, and upon entrepreneurship. In the context of this report peripherality is simply the inverse of accessibility, i.e. the higher the accessibility, the less peripheral is a region and vice versa[259].

Peripherality is a notoriously "slippery" concept, and the term tends to be used in a rather loose way, leading to a degree of confusion. In the context of this report the concept incorporates two main causal elements; distance from sources of goods and services, and an absence of agglomerative economies. Associated with these are "contingent" disadvantages, such as the high cost of service provision, low rates of entrepreneurship, and a range of associated problems, such as slow adjustment of sectoral structure, poor local infrastructure, and so on[260]. Peripherality is therefore not a simple one-dimensional disadvantage, it is a complex concept, a "syndrome".

However it is generally accepted that there is a simple "driving factor", which may be estimated in terms of a proxy indicator – often termed "economic potential". Peripherality is a consequence of the location of a region in relation to all other regions, and their economic size/importance. Quite simply, a region which is close to centres of economic activity will have a range of advantages over one which is located further away, and vice versa.

It is this "relative location" which "economic potential" indicators seek to measure. They do so assuming that for each region the overall advantage/disadvantage of accessibility may be represented by a weighted average of the "economic size" or "mass" of all other regions. The weights used in the calculation are inversely proportional to some measure of the distance between each pair of regions (such as car travel time), so that the "mass" of a distant region will have much less impact than an adjacent one of equivalent economic size.

8.8.2 *The Schürmann and Talaat Index*

Over the past three decades regional science has produced a variety of accessibility/peripherality indicators, ranging from simple travel time indicators, to rather complex economic potential indices, which take account of both transport network characteristics and the activities or opportunities that can be reached by it[261]. For the purposes of this report an indicator developed by Schürmann and Talaat, for the European Commission, as a background study for the Third Report on Economic and Social Cohesion, has been updated[262]. It is described below, and later (Chapter 9) incorporated into proposals to enhance the OECD rural-urban classification of NUTS 3 regions. The importance

[258] Schürmann, C., Talaat, A., 'Towards a European Peripherality Index', Final Report, Berichte aus dem Institut für Raumplanung 53, 2000, IRPUD, Dortmund

[259] Nordregio, 'Mountain areas in Europe – Analysis of mountain areas in EU Member States, acceding and other European countries', Nordregio Report 2004:1, 2004, Nordregio, Stockholm

[260] Copus A K (2001) From Core-Periphery to Polycentric Development; Concepts of Spatial and Aspatial Peripherality, European Planning Studies, vol 9 No 4 pp539-552

[261] Bökermann, D., 'Theorie der Raumplanung', 1982, Oldenbourg, München/Wien

attached to peripherality in this report (both as a concept of disadvantage, and in terms of the proxy indicator described below) derives from the observed empirical processes of urbanisation and counter-urbanisation, which feature in Chapters 2-4.

Technical details of the way in which the indicator was calculated are provided in Note A8.5 (Appendix 8). It is worth noting here, however, that (in common with other economic potential indicators) the Schürmann and Talaat index is not expressed in familiar units, but on a relative scale. To make it a little easier to use it is expressed as a percentage of the European average. The highest values indicate high accessibility/low peripherality, and vice versa.

8.8.3 *European patterns*

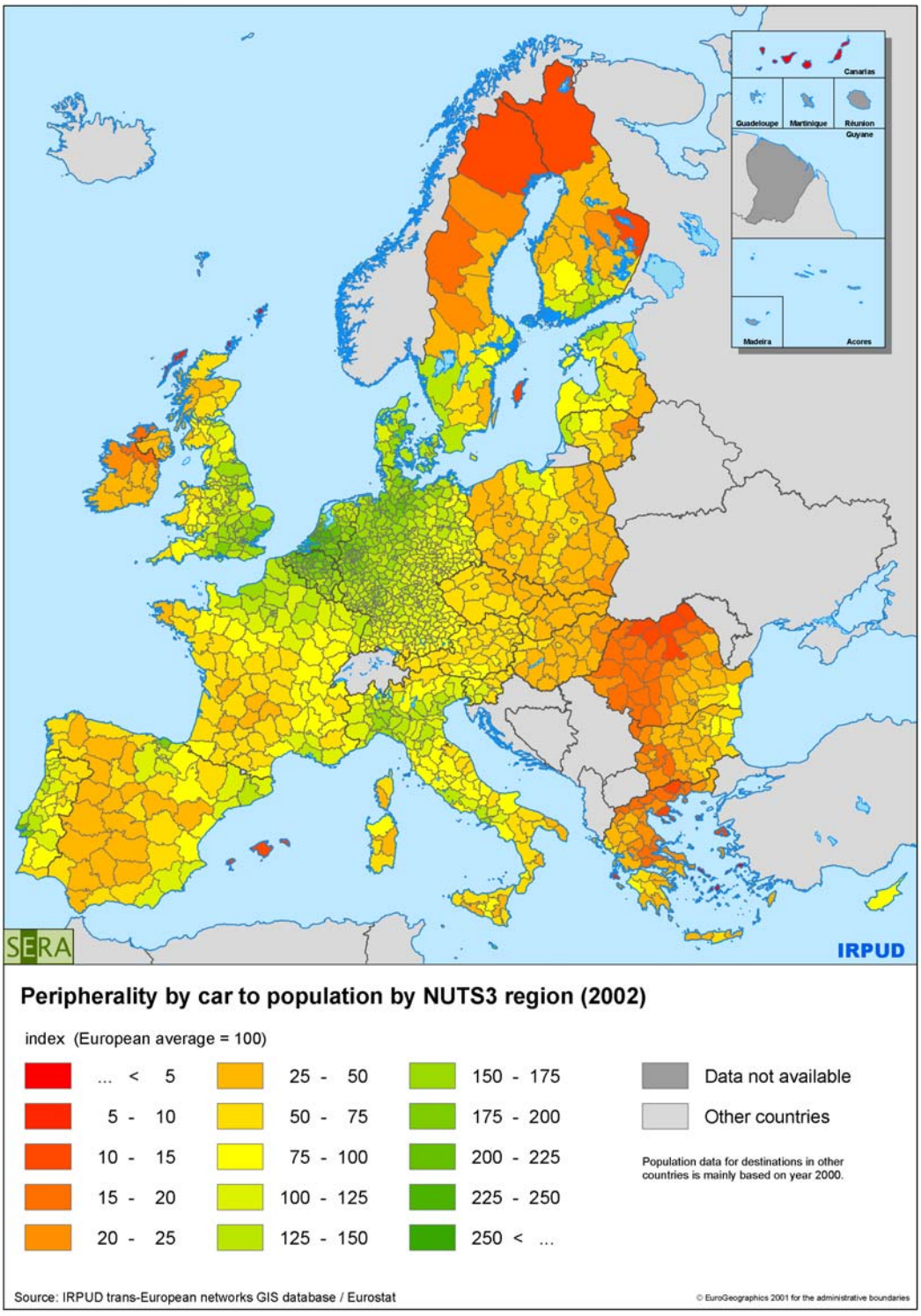
(Map 8.1) clearly shows a core-periphery pattern for EU27's NUTS3 regions, with the core regions situated in Eastern and Southern England, Benelux, the North of France, Northern and Western Germany and parts of Denmark. Also some regions in Northern Italy show above-average values. The more peripheral parts of Europe are constituted by Southern France, the central Spanish, Mid and South Italy as well as AT HU, SK and CZ. The Scandinavian as well as the Baltic countries show above-average accessibility only in the more populated coastal regions while other parts of these countries (especially in Scandinavia) tend to be highly peripheral. The New Member States as well as RO, BG and GR are almost exclusively characterised by high peripherality.

Table 8.7: Peripherality indicator by country and OECD class

	PU	SR	PR	All
EU27	**123.45**	**84.62**	**62.96**	**100.00**
AT	73.97	69.83	66.40	69.17
BE	196.30	162.00	143.93	190.44
BG	28.95	54.28	38.23	39.22
CY		85.96		85.96
CZ	63.18	50.19	54.75	51.90
DE	147.48	126.58	119.94	138.21
DK	163.40	165.45	127.51	150.11
EE	55.94	115.39	101.04	106.15
ES	93.59	62.72	46.46	71.12
FI		140.82	54.30	86.91
FR	134.00	94.24	67.53	101.05
GR	35.53	30.82	28.28	31.55
HU	49.19	38.17	31.96	37.12
IE	38.27		30.37	32.64
IT	119.62	90.82	76.50	103.82
LT		70.63	60.76	66.25
LU		135.38		135.38
LV	128.32	54.86	71.57	87.02
MT	157.81			157.81
NL	205.07	149.03	138.34	195.39
PL	60.03	43.04	46.96	48.29
PT	158.38	87.93	85.95	122.43
RO	41.20	27.50	22.26	26.25
SE		119.68	79.43	92.90
SI		96.77	74.19	83.71
SK	54.95	37.15	37.13	39.13
UK	136.46	130.58	86.46	127.51

[262] Schürmann and Talaat 2000 o.c.

Comparison of the averages for the three OECD urban-rural categories shows that PU regions are generally highly accessible (at 132% of the EU average). The SR regions have an average score only 85% of the the EU average, whilst the PR regions are generally rather peripheral, at 63%.



Map 8.1: The Schürmann and Talaat Index

8.9 Conclusions

The provision of basic services and infrastructure in rural areas is important because deficiencies will impact upon quality of life and aggregate economic performance, feeding into a cycle of decline and resulting in selective out-migration. However in rural, and especially sparsely populated or peripheral regions, provision is more difficult and more expensive, due to dispersed demand, longer distances, and the absence of economies of scale. Sometimes this will mean a higher level of provision per capita is needed to ensure that services or infrastructure is within a reasonable travel time of all settlements. Sometimes this will mean more expensive provision in small scale units. In other instances the service users will have to accept long journeys for specialist services (such as particular kinds of medical treatments), or less frequent access to services (such as higher order retailing or financial services). Finding solutions to these questions is a very important aspect of the rural policy which will be required in those regions currently still experiencing the effects of rural-urban migration and decline.

An important first step in addressing these issues is to assess the extent and nature of the problem. The indicators presented and discussed in this chapter are a first step, which have provided some general "signposts" to rural-urban differences and impressions of geographical patterns. However it is clear that at present the lack of harmonised regional data relating to basic services is a serious handicap. This leads to the following recommendations in relation to data collection:

(i) Several member states have in recent years conducted surveys or analyses of the provision of, and access to, basic services in rural areas (the Scottish report is given as an example in Appendix 8). A comparative review of these exercises might suggest an appropriate strategy for the creation of an EU database with standard indicators.

(ii) This might usefully include an initiative to digitally map provision of certain key services. In conjunction with LAU 2 (commune) level population data this could form the basis of a GIS-based analysis of access to these services.

(iii) In selecting standard indicators it will be important to recognise differences in national traditions (for example in education) which may affect interpretation of the results.

The analysis of the indicators in this chapter has also highlighted some important, specifically rural considerations in relation to basic service provision:

(iv) It is necessary to consider qualitative aspects of the provision of services – a small local hospital, or a small rural secondary school, do not offer the same breadth of specialisms that their larger, urban counterparts do.

(v) It is perhaps obvious, but still worth re-stating, that provision of some services on a dispersed, small scale model may well require a higher level of per-capita provision, and will almost certainly mean higher unit costs[263].

The main findings in relation to the various aspects of service provision are:

(i) The analysis of the distribution of hospitals provides a very good example of the fact that equitable per capita provision may belie substantial rural-urban inequalities in terms of access.

[263] Paula Gilder Consulting, 2004 The Cost of Super Sparsity, a report for Highland Council and Argyll and Bute Council, http://www.highland.gov.uk/cx/pdf/cost-of-supersparsity-report.pdf

(ii) In relation to education there is probably little to be gained from an analysis of regional per capita provision of education, except for those parts of the system outside the normal universal statutory provision. This has partly been addressed by the above analysis of university provision – which has shown up considerable rural-urban disparities. However it would be extremely interesting to carry out an analysis of pre-school education. Furthermore, a longer term aim should be to assess rural-urban differences in qualitative aspects, such as journey to school times and the breadth of the upper secondary curriculum.

(iii) With respect to the provision of ICT and related services rural regions have been shown to be (with one or two notable exceptions) lagging behind. This applies particularly to the New Member States and the accession countries where very little diffusion of ICT across rural areas is observable. There is insufficient regional data to comment upon the two key constraints on ICT usage, the physical availability of infrastructure, and the level of awareness and training among the population.

(iv) Transport infrastructure is a key factor in regional development and success since it often constitutes a prerequisite for accessing other infrastructures and services[264]. The analysis has revealed that in general transport infrastructure networks already show a high level of development, at least within the European core regions. The greatest need for improvement is in the Southern parts of Europe, and particularly the New Member States and accession countries. With respect to motorways and trunk roads the network density in rural regions is of course significantly lower than in urban ones but the per head investment spent is significantly higher due to population sparsity. The analysis of the railway network also reveals that PR regions are generally less well served than urban ones, but levels of provision are determined to a great extent by national traditions and transport policy. The accessibility of airports clearly favours urban regions while SR and PR regions generally show significantly higher average travel times. For some countries airports are more important as they also serve regional traffic from the periphery to agglomerations.

(v) The final section on peripherality and the Schürmann and Talaat index provides an important link between the discussion of demographic and employment patterns in the early chapter of the report, the analysis of transport infrastructure provision in this chapter, and the discussion of rural-urban classifications in the chapter which follows.

[264] Machold, I., Tamme, O., ‚Abgefahren? Infrastruktur im ländlichen Raum' In: Raum Forschung 59, Mag. Peter Schneidewind (Austrian Institute for Regional Studies and Spatial Planning (ÖIR)) (Ed.), 2005, Vienna

9 PROGRESS TOWARDS A NEW EUROPEAN RURAL TYPOLOGY

9.1 Introduction – the terms of reference

The overall aim of this chapter is encapsulated in the Terms of Reference (p5) through a quotation from the conclusions of the July 2003 Agricultural Council which called for a "…*discussion on the creation of appropriate statistical tools for rural areas".* According to the subsequent elaboration of this general theme the specific tasks to be accomplished are:

1. The development of a more appropriate delimitation of rural regions within the EU27 at a NUTS3 level, through;
    - the analysis of the "pertinence" of the OECD definition as a rural-urban framework within which to collect and present socio-economic statistics;
    - a review of potential alternative delimitation methodologies and;
    - an assessment of these alternatives with a view to finding the most appropriate spatial framework for presenting socio-economic data as a context for rural policy development
2. To create a typology of the rural regions so defined, highlighting various socio-economic characteristics and components relevant to rural policy, based on the key indicators collected in the framework of the project.

9.2 Current "state of the art", and the approach to the tasks

There has been a long scientific debate on what rurality is and how to capture, in an holistic manner, the nature of rural areas[265]. Moreover, there have been a large number of attempts to classify rural regions according to various indicators and applying different statistical tools. This raises the question - why are rural definitions and the delimitation of rural areas so difficult and debatable? There are three general answers:

1. The variety of concepts and perceptions associated with the terms "rural" and "rural areas", including, for instance, sparsity of population, remoteness and absence of cities, dependence upon agriculture and other primary industries, traditional cultures, and so on.
2. The extensive range of (often regionally specific) characteristics of rural areas which are difficult to reflect in terms of statistics.
3. From an economic and social perspective rural regions cannot be seen as separate from, or independent of, their urban counterparts, since there are many structural and functional relationships between them. The concept of the rural-urban continuum has been widely accepted for several decades. There is therefore no strong incentive, from an academic point of view, to draw an exact border between rural and urban regions.

Given these difficulties it is perhaps worth reminding ourselves why a rural definition remains an important goal. The main motivations are (a) to allow comparative (rural-urban) analysis of socio-economic data, and (b) to facilitate design of rural policy (and, perhaps, associated resource allocation). The terms of reference cited above, together with discussions with the project Steering Group have made it clear that both of these apply to the current exercise.

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[265] An overview of the various approaches is given in BENGS, C. et al. (2004): Urban-rural relations in Europe. ESPON Project 1.1.2, Final Report

On reflection, the two objectives noted in the previous paragraph relate to two distinct tasks: (i) to define "rurality" in the context of NUTS 3 regions and the available data, and to "delimit" rural Europe on this basis, and (ii) to characterise NUTS 3 regions in terms of their labour market "performance", through the development of a "typology".

It is arguable that the development of a single definition of rurality, reflecting all aspects of the rural realm in an holistic way, is not a realistic goal, since it is impossible to encapsulate the diversity of rural Europe in a single set of criteria. Instead, several alternative "objective" definitions may be developed. The choice between them cannot be taken in isolation from specific policy considerations, since it depends on the underlying objectives and policy issues in question. Furthermore, a simple, binary, rural-urban distinction is rarely sufficient, and most policy contexts also require some form of distinction between different kinds of rural areas, or degrees of rurality. This points to the need for a refinement to the first (definitional) task - the "classification" of rural areas.

Similarly, in relation to the second task, an exercise such as this, not being specifically linked to a precise policy context or requirement, is unlikely to be able to offer a definitive, all-purpose, typology of regions according to labour market performance. It may, however, make a substantial contribution, by developing appropriate statistical procedures, and providing examples of typologies, which will reinforce the descriptive chapters of the report by illustrating key geographical dimensions of labour market performance.

For the sake of clarity, and to avoid confusion over terminology in this chapter, the first task will be referred to using the terms "*rural definition*", "*delimitation*" and "*classification*", whilst the term "*typology*" will be reserved for the second task.

The specific approach to rural definition/delimitation described in the pages which follow takes the OECD classification as a starting point. Thus the proposed delimitation options are mainly based upon population density, combined with a new dimension represented by the peripherality/accessibility index[266] described in Chapter 8. The fundamental nature of population density as an indicator of rurality is thus accepted, whilst the potential for improving the detailed implementation of the definition and its criteria is explored. However, it is also evident at many points in the discussions of labour market indicators in Chapters 2-8, that the degree of peripherality/accessibility is also a reliable guide to the general character and performance of a rural region. It is therefore worth considering rural classifications which avoid placing remote rural and accessible rural regions in the same category.

The aim of the typology (as explained above) will be to reveal the spatial patterns of the state of and trends in labour markets within rural areas in the EU25 plus Romania and Bulgaria, based on key demographic, economic activity and employment indicators. The first step, creation of separate demography and employment typologies, has already been summarised in Chapters 2 and 3. These two typologies will be brought together with others, below, to facilitate an assessment of regional patterns in overall labour market performance.

[266] see SCHUERMANN, C.; TALAAT, A. (2000): o.c.

9.3 Assessment of the pertinence of the OECD approach for designating rural areas

In 1991 OECD launched its Rural Development Program, in which rural indicator research was a central part. The first stage involved developing a territorial scheme (rural-urban regional classification) for collecting and providing statistics on sub-national territorial units in a multi-national context[267, 268]. The OECD classification is a two-stage procedure based on population density. In the first step local areas (communes) are classified as rural if their population density is less than 150 inhabitants per square kilometre. Urban communes are defined as those with a population density greater than 150 inhabitants per km^2 (OECD 1994). Based on this simple distinction between rural and urban communes three categories of regions are defined at NUTS3 level:

- **Predominantly rural:** > 50% of the population lives in rural communes.
- **Significantly rural:** 15 to 50% of the population lives in rural communes.
- **Predominantly urban:** less than 15% of the population lives in rural communes.

The OECD classification is now quite widely accepted and used. The methodology is appealing due to its simplicity and transparency. Compared to other classification approaches[269], which are solely based on NUTS3, the strength of the OECD approach is that the internal "structure" within the NUTS3 region is considered by analysing the population density at LAU1/2 level[270].

Throughout this chapter the classifications of rural areas use population data for a base year of 2001 (minor variations in some member states are inevitable).

The assessment of the pertinence of the OECD classification is, however, difficult, since there is no true reference against which it can be objectively compared. Nevertheless, three aspects may be discussed; the first relates to the use of NUTS 3 as a framework, the second concerns conceptual implications of the classification procedure, and the third relates to the determination of thresholds in the criteria.

9.3.1 *Territorial breakdown: Use of NUTS3 regions and their consequences for developing a consistent typology*

Comparable territorial units are a basic requirement, not only for the task of delimiting or classifying rural areas, but also for the subsequent typology work[271]. Within an EU context the availability of harmonised socio-economic statistics means that the NUTS3 level is the only practicable territorial structure for the typology task, and this has dictated the same choice for the delimitation exercise.

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[267] OECD (1994) Creating Rural Indicators for Shaping Territorial Policy
OECD (1996) Rural Employment Indicators, Paris

[268] BRYDEN, J.; COPUS, A: Rural Development Indicators. PAIS Final Report, commissioned by Eurostat, Luxembourg 2004

[269] e.g. ESPON studies. Available at www.espon.lu

[270] Other binary approaches using LAU as a basic territorial entity are the Eurostat "Degree of Urbanisation" or a recent test of DG AGRI combining population density and land cover data (% of artificial land).

[271] COPUS, A. (1996): A Rural Development Typology of European NUTS III Regions. Air Project CT94-1545: Impact of Public Institutions on Lagging Rural and Coastal Regions, Working Paper 14

However, there are two specific properties of the territorial units (NUTS and LAU regions) which have a significant impact on the result[272]. As already mentioned above, EU administrative units differ considerably in size and number, not only at NUTS2 or 3 level, but also at commune level (LAU1/2). Examples of different sized NUTS3 and LAU 1/2 are given in Figure 9.1.

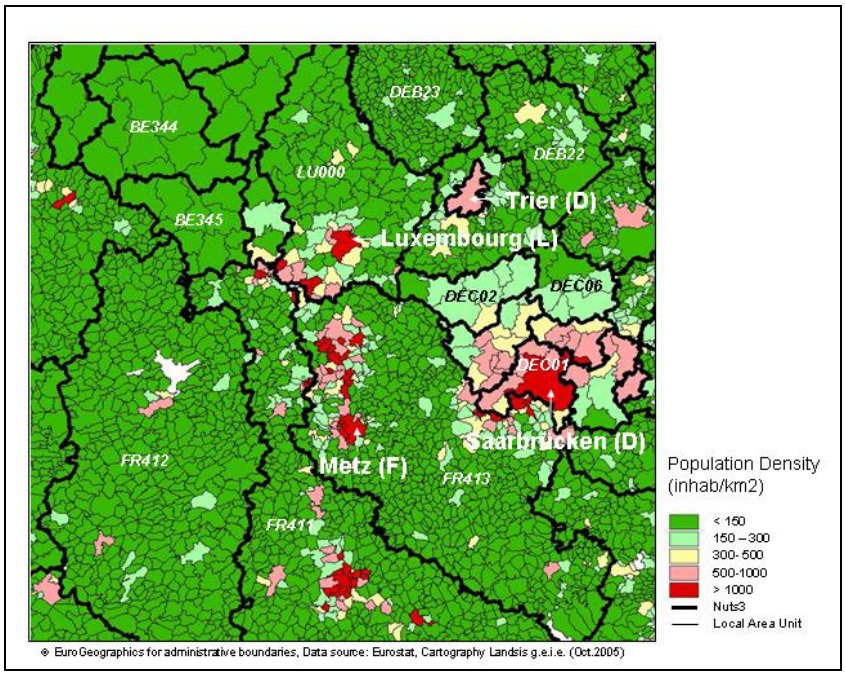

Figure 9.1: Different sized NUTS3 and LAU1/2 regions in FR, L, DE and BE

- ***Heterogeneity of Territorial Units***

Clearly, where the territorial units are larger, there is a greater likelihood of heterogeneity in terms of rurality. The extent of the variation in terms of territorial subdivision is revealed by a comparison of France (population 59 million, approximately 36,000 communes, average commune population 1,600) and Sweden (population 9 million, 289 communes, average commune population 35,000). In general, "finer grained" territorial units allow a clearer distinction of rural and urban areas. The variation between the member states means that a standard classification procedure will necessarily be a compromise and will work better in some member states than others.

- ***Treatment of Cities***

A second way in which the NUTS territorial framework varies between member states is the way in which free-standing cities are treated. In Germany for example, most cities larger than 100,000 inhabitants form separate NUTS3 regions (the so-called "Kreisfreie Städte"). In general, these NUTS3 regions coincide quite well with the built-up area (urban agglomeration). The surrounding rural "hinterland" forms another NUTS3 region which is characterised by lower population density. In this case urban and rural regions can, of course, be distinguished easily by their population density. On the other hand, in functional terms, the distinction is rather artificial, since the two NUTS 3 regions are likely, in reality, to form a single economic region or labour market.

[272] GALLEGO, F.J. (2005): Mapping rural/urban areas from population density grids. Available at: http://www.ec-gis.org/document.cfm?id=504&db=document

However, this clear urban-rural differentiation cannot be found in all Member States. In contrast to the Germany administrative breakdown, in France, Spain, Poland, the UK, and particularly in Sweden, urban agglomerations tend to be embedded within a single, but larger, NUTS3 region. These are probably closer to "functional regions" in economic or labour market terms, but they are very difficult to classify in terms of rurality. They generally contain both substantial cities and extensive rural hinterlands, and, at the NUTS 3 level, the urban–rural distinction becomes "blurred". These mixed regions tend to end up in the SR category, alongside regions which are more uniformly intermediate in population density.

One possibility for obtaining comparable territorial units would be to split larger NUTS3 regions into their urban and rural parts, using constituent commune boundaries. However, the problem with such a classification would be that very little socio-economic data would be available for the "part NUTS 3" regions, which would undermine the subsequent typology work.

9.3.2 *Underlying conceptual basis*

From a conceptual point of view, the OECD classification depends solely on population density to differentiate between rural and urban areas. However, the material presented in Chapters 2-8 has pointed to the existence of both centripetal (urbanisation) and centrifugal (counter-urbanisation) processes, which sometimes results in strong differentiation between rural regions, independently of their population density. Despite improvements in transport and travel networks, and advances in information technology, peripherality is still an important "independent variable" in explanations of regional patterns of economic performance[273]. It is therefore arguable that a peripherality indicator should play a role in defining the spatial framework within which typologies of labour market performance are developed[274]. This should allow the differences in performance between accessible rural regions and peripheral rural regions to be more clearly identified.

9.3.3 *Thresholds used*

The OECD typology uses a threshold of 150 inhabitants per km^2 to distinguish between urban and rural communes. Whether this threshold has a basis in empirical evidence is unclear. The same applies to the thresholds (in terms of the share of population living in rural communes) defining SR regions (>85%), PR regions (50-85%) and PU regions (<15%).

A specific question relating to the population density threshold for defining rural/urban communes is whether a rigid application of the criterion causes a degree of mis-classification where communes are unusually small. Thus, out of the 18,328 communes classified as urban (population density >150 inhabitants/km2), within the EU25+2 there are almost 13,000 communes in which the total number of inhabitants does not exceed 10,000. Although a detailed investigation would be preferable, it seems reasonable to assume that the majority of these should be in the rural category. Conversely, there are several communes which are coded as rural (according to the density criterion) but which have a relatively large number of inhabitants, and therefore may be assumed to contain an urban settlement. The introduction of a threshold defining the minimum number of inhabitants for an urban commune (independent of density) is one way to deal with these "aberrations".

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[273] Copus A K and Macleod M (2006 forthcoming) Taking a fresh look at peripherality, in Jones G and Leimgruber W, Marginality in the Twenty-first Century: Theory and Recent Trends, Ashgate, Aldershot.

[274] Unfortunately the project schedule set out in the terms of reference did not allow this, since the typology work took place before the definition and classification task was completed.

9.4 Development of a alternative definitions and delimitations of rural areas

The advantages of "backwards compatibility" (the facility to re-aggregate classes in a new typology in order to reconstruct the original OECD typology, for comparative purposes) are a strong argument for using the existing typology as a starting point. Before describing the options for enhancing the OECD classification it is perhaps worth stating the two main "desiderata" for a good rural-urban classification, in the context of rural policy design:
(i) *Simplicity*; it should be transparent even for non-experts. Thus the number of classes should be relatively small, and they should be defined in a simple way.
(ii) *Interpretability*; bearing in mind the subsequent use of the classification as a framework for typologies of performance, it is desirable that the classification criteria should be considered likely (*a priori*) to distinguish between leading and lagging regions, (without actually involving performance indicators themselves).

Of the many possible options to improve the OECD typology, to give improved urban-rural differentiation, consideration of the three issues noted above suggests three possibilities to be explored in a practical, empirical way:

- **Option 1:** Integration of the peripherality indicator to the OECD classification
- **Option 2:** Minor adjustments to the implementation of the population density criterion, together with the integration of the peripherality indicator
- **Option 3:** Development of an alternative classification scheme relating to population characteristics, plus integration of the peripherality indicator.

9.4.1 *Option 1: Combination of OECD approach and the Peripherality Index*

The first and least complicated option to enhance the OECD classification is to broaden its scope by adding to the population density criterion, the index of peripherality (chapter 8) as a means of subdividing the rural NUTS 3 regions into "accessible" and "peripheral" sub-categories.

Table 9.1 shows the descriptive statistics for the peripherality index, by OECD urban- rural category. It shows (unsurprisingly) that, (on average), PU regions are more accessible than SR regions, and that these are in turn on average more accessible than the PR group.

Table 9.1: Category Summaries: Peripherality index

OECD regional category	Number of NUTS3 regions	Mean	Std. Deviation
Predominantly urban	405	143.0	42.7
Significantly rural	436	102.1	44.3
Predominantly rural	439	71.9	41.5

Note: Excluding overseas NUTS 3 regions

However, as was demonstrated in Chapter 8, and confirmed by the standard deviations shown in Table 9.1, there is considerable variation in accessibility between regions within the three OECD types, and this therefore provides a simple but effective means of increasing the discrimination of the OECD typology. Introducing a second criterion based on the European average of the peripherality index (= 100), allows the SR and PR to be subdivided into peripheral and accessible categories (Table 9.2).

Table 9.2: Designation of rural areas: Option 1 - Combining OECD types and peripherality index

Criterion 1:			Criterion 2:			
Population density (OECD approach)		**Code**	**Peripherality**	**Code**	**Final category**	**Final code**
<15% in rural communes	Predominantly urban	PU	N/A	N/A	Predominantly urban	PU
15-85% in rural communes	Significantly rural	SR	>100	A	Significantly rural – accessible	SRA
			<100	P	Significantly rural – peripheral	SRP
>85% in rural communes	Predominantly rural	PR	<100	A	Predominantly rural – accessiblel	PRA
			>100	P	Predominantly rural – peripheral	PRP

The result of the classification approach is displayed in Map 9.1. The main difference between this classification and the original OECD scheme is that the accessible rural regions (both SR and PR) of the BENELUX countries, Germany, northern and eastern France, England, northern Italy, and the regions close to the Nordic and Iberian capital cities, together with some Mediterranean coastal regions, are clearly distinguished from the less accessible rural regions elsewhere. This would seem to be a useful additional "dimension" of discrimination, which might be expected to allow the impacts of urbanisation and counter-urbanisation processes to be highlighted more clearly than is the case with the original OECD classification.

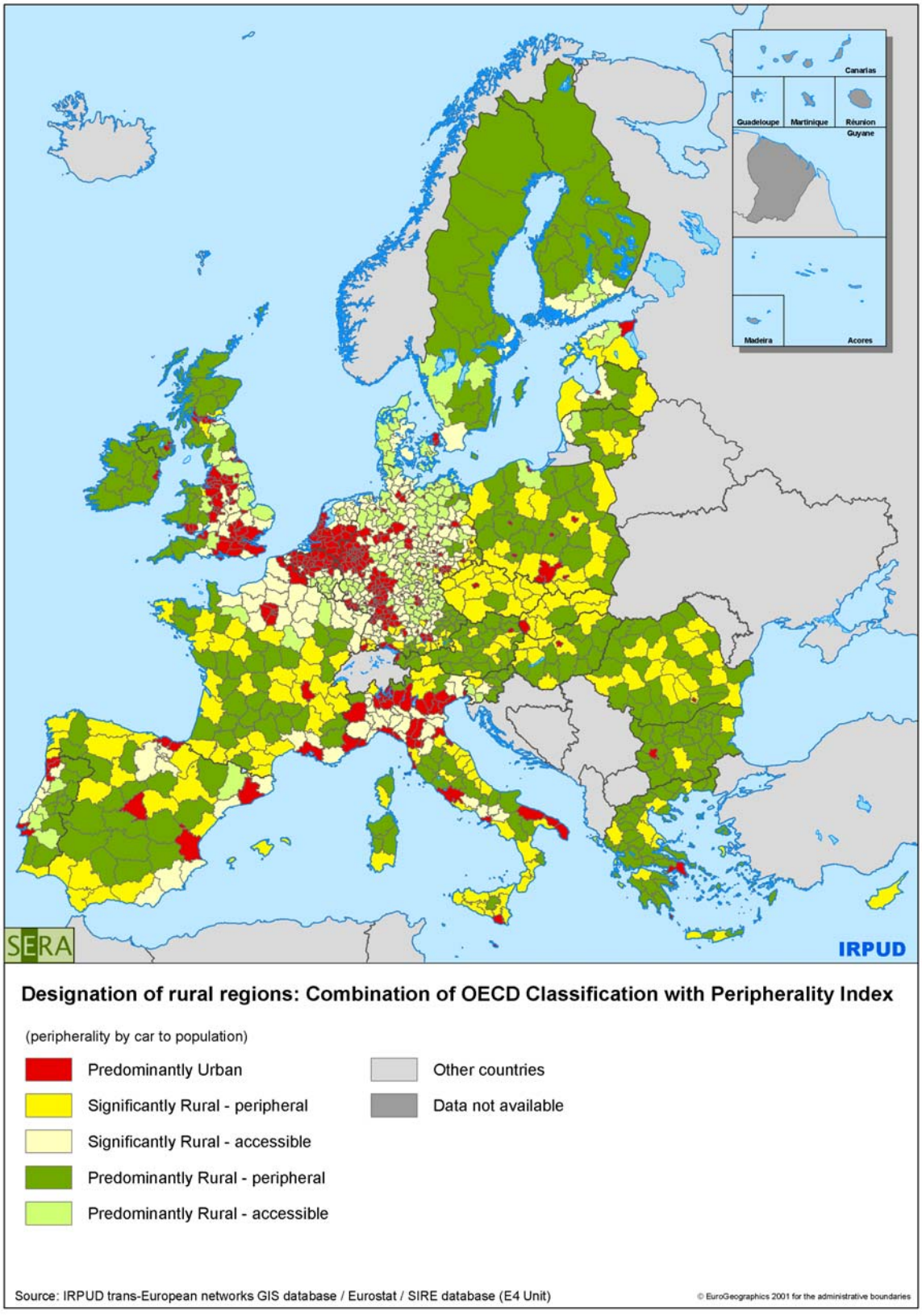
Some basic statistics, showing the differences between the four rural types of Option 1 are given in Table 9.3. According to this classification, accessible SR (SRA) regions account for 13% of EU area, but 15% of EU population, peripheral SR (SRP) regions for 22% of area and 21% of population. The area/population shares are rather different in the PR zone, where PRA regions account for 8% of area but only 4% of population, whilst the PRP regions account for almost half the area of the EU (49%) but only 18% of its population[275]. The distribution of area and population result in a steady decline in population density from SRA at 163 per km2 down to 54 in the PRP.

Table 9.3: Some key statistical figures by modified rural-urban area category (option1)

Code	**Category**	**Number of NUTS 3 regions**	**Area share* (%)**	**Total population**		**Population density* (Inh/km2)**	**Peripherality Index (Mean)**
				('Mio)	**(%)**		
PU	Predominantly urban	405	7.9	201.559	41.7	1215.8	143.1
SRA	Significantly rural – accessible	223	12.9	71. 231	14.7	163.1	137.7
SRP	Significantly rural – peripheral	213	22.4	103.243	21.4	127.9	64.9
PRA	Predominantly rural – accessible	102	8.0	20.837	4.3	79.7	132.6
PRP	Predominantly –rural - peripheral	337	48.7	86.564	17.9	54.4	53.4

Note: No data for BG, RO, LV

[275] Area and population shares by member state are given in Appendix 9.



Map 9.1: Designation of rural areas based on the combination of the OECD classification and peripherality index

9.4.2 *Option 2:*

Option 2 follows the same general principles as Option 1. The main difference is that the procedure used to classify the communes as urban or rural has been slightly modified. In Option 2 only communes with a total population of >10,000 have been designated as urban. As explained above the threshold is intended to deal with the anomaly that many communes with high population density but a small number of inhabitants are (according to the OECD procedure) classified as urban. The threshold of 10,000 inhabitants is commonly used as a threshold for defining urban settlements in several EU member states[276].

The assignment of a NUTS3 region to either predominantly urban, significantly rural or predominantly rural remains the same, ie:

- **Predominantly rural:** > 50% of the population lives in rural communes
- **Significantly rural:** 15 to 50% of the population lives in rural communes.
- **Predominantly urban:** less than 15% of the population lives in rural communes.

In order to distinguish them from the original OECD categories in the tables which follow, the abbreviations PU, SR and PR have a * as a suffix.

As the tables and maps below show, the introduction of a minimum threshold of 10,000 for urban communes (population density >150 and minimum inhabitants of 10,000) has a significant impact. Table 9.4 shows a simple cross tabulation - in the diagonal the number and the percentage of unchanged NUTS3 regions are displayed. In the other table cells the number of NUTS3 regions are listed which are changed regarding their "rurality". According to the table, there are a considerable number of communes which are no longer termed urban, but rural (for example 82 (25%) of the former urban areas are now assigned to the significantly rural category). Altogether, roughly one third of OECD urban (PU) regions are re-classified as rural (SR* or PR*). In addition, more than half of the OECD SR regions are shifted into the PR* group.

Table 9.4: Cross tabulation of the original OECD classification with updated classification procedure (N° of NUTS 3 Regions)

Category and code		modified OECD PU*	modified OECD SR*	modified OECD PR*	Total
original OECD PU	N°	215	82	26	323
	%	*67%*	*25%*	*8%*	
original OECD SR	N°		178	216	394
	%		*45%*	*55%*	
original OECD PR	N°			345	353
	%			*100%*	
Total	N°	215	260	587	1070

Note: no data for UK, SK, RO, BG, CY

At the same time, under Option 2 the share of population living in rural NUTS 3 regions (SR* and PR*) increases from the 60% of the OECD classification to 72% (Table 9.5). The share of the EU population living in the PR* regions almost doubles (compared with the original PR), from 21% to 40%.

[276] Bengs C *et al* 2004 o.c.

Table 9.5: Comparison of area and population share by original and modified OECD classification

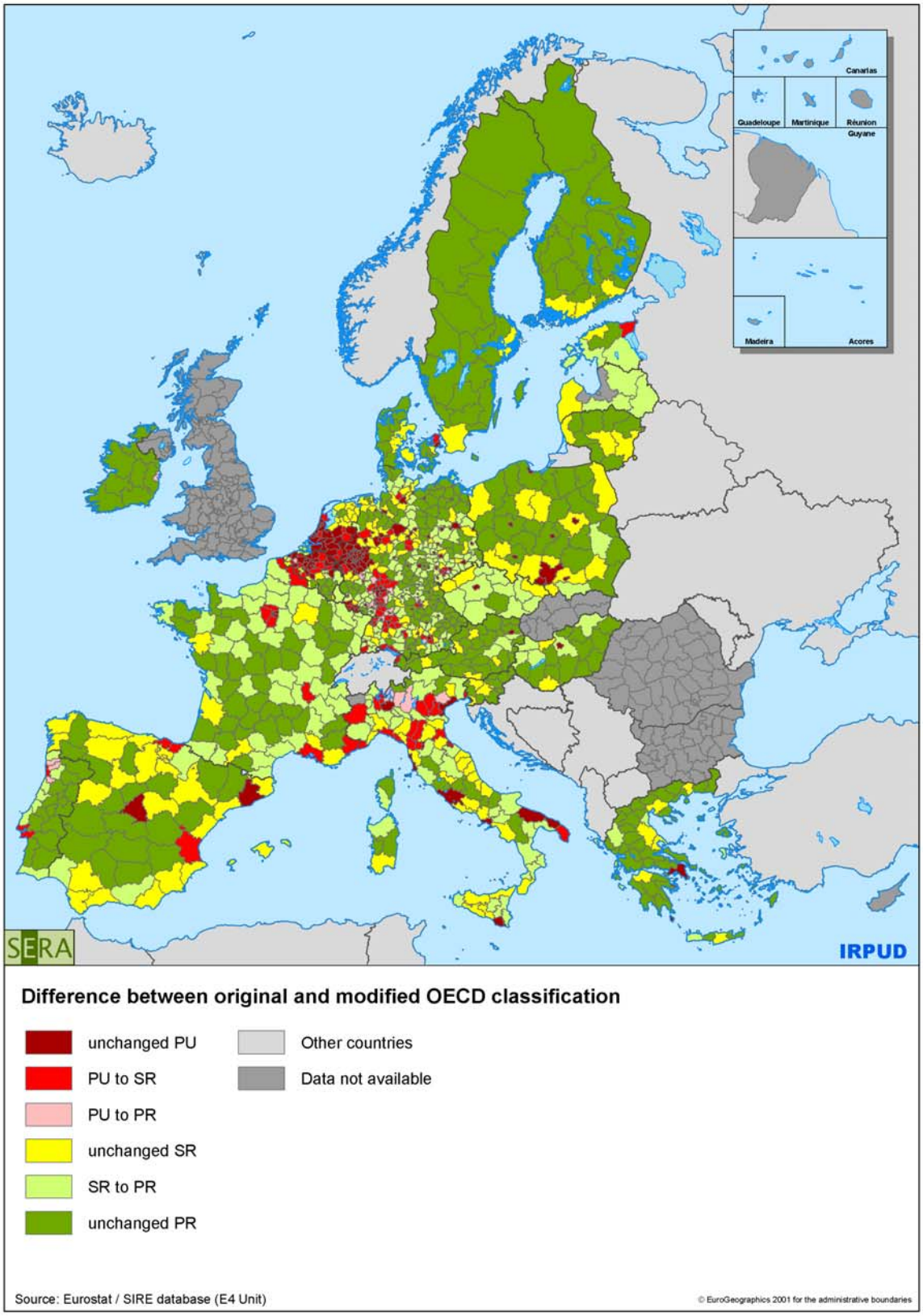
Modified OECD classification			Original OECD classification		
Code	**Population (%)**	**Area Share (%)**	**Code**	**Population (%)**	**Area Share (%)**
PU*	27.6%	3.4%	**PU**	40.3%	7.2%
SR*	32.4%	21.9%	**SR**	38.9%	36.1%
PR*	40.0%	74.6%	**PR**	20.8%	56.6%
Total	100.0%	100.0%	**Total**	100.0%	100.0%

Map 9.2 displays in spatial terms the differences between the original OECD classification and modified version. The member states most affected are France and Czech Republic, where a considerable share of the national territory moves from significantly to predominantly rural. In France this is the consequence of the numerous very small communes (low number of inhabitants, small in size, but high population density). In the original OECD classification, the relevant NUTS 3 regions are considered as urban since population density exceeds 150 inhabitants and the sum accounts for more than 15% of the region's population. In the modified version, these communes are considered as rural, since they have less than 10,000 inhabitants.

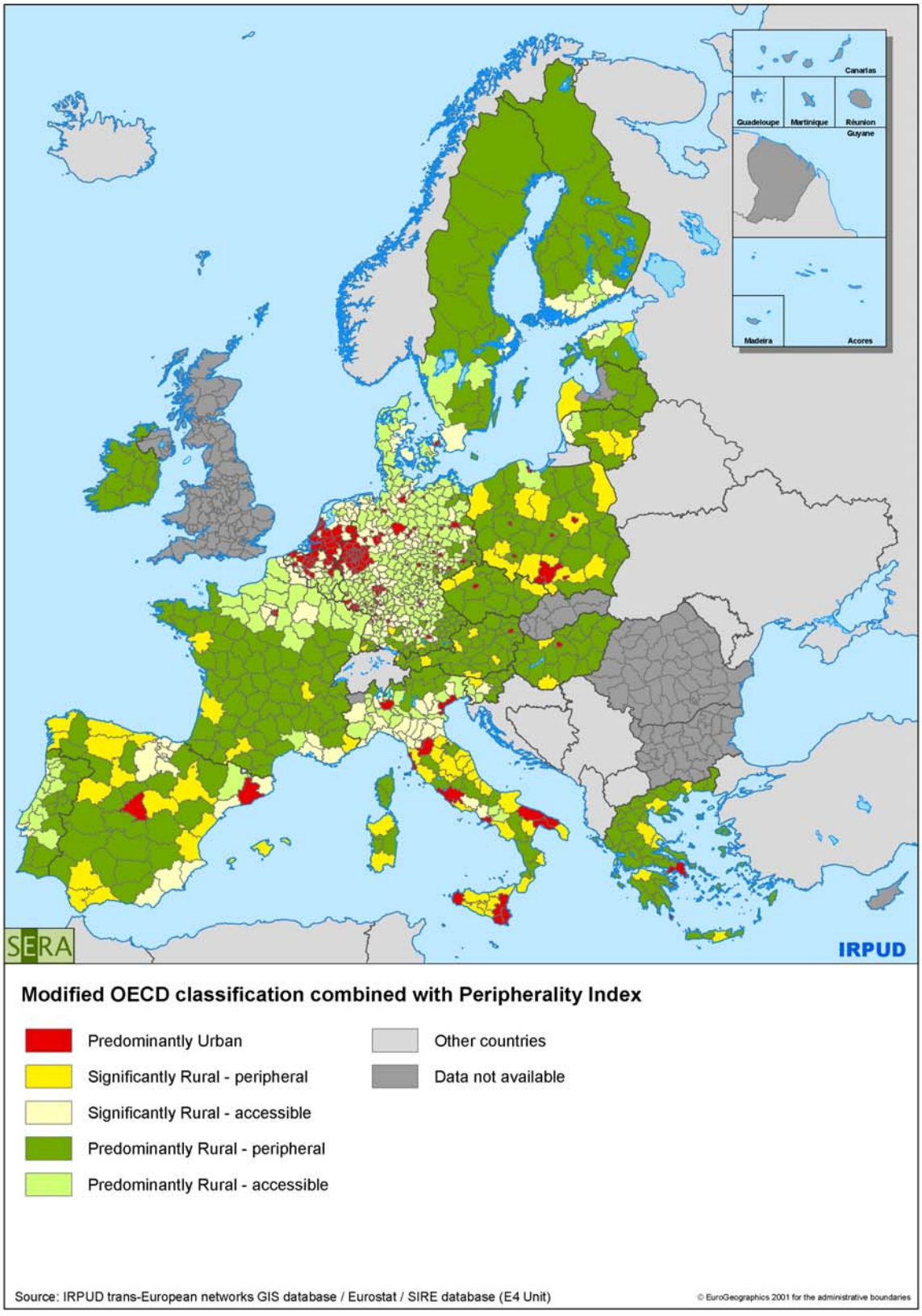
In a second stage of classification, (as in Option 1) the three area categories of this modified OECD classification have been further disaggregated using the peripherality index. Table 9.6 shows the corresponding classification scheme, which divides the two rural classes into accessible and peripheral groups. Map 9.3 gives an overview of the spatial pattern of the 5 different area types defined by Option 2.

Table 9.6: Designation of rural areas: Classification scheme of Option 2: modified OECD categories and peripherality index

Criteria 1:		**Criteria 2:**		**Final category/code**	
Population density (modified OECD approach)		**Peripherality Index**			
<15% in rural communes	Predominantly urban	N/A	N/A	PU*	Predominantly urban
15-50% in rural communes	Significantly rural	> 100	Accessible	SRA*	Significantly rural – accessible
		< 100	Peripheral	SRP*	Significantly rural – peripheral
>50% in rural communes	Predominantly rural	> 100	Accessible	PRA*	Predominantly – accessible rural
		< 100	Peripheral	PRP*	Predominantly rural – peripheral



Map 9.2: Difference between original and modified OECD classification



Map 9.3: Modified OECD classification combined with Peripherality Index (Option 2)

The corresponding statistics by country can be found in Appendix 9 Table A9.3. As already mentioned above, the modification of the OECD classification scheme is linked to a strong shift of the NUTS3 regions towards the "rural". This fact is also displayed in Table 9.7. Fewer people live in the predominantly urban areas as compared to the OECD classification, and Option 1. Population density (at NUTS3 level) is higher in all categories (compared with Option 1) as a result of the shift of regions from PU to the rural classes and from SR to PR.

Table 9.7: Key Characteristics of categories defined according to option 2

OPTION2 Category	Code	N° of NUTS3 Regions	Population share (%)	Area share (%)	Population density (inhab/km2)
Predominantly urban	PU*	218	27.7	3.4	1390.9
Significantly rural – accessible	SRA*	174	17.8	9.3	270.2
Significantly rural – peripheral	SRP*	89	14.7	12.7	152.9
Predominantly – accessible rural	PRA*	247	13.9	14.5	130.5
Predominantly– peripheral rural	PRP*	337	26.0	60.1	74.1
Total			100	100	

9.4.3 *Option 3:*

Option 3 involves the development of an alternative approach to the classification of communes (the first step in the OECD classification). It adopts a procedure which diverges more substantially from the original OECD methodology in order to address concerns relating to the heterogeneity of the SR category, which tends to incorporate both regions which are fairly evenly (and moderately) densely populated, and regions which have both medium-sized cities/towns and sparsely populated communes.

While the OECD approach takes the **share of population** living either in rural or urban communes into consideration, an alternative procedure, which focuses on the **area share** of rural and urban communes within the NUTS3 regions is tested here. The area share of rural and urban areas tries to introduce a spatial composition into the classification procedure.

The following methodology has been applied:

1. In the first step each commune has been classified as rural, intermediate or urban on the basis of population density thresholds (Table 9.8). The threshold for sparsely populated communes is the same as the OECD "rural", while the one for densely populated communes has been taken from Eurostats rural – urban classification used in the labour force survey. Then for each NUTS 3 region, the percentage of area associated with each commune category has been calculated.

Table 9.8: Classification of communes based on population density

Population density	Description
<150 inhabitants/km2	sparsely populated commune
>150-500 inhabitants/km2	Intermediate
>500 inhabitants/km2	densely populated commune

2. The share of total regional area accounted for by densely populated communes is taken as the first criterion for classifying NUTS 3 regions into four categories, from "Deep Rural", to "Mainly Urban". Between these two extremes are two intermediate categories, distinguished by the degree of "urban influence" (Table 9.9).
3. A second criterion (but relating to the same four categories) is the maximum commune population size within the NUTS 3 region. This allows rural regions with a significant urban centre to be distinguished from those which are more homogenously rural.

Table 9.9: Definition of NUTS3 types based on the area share of sparsely/densely populated communes and maximum commune population

Regional category	Area share of densely populated communes (>500 inhabitants/km2)		Maximum inhabitants
Deep rural	0%	or	No commune exceeding 50.000 inhabitants
Intermediate areas with a limited urban influence	1 - 10%		No commune exceeding 100.000 inhabitants
Intermediate areas with a significant urban influence	1%-20%		Including communes larger than 100.000 inhabitants
Mainly urban	20%		Including a commune with at least 500.000 inhabitants

The exact thresholds used in conjunction with both criteria have been arrived at through an iterative "trial and error" process in which the objective was to arrive at a classification which was transparent, and which resulted in a meaningful pattern when mapped[277].

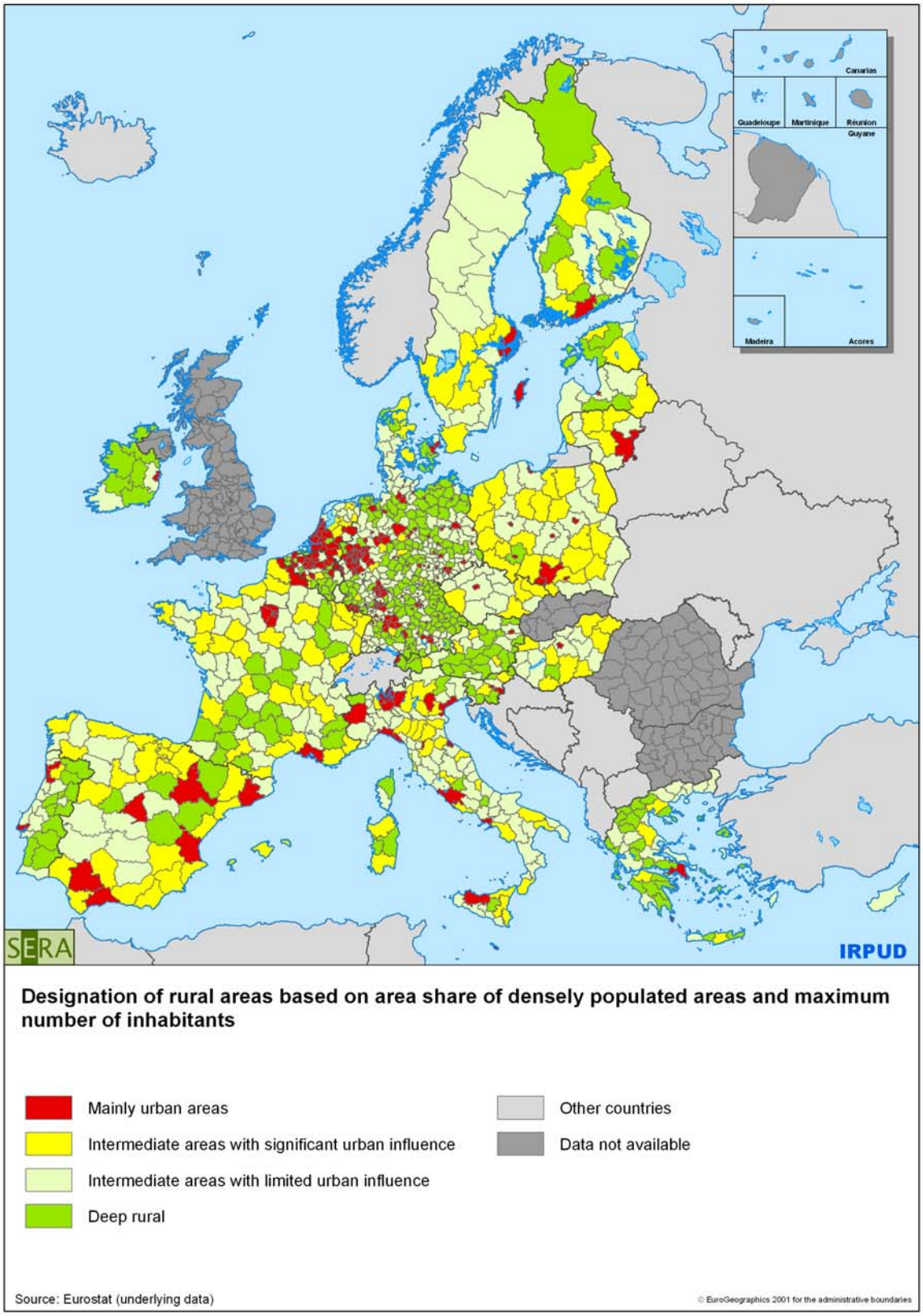
The definition of the four area categories is strongly dependent on the third step (maximum number of inhabitants per commune) and thus reflects the influence of urban agglomerations within the NUTS regions. The results, covering a large part of the EU territory (excluding UK, SK, BG, RO, due to gaps in the commune data) are displayed in Map 9.4. Some key statistics, displaying significant differences are summarised in Table 9.10.

Table 9.10: Comparison of the original OECD classification with designation of rural areas based on Option3

		Mainly urban	Intermediate areas (significant urban influence)	Intermediate areas (limited urban influence)	Deep Rural areas	Total
original OECD PU	N°	248	15	47	11	321
	%	*95%*	*9%*	*12%*	*4%*	
original OECD SR	N°	10	116	200	68	394
	%	*4%*	*72%*	*52%*	*26%*	
original OECD PR	N°	2	31	134	187	354
	%	*1%*	*19%*	*35%*	*70%*	
Total	N°	260	162	381	266	1069

Note: No data for UK, SK, BG, and RO

277 Of course this cannot be defined objectively (any more than the original OECD classification can) but it at least serves to illustrate the potential of the procedure.



Map 9.4: Rural Urban Classification of NUTS3 regions based on the area share of densely and sparsely populated communes

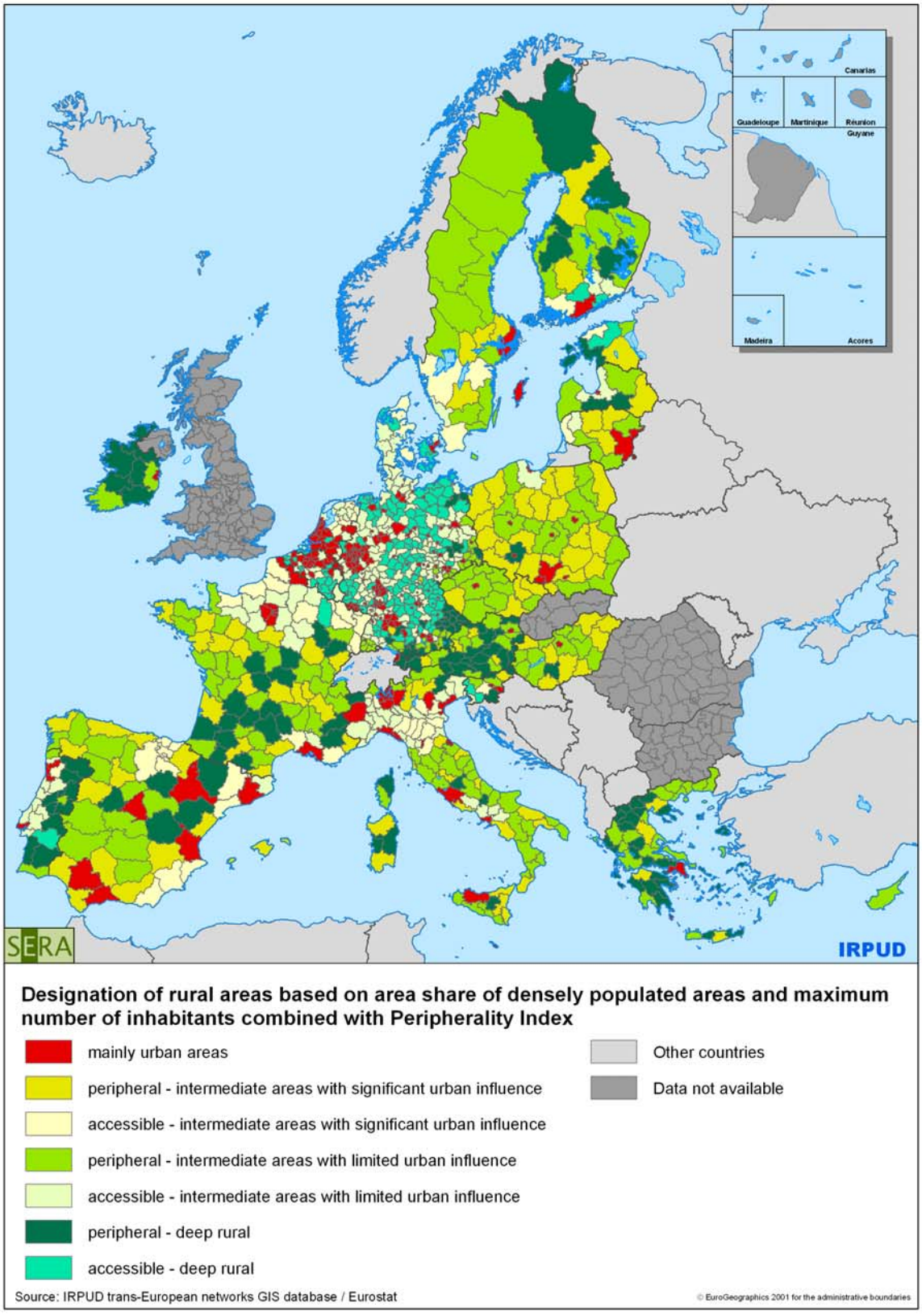
Although the classification scheme of Option 3 is conceptually different to the one defined by OECD (area share versus population density) thus making direct comparisons difficult, Table 9.10 shows that the final results are broadly similar. For instance, 95% of the first, mainly urban, category regions were originally classified as PU, almost three quarters of the intermediate (significant urban influence), and over half of the intermediate (limited urban influence) were previously SR. 70% of Deep Rural regions were previously classified as PR.

However, some interesting differences are also evident. For example, some 47 regions formerly classified as PU are found in the Intermediate (limited urban influence) category of Option 3. One of the largest shifts is that of 134 PR regions into the Intermediate (limited rural influence) category.

Table 9.11: Option 3: final classification scheme

Category	Peripherality	Sub- categories	Code
Deep rural	< 100	Deep rural - peripheral	DRP
	> 100	Deep rural accessible	DRA
Intermediate areas -limited urban influence	< 100	Intermediate areas limited urban influence - peripheral	ILP
	> 100	Intermediate areas limited urban influence - accessible	ILA
Intermediate areas - significant urban influence	< 100	Intermediate areas significant urban influence - peripheral	ISP
	> 100	Intermediate areas significant urban influence - accessible	ISA
Mainly urban	**N/A**	Mainly urban areas	MU

Map 9.5 shows the final Option 3 classification including the sub-categories defined by the Peripherality index (the scheme shown in Table 9.11). Both Map 9.4 and show quite complex patterns. To some extent it seems that the objective of Option 3 (to discriminate better between different sorts of “intermediate” regions) has been realised. This is perhaps more clearly seen in Map 9.4, where the patchwork of the two intermediate types (in France, Spain and Italy for example) accords quite well with expectations. However, in other parts of the map the results seem to be unduly affected by the configuration of NUTS 3 regions. For instance, the classification of the rural areas in Germany as Accessible Deep Rural seems counter-intuitive. This seems to be a consequence of the separation of urban and rural areas into different NUTS 3 regions and can be seen as a particular weakness of the Option 3 classification scheme.



Map 9.5: Rural Urban Classification of NUTS3 regions based on the area share of densely and sparsely populated communes combined with Peripherality Index (Option 3)

9.4.4 *Discussion: The alternative classifications as a context for Rural Policy development*

It is evident from the above presentation that the heterogeneity (in terms of size and configuration) of NUTS 3 regions, is a significant obstacle to progress in the search for better procedures for defining and classifying rural regions. It is also beyond the control of the statistician. However, since at present no alternative territorial units are available, pragmatic approaches must be adopted.

Any assessment of the four alternative classifications as spatial frameworks for rural policy development must accept the absence of any objective "benchmarks" as a limitation. Furthermore, as noted in the introduction to this chapter, any assessment depends to some extent on the specific demands of the policy context. Nevertheless it is worthwhile summarising some general "pros and cons" associated with the original OECD classification, and the three options described above. These fall into two groups, the first relating to ease of use and conceptual "rigour", the second (more specific to the focus of this report) reflecting on the relative ability of the classifications to discriminate between different kinds of labour market conditions.

Ease of use and conceptual rigour:

- All three options incorporate the peripherality index, thus discriminating between accessible and peripheral rural regions. The patterns identified in the earlier chapters of this report suggest that this is particularly useful in the context of rural labour markets.
- Option 1 presents a straightforward and least radical solution, being a simple extension of the already well established and simple to understand OECD classification. This option has full "backward compatibility" with the original OECD classification.
- Option 2 addresses an anomaly in the definition of rural/urban communes. This results in a significant increase in the number of regions classified as rural. A modification of the threshold for classifying the NUTS regions may be appropriate, to compensate for this effect.
- Option 3 is a completely new approach (minimal backwards compatibility) which is an attempt to address the issue of poor discrimination between intermediate regions with dispersed medium density population patterns, and regions with a more heterogeneous distribution and a "nucleated" settlement pattern. The resulting classification is more detailed, more complex, but difficult to interpret. The requisite data is not yet available in some EU member states, and the methodology seems to be more vulnerable to the effects of heterogeneity in the configuration of NUTS 3 regions.

Power of discrimination

If we assume that different degrees of rurality are associated with different socio-economic characteristics, then one test of the validity of the classifications is to measure the degree of variance (in terms of key indicators) between the categories. In order to achieve this an analysis of variance (anova) was performed between each pair of rural-urban categories (eg PU-SR, PU-PR, SR-PR) using six key labour market indicators.

Table 9.12 shows the results of the anova analysis for the OECD classification. The notation is simple, a "+" indicates that there was a statistically significant difference between the pair of categories (eg PU-SR) in terms of the average of the indicator named in the left-hand column. A "-" indicates that the average indicator for the two categories were not significantly different. It can be seen that the predominantly urban areas seem to have a distinctive employment pattern compared to the rural

areas. In the PU-SR column four of the six indicators show a significant difference. The exceptions are the female activity rate, and long term unemployment rate. In the PU-PR column all the indicators show a significant difference except the female activity rate.

Table 9.12: Significance of between category-differences of OECD classification

OECD categoryification	PU - SR	PU - PR	SR – PR
% tot econ activ	+	+	-
% econ active male	+	+	-
% econ active female	-	-	-
% unemploment	+	+	-
% unemployed<25	+	+	-
% long term unemployed	-	+	+

"+" significant difference between categories , "-" no significant difference between categories

Note: all data 2001

A comparison of the two rural categories shows a very different picture; only the long term unemployment shows a significant difference. Thus the analysis indicates that the original OECD classification does not discriminate very well between different sorts of rural area in terms of labour market characteristics. It was an awareness of this, arrived at through the review presented in the early chapters of this report, which prompted the experiments with a peripherality criterion, through Options 1-3.

Table 9.13 shows the results of the anova analysis for the Option 1 classification. The two extremes in terms of discrimination are as follows:

- The following pairs of categories show the best discrimination:
  - PU/SRP, PU/PRP, SRA/SRP, SRA/PRP
- The following pairs of categories show the weakest discrimination:
- PU/SRA, PU/PRA, SRA/PRA, SRP/PRP

Broadly speaking this suggests that the strongest differences in terms of the key labour market indicators are between the urban and accessible rural categories on the one hand, and the peripheral rural categories on the other. The smallest differences are observed between the urban and accessible rural categories, and between the two accessible rural categories, and between the two peripheral rural categories. This seems to confirm the view that degree of peripherality has a stronger impact upon labour market characteristics than the degree of rurality does, and that the Option 1 classification is therefore an improvement upon the original OECD classification for use in the context of developing policies for rural labour markets.

Table 9.13 shows significant differences in 35 out of a total of 60 combinations of category and indicator.

Table 9.13: Significance of between-category differences of Option 1 classification

Option 1 Categories	PU/ SRA	PU/ SRP	PU/ PRA	PU/ PRP	SRA/ SRP	SRA/ PRA	SRA/ PRP	SRP/ PRA	SRP/ PRP	PRA/ PRP
% tot econ activ	-	+	+	+	+	-	-	-	-	-
% econ active male	-	+	-	+	+	-	+	+	-	+
% econ active female	-	-	-	+	-	-	+	-	+	-
% unemploment	-	+	+	+	+	+	+	+	-	+
% unemployed<25	-	+	-	+	+	-	+	+	-	+
% long term unemployed	-	+	+	+	+	+	+	+	+	+

"+" significant difference between categories , "-" no significant difference between categories

Note: all data 2001

Table 9.14 show the results of the anova analysis for the Option 2 classification. The conclusions are similar. Again there is evidence of clear differences between PU regions and peripheral rural regions (both SR and PR), and between the accessible and peripheral parts of the SR and PR. The weakest differentiation is still between the PU and the accessible rural areas. The only way in which Option 2 appears to differ from Option 1 is that there is greater discrimination between the SRP and the PRP. There is no obvious explanation for this.

Table 9.14 show significant differences in 37 out of a total of 60 combinations of category and indicator.

Table 9.14: Significance of between-category differences of Option 2 classification

Option 2 Categories	PU/ SRA	PU/ SRP	PU/ PRA	PU/ PRP	SRA/ SRP	SRA/ PRA	SRA/ PRP	SRP/ PRA	SRP/ PRP	PRA/ PRP
% tot econ activ	-	+	-	+	+	+	+	+	+	-
% econ active male	-	+	-	+	+	-	+	-	+	+
% econ active female	-	-	-	+	-	-	-	-	+	+
% unemploment	-	+	+	+	+	-	-	-	+	+
% unemployed<25	-	+	-	+	+	-	+	-	+	+
% long term unemployed	-	+	+	+	+	+	+	+	+	+

"+" significant difference between categories , "-" no significant difference between categories

Note: all data 2001

Compared to option 1 or 2, the results of the variance analysis of Option 3 do not generally provide such clear differentiation. Part of the explanation may lie in the separation of urban and rural parts of functional economic regions in countries where NUTS 3 regions are relatively small, and configured as they are in, for instance, Germany (see above). Full details of the results of the variance analysis for Option 3 are too large to be included here, but can be found in the Appendix 9.

- ***Some Final Thoughts on Rural–Urban Classifications***

Of the three options for enhancing the OECD classification, Option 1 seems to provide the best combination of simplicity, clarity, backwards compatibility, and power of discrimination in terms of labour market indicators. Option 2 has similar qualities, but the loss of backwards compatibility, and slight loss of discrimination is perhaps too high a price to pay for the conceptual advantages of

addressing the "anomaly" in the definition of rural communes. Option 3 has the strongest conceptual basis, but is weakened by gaps in the required commune-level data, and the complexity of the resulting patterns, which are not easy to interpret. Furthermore, the fact that the two intermediate categories tend to cut across economic functional regions undermines its discrimination power. However, because it has a strong rationale this classification has potential for further development, particularly as the commune level data is improving all the time.

9.5 Typology of Rural NUTS 3 Regions

9.5.1 *Aim of the rural typology, in contrast to delimitation*

In one sense the characterisation of the rural areas in terms of a typology, which is the second task, is more straightforward. However, it is also of paramount importance, since it has a synthesising role, reflecting (in empirical terms) the findings in relation to rural labour market performance, presented in Chapters 2 and 3.

Since the intention of the project sponsor is to use the typologies created within the framework of the project as an analytical tool in a policy development context, preference was given to the disaggregative approach, because the entire classification process provides the necessary transparency. The following typologies have been created:

- A demographic typology, presented at the end of Chapter 2
- An economic activity typology (combining total economic activity rate, female activity rate, youth employment rate
- An unemployment typology (combining total unemployment, youth unemployment and long term unemployment)
- A "simple" employment typology (combination of total activity rate and unemployment), which is presented at the end of Chapter 3
- a typology crossing the employment and the demographic typologies.

9.5.2 *Employment related typologies*

The following key variables have been identified as candidates for establishing employment related typologies:

- Total Economic Activity Rate (%)
- Female Economic Activity Rate (%)
- Share of Economic Active Population <25 years (%)
- Unemployment Rate (%)
- Youth Unemployment (%)
- Long Term Unemployment (%)

A simple binary classification has been chosen for grouping the variables in order to keep the number of resulting classes small. Binary classification means, that for each variable just two classes are defined, which, in this case, means above and below average.

Two separate classifications covering the employment issue have been prepared: one linked to economic activity (reflecting rates of participation) and a second related to unemployment (reflecting the economic performance of the local economy).

9.5.3 *Typology based on economic activity rates*

In Table 9.15 the classification scheme is shown. As class thresholds, the average values over all NUTS3 regions have been used. In the calculation of the average, no distinction between the OECD rural and urban areas has been made so far. So the typology covers the entire EU27 territory.

Table 9.15: Classification scheme Economic Activity

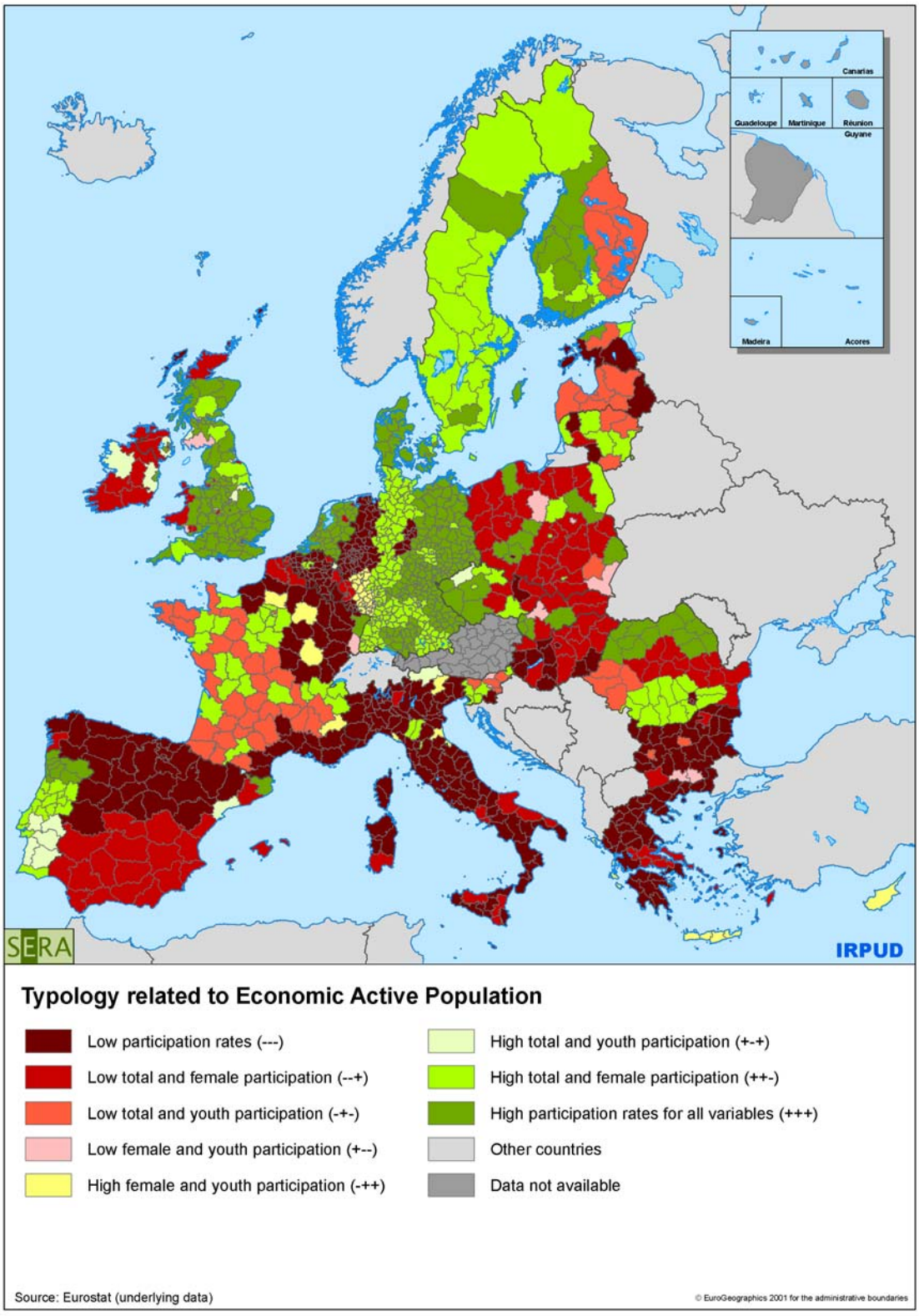
Total Economic Activity Rate (age 16+)		**Female Economic Activity Rate (%)**		**Share of Economic Active Population <25 years**		**Typology code**
Criteria	Class	Criteria	Class	Criteria	Class	
<70.4	1	< 62.4	1	< 12.3	1	111
				> 12.3	2	112
		> 62.4	2	< 12.3	1	121
				> 12.3	2	122
>70.4	2	< 62.4	1	< 12.3	1	211
				> 12.3	2	212
		> 62.4	2	< 12.3	1	221
				> 12.3	2	222

If a consensus is reached regarding the delimitation of rural and urban (see section 9.4), in the future a specific focus could be put at rural areas by discarding the urban regions and taking thresholds only from rural regions. This would allow a more focused view of the specific rural character, instead of a balanced view of all NUTS 3 regions, irrespective of their designation as rural or urban.

Table 9.16: Summary statistics from the eight classes distinguished:

Criteria	**Types**		**Total Economic Activity Rate (age 16+)**	**Female Economic Activity Rate (%)**	**Share of Economic Active Population <25 years**
Low participation rates (---)	111 347 regions (28%)	Mean	64.24	53.7	10.26
		Std.	4.8	6.8	1.27
Low total and female participation (--+)	112 144 regions (12%)	Mean	63.4	53.1	14.6
		Std.	6.5	8.1	2.36
Low total and youth participation (-+-)	121 59 regions (5%)	Mean	68.1	64.5	10.44
		Std.	1.74	1.6	0.9
Low female and youth participation (+--)	211 48 regions (4%)	Mean	71.5	60.7	10.9
		Std.	1.15	1.6	1.1
High female and youth participation (-++)	122 15 regions (1%)	Mean	66.17	64.3	15.1
		Std.	11.7	2.2	2.56
High total and youth participation (+-+)	212 18 regions (1%)	Mean	72.0	60.7	15.2
		Std.	1.0	1.3	2.67
High total and female participation (++-)	221 252 regions (20%)	Mean	74.7	67.8	10.8
		Std.	3.9	4.8	0.869
High participation rates for all variables (+++)	222 366 regions (29%)	Mean	76.3	69.8	14.37
		Std.	3.5	4.01	1.89

The classification result shows a coherent spatial pattern of the employment indicators throughout EU25+2 (Map 9.6). The employment situation in the regions coloured green can be considered as positive while those coloured in red are characterised by a relatively negative situation.



Map 9.6: Typology related to Economic Active Population (EAR= Economic Activity Rate)

Taking the EU average for all three indicators, high rates of participation can be found in Germany, the UK, Sweden and large parts of Finland. There is a clear N-S gradient in Portugal. France shows a heterogeneous pattern: While northern and western France as well as the regions along the

Mediterranean coastline have generally low rates of participation, the rest of France is a patchwork of positive and negative employment situation. Ireland, Spain, Italy, Greece and most of the New Member States show employment figures below the EU average.

9.5.4 *Unemployment typology*

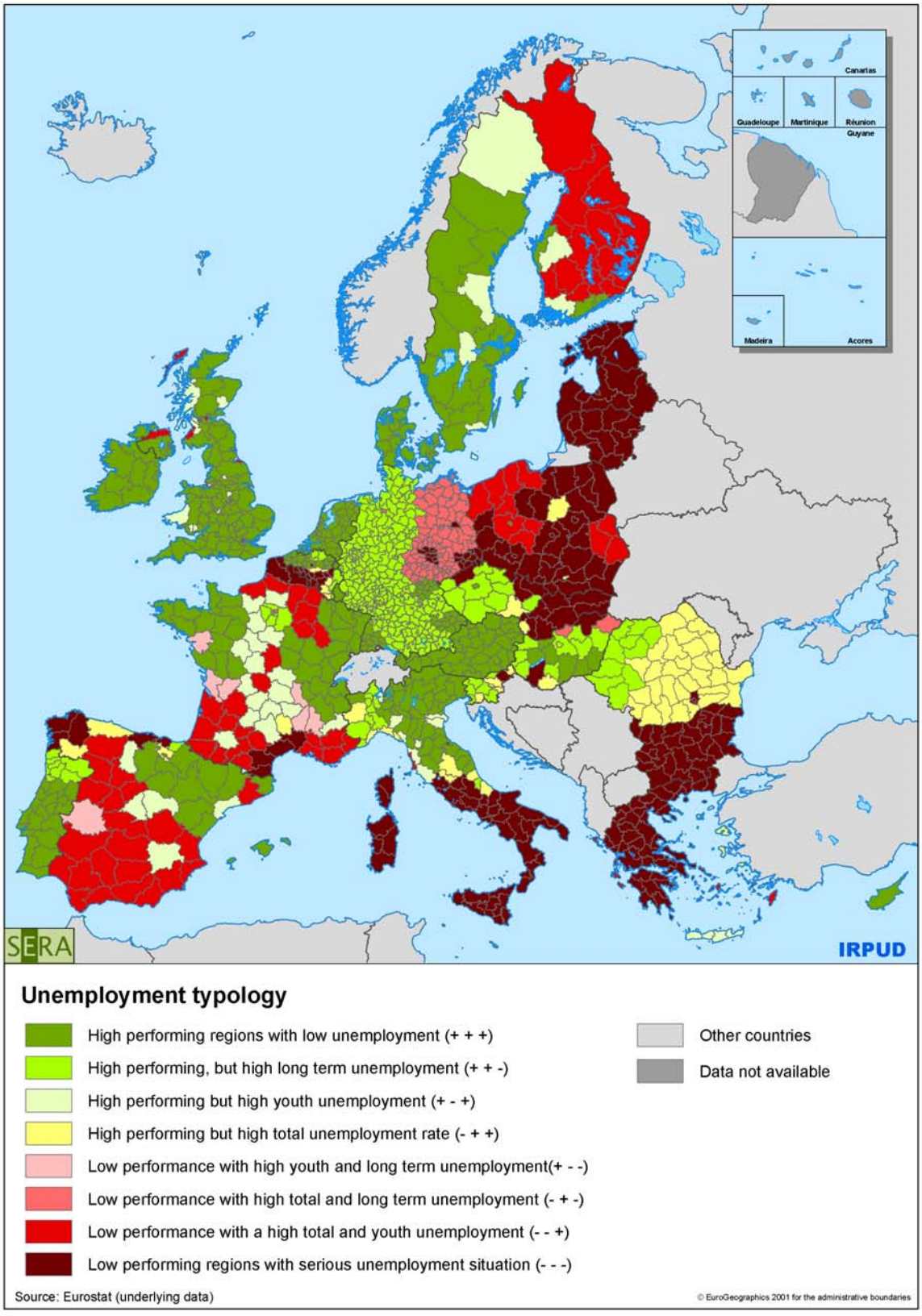
The same procedure has been applied to data on unemployment rates. Here too the average values for each variable over all NUTS 3 regions have been taken (Table 9.17, Table 9.18).

Table 9.17: Classification scheme: Unemployment

Unemployment rate		**Share of youth unemployment <25y**		**Share of long-term unemployment**		
Criteria	Class	Criteria	Class	Criteria	Class	combined
<8.4	1	<15.7	1	<42	1	111
				>42	2	112
		>15.7	2	<42	1	121
				>42	2	122
>8.4	2	<15.7	1	<42	1	211
				>42	2	212
		>15.7	2	<42	1	221
				>42	2	222

Table 9.18: Summary class statistics of the unemployment typology

Types			**Unemployment rate (2001)**	**Share of youth unemployment <25y**	**Share of long-term unemployment**
High performing regions with low unemployment (+ + +)	393 regions (31%) 111	Mean	4.3	9.1	28.0
		Std.	1.6	3.8	7.5
High performing, but high long term unemployment (+ + -)	355 regions (28%) 112	Mean	5.2	7.4	47.6
		Std.	1.3	3.0	3.9
High performing but high youth unemployment (+ - +)	60 regions (5%) 121	Mean	6.8	19.4	31.2
		Std.	1.1	3.0	6.7
High performing but high total unemployment rate (- + +)	7 regions (0.5%) 211	Mean	9.1	14.6	30.0
		Std.	0.61	0.75	1.8
Low performance with high youth and long term unemployment(+ - -)	61 regions (5%) 122	Mean	6.7	20.4	49.8
		Std.	1.06	3.4	4.9
Low performance with high total and long term unemployment (- + -)	100 regions (8%) 212	Mean	16.0	12.9	51.9
		Std.	2.5	1.2	5.5
Low performance with a high total and youth unemployment (- - +)	90 regions (7%) 221	Mean	12.5	26.5	33.3
		Std.	4.6	8.5	6.6
Low performing regions with serious unemployment situation- - -	218 regions (17%) 222	Mean	16.5	35.6	58.0
		Std.	6.0	12.6	7.8
All regions		Mean	8.4	15.7	41.9



Map 9.7: Typology related to Unemployment

Map 9.7 summarises unemployment patterns across the EU25+2, through the results of the above typology. The worst situation (all three indicators above average) can be found in southern Italy, Greece, large parts of Poland and the Baltic Countries. Finland, central and southern Spain, southern and northern France can also be assigned to this group, although long term unemployment is lower here. High long-term unemployment rates are typical of Romania and East Germany.

More positive unemployment characteristics are found in the UK, Sweden, BENELUX, Germany, Austria, northern Italy, Hungary, Czech Republic and Portugal. The central part of France is a special case, characterised by a high youth unemployment rate, although all other indicators show unemployment rates below the EU mean.

9.5.5 *Simple employment typology, combining economic activity rates with unemployment*

In order to explore the relationship between the economic activity rate and unemployment at a regional level, both issues have been combined in a "simple" employment typology. The typology is presented at the end of Chapter 3, and it is only necessary here to provide a brief methodological note.

Compared to the approach applied so far, the methodological approach has been slightly modified:

- Instead of using all six variables, only two basic variables have been used: total economic activity rate and unemployment rate.
- By using 0.5 standard deviation as a threshold (average ± 0.5 std), data has been grouped into three classes (3 classes per variable and 9 combined classes).
- Unemployment data have been indexed by considering the national average (set to 100) in order to enhance comparability between Member States.

9.5.6 *Combined typology on employment and demography*

In order to provide a single indication of labour market performance, the employment typology (Chapter 3) and the demographic typology (Chapter 2), have been combined.

In a first stage, the demographic typology (6 classes) was cross tabulated with the "simple" employment typology (7 classes), resulting in 42 different classes. In order to reduce the number of classes, these were aggregated, with the aim of allocating a reasonable number of regions into a reasonable number of final groups. The 42 original classes have been reduced to 9 final groups of regions, each with a distinctive combination of demographic and economic characteristics. The outcome of this stepwise aggregation procedure is displayed in Table 9.19.

Table 9.19: Classification scheme of employment and demography

Original types / Employment Typology / Demographic Typology		3. Low performance-low participation	5 Low Performing medium participation	7 Low performance-high participation	2. Intermediate	1 High performing - low participation	4 High performing - medium participation	6 High performing-high participation
		3	5	7	2	1	4	6
		1			**2**	**3**		
6: Double negative regions / 5: Declining regions with natural decrease	**1**	**11**			**12**	**13**		
4: Declining regions with in-migration / 2: Growth regions with out-migration	**2**	**21**			**22**	**23**		
3: Growth regions with natural decrease / 1: Double positive regions	**3**	**31**			**32**	**33**		

The original 6 demographic types have been aggregated to 3 main types, on the assumption that the total population change and net migration are the most relevant variables in relationship to employment issues. The employment typology (see Chapter 3) has been aggregated to 3 groups, in which the unemployment rate (performance) has been assumed to be of primary importance.

The combination of the 3 classes per theme resulted in 9 final classes, which are described in the remainder of this section.

Table 9.20: Key characteristics of the region types

Type	Description
11	low performance, out migration, decreasing population, aging population
21	low performance, in-migration but decreasing and aging population or low performance, out –migration, but increasing young population, positive population development
31	low performance, in-migration, “young population”, positive population development
12	Intermediate performance, out migration, decreasing population, aging population
22	Intermediate performance, in-migration, but decreasing and aging population or Intermediate performance , out –migration, but increasing young population, positive population development
32	Intermediate performance, in-migration, “young population”, positive population development
13	High performing, out migration, decreasing population, aging population
23	High performing, in-migration, but decreasing and aging population or out –migration, but increasing young population, positive population development
33	high performing, in-migration, “young population”, positive population development

Table 9.21 shows the cross-tabulation of the employment and demography typology and the corresponding number of regions in each of the 9 classes.

Table 9.21: Number of regions assigned to the employment-demography typology

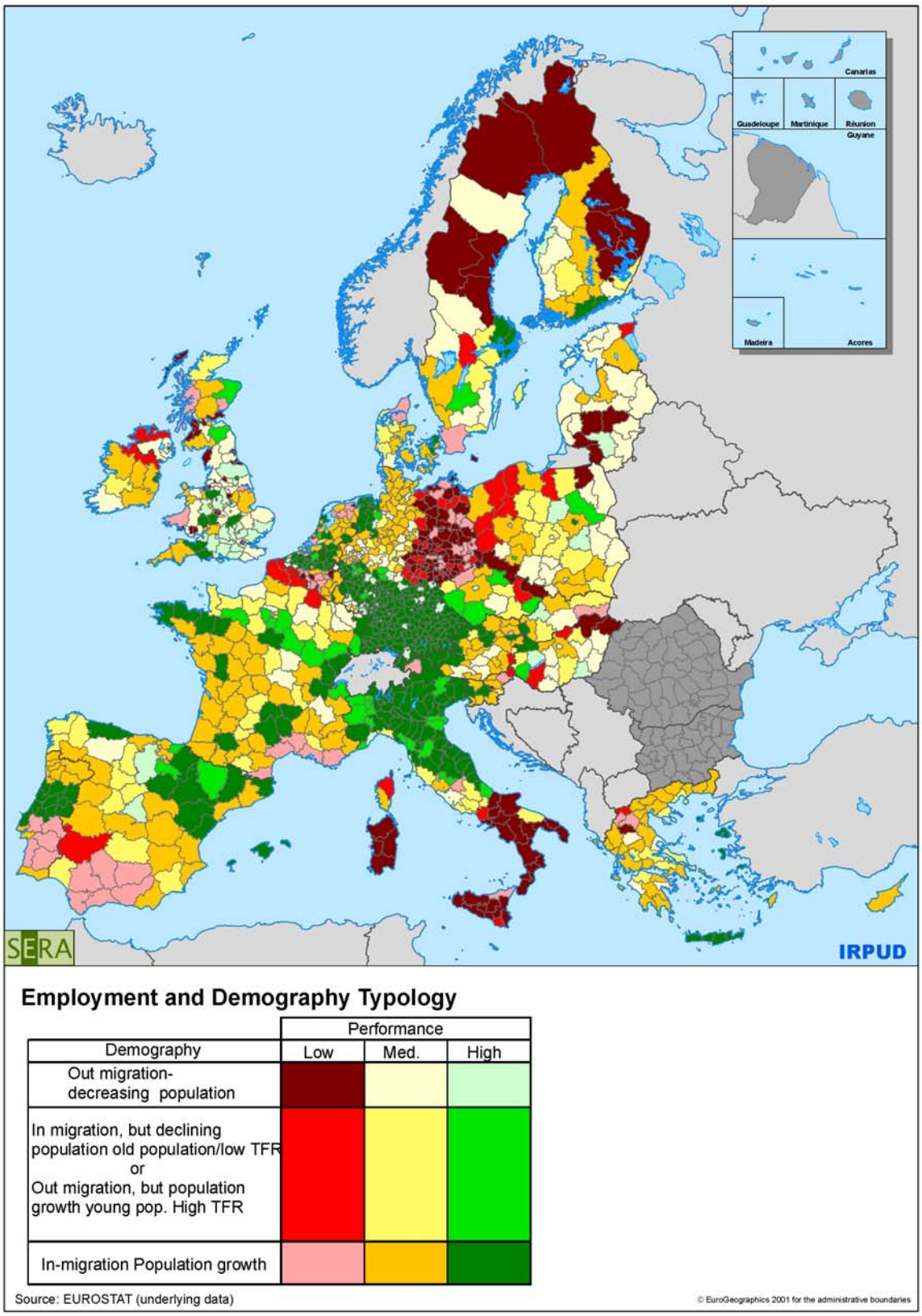
N° of Regions	Aggregated employment typology			
Aggregated demography typology	**1: low Performance**	**2: medium Performance**	**3: high performing**	**Total**
1: out- migration, decreasing population	155	134	75	364
2: in – migration, decreasing population or vice versa	47	99	51	197
3: in-migration, increasing population development	68	248	335	651
Total	270	481	461	1212

As can be seen from Table 9.21, there is a strong relationship between the low performing economy (high unemployment rates) and out-migration on the one hand, and high performing regions (low unemployment rate) and a sustainable demographic development (in-migration). Table 9.22 shows the type means for some key variables.

Table 9.22: Average values for different key indicators per region type of the combined economic-demographic typology

Region type	Unemployment rate 2001	Economic activity rate 2001	Natural population change 1999-2000 (% of pop.)	Net-migration 1999-2000 (%of pop)	Population Change 1990-2000 per year	Population Change 1990-1995 per year
11	15,2	69,1	-0,2	-1,1	-0,39	-0,33
21	16,1	68,6	-0,1	-,02	-0,24	-0,25
31	13,4	69,0	-0,04	0,82	0,05	0,06
12	8,1	70,5	-0,1	-0,8	-0,08	0,24
22	9,3	67,6	-0,1	0,03	0,096	0,19
32	7,3	69,8	0,05	0,6	0,46	0,53
13	4,6	74,1	-0,06	-0,7	0,35	0,59
23	5,2	69,6	-0,2	0,08	0,15	0,29
33	4,2	72,3	0,03	0,5	0,6	0,77
Total	**8,1**	**70,5**	**-0,05**	**0,05**	**0,2**	**0,36**

The spatial pattern of the employment and demographic characteristics is shown in Map 9.8. The most positive combination (33, dark green) is found in a band of regions stretching from N Italy through West Germany, to the BENELUX countries. Clusters of this type of region are also found in NE Spain, around Lyon, and Brittany. Isolated regions in this group are also found in England and Wales, around Stockholm, Helsinki, Vienna, Paris, and in the Balearics and the Greek Islands. The most negative type (11, brown) is found in southern Italy, Corsica, parts of Scotland, the New Lander, Northern Sweden and Finland, and scattered across the New Member States. The pattern between these two extreme groups is quite mixed, though type 32 (orange, medium employment performance, population growth and in-migration) seems to dominate in much of France, Spain, Denmark, and even in the New Member States. The low performance equivalent (type 31, pink) is common in southern Spain and along the Mediterranean coast of France. There is a scattering of rural regions in the type 22 group (yellow, medium performance, medium population growth). Type 21 regions (red, low performance but medium demographic characteristics) are found in the New Lander, north-east France, south west Spain, northern Greece, and north west Ireland. Many English regions are in type 13 (low unemployment but relatively poor demographic trends).



Map 9.8: Employment and demography typology

The broad geographical pattern presented by the typology generally accords with expectations. in many ways it confirms existing patterns of resource allocation for rural and regional development. However the fact that most of the New Member States are not in “low performance” groups is worth noting. Presumably this reflects the fact that unemployment rates are lower than might be expected, due to under-employment and the social-buffer function of semi-subsistence farming.

Table 9.23 shows the share of the region types within PR, SR and PU areas, which allows the identification of rural-urban patterns in relation to the 9 different region types defined. More than a third of all PU regions are in the most positive type (33). In the PR category, only 21% of regions exhibit such positive overall labour market conditions, whilst the SR category occupies an intermediate position, 28% of SR regions being in this group. At the other end of the scale the proportion of regions in the most negative type (11) is roughly the same in all three OECD urban-rural categories at 12-13%. Between these two extremes there is a rather mixed distribution of urban and rural regions. One interesting feature is the relatively large numbers of rural (PR and SR) regions in types with positive employment (ie low unemployment) characteristics (such as 31 and 32). It may well be that under-employment is not reflected in unemployment rates. Another pattern revealed by Table 9.23 is the relatively large number of rural regions assigned to types characterised by negative demographic characteristics (31, 21).

Table 9.23: Share of region types distinguished per OECD rural-urban typology

	Region Type (combined economic/demographic typology)									
	11	**12**	**13**	**21**	**22**	**23**	**31**	**32**	**33**	
performance	**-**	**-**	**-**	**0**	**0**	**0**	**+**	**+**	**+**	
demography	**-**	**0**	**+**	**-**	**0**	**+**	**-**	**0**	**+**	
% within OECD PU Code	13.3%	12.3%	10.3%	2.0%	5.3%	4.8%	3.0%	15.0%	34.1%	100.0%
% within OECD SR Code	12.4%	9.1%	4.8%	3.1%	7.9%	4.8%	7.4%	22.2%	28.2%	100.0%
% within OECD PR Code	12.9%	11.4%	3.6%	6.5%	11.6%	3.1%	5.7%	24.3%	20.9%	100.0%
N° of regions	155	134	75	47	99	51	68	248	335	1212
%	12.8%	11.1%	6.2%	3.9%	8.2%	4.2%	5.6%	20.5%	27.6%	100.0%

9.5.7 *Discussion and Conclusions*

The aim of the typology is to gain a spatial picture of the various aspects of the employment and demographic situation throughout Europe. For this purpose several typologies have been developed. By combining various key variables, the typology maps show in a spatially comprehensive but concise manner the regional specific characteristics throughout EU.

The approach adopted has been based on the assumption that there are major themes (“participation” and “performance” in employment, the components of population change in demography) which can be summarised by key indicators. The simple “multi-criteria” approach then allows regions to be grouped and characterised according to various simple “cross tabulations” in which the link with the original indicators is very clear, making interpretation as straightforward as possible. Thus the demographic typology not only allows regions of growth to be distinguished from those of decline, but enables those in which migration played a major role to be distinguished from those where age structure was affecting prospects via natural change. Clearly the rural policy responses in each of

these situations should take these characteristics into account. Similarly the “simple” employment typology allowed regions in which participation was low (usually because of low female activity rates) to be distinguished from those in which high unemployment was reflecting poor economic performance. Again, the policy implications are obvious. In the first type of region consideration should be given to measures relating to groups excluded from the workforce, whereas in the latter a more broad-based intervention to stimulate economic growth might take priority. Of course it is also clear that these issues are inter-related, and excessively “narrow” approaches are not being advocated here.

The final “integrated” typology is less useful in terms of “tailoring” rural development policy to local conditions. Instead it seeks to provide an overview of labour market situations, allowing those regions in which the most severe problems exist, to be identified on an objective, comparable basis (subject of course to the limitations of the raw data). Such an overview is useful background information to any discussion of geographical prioritisation and allocation of scarce resources for rural development.

Clearly there is much more that could be done to enhance and develop the typologies presented above. Sensitivity analysis should be carried out on the effect of different thresholds. Other rural development issues (beyond labour markets) could be explored. Perhaps most importantly, the typologies should be applied to rural regions only, excluding the urban regions. This would, of course pre-suppose a decision on how urban regions are defined, which takes us back to the discussion of the first half of this chapter. Nevertheless, the typologies presented above, and in Chapters 2 and 3, demonstrate the potential value of such approaches, and as more harmonised regional data becomes available, further work will begin to bring real benefits for policy design and resource allocation.

10 CASE STUDIES: IMPACT OF CAP REFORM/INTRODUCTION ON AGRICULTURAL EMPLOYMENT

10.1 Introduction and methodology

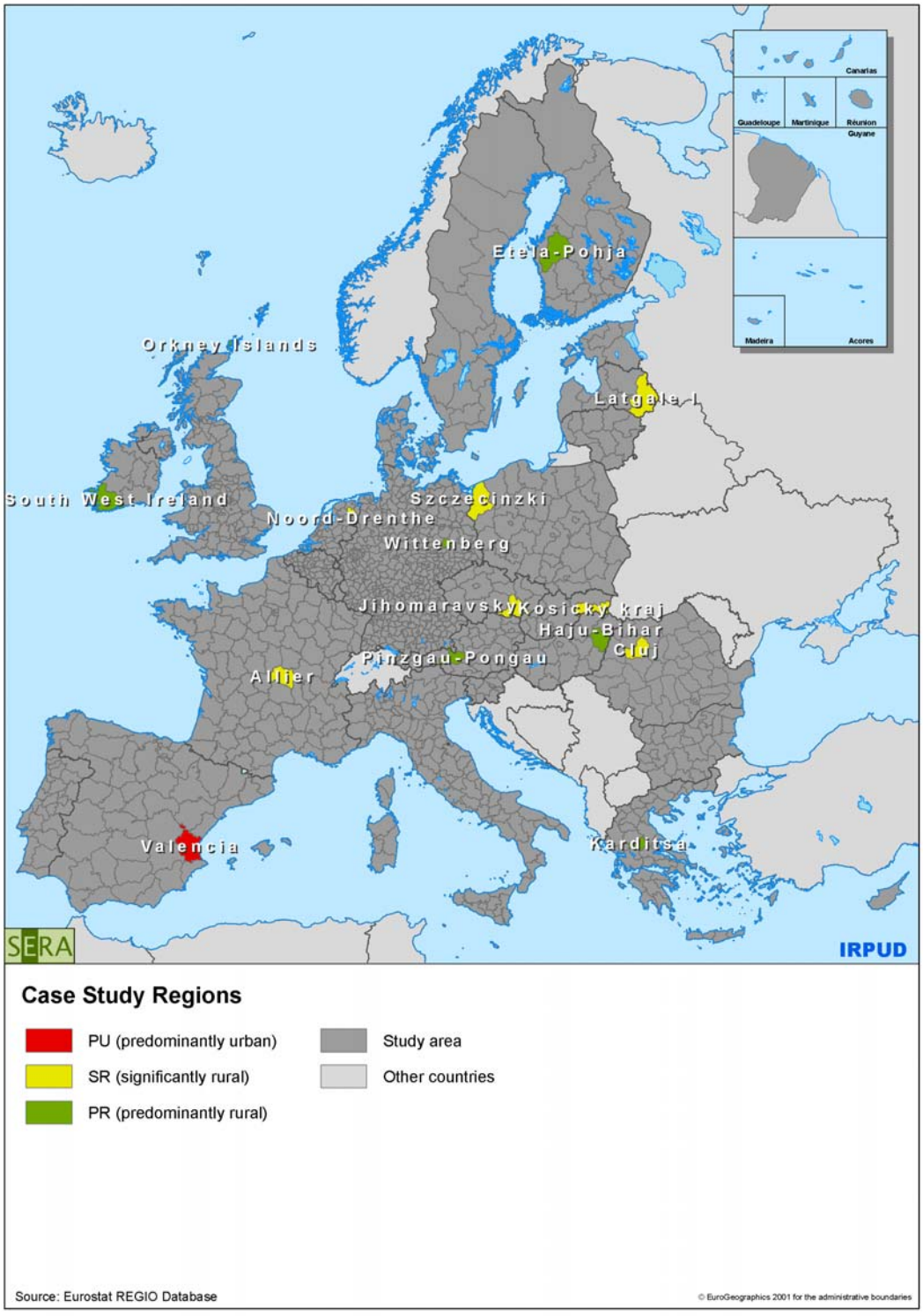
The objective of the case studies is to analyse the agricultural employment situation and its likely future development in 15 selected NUTS-3 regions. The analysis aims to foresee the rural employment effects of the 2003 CAP reforms (EU15 case studies) and the implementation of the CAP (NMS12 case studies). Case study regions have been selected to represent differences in remoteness, employment prospects, agricultural dependence, geography/agro-climatic conditions and CAP regime. One aim is to show where and why change might happen and hence to understand the processes of agricultural employment change for CAP policy design. It is hypothesised, however, that the general economic development of the case region is more important for the development of agricultural employment than agricultural policy. For the decision to stay in agriculture or to leave the sector the opportunity costs of those engaged in agriculture are decisive. However, CAP change or CAP introduction may be an important trigger alongside these wider economic factors.

By looking at 15 regions in more detail, the case studies supplement the analyses carried out in the other chapters of this study for the whole EU27 and its nearly 1,300 NUTS-3 regions. Map 10.1, Table 10.1 as well as Table 1 and 2 in Appendix 2 describe the NUTS-3 regions selected as case studies. The individual case region reports can be found in Appendix 2 as well as an exemplary copy of the questionnaire used in the survey part of the case study work. The conclusions from the two sets of case studies are presented and discussed below.

The methodology for the case studies is based around a background analysis of the region, trend employment scenarios and survey/research in the local area to assess how CAP reform/introduction may affect the scenario results.

In order to be able to assess the current situation of agricultural employment and its likely future development, the NUTS-3 regions selected as case studies are briefly described. Besides specific data on the agricultural labour force, general information on the region, conditions for farming, land use, husbandry and farm structure is provided. To be able to assess how representative the selected region is for the entire country, the regional data is compared with national data. The prevailing farming systems are briefly described focussing on those aspects which are affected by the implementation of the (reformed) CAP and which are likely drivers of change or pressure points. For some of the case study regions in the NMS there is a brief summary of how the transition processes in the 1990s changed agricultural labour input and the farm structure in the region. Based on available time series of agricultural employment on the regional/national level, trends are identified and extrapolated. These core agricultural employment figures for 2014 are then commented upon and adjusted by the expert analyses of CAP impacts which follow.

Map 10.1: The 15 case regions and their rural definition



Based on their expertise and interviews with 5 to 10 farmers and 4 other stakeholders (e.g. representatives of farmers associations, extension services, key spokesmen for downstream industries or regional employment/development agencies, as appropriate), the country experts have assessed the future development of agriculture and then of agricultural employment in the case study region. In the survey the enterprises of the interviewed farmers are described briefly, their reactions to CAP change/introduction are assessed, their view on how the wider industry may react is gathered

and the main determinants (driving forces) of change within different farm types are identified. An expert view of how farm systems may change, over a range of time horizons, has then been formulated. From this, labour impacts can be assessed. Given the limited resources available for the case studies, the interviewees cannot be representative of the whole region, but have been selected to provide a range of farm types, age and size. Most importantly interviewees with a broad view of the industry and the rural economy have been selected. The interviews were conducted in summer 2005.

Table 10.1: Agricultural employment in the EU15 and NMS12 case regions (Nuts 3) 2003

Case Region (Country)	Share of agriculture[1)] in employment in % (2002)	Share of agriculture[1)] in GVA in % (2001)	Labour input in AWU/100 ha UAA	Share of family labour force in regular labour force (AWU) in %	1. row: % of holdings < X ha and their share in UAA 2. row: % of holdings > Y ha and their share in UAA	% women in regular labour force (AWU)	Natural conditions and prevailing farming system
EU15 cases							
Pinzgau Pongau (Austria)	5.3	2.3	3.5[2)]	92.0[2)]	46.5<10 ha: 10.5 9.1>100 ha: 31.3	40.8	Alpine grassland, mostly cattle breeding
Wittenberg (Germany)	6.5	3.3	1.9	19.2[2)]	35.9<10 ha: 0.5 31.6>100 ha: 95.0	27.5	Heterogonous soils, field cropping and dairying
Valencia (Spain)	3.5	2.2	8.1	86.0	93.1<10 ha: 44.3 0.4>40 ha: 24.8[2)]	15.8	Mediterranean. coastal, citri-, fruit and olive trees, vineyards together > 75% of UAA
South Ostrobothnia (Finland)	16.5	9.8	4.0	92.0	18.8<10 ha: 3.6 22.0>40 ha: 50.3	33.8	Nordic climate, lowland, heterogeneous soils much livestock
Allier (France)	6.6	5.1	2.4[2)]	65.0	21.8 <10 ha: 1.6 [2)] 15.7 >100 ha: 42.9	28.5	Mixed mountain and valley farming; dairy,beef,sheep,40% of arable land under cereals
Noord-Drenthe (Netherlands)	5.9	3,6	2.0	88.0	21.8 <10 ha: 20.8 [2)] 5.5 > 100 ha: 5.5	23.6	Lowland area dominated by root crops (50% of arable land) and specialist dairy sector.
Karditsa (Greece)	52.9	22.2	15.0	99.5	85.7<10 ha: 53.1 3.0>20 ha: 16.8	32.1	Lowland with intensive irrigated agriculture (cotton 74% of arable land), mountainous areas
South West Ireland (Ireland)	7.7	2.8	3.2	96.0	16.2<10 ha: 2.3 5.4>100 ha: 21.8	18.0	Grassland farming system, dairying, beef cattle and sheep
Orkney Islands (UK)	16.7	15.7	2.2[3)]	77.8[2)]	41.8<10 ha: 3.1 10.3>100 ha: 60.3	31.0 [5)]	Grassland farming system, mainly intensive beef cattle
NMS12 cases							
Jihomoravsky (Czech Republic)	4.8	3.6	6.3	28.0	80.3<10 ha: 2.2 5.5>100 ha: 89.2	32.4	Low mountain range and lowlands, intensive arable farming, some horti-/viticulture
Latgale (Lativa)	22.3	8.6	10.8	93.3	73.8<10 ha: 38.0 0.4>100 ha: 9.5	51.5	Lowlands, much grassland and uncultivated area, arable farming
Hajdú-Bihar (Hungary)	9.2	7.2	7.8	78.5	93.3<10 ha: 18.1 0.6>100 ha: 51.7	36.4	Heterogeneous soils, mainly arable farming and vegetables
Szczecinski (Poland)	13.0	3.2	13.3[3) 4)]	97.2[3)]	66.2<10 ha: 14.1[2)] 1.9>100 ha: 37.1	n. a.	Lowland, mostly arable farming
Kosický Kraj (Slovakia)	4.6	4.2	4.6	53.1	94.2<10 ha: 2.0 2.9>100 ha: 94.3	34.7	Mountainous, mixed arable farming and livestock
Cluj (Romania)	28.8 [a)]	11.4 [a)]	76.8[2)5)b)]	93.2[5)]	92.4<10 ha: 49.5 0.1>100 ha: 44.3	46.0	Upland and river plains, mixed arable farming and extensive livestock

Note: [1)] Agriculture, hunting, forestry and fishing [2)] Administrative unit NUTS 2 [3)] Only individual holdings [4)] Poland [5)] Persons.

Source: Eurostat Regio Database (2005), [a)] Yearly Statistic Breviary Cluj (2004) [b)] Rom. Stat. Yearbook (2004).

Based on these findings, impacts on the overall employment situation as a result of CAP reform or introduction are qualitatively assessed and discussed in the individual reports and the overall conclusions below. These have been split into EU15 and NMS12 sections. This reflects the greatly differing recent structural developments in the two groups and the differences between reform of an existing CAP structure and introduction to the CAP for the first time. Overall conclusions from the two sets of case studies are pulled together in the final section of this chapter.

10.2 Results of the EU15 case studies

10.2.1 *Description of the regions*

The 9 case study regions cover the full range of EU *natural conditions*. The maritime fringe of NW Europe is represented by *Orkney* and *South West Ireland* with rainfall exceeding 1,000 mm per annum, mild winters and average summer temperatures no higher than 18 degrees centigrade. *South Ostrobothnia* in Finland represents Scandinavian conditions with an intense 160 day growing period and hard winters. Continental European upland and alpine conditions are represented by the *Allier* region of the Massif Central and the *Pinzgau-Pongau* region of Austria. The mix of arid and irrigated Mediterranean production is represented by *Karditsa* in Greece and *Valencia* in Spain while *Noord-Drenthe* in the Netherlands and *Wittenberg* in Germany cover the conditions of the North European plain. This coverage provides the full range of CAP supported and unsupported farm enterprises and also represents the same enterprise in different conditions e.g. grazing dairy systems in *South West Ireland*, fodder based systems in Finland and large corporate dairy systems in *Wittenberg*.

The *socio-economic* features of these regions are also diverse and contrasting. For example *Orkney* and *Karditsa* are similar in their high agricultural dependence (16% and 22% of GVA respectively) and low GDP per head, but while *Karditsa* has 13.4% unemployment and 52.9% employment in agriculture, the figures for *Orkney* are 4% and 17%. In contrast to both these areas, *South West Ireland* has a GDP per capita well above the Irish and EU average, low unemployment and only 8% of employment in agriculture. Population density and trends also vary greatly. *Noord Drenthe* is a rural area in Dutch terms, but at 174 inhabitants/km^2 has more than ten times the population density of *South Ostrobothnia*. And like the *Valencia* case region (207 inhabitants/km^2) it is heavily influenced by local urban centres. In *South West Ireland* there has been a 25% growth in population since the 1970s reversing a century of decline, while there has been emigration from *Wittenberg* and *Allier* due to a lack of job opportunities. In *Noord Drenthe* population growth is being driven by the city of Assen while in *Pinzgau Pongau* the population is growing at 3.6% per annum, despite there being no towns exceeding 11,000 people.

Farm structures range from an average farm size of 4.86 ha (in 3,8 parcels on average) in *Karditsa* to 199 ha in *Wittenberg*. 95% of the UAA in *Wittenberg*, 62% in *Allier* and 60% in *Orkney* are on holdings of over 100 ha. Physical area may not reflect economic importance or intensity; for example in terms of people each 5 ha holding in *Karditsa* involves almost 2 agricultural workers while each *Orkney* holding of roughly 50 ha involves just over 1 worker. Other than in *Wittenberg*, family farms dominate and part time farming is increasing everywhere. However, the pattern is not uniform; 87% of farm holders in *Karditsa* are registered as full time.

Farming systems vary in line with the agro-climatic conditions. In *South West Ireland* and *Orkney,* systems revolve around maximising the use of grazed grass to produce meat or milk. In these countries beef breeding cows and sheep are significant sectors and stocking rates (the census

numbers of all classes of livestock, converted using standard weightings, into cow equivalents (1 cow = 1 Livestock Unit) and then divided by the total hectares of Utilised Agricultural Area) are significantly higher than in the other case regions (even those such as *Pinzgau-Pongau* which are dominated by livestock). In *Allier* the system is more mixed with a higher proportion of cereals, but also beef and dairy cattle. *South Ostrobothnia* also has mixed systems heavily reliant on conserved grass for dairy cows and related beef enterprises. *Wittenberg* is dominated by cereal production in large units, many of which also have a livestock enterprise such as dairying or pigs. *Noord Drenthe* is unusual in that almost 50% of the arable area is in potatoes and sugar beet, but with some farms dedicated to dairy production. *Karditsa* similarly is dominated by one type of crop; cotton – which occupies 74% of the arable land. However, the mountainous area of *Karditsa* has more mixed systems and arid pastures grazed by cattle, sheep and goats. *Valencia* is dominated by intensive irrigated citrus and fruit trees (50% of the arable area) plus rice and vegetable production on the plain and more traditional olive, vineyard and cereal production in the hills with extensive sheep grazing in the mountains and inland valleys.

10.2.2 *Agricultural employment historic trend*

The contrast of AWU figures to the number of persons in the regular labour force suggests that *Pinzgau-Pongau*, *South Ostrobothnia*, *South West Ireland*, *Valencia* and *Karditsa* are the most strongly part time. This is in contrast to *Allier*, *Noord Drenthe* and *Orkney* where larger units may lead to less part time farming (although the trend toward part time farming is well established in these regions) and *Wittenberg* where the very large unit size and co-operative employee structure by definition mean full time working. The trend in most of these regions, however, is a shift from full time to part time farming for smaller units. Medium size units reduce their employed labour and rely on family workers while the larger expanding businesses are the only ones to maintain a core of employees. Within the regular labour force, non family labour is only of significance in *Wittenberg* and *Allier*, and to a lesser extent in *Noord Drenthe* and *Valencia*.

Casual and seasonal labour is largely insignificant in most regions except perhaps *Wittenberg* where harvest labour is important on large units, and in *Valencia* and *Karditsa* where the casual labour force constitutes a large number of people if not a large proportion of the total labour force. In these latter regions the casual workers may be employed in seasonal crop picking.

The proportions of females in the labour force do not seem to follow a pattern. There are clearly national differences in the roles of women in farming, but there may also be differences in how these roles are recorded in census forms. There is some suggestion from the cases that female involvement is greatest where farmers are most part time e.g. *Pinzgau-Pongau*. However, in *Valencia* the farming is part time, but female involvement is low. In *South West Ireland* the typical female role is to work off the farm to bring another income to the household rather than to cover for a husband working off the farm.

The recorded data also shows major variations in the age profile of family workers between case regions. The youngest profiles are in *Pinzgau-Pongau*, *Noord Drenthe* and *Wittenberg* (where the employee structure will mean most over 65 years will be retired). The older profiles are in the Mediterranean countries, *Orkney* and *Allier*. In *Orkney* the figures refer to occupiers and spouses and ignore the fact that a younger person not listed as the occupier may actually be doing most of the work and making many of the decisions.

The agricultural employment trend data shows a surprisingly uniform decline in persons of around 2% per annum across most regions. The AWU declines are much less uniform, but may suggest a higher rate of decline in northern Europe (*Wittenberg*, *South Ostrobothnia*, *Orkney*, *South West Ireland*). The data suggests that in some regions the number of people is falling faster than the AWU applied to agriculture, suggesting that those remaining in places like *Pinzgau-Pongau* and *Valencia* are doing more work.

The trend graphs for the individual cases tend to show steady and uniform decline irrespective of the CAP regime and its reforms. For example the Finnish case shows a very steady removal of labour on an annual basis with no interruption from EU accession, Agenda 2000 and changes in national support regimes. In some cases there may be a suggestion in the data of a stabilisation during the early 1990s following Agenda 2000, but this is soon replaced by a return to trend or indeed a sharper downward correction.

There is some suggestion in the trends that the rate of labour movement out of the industry reflects the rate of growth of the non farm economy. For example in *South West Ireland* the rate of labour decline increases greatly from 1996 onwards. In *Orkney* decline is sharpest since 1999.

10.2.3 *Future agricultural employment: extrapolation of trends and results of the survey*

Based on the past trends described above, linear trend extrapolations[278] were made of the number of persons and AWUs in agriculture in each region to 2014. The average changes are listed below. Please refer to the individual case reports in the annex for more detail.

Table 10.2: Projections of average annual regular labour force change 2003 – 2014.

	Pinzgau Pongau	Allier	Noord Drenthe	Witten berg	S. Ostro-bothnia	Orkney	SW Ireland	Valen-cia	Kardi-tsa
Average workforce change per annum 2003 – 2014 (persons)	-1.9%	-5.9%	-0.8%	-3.5%	-6.3%	-1.1%	-2.7%	-1.1%	-1.8%
Average workforce change per annum 2003 – 2014 (AWU)	NR	-5.4%	-2.3%	-4.4%	-9.5%	-2.9%	-7.3%	NR	-3.8%

Note: NR = forecast not reliable.

These projections reflect past trends. Some predict major movements of labour out of the industry, especially in places like *South West Ireland* and *South Ostrobothnia* where a traditionally small to medium sized farm structure now has a well established trend toward part time farming, amalgamation of units and simplification of systems.

The important question in the case studies was “what impact may CAP reform have on these historic trends?” The survey yields the following results.

The **views and attitudes** of the industry across the 9 regions were very similar. Most were well informed and felt that those who did not understand the reforms were the older generation (who would continue farming until retirement whatever the change) and small part time farmers whose non farm income made farming a hobby. Although there was a general feeling, especially among stakeholders, that the reforms could have a serious impact on individuals and especially on the wider rural

[278] These extrapolations are based on the first scenario described in section 4.4.1 for the national level

economy, a proportion of the farmers saw decoupling and the freedom it provided as an opportunity. The reaction to the reforms will be gradual even where full decoupling has been implemented from 2005. In the short term farmers will do nothing – simply use the decoupled payment to subsidise existing enterprises. But in the longer term (5 years plus) the expectation is that they will adjust their systems to make full use of the new regime. It should be noted that some change is already happening regionally – cattle are being finished faster (no age related beef premium), male store cattle prices are falling (no beef premium), sheep marketing patterns are changing where the restrictions of the quota system have been removed. In many ways these market price changes have more impact on farmers decisions in the short term than the CAP reforms themselves. It should be noted that the ability of the farmers to give a view on their future direction as a result of CAP reform varies across the regions. This is due in some cases to the very recent announcement of details (e.g. cotton decoupling % in Greece in June 2005) and in others due to the delayed implementation of the reforms (*Allier*, *South Ostrobothnia*).

In relation to the **balance of enterprises**, perhaps the strongest theme which comes out of most case regions is the potential decline in beef breeding cattle and perhaps sheep numbers. This is especially strong where there is immediate full decoupling (*South West Ireland* and *Orkney*), but also in Finland where cattle payments will also eventually be decoupled. Falls of between 15% and 50% in beef cow numbers were predicted by interviewees in *South West Ireland* and *Orkney*. In contrast in *Pinzgau-Pongau* where the Suckler Cow Premium has been retained there may be some increase in beef cow numbers as part time farmers switch from labour intensive dairying to extensive beef. Another strong theme across most case regions is the extensification of production on poorer land. This applies to decoupled beef and sheep systems where inputs will be cut and stocking rates reduced. It also applies to cereal production on poorer land in *Wittenberg* and *South Ostrobothnia*. However, the wholesale abandonment of land is not seen as a major risk except perhaps in the poorer upland cereal and grazing areas of Valencia. The interviewees assessment of the impact on cereal production is of little change. However, there is some indication of more diversity in cropping – the growing of proteins and the expansion of oilseed rape for biodiesel. In beef areas extensification will lead to a reduction in the related cereal area grown for on-farm feed. In the major cropping regions grain production will continue with existing trends towards specialisation and economies of scale. It should be noted that farmers in predominantly livestock areas stated that under the new CAP regime they may sell their set aside area entitlements to allow extensive grazing of the whole farm. Root crop areas such as *Noord Drenthe* face uncertainty over the future of sugar beet support – this could have a major impact on the margins of small and medium sized arable farms and hasten trends to consolidation and reduction in labour inputs. In all regions there is a concern over the future of milk prices as a result of CAP reform, but the general feeling is that the size of the dairy sector will remain static though trends toward fewer larger units and higher yields will continue. The positive prognosis for the dairy sector is greatest where there is a strong processing sector and branded products e.g. *Orkney*, *South Ostrobothnia*, *South West Ireland*. Pig and poultry production are not expected to be affected by the reforms. In the Mediterranean case regions many of the crops (citrus, vegetables) are unaffected, but in *Karditsa* the cotton monoculture faces major change due to the partial decoupling of subsidy. Here the decision to give up a crop which is unprofitable without subsidy may be closely related to the age structure of the farming population and the option of “retiral” using the decoupled payment. An important theme across all regions is the stability conferred by a high level of agri-environment/LFA/national support. For example in *Pinzgau-Pongau* most farmers are in agri-environment schemes(>90%), a large proportion receive organic support (40%) and LFA support is also significant. In *South Ostrobothnia* it is estimated that direct CAP payments only account for 27% of the total support to farmers (LFA and environment 39%, national support 33%). This makes the impact of reform of direct CAP payments

fairly minimal and partly explains the feeling in these two regions that little future change can be attributed to the current reforms. In regions (e.g. *Orkney*) where there has traditionally been very little agri-environment support (and little RDR support in general – of the £15.8m of CAP subsidy for the islands in 2003, £11.5m was direct payments and around £3m LFA) there is now a rush of applications to join agri-environment schemes (and to make use of Objective 1 transitional programme grant funding). There is far less interest in organic farming due to the problems of current high stocking rates, climatic disadvantage, and poor marketing infrastructure. Particular systems such as rice production in Valencia which might have been threatened by CAP reform are expected to be protected by an established agri-environment programme in the Natural Park.

Most of the **changes to farming methods** expected over the next 5 to 10 years are a continuation of existing trends. These are a slight decline in investment in buildings and machinery by individual farms, more use of contractors and machinery rings, more renting of land (as farmers try to expand/ extensify and because land purchase prices are driven sharply upward by non farming factors) and a simplification of systems into fewer enterprises. As discussed earlier a strong theme is the extensification of production. This is a substitution of land for technical inputs and relies on the cost of securing the extra land falling. It also relies on a reduction in fixed costs (e.g. less machinery cost due to less silage production and most importantly a reduction in labour) or the freedom to earn more income off the farm. Extensification is described by interviewees across all types of region – Mediterranean, NW Europe, cropping, livestock. The irrigated area is expected to fall slightly as farming margins cannot compete with other water users. Where farms are very small the extensification trend may not be an option – intensity will be maintained, if the land stays in farming.

Trends toward the development of **other income sources and responses** would seem to follow existing well established trends across most regions. The uptake of part time jobs outside the farm will continue to increase both for farmers/spouses and other family members. This will be more important than uptake of full time jobs. In some regions this has been a long standing trend and cannot go much further (*Pinzgau-Pongau*) while in others it is more recent and will allow a faster movement of AWUs out of the industry (*South West Ireland*, *Orkney*, *South Ostrobothnia*). There are exceptions to these trends, for example in *Wittenberg* where the workforce is by definition full time on co-operative farms, in *Karditsa* where the lack of job opportunities and the age of farmers limits this development and perhaps in *Allier* where unemployment also limits opportunities. The labour market and worker migration vary greatly between regions. Inward migration of farm workers from the new member states is a feature in areas of high employment and skills shortages such as *Orkney*, *South West Ireland* and *Pinzgau-Pongau*. Casual and seasonal worker migration from Latin America and North Africa is a strong feature of the fruit industry in *Valencia*. A strong expectation in many regions is a loss of jobs in the sectors serving agriculture (primary processing, input supply) as some sectors cut output in response to CAP reform. This will have a knock-on effect to the part time farming trend and is a concern in “enclosed” island labour markets like *Orkney*. The numbers entering agricultural education are strong in some regions (Austria, Finland), but are falling sharply in others (UK, Ireland). However, the use of advisory services and technical knowledge is not expected to decline, due to the challenges thrown up by CAP reform and the plethora of Pillar 2 schemes.

Succession is a complex issue across the EU. In some regions there is a clear expectation of a severe lack of successors for the existing farm structure even to the point of land abandonment (e.g. *Karditsa*). Paradoxically in some regions with apparently ageing farming structures (e.g. *Orkney*) there is no concern over the number of successors; there are plenty for the future consolidated farm structure and many potential successors are working off farm and are not recorded. Overall, CAP

reform is expected to have a minimal effect on all of the above factors. By hastening change in some enterprises such as beef production it may lead to an acceleration of existing trends, but is far less important than the attraction of the non farm economy. Similarly Pillar 2 schemes have some moderating effect, as discussed earlier, in that they provide another income stream (and set of farming related obligations) which to some extent maintain the existing farming structure. However, the interviewees do not expect them to halt long term trends or to push labour use in new directions (for example the further development of farm diversification, which in most regions is expected to be relatively minor).

Table 10.3 below shows the interviewed farmers and stakeholders expectation of the impact on employment of these changes in the region over the next 5 years.

Table 10.3: Interviewees' forecast of agricultural employment change in the whole case region in the next five years

Employment category	Full time	Part time	Seasonal/ Casual	Total family workers	Total employees
Pinzgau-Pongau	4	2	3	4	4
Wittenberg	4.5	3	2	4.5	3
South Ostrobothnia	4.3	3.2	2.2	4.3	3
Orkney	4.2	2.9	3.1	3.3	3.8
Allier	2	2	1	2	2
SW Ireland	5	2	3.3	4.5	3.9
Valencia	4	4	2	5	2
Karditsa	4	3	2	4	4
Noord-Drenthe	2	2	3	2	2

Note: 1 = large increase, 2= small increase, 3= no change, 4= small decrease, 5= large decrease. I

Key expectations are;

- a major reduction in full time workers across all regions, partly as farmers go part time and partly as full time employee numbers are reduced.
- a less uniform change in part time workers. The general picture is either no change or small increases where full time farmers become part timers. In *Valencia* a decrease is expected – the industry there is already part time and the change is a reduction in the number of farmers.
- seasonal and casual workers are not important in some regions, especially where the workload is based around livestock and is more constant over the year. However, the picture is of some increase across many regions, to cope with less full time/part time workers.
- the expected future trend for employees is downward, but there are two conflicting developments here. The medium sized businesses often with one employee are not replacing these workers on retiral and instead adjust the system or mechanise to substitute for labour. However, the relatively small number of large businesses which in some regions farm a large proportion of the UAA are maintaining a core of hired labour as they expand.
- the number of family workers is expected to fall faster than the number of employees. These are farmers going part time or leaving the industry altogether, plus spouses once recorded as farm labour now leaving the farm to secure an income in the rest of the economy. While this is simply stated by the interviewees, it implies that these farmers and spouses actually have skills required by the job market, can find opportunities locally and can fit it in with remaining farm and family commitments.

Specific **conclusions for young people and women** have been difficult to glean from the survey as this is a complex area, not often considered by the interviewees and regionally variable. The general

picture for **young people** is that the classical model of succession is ending. Where there are larger farms a son, or less often a daughter, may work on the farm full time until the parent retires or takes a back seat role. However, by far the more common situation is for the young person to work off the farm full time or part time because most farms cannot carry the costs of two family households. A final decision to return to the farm is made much later, usually when the farmer retires (which partly explains the rising average age of farm holders). In this model the young person has been open to the greater opportunities of the non farming economy and is therefore more likely to reject a return to the farm or adopt a part time system. The feeling of interviewees was also that inheritors returning to farming by this route would be much more likely to react sharply to CAP changes because they are more flexible and have a non traditional view. This model is not automatic – it assumes that the individual has had a better education or skills training and hence has not been forced through lack of opportunities to stay on the farm. This has clear implications for policy.

The role of **women** is more complex and is still often affected by the culture and traditions of the region. In all case regions there are very clear differences in the roles of men and women on the farm, with men doing the traditional field and herd management tasks while women act as administrators and tend youngstock. This traditional model is disappearing, however, as women increasingly work off the farm to earn another income for the household or take over the day to day management of the business while the husband works off the farm. In addition as farms have diversified into new enterprises such as tourism it is often the wife who is better equipped to manage this part of the business. There are clearly regional differences. In *Pinzgau-Pongau* the farmers wife manages the farm and holiday chalets while the farmer works off the farm. In *South West Ireland* and *Orkney* the farmers wife more often works in the rapidly growing non farm economy. In *Valencia* a large number of seasonal vegetable and fruit packing jobs are serviced by farmers wives. In Finland the conclusion may be that a shift out of cattle farming due to CAP reform will release more women who have traditionally had an important role in this enterprise. The general feeling is that CAP reform deepens the trend towards a transformation in the role of farm women away from the traditional support role and toward a separate career or management role within the farm. As with young people moving off the farm, this is not an automatic process – it implies education, training and restructuring of farming and family roles. As a conclusion to the survey, interviewees were asked to rank a range of factors which may have an impact on future employment levels in agriculture. It may have been expected that the availability of off farm jobs and the differences between farm and non farm incomes would have been selected as the major drivers. These were selected as important, but the top rankings went to output prices, input prices and other factors like CAP direct payments which directly affect the profitability of the farm. This is a simple, but important point. If the farm including subsidy makes a reasonable profit they will stick with farming because its what they want to do. But if prices fall and the farm cannot provide even a modest living, individuals will react to decoupling in a more radical fashion. This was evident in some of the interviews where recent price reductions for beef cattle and milk were seen to focus farmers attention on alternative strategies.

10.2.4 *Summary: impact of CAP reform on agricultural employment change*

The following table very roughly summarises the rating of the impact of CAP reform on the main types of employment for the regions. This is an amalgamation of the views of the farmers and stakeholders, and the overall judgement of the country expert.

Table 10.4: Assessment of impact of CAP reform on agricultural employment change

	Full time	Part time	Seasonal /Casual	Total family workers	Total employees
Pinzgau Pongau (AT)	2	2	-	2-3	2
Wittenberg (D)	2-(3)	2-3	2	3	2
South Ostrobothnia (FIN)	(2)-3	(2)-3	(2)-3	(2)-3	(2)-3
Orkney (UK)	1	2	3	2	2
SW Ireland (IE)	1	1	3	1	2
Noord-Drenthe (NL)	2	2	3	2	2
Allier (FR)	2	2	3	2	2
Valencia (ES)	2	2	2	2	2
Karditsa (GR)	1	1-2	1	2	1

Note: Rating of CAP impact: 1= major, 2= minor, 3= none.

The above is basically a compilation of the opinions of a small number of people and therefore should be treated with caution. However, in the EU15 the biggest impact of the reforms would seem to be an acceleration of the decline in full time workers in the agricultural industry, especially employees. Extensification, as described earlier, may be an important driver of this change. While family worker numbers are expected to fall sharply, the influence of CAP on this group is minor. This trend is more to do with the opportunities in the rest of the economy and the underlying lack of farm profitability. The relative importance of the CAP reforms on part time worker numbers is confined to areas like Karditsa where subsidy reliant crops could be badly affected by decoupling.

Interviewees tended to be focused on the employment effects of decoupling. Any employment effect of an increase in Pillar 2 funding through modulation was difficult to discern.

It is important to point out the regional differences in the above rating. The strongest impact of the CAP is expected to be in *South West Ireland* and *Karditsa*. In an area like *South West Ireland* with small to medium scale farms, a booming economy and heavy reliance on the beef sector, the complete decoupling of subsidies removes a major barrier to agricultural employment change. Farmers no longer need to maintain a high level of activity in farming to receive substantial subsidies – time can be released to pursue other income earning opportunities, of which there are many. In this case the overall conclusion may be that even the very significant 7% per annum reduction in AWUs projected in the trend scenario will be exceeded post decoupling, if the Irish economy continues to grow at the rate of the last 10 years. In *Karditsa* it is the unusual reliance on one crop whose support will now be partially decoupled which leads to the forecast of major movements of labour out of the sector, despite a lack of alternative income earning opportunities. The 3.8% annual reduction in AWUs forecast in the trend scenario for the period to 2014 may be understated. In other regions the rating of CAP impact varied from minor to none, especially in *South Ostrobothnia, Noord Drenthe, Allier* and *Pinzgau-Pongau*. In *Wittenberg* the assessment is that CAP reform only has a minor impact, if any, on the long term employment trend. As pointed out in the Finnish case, the dual impact of on the one hand substitution of capital for expensive labour to reduce unit costs, and on the other the attraction of the non farming economy, combine to drive the downward trend in agricultural labour. CAP plays a minor and indirect role in this underlying driver.

The impact of CAP reform on employment is highly variable, and region and enterprise specific. It reflects the different implementation regimes applied by member states and the relative importance of CAP direct payments in comparison to other farm supports such as agri-environment. It also reflects

the importance of farming as a share of household income – areas with less part time farming, larger farms and more employees may see more and faster change.

This survey based analysis is necessarily static. It looks at the impact on existing farm systems and what that does to labour. However, one of the benefits pointed out by many of those interviewed is that it provides freedom of movement, stimulates production for a real market and allows better returns on entrepreneurship.

10.3 Results of the NMS12 case studies

10.3.1 *Description of the regions*

The *natural conditions* differ among the case regions. The Polish region *Szczecinski* is characterised by a moderate climate, a flat relief and soil qualities reaching from poor in the north to fertile in the south of the region. The Latvian region *Latgale* is called the "land of blue lakes" with both highlands and lowlands and temperatures recorded from -43°C to +36°C. The Czech region *Jihomoravsky* has a rather low long-term average rainfall (539 mm) and the highest long-term average annual temperature (+8.7°C) of all Czech regions. The altitude ranges from 150 m to 819 m a.s.l.. The Slovakian region *Kosicky* is characterised by lowlands and highlands (highest mountain: 1,476 m a.s.l.) and a long-term average annual temperature of 10.0°. *Hajdú-Bihar* is part of the Northern Hungarian Great Plain with a continental climate and a low level of precipitation (566 mm/year). In Romania, the case region *Cluj* is predominantly hilly with a 3rd class soil quality and a moderate continental climate with an average rainfall of 600 to 1,000 mm.

Regarding the *socio-economic background*, *Latgale* is in some respects exceptional. It is by far the case region with the lowest GDP p.c. in PPP in absolute terms (less than 4,000 in 2002), but also compared to the national average (less than 50 %). The unemployment rate in *Latgale* (15.4 %) exceeds the national average by one third and the share of agricultural employment in total employment is approximately one and a half of the national figure. *Latgale* is also the most sparsely populated region of all case regions (26 inh./km^2). In all the other case regions the per capita income ranges between approximately 7,200 (*Cluj*) and 13,400 (*Jihomoravsky*) and is much closer to the respective national average. In the Czech and the Slovakian case region agriculture plays only a minor role for the regional economy contributing less than 4.2 % to the total GVA and less than 4.8 % to the total employment. In *Hajdú-Bihar* the importance of agriculture for employment (9.2 %) exceeds the national average by one third and its share in GVA is almost double (7.2 %). On the other hand, in *Cluj* and *Latgale*, the agricultural employment share reaches around 29 %.

According to the *farm structures*, the Czech and the Slovak region are dominated by large enterprises, mostly organised as co-operatives and commercial companies with an average size of 790 ha (*Jihomoravsky*) and 1,241 ha (*Kosicky*) respectively. On the other hand, subsistence or semi-subsistence farms play an important role in the Romanian, Latvian and to a less extent in the Polish case region.[279] Compared to the Polish average, individual farms in *Szczecinski* are rather large (16 ha). *Cluj* is the only region where holdings managed by public administration units still play an important role. In 2002, they cultivated 36 % of the UAA. In *Hajdú-Bihar* the dualistic farm structure is

[279] For example, in 2002, in *Cluj* 44 % of all individual farms only produced for own consumption, 54 % sold part of their production and only 3 % produced mostly for sale. The individual farms accounted for 55 % of the UAA.

particularly pronounced. This is illustrated by the fact that 77.7 % of all holdings are smaller than 2 ha and cultivate 5.2 % of UAA, whereas only 0.6 % of all holdings cultivate 51.7 % of UAA.[280]

With regard to the *farming systems*, the Latvian region is the only one where grasslands and livestock production (milk and beef) dominate. In all other regions, crop production is much more important with shares of arable land in the UAA ranging from 41 % (*Cluj*) up to 90 % (*Jihomoravsky*). For the Latvian and the Romanian case it is reported that idle land has a significant share. In *Cluj*, 15 % of the agricultural area is not used due to high cultivation costs. The livestock density of those case regions reported varies between 0.3 LSU/ha (*Kosicky*) and 0.6 LSU/ha (*Cluj*).

10.3.2 *Agricultural employment historic trend*

As pointed out in section 4.1, agricultural employment in Central and Eastern Europe (including the German *New Länder*) has been strongly influenced by the transformation processes, in particular at the beginning of the 1990s. This also holds for the case regions, including *Szczecinski*. Whereas in most parts of Poland agriculture was dominated by family farms even prior to the beginning of transition, this was not the case for *Szczecinski* and other regions in the North-western part of Poland. There, a large share of land was cultivated by state farms with a lower labour input per hectare than in the other parts of Poland. Today, most of the former state farm land is bought or rented by family farms. Many of them have specialised on cereals and other low labour input crops.

The Latvian case study can serve as an example for the drastic decline of agricultural employment in the first years of transition. From 1989 to 1991, the number of persons employed in agriculture dropped from 356,000 to 217,000, i.e., by nearly 40 %. In the today Czech Republic, the most dramatic fall of agricultural employment was in 1991 and 1992, when employment plummeted by 24 %. However, it has to be taken into consideration that the collective and state farms employed more persons than necessary (hidden unemployment) and that many of them were also engaged in non-agricultural activities. Among the agricultural activities particularly livestock production (which is rather labour intensive) has been drastically reduced.

Little quantitative information is available on what happened to those who left the agricultural sector. In the German case study report, findings of Mehl (1999) for the *New Länder* are cited, that already by 1991, the agricultural labour force was reduced to 35 % of the 1989 level – and more than half of these 35 % worked only short-time receiving short-time allowances from the federal unemployment agency. 21 % of the formerly agricultural workforce made use of retirement or early retirement schemes, 12 % of job creation measures or additional vocational training financed by the unemployment agency. 18 % were unemployed and only 14 % had found another job outside the agricultural sector. However, these social measures were only financially and administratively feasible due to the German unification and are therefore in this extent unique among the transition countries.

Romania is an example for a country where agriculture has served as a social buffer. In the course of the privatisation, land was restituted to the former owners (or their heirs) or distributed to agricultural workers. Many of those urban landowners who lost their jobs in industry started (subsistence) farming resulting in an increase of agricultural employment. As stated in the case study report, the main driving

[280] The huge number of small farms is partly caused by the low minimum requirements in terms of UAA and livestock numbers to be eligible to register as agricultural enterprise and by tax concessions granted for agricultural enterprises.

forces for agricultural employment in the 1990s were "the radical decrease of employment opportunities in industry after 1989, the restrictions regarding the status of unemployed people (land owners were not registered as unemployed), and the possibility to reduce the costs of family consumption by producing their own food." Data for *Cluj* are missing, however, it is likely that the development is similar to that at the national level.

The "social buffer" role of Romanian agriculture is mirrored by the exceptional high labour-land-ratio. In the NUTS-2 region to which *Cluj* belongs more than 76 *persons* are employed per 100 ha (Table 10.1). To a less extent, also in *Latgale*, agriculture is labour intensive with 11 AWU/100ha. In contrast, only 4.6 and 6.3 AWU/100 ha are used in the Slovak and Czech case region. The dominance of large farms in these two regions is also reflected in the high shares of non-family labour (47 % and 72 % resp.). In all other case regions except for *Hajdú-Bihar*, family labour contributes more than 90 % of the total regular labour force measured in AWU.

The **employment of women** is strongly influenced by whether a family or non-family labour force is prevailing. In all case regions the share of women in the family labour force is higher than in the non-family labour force. In *Latgale* the share of women in the regular labour force is exceptionally high with 53.5 % females in persons and 54.5 % in AWU, indicating the dominance of full-time female workers on family farms. The second highest share can be found in *Cluj*, where women have a share of 44.0 % in persons in the regular labour force. Numbers for the Polish case region are not available, but presumably are also high. In *Kosicky* the share of women is higher in regular (41.3 % persons and 34.7 % in AWU) and in family (46.0 % in persons and 42.1 % in AWU) labour force than in *Jihomoravsky,* where large farms with paid labour prevail and farm structure is not as much dualistic as in Slovakia. In all case regions, on-farm activities are stated to be clearly gender-specific. Management, machinery maintenance and fieldwork are typical male activities, while accounting, milking, calf rearing and mostly intensive manual seasonal labour like fruit picking and harvesting is classified as typical female. Only in *Latgale*, is there a significant share of female farm holders/managers.

The present age structure on the farm holdings (see Table 10.5) in the case regions is quite unfavourable particularly in *Kosicky* and *Latgale* where 15.3 % and 22.4 % respectively of workers are older than 65 years and the number of people younger than 35 is lowest. The exceptional low share of workforce >65 years in *Jihomoravsky (CZ)* results from the high share of non-family labour in total labour force. The share of *young people in agriculture* is highest in *Cluj*, where 33.2 % of agricultural labour force is younger than 35 years.

Table 10.5: Age structure of agricultural workforce in the case regions, 2003

	Hajdú-Bihar	Jihomoravsky	Kosicky	Szczecinski	Cluj	Latgale	
<35 years	n. d.	19.5 %	13.1 %	n. d.	33.2%	<30 years	13-4 %
35-44 years	n. d.	22.3 %	24.5 %	n. d	17.8%	30-39 years	18.5 %
45-54 years	n. d.	35.9 %	30.9 %	n. d	18.3%	40-49 years	19.5 %
55-65 years	n. d.	19.0 %	16.2 %	n. d	17.0%	50-59 years	16.5 %
> 65years	n. d.	3.4 %	15.3 %	n. d	13.7%	60-64 years	9.7 %
						> 65years	22.4 %

Sources: CZSO (2004), ŠÚSR - Štrukturálny cenzus fariem 2001 (2002), FM (2005), EUROSTAT REGIO database (2005).

10.3.3 *Future agricultural employment: results of the survey*

In the NMS12 case regions, the survey concentrated on the present and future agricultural employment situation and the impact of CAP introduction. Since CAP has been introduced as recently as 2004, no experiences of former CAP changes on employment are available and the experiences of the interviewees with the current CAP are still limited.[281]

Analysing **the views on and attitudes** to the CAP, the level of information on the CAP of the interviewed farmers in *Hajdú-Bihar, Jihomoravsky* and *Kosicky* is generally high and this also holds for the whole regions except for the Hungarian case. The interviewees assess the possibilities to acquire information as good, but strongly depending on the farmers' interest. These views are shared by the stakeholders. Both groups claim small individual farms, older farm managers/holders and part-time farmers to be less well informed. Farm managers of large enterprises, which dominate in those regions, have higher incentives to acquire a higher level of information and usually have a better educational level. In *Szczecinski* and *Latgale*, farmers and stakeholders differentiated in the same way. However, the farm structure in the latter two regions is dominated by small farms indicating that the overall level of information on CAP should be very different across the regions. In the Polish case study it is reported, that "most of the farmers have problems with understanding the complexity of CAP. Usually they cannot make a distinction between it and all other changes that occurred after Poland's EU accession." This might also be problem for many other farmers in the NMS. In *Cluj,* the majority of interviewees felt themselves well informed on CAP and EU accession issues related to agriculture using media, information events and even study trips abroad. Contrary, they assess the general level of information of farmers in the region to be very low. This is not surprising given the dominance of (semi)subsistence farms and the fact that the CAP will be fully implemented only with the accession to the EU.

In *Hajdú-Bihar, Jihomoravsky* and *Kosicky* the assessment of the CAP introduction as a threat or opportunity differs among the interviewees. The interviewees judged the system of market intervention and support to be the most important elements of the CAP introduction, enhancing farm stability and planning security compared to the previous national system. The Czech and Hungarian interviewees were more positively attuned, while the majority of Slovak farmers thought CAP to be a threat for the region due to decreasing prices and marketing problems for their products as well as the higher support level in the EU 15. The Slovak experts had a more differentiated view stating also the advantages e.g. the direct payments which facilitate on-farm investments and thereby increase competitiveness. According to the interviewees in *Jihomoravsky* as well as *Kosicky* the direct payments in 2004 were mainly used for investments in machinery, buildings and inputs. The late payment of direct payments was claimed to be a particular problem in *Hajdú-Bihar*. In *Szczecinski* the introduction of CAP was perceived as a threat by most of the farmers, although they saw market intervention and quotas positively since they increase stability. The majority of the interviewed farmers expressed that they are worse off due to the to the sharp fall of cereal prices and the withdrawal of the previous direct payments linked to the quantity of bread quality grains, which are not fully compensated by the CAP payments.[282] Contrary, in *Latgale* most farmers and all experts perceived

[281] Since Romania has not yet acceded the EU (presumably in 2007), the Romanian interviewees did not have own experiences with the CAP regime which made it more difficult for them to assess its impact on future employment development.

[282] The yields in the surveyed farms are relatively high (exceeding 6t/ha), whilst CAP direct payments, of which, in 2004, farmers received 55% of the total rate, were calculated based on the national reference yield of 3 t/ha.

the CAP introduction as an opportunity mainly referring to the improved support level and planning security. Direct payments were mainly used for inputs in the Polish case region. In the Latvian case region the large farms used it for investments in machinery and buildings, whereas the small farms in the region were expected to use it mainly for inputs and also private consumption. In *Cluj* the ideas of the consequences of CAP introduction are rather vague as the scenario is still abstract. All interviewees expect that EU accession will cause serious structural change for the small-scaled regional agriculture due to rising standards and requirements as well as competition of other EU countries. Thus they view it as a threat for the region even if they consider it an opportunity for their own farm. The support for investments under the SAPARD programme is thought to be the right way in increasing competitiveness among Romanian farms, but implementation suffers from *ex ante* financing of grants, as EU payments are made *ex post*.

Regarding the **balance of enterprises** expectations often expressed are an increase in the area under agri-environmental schemes, organic farming and energy crops as well as a decline in sugar beet production. Concerning livestock production the picture is less clear. In *Haidú-Bihar* a trend to further specialisation and a significant impact of CAP introduction on these changes is expected. In less competitive branches like beef and pig production restructuring is expected, whereas other branches like fruit production are thought not to change much. In *Jihomoravsky,* where arable farming predominates, the relation of arable farmland and grassland is expected to stay the same due to the stabilising effect of the CAP introduction. The interviewees believe that the CAP will not cause major changes in animal husbandry, while the quota system stabilizes the volume of milk production. More changes are likely in arable farming. No changes are forecasted in dairy and poultry production in *Kosicky*, whereas opinions differ with regard to pig production. In general, farmers assume less changes and less influence of the CAP introduction on the developments of the balance of enterprises than the experts. In *Szczecinski,* further specialisation is expected for the small and medium-sized farms. Farmers expect a large decrease in animal production, while stakeholders expect a small increase in the numbers of livestock. Large farms with animal specialisation will remain, but smaller ones aim to reduce the number of different animals. Most farmers declared that they saw no influence of CAP on their production decisions. On the other hand, stakeholders indicated a minor CAP influence on the above mentioned changes, mostly indirectly. Changes in the farming sector of the region seem to be more due to the transition process of the Polish economy, in the region specifically the privatization of state farms, than a direct consequence of the CAP introduction. In *Latgale* a future increase is expected in animal husbandry and in arable farming in almost all activities, which is mainly due to the currently low level of agricultural production. After transition had started production dramatically declined and large agricultural areas were abandoned, as is also the case in Latvia as a whole. In 2004, direct payments improved liquidity on the farms and provided incentives to take more land into production. The interviewees link the expected changes strongly with the CAP introduction. Most interviewees in *Cluj* expressed the opinion, that market prices and subsidies paid for specific products under the CAP have the main impact on the decisions of the farmers to increase or decrease production after Romania's EU accession. Developments in production structure will be strongly linked to developments in the farm structure. A general decrease in livestock numbers is expected apart from poultry and sheep. These species require less capital and effort to comply with the EU norms. The area cultivated with cereals, oilseeds and protein crops is expected to decrease. No change will occur regarding vegetables and potatoes which are mostly sold on the food markets of the cities. Potential is seen in energy crops, whose share might increase due to current trends, and in producing labour-intensive niche products like mushrooms, flowers and medicinal plants.

Concerning **changes in farming methods,** investments (machinery, buildings) are thought to increase. This particularly holds for *Cluj* and *Latgale*, but to a lesser extent for the other case regions where much of the agricultural restructuring and modernisation has already happened in recent years. A similar regional pattern can be found regarding the expected increase in the intensity levels (fertiliser, pesticides). The expected increase is highest in those two cases which are most lagging. As came out from the *Kosicky* case the expected general intensification might by compensated by extensification tendencies in marginal regions, and the expected increase of the area under organic farming and agri-environmental schemes.

Other income sources than agricultural are important for the well-being of many farm households. Regarding diversification the case studies show that agri-tourism is assessed to increase in *Latgale,* the northern part of *Szczecinski* and also in *Cluj*, where the natural preconditions are favourable. At the same time farm income from off-farm jobs is expected to rise in those regions since the income that (semi)subsistence farms provide is not sufficient. On the other hand, in the Romanian case region supply of off-farm jobs is expected to increase only slightly and therefore subsistence and semi-subsistence farms will continue to play an important role. Migration of agricultural workers out of the region is supposed to increase slightly in *Szczecinski* and particularly in *Cluj*. Mostly young workers leave the region to temporarily work and earn their income abroad. In *Jihomoravsky* and *Kosicky* off-farm income in family farms is expected to slightly increase. Diversification is not expected to become more important in the Slovak case region, but in the Czech region its importance is thought to rise.

The assessment of **future changes of agricultural employment** by the interviewees in the case regions is shown in Table 10.6. The clear overall trend is a decrease in total employees in agriculture in all regions apart from *Szczecinski,* where the total number of employees is considered not to change. Regional differences are expected in the strength of the decrease as well as the kind of likely changes.

Table 10.6 Interviewees' forecast of agricultural employment change in the whole case region in the next five years

Employment category	Full time	Part time	Seasonal/ Casual	Total family workers	Total employees
Jihomoravsky (CZ)	4	3-4	3-4	4	4
Hajdú-Bihar (H)	3.9	2.8	2.7	3.8	3.3
Latgale (LV)	3-4	2-3	2	3	3-4
Szczecinski (PL)	3	3	4	3	3
Kosicky (SK)	3-4	2-3	2-3	3	3-4
Cluj (RO)	2-3 [a)] 4-5 [b)]	3	4 –5	4 –5	4 –5

Note: Interviewees were asked to asses the order of change on a rank from 1 – 5 (1 = strong increase, 2 = weak increase, 3 = no change, 4 = weak decrease, 5 = strong decrease). [a)] Commercial companies [b)] Agricultural associations.

In *Hajdú-Bihar* no change or even a slight increase in the number of part time and casually employed is expected, whereas full time and family employment is expected to decrease. The interviewees anticipate that small family farms with full time labour and paid workers on the large farms will leave the agricultural sector, whereas people having other jobs will continue farming. In *Jihomoravsky* a weak decrease is anticipated for all kinds of employees. The decrease is thought to be most pronounced for family workers and full-time employees. The decrease of family labour will mainly be caused by retiring holders of small family farms which do not have a successor. The decrease in full-time employees will basically take place on the large corporate farms due to cost pressure, labour-saving investments as well as retiring employees not being replaced. The changes in *Kosicky* are

supposed to be slightly different in detail. While a weak decrease is expected in the number of full-time employees, a slight increase seems probable in the numbers of part-time and casual/seasonal workers. Due to rising cost pressure permanent full-time employees might be replaced by seasonal/casual on the large farms which rely on paid labour. Family workers – mostly employed on subsistence and semi-subsistence farms (of all farm holdings in 2003, 92.3 % are smaller than 5 ha) – are thought to stay in agriculture in the near future. Alternative jobs are difficult to get because of the unfavourable labour market situation and age structure as well as the low educational level of those employed on these farms. In *Szczecinski* a decline in total employment is expected in the long term, but not in the next five years apart from a weak decrease of seasonal workers. In total, seasonal employment has little importance in the region. Most seasonal and casual workers are family members like children, which will leave the farms for educational or job-related reasons. Furthermore, despite the high unemployment rate (23.7 % in 2003) seasonal work is often done by immigrants e.g. from Ukraine, since the wages offered are too low for Polish workforce. Family farms predominate in the region, therefore succession will be one of the crucial issues determining the number of employees in agriculture. A significant decline is expected in the number of successors, but it is not unusual that farmers will keep on farming for one or two decades knowing that their already mature children will not takeover the farm. In *Latgale* only a weak decrease of agricultural employees is expected in the near future. Increases in part-time and seasonal work will not compensate the decline in full-time employees due to labour saving investments and consolidation in the farming sector. It is anticipated, that the decline in agricultural employees in *Latgale* will be above the Latvian average. In *Cluj* a significant outflow of labour out of the agricultural sector is expected due to structural changes. Commercial companies are expected to increase their size and to employ more full-time employees whereas full-time employment in agricultural associations will likely go down due to a decreasing number of such associations and a rising economic pressure to cut costs. Furthermore, the number of subsistence and semi-subsistence farms is anticipated to decline considerably. The elderly farmers will not be able to work anymore and many will not find a successor. EU accession (implementation of the *acquis*, competition in the single market, restrictions concerning the eligibility for direct payments) will contribute to the decrease of the number of small farms. At least for the larger farms it is expected that labour-intensive activities will be more and more mechanised, i.e. investments will be mostly of a labour-saving kind and, thus, reduce the demand for labour. It is particularly expected that the employment of seasonal workers – which are mostly women – will considerably go down.

Future **employment of women** in agriculture is heavily influenced by investments in labour saving technologies and mechanisation of activities traditionally carried out by women. These developments are expected to decrease the share of females significantly as hypothesised in the case studies on *Cluj* and *Szczecinski*, but also on *Kosicky* and *Jihomoravsky,* where a much higher level of mechanisation prevails. The developments in farm structure are another important driving force for female employment. There is evidence in the employment structures of the case regions that the share of women declines with a rising share of non-family work. Furthermore, in the case of family workers going out of agriculture e.g. in semi subsistence farms in *Cluj* it is hypothesised that it might be easier for men than for women to find off-farm employment. This would lead to a relative increase of female labour in agriculture.

In the regions where family farms dominate, future **employment of young people** in agriculture is principally an issue of succession like in *Szczecinski, Latgale,* and *Cluj.* In these regions it is expected that in the future only few young people will takeover the farm of their parents, as remuneration is too low on the smaller farms. Particularly in *Cluj*, where the share of young people is currently very high, the availability of off-farm jobs will influence the share of young people in agriculture. Concerning non-

family work, as predominating in *Jihomoravsky*, retirals will probably not all be replaced. In the future there will be a need for qualified paid labour on the large farm holdings, but incentives for young people to work in agriculture are low due to the differentials between agricultural and non agricultural wages, the hard work and low reputation of agricultural work in the society. In *Kosicky* the share of young people working in agriculture is expected to decrease, too, for mainly the same reasons.

The **main drivers of agricultural employment** as ranked by the interviewees[283] vary according to the kind of work prevailing in the specific region. In *Jihomoravsky* there is a mixture of family farms, individual farms with paid labour and corporately organised farms exclusively working with non-family paid labour. As paid labour has to be constantly remunerated, farm income plays a crucial role for employment even in the short run. On the other hand wage levels strongly influence the employees' decision to stay in the agricultural sector, if jobs are available in other industries. In contrast, changes in family labour employment are much less influenced by short-term considerations. Family work is mostly determined by expected income differentials over the long run and adjusted by succession decisions. Interviewees ranked differentials between agricultural and non-agricultural wages as the most important driver of employment in agriculture, followed by output prices, CAP and grants for investments. In *Kosicky* interviewees view CAP, grants for investments, output prices and input prices to be the main drivers of employment in agriculture. This reflects the importance of factors directly influencing farm income for large farms working with paid labour as well as for family farms. In *Szczecinski, Latgale,* and *Cluj* small family farms predominate. The speed of structural change will influence employment in agriculture. The potential for labour saving investments, mechanisation, specialisation and economies of scale is high in all three regions, but most in *Cluj*. Due to the farm structure early retirement schemes and off-farm availability of jobs, as well as wage differentials are mentioned as the main drivers of agricultural employment together with the CAP which is viewed to provide incentives for farming via direct payments.

10.3.4 *Summary: Impact of CAP introduction on agricultural employment change*

CAP has been introduced as recently as 2004 (and not yet in Romania) and assessing the employment effects of CAP introduction in the NMS requires the isolation of the CAP impact from the effects of ongoing restructuring of the agricultural sector and the overall economy as well as from the general effects of EU accession on the agricultural sector. In the case studies it is very likely that many interviewees mixed up these effects. Also their personal experience with the CAP is rather limited and their understanding of how structural change comes about in a market economy is sketchy (or missing at all in the Romanian case). This has to be taken into account, when interpreting the results of the survey on the impact of CAP introduction on agricultural employment change in the case regions (Table 10.7).

[283] The interviews were asked to rank the five most important drivers of agricultural employment from the following list: availability of full time jobs off the farm, availability of part time jobs off the farm, output prices (prices of grain, milk, etc), CAP (market support, direct payments etc.), grants for investment, input prices (fertiliser, fuel, etc), difference between agricultural and non agricultural incomes, ability to diversify the farm (into tourism, etc), number of young people interested in farming, availability of a sufficient social security system (e.g. pensions), reputation of farming in the society, other.

Table 10.7: Interviewees' view on the impact of CAP introduction on agricultural employment change

	Full time	Part time	Seasonal/ Casual	Total family workers	Total employees
Jihomoravsky (CZ)	2	2.5	2-	2.5	2
Hajdú-Bihar (H)	1.7	2.2	2.3	2.2	2.1
Latgale (LV)	1	1	2-	1	1
Szczecinski (PL)	3	3	3	3	3
Kosicky (SK)	2	2.5	2.5	3	2
Cluj (RO)	1	2	2	1	1

Note: Rating of CAP impact: 1= major, 2= minor, 3= none.

Regarding the average of all regions the impact of CAP on the different employment groups is rather similar. It is considered to be strongest for changes in the full-time workforce, which constitute the largest labour force group in all regions. Still, the mean value of 1.8 shows that the impact is rated to be rather minor. However, looking at the ratings in the single regions shows that the regional differences are pronounced. In *Jihomoravsky* and *Kosicky* overall a minor influence of CAP introduction is assessed and in *Szczecinski* (with farms sizes well above the Polish average) interviewees expect no influence at all (and they do not expect that agricultural employment will change in the next five years). In *Latgale* and *Cluj* the impact of CAP introduction on agricultural employment changes is assessed to be major. This view is likely to result from the expected structural changes with regard to the subsistence and semi-subsistence farms particularly in *Cluj*. These structural changes are, however, also influenced by various other factors than the CAP, which are likely to be mixed up by the interviewees particularly in the Romanian case region. In *Latgale* the short-term effects of EU accession, CAP introduction and direct payments, which have obviously stimulated agricultural production, are already visible.

10.4 Summary of findings and conclusions

In the following the main findings of the case studies are summarised and conclusions are drawn first for the EU15 case studies and then for the NMS12 cases. It has been impossible to identify differences in CAP employment effects between PU, SR and PR case regions – they have too many other differences and the number of case studies is too small. Regions such as *Valencia* and *Noord Drenthe* are clearly influenced by their urban proximity, but remoter areas such as *Orkney* and *Pinzgau Pongau* also report major urban influences e.g. in property prices. The case studies are limited in their scope and cannot review the wider (non CAP) policies which may have influenced rural development in each region. However, it is important to realise that the successful and rapid transformation of surplus agricultural labour into new areas of activity in an area like *South West Ireland* is likely due to favourable taxation policies for new businesses and a major commitment to education and retraining. CAP has minimal impact. For the NMS12 cases it is evident that agricultural development changes since the beginning of transition have been very much influenced by non-agricultural policies. One overall conclusion must be the major difference between the policy needs of the EU15 and the NMS. For the EU15 much of the change expected is a continuation of trends established over the last 30 years or longer. However, for the NMS there is a much greater policy need as they face major changes and a "catching-up" process concentrated into the next 10 years.

10.4.1 *EU15 case studies*

- The cases show major regional differences in the nature of agricultural labour markets, in the role of women and in the way young people enter the industry. They also show fairly major differences in farm structures and the performance of local economies.
- It is very early to try to measure the likely impact of recent CAP reform on employment. There will be a strong timescale effect. Even where there is full decoupling from 2005, many farmers will use the decoupled payment in the short term to subsidise unprofitable enterprises and will mainly adopt a wait and see attitude. In the medium term sharp employment reductions are expected in some regions. However, the potential long term employment gains from freedom of action and Pillar 2 investments are poorly understood by both farmers and experts, making long term forecasts difficult and possibly inaccurate.
- It can be hypothesised that investments of a Pillar 2 nature (to allow efficient part-time farming, high environmental value farming, investment in diversification and training) can, in a tourist region like *Pinzgau Pongau,* help create long term rural employment stability. In case regions where no such development has taken place and the rural population is reliant on a high level of direct payments, we see potential instability. Farmers perceptions of direct payments is that they have immediate effects, while Pillar 2 measures have long term effects which are more complex.
- The agricultural labour trend in all regions shows strong underlying features (substitution of capital for labour, farm commodity prices falling in real terms, the attraction of jobs with higher wages and better conditions in the rest of the economy) immune to CAP reform and agricultural policy in general. For example the trends show no long term reaction to the MacSharry reforms or Agenda 2000, though in some cases the data might suggest a short term stabilisation in the early 1990's. In the case of Finland, EU accession did not even shift the trend.
- The impact of recent CAP reform on agricultural employment is judged to be minor overall. However, the impact is greatest on full time employment and in particular regions where the non farm economy is booming and where full decoupling will have potentially major effects on specific enterprises e.g. beef breeding.
- Inward migration of agricultural workers to fill skill shortages is a feature of some areas where there are good non farm job opportunities. Inward migration includes migrants from the new member states, from Latin America and North Africa in Spain.
- The implementation options chosen by individual member states have a profound effect on farming systems and related employment. Where full decoupling has been adopted immediately, the largest changes are expected.
- There are significant enterprise effects. Beef and sheep are seen as especially threatened by decoupling as are specific crops like cotton. Milk prices are expected to fall, but the impact is expected to be concentration into fewer larger enterprises rather than overall reduction. Cereals are only threatened on the poorest land and where they are linked to threatened livestock enterprises. This may release land for dairy expansion or extensification. Cropping may diversify (oilseeds for biodiesel, proteins, etc), but options are viewed as limited. The impact of recent sugar beet regime proposals is as yet unclear. Pigs and poultry are expected to be little affected.
- Extensification of production systems is a major theme – lower stocking rates, lower fertiliser, less labour per unit of output; overall the substitution of land for other inputs allied to a cut in fixed costs. This assumes land will be cheaper, partly because more farmers will retire without a successor. The growth in renting is a strong theme in many regions where it has not traditionally been important.
- One conclusion may be a more significant reduction in processing/input supply jobs than in farming, as farming shifts to lower output systems. This has a further knock-on effect for the part

time jobs in these sectors occupied by farmers and their families, leading to a spiral of change in some areas.

- Europe seems faced with a divergence in production systems; for example a reduction in beef cows in the UK and Ireland due to decoupling, but some increase in beef cows in Austria (where the Suckler Cow Premium is retained) as farmers shift from labour intensive dairying to extensive beef.
- There is some indication of greater stability in farm structures and employment where CAP direct payments are a lower share of the total subsidy support to farmers, and more is provided by Pillar 2 as agri-environment/LFA/rural development aid. This feature is suggested by the South *Ostrobothnia* and *Pinzgau Pongau* cases and is backed up by Mid Term Evaluations of Rural Development Programmes across the EU. These tend to show that while Pillar 2 schemes may not create long term jobs they do help retain current employment. Also, specific measures which stimulate investment result in local expenditure which may offset some of the negative downstream effects of decoupling. The cases show that where the participation in Pillar 2 schemes has been historically low, there is now a rush of applications as farmers try to broaden their income base.
- Organic farming is strong in some case areas (40% of farms in *Pinzgau-Pongau*) where it helps to provide some stability to structure and employment due to the extra funding it brings to farms. However, expectations of increases in organic farming were low due to technical difficulties, discredited use of the scheme and poor marketing structures.
- Output price changes will be decisive in influencing farmers future decisions. These price effects of CAP reform are poorly understood, but some adjustments are already happening e.g. in store cattle and seasonal land rents.
- New models of young peoples route into farming are developing – not as workers on the farm, but after a period off the farm. This changes the attitude of the inheritor on the decision to farm and on the reaction to policy change. As a result the proportion of young labour applied to farming may decline faster than other categories.
- Likewise the role of women is changing away from being a support to the farmer and toward (a) off farm work to provide another income (*South West Ireland* 18% female regular labour) or (b) into management of the farm and new ventures such as tourism while the farmer works off the farm (*Pinzgau-Pongau* 42.5% female regular labour). Clearly this means different levels of female labour input in different types of farm and region. Overall our assessment would be that the off farm work scenario will be most prevalent leading to a significant drop in female labour in agriculture.
- The new model of young peoples route in to farming and the changing role of women described above, will not happen automatically. They require the acquisition of new skills, the availability of local job opportunities, time and resources to seek out these jobs and innovation in the way the remaining farming business is structured and operated. These are important areas for policy.

10.4.2 *NMS12 case studies*

- Assessing the employment effects of the CAP introduction in the NMS12 requires an isolation of the CAP impact from the effects of the ongoing restructuring of the agricultural sector and the overall economy as well as from the general effects of EU accession on the agricultural sector. In the case studies it is very likely that many interviewees mixed up these effects, also because their personal experience with the CAP is rather limited (or missing at all in the Romanian case).
- In the six case regions (as well as in the East German case region) the agricultural sector has experienced dramatic changes during transition. Agricultural employment was mainly affected by

the decollectivisation and privatisation in the 1990s, by the changes in the agricultural production structure, e.g. a strong decrease in livestock production, by the massive loss of employment opportunities in the industry which together with weak social security systems forced many landowners to make their living by farming their own small plots and by a "statistical effect" since prior to transition many collective and state farms pursued various non-agricultural activities (kindergarten, road maintenance etc.). Despite the increase of agricultural employment in *Cluj* in the 1990s, the overall past trend in the case regions is that of a decline of agricultural labour input. The decrease was particularly sharp in *Jihomoravsky* and *Kosicky* – as well as in *Wittenberg* – in the early 1990s.

- In general, in comparison with the EU15, peculiarities of agriculture in the NMS12 relevant for labour employment in this sector are the dualistic farm structure – i.e., a huge number of (semi-) subsistence farms and at the same time a high share of large farms, often with more than 1,000 ha, in total land use –, the low level of labor and land productivity as well as the importance of non-family farms and non-family labour.
- Particularly in the cases *Cluj* and *Latgale* decollectivisation and restitution resulted in the emergence of a large number of subsistence and semi-subsistence farms (as well as some very large commercial farms). The small farms have had the function of a "social buffer". This goes in hand with “hidden unemployment”. The future prosperity of (semi)subsistence farms and their role for agricultural employment depends much more on the development of other income opportunities (non-agricultural jobs, social security benefits) than on agricultural policy itself including pillar 2 measures
- The expected growth rates of the whole economy are much higher in the NMS12 than in the EU15. However, it is unclear to what extent this will lead to a growth of non-agricultural employment, to what degree rural areas participate in this growth and to what extent agricultural workers will find non-agricultural jobs. As recorded in the case studies, the average educational level of those employed in agriculture is relatively low.
- The great importance of large co-operatives or commercial companies and the high share of non-family labour in *Kosicky* and *Jihomoravsky* (and in *Wittenberg)* could contribute to a faster adjustment of agricultural labour input to changing economic conditions, since the farm manager himself is not directly affected by the dismissal of employees and employed farm workers are emotionally less connected with the farm enterprise. Even so, the maintenance of jobs on farms is often an important business objective besides profit maximization. This is particularly true if the employees hold shares in the enterprise, are members of a co-operative or have leased land to the farm enterprise.
- Labour-land ratios are much higher in the NMS12 than the EU15 average apart from the Czech and Slovak case regions. According to the case studies EU accession and the CAP introduction will lead to slightly more investments in machiney and buildings. These investments are mainly in labour-saving technologies. This will be most important in *Cluj,* where e.g. much harvesting labour is done manually by seasonal workers. It is likely that the substitutional effect of replacing labour by capital will be more pronounced than the effect of expanding production. In total, labour input will go down.
- In all cases (except for *Cluj* which does not yet belong to the EU) the NMS apply the simplified area payment scheme (SAPS), which means that the direct payments are fully decoupled (except for the national top-ups). Hence, these payments do not have a direct production (and employment) effect, but an indirect one by improving liquidity. Although the CAP introduction on average increases farm income, this does not hold for all regions and farm types as exemplified by the *Szczecinski* case.

- Employment changes related with CAP induced adjustments of the balance of enterprises are expected to be minor in the case regions apart from *Latgale*. In this case, an expansion in milk production and an increase in the sown area is expected due to a CAP induced increase in output prices and the improved liquidity of farms. In the other case regions mainly an increase in the participation in agri-environmental schemes is anticipated, e.g. in *Kosicky*, where natural preconditions are partly unfavorable. At the same time, the improvement in liquidity by the direct payments could lead to an intensification, particularly in *Cluj*.
- The share of women in the regular labour force is significantly higher in those regions where family labour dominates. On-farm activities are stated to be clearly gender-specific in all case regions. Management, machinery maintenance and fieldwork are typical male activities, while accounting, milking, calf rearing and mostly intensive manual seasonal labour like fruit picking and harvesting is classified as typical female. Only in *Latgale* is there a significant share of female farm holders/managers. The share of females in agricultural employment might decrease due to investments in labour-saving technologies and the mechanisation of activities traditionally carried out by women. On the other hand, some interviewees believe that it is easier for men than for women to find off-farm employment which would lead to an relative increase of female labour in agriculture.
- In the regions where family farms dominate as in *Szczecinski, Latgale,* and *Cluj*, future employment of young people in agriculture is mainly an issue of succession. In these regions it is expected that in the future less young people will takeover the farms, as remuneration is too low on the smaller farms. Particularly in *Cluj*, where the share of young people is presently high, the availability of off-farm jobs will influence the share of young people in agriculture. Concerning non-family labour, many retiring workers will probably not be replaced. As reported for *Jihomoravsky*, there will be a need for qualified paid labour on the large farm holdings in the future, but incentives for young people to work in agriculture are low.

11 POLICY CONCLUSIONS AND RECOMMENDATIONS

11.1 Introduction

In relation to Policy Conclusions and Recommendations, the terms of reference specified

- *An examination, on the basis of the case studies, the extent to which both pillars of the CAP might influence the employment situation in rural areas (especially regarding young people and women)and to provide policy recommendations.*
- *The formulation and recommendation of typologies of rural areas which would be useful for the 2007-2013 programming period.*

These two tasks therefore form the core of this final chapter of the report. However, as a reminder of the findings in relation to the broader rural labour market context, and their policy implications, the conclusions from Chapters 2-8 will be drawn together first. This will be followed by a review of specific effects (some indirect) of CAP Reform/Implementation, which will lead on to some more general comments about the way in which these relate to the Lisbon employment targets. Some specific conclusions relating to classification of rural regions and typologies as an aid to rural development resource allocation are followed by a very brief final section which attempts to encapsulate the main findings of the report in three simple statements.

11.1.1 *European Rural Labour Markets – some broad patterns and trends*

A recurrent theme suggested by the demographic and employment indicators presented in Chapters 2-5 was of two opposing core-periphery processes, urbanisation and counter-urbanisation. Thus in the demographic analysis it was found that the SR regions have tended to show the most positive population trends because they have received migration from both PU and PR regions. In the employment chapters PR regions, especially the more remote ones were shown to have (broadly speaking) lower economic activity and employment rates, higher unemployment rates, and a greater proportion of employment in the primary sector. There was also some grounds to support the concept of “employment counter-urbanisation”, as a centrifugal flow (made possible by new transport and communications technologies) away from congestion and less attractive environments in PU regions into SR regions where quality of life is better, skilled/educated labour is relatively plentiful, and land is cheaper. The resulting expansion of secondary and tertiary sectors in the SR group of regions has resulted in a convergence in terms of industrial structure. The urban and rural economies of Europe are rather less distinctive in the 21st century than they were two or three decades ago. The more accessible regions in the PR group have shared in these trends to some extend, the more remote PR regions continue to be “drained” of development potential by negative demographic and employment trends.

However, overlaying these centre-periphery processes the analysis highlighted a number of north-south and east-west dimensions. The former seem to be based on either environmental or land use differences, or cultural contrasts, whereas most of the latter are more temporary effects of recent economic reforms and EU accession. Thus demographic ageing is a particularly important issue in the member states of the south, whilst “masculinisation” due to selective out-migration of young females is a particularly important issue in the Nordic

countries and the New Member States. The relative importance of agriculture in the rural economy varies both between the north and south, and between EU15 and New Member States. Self employment shows a North-South pattern. Infrastructure endowments, access to basic services, and human capital indicators all have both North-South and East-West components overlaying urban-rural variation.

11.1.2 *Implications for Rural Development Policy*

The analysis of demographic indicators provides a reminder of the existence of feedback effects and cumulative processes of either decline or improvement, and points to a general allocation issue; whether it is preferable to focus support upon the weakest regions, to try to break the "vicious cycle" of decline, or to use scarce resources to "tip the balance" in those regions which show some potential for growth but remain close to the threshold of a cumulative negative process.

Indicators of economic activity and unemployment have revealed (Chapter 3) two dimensions of regional differentiation, "participation" and "performance". These do not necessarily coincide or reinforce each other; low "participation" (largely determined by female activity rates) being particularly an issue in Southern Europe, whilst low "performance" (indicated by unemployment rates), is an issue throughout the periphery. Clearly the most problematic regions are those which have both low performance and low participation. Policy resource distribution should reflect this. Elsewhere there is a case to be made for two distinct strands of policy, one addressing "performance" through diversification and entrepreneurship, and one addressing "participation" through social inclusion and training measures. A specific demand for the latter was highlighted by the analysis of agricultural employment (Chapter 4), which also provided some insights into the scale of the problem - potentially several million farm workers shifting to other sectors or into retirement over the next decade. Furthermore patterns of educational attainment (Chapter 7) highlight the relative "deficit" in rural regions of Europe, and further serve to emphasise the central importance of interventions to strengthen rural human capital resources.

With regard to female activity and employment rates, one interpretation of the data presented in Chapter 3 could be that the former are mainly constrained by society-wide limitations (which are common to urban and rural regions), whilst the latter are affected by additional barriers in rural areas, which result in relatively high female unemployment rates in the countryside. This may have implications for the design of rural employment policies.

11.2 Main messages emerging from the Case Studies

It should be stressed that the findings presented in this section have a different kind of evidence base to those of the rest of the report. They were derived by compilation of the opinions of a relatively small number of people, together with the interpretations of the authors.

1. *Future employment effects*: The expectations of participants in the EU 15 case studies suggest that the impact of CAP reform on employment is highly variable, and region and enterprise specific. It reflects the different implementation regimes applied by Member States and the relative importance of CAP direct payments in comparison to other farm

supports such as agri-environment. Although many of the interviewees agreed that CAP Reform will lead to the development of more competitive farming systems and entrepreneurial activities which could conceivably have a positive long term effect on rural employment, there is also a certain fear that the decoupling of direct subsidies could have a negative impact on farm employment, and more in particular full-time employment.
The policy implications are;

- Delays and complex partial decoupling regimes in the reform process should not detract from the necessity and urgency of adjustment. Adjustment is likely to be beneficial to all stakeholders .
- Processes, skills and infrastructure which allow adjustment to have a better outcome should be supported through Pillar 2. This could involve supporting entrepreneurship, market access, value adding, knowledge transfer, education and retraining. Intervention should only take place where there are gaps in provision.

2. *The social buffer function of farming in the NMS and the need to increase farm competitiveness:* (Semi)subsistence farms in many NMS fulfil an important social service as a refuge and forced way of survival from unemployment and economic disruption. On the other hand there is a strong need to modernise the agricultural sector. Although competitiveness-improving investments are mostly in labour-saving technologies, which contributes to the release of agricultural labour, support to assist structural change, to improve food quality, traceability and hygiene, animal welfare and the treatment of wastes are all necessary to be competitive in the single market and to secure agricultural employment in the long run. This suggests the following policy options:
   - Continued support to agricultural sector investments with public good characteristics in the NMS to help to close the modernisation gap to the EU 15.
   - Design appropriate policy measures tailored to semi-subsistence farmers (see section 8 above).
   - Evaluate these measures to see whether their impact is in terms of developing these farms towards commercial competitiveness or in terms of social support.
   - Evaluate whether these measure hinder structural changes in the agricultural sector and whether there are more appropriate social policies.

3. *Decoupling of Complementary National Direct Payments and Single Payments*: The NMS (except for Slovenia and Malta) apply the Single Area Payment Scheme (SAPS). Whereas the SAPS payment is fully decoupled this is not the case for the Complementary National Direct Payments (Top-ups). Thus, the latter create distorted production incentives as well as reducing the resources available for structural adjustment.
   - The policy recommendation is to avoid wrong incentives for farmers in the NMS.
   - In the long run, this will increase the competitiveness of agriculture in the NMS and, thus, contribute to sustained agricultural employment.

   The same comment, and policy conclusion, applies to those EU15 member states where single payments are still partly coupled.

4. *Policy for marginal areas:* The case studies (both EU15 and NMS12) describe some regions with natural disadvantages which will not be competitive in most branches of agriculture and which could lose sizeable amounts of output and agricultural employment. However, these regions may have other national benefits and provide other public goods. This suggests the following policy directions;

- Continued support to explicitly reward farmers for provision of non-market public goods, (environment, landscape, biodiversity).
- Rural development programmes e.g. rural infrastructure to aid wider economic development
- Diversification support
- Appropriate LFA scheme design – to support public goods rather than production
- Supports which tackle disadvantages (distance from markets, road links), but do not promote production systems inappropriate for the natural resources available.
- Accelerate the shift from Pillar 1 to Pillar 2 supports so the resources are available for the programmes above.
- Analysis of the risks from natural events such as drought and floods and design of appropriate schemes to moderate their impacts

5. *Exploiting the advantages of lower intensity in the NMS:* Agricultural production in most regions in the NMS still relies much less on chemical inputs than in the EU15. Whereas, one of the main responses to price levels determined by market forces may well be to intensify production, a low intensity level is an opportunity to secure environmentally friendly production methods which often have a positive employment effect and also reduce the risks from adverse price and yield movements.
   Possible policy implications include:
   - Design and implement appropriate agri-environmental schemes (if not yet done) which recognise foregone net benefits from intensification.
   - Implement support arrangements for the establishment of marketing channels for environmentally friendly food products including organic products.

6. *Maximising the benefits from extensification (EU15):* Similarly, extensification of production systems is a strong theme across many of the case regions in the EU15 in response to the general economic conditions of agriculture and .CAP reform.
   - For policy the point is not to interfere with this trend, but possibly to help individuals and communities to use this shift to their advantage. Does it assist with a shift to added value, natural or organic branding? Does it affect the design of agri-environment schemes, or in some cases negate their use?

7. *Reform impacts on succession in the EU15:* CAP reform could well accelerate the change in the way succession happens (many farms cannot support the farmer and the successor at the same time, so the successor will increasingly return to the farm after a period elsewhere).
   - For policy the implication is that agricultural education needs to be available in a form to suit mature students returning to farming and lifelong learning opportunities are made available.

8. *An increasing role for women on the farm?* In some regions the case studies suggest women will take on a greater management role as farmers get off-farm jobs and as new on farm alternative enterprises are set up.
   This may suggest the need for;
   - Management training for spouses
   - Farm women networks to share experience/knowledge/best practice

9. *Support for part-time farming:* A clear, long standing trend, in both the EU15 and NMS is the shift to part-time farming. This means the management of systems with less regular labour and less personal time. Farmers are finding ways to make this work, but the case interviews point to stresses and failures in that a part time job is often effectively being operated on top of full time farming.
   - The policy implication of this is the need to foster new operating mechanisms such as machinery rings, labour rings, co-operatives, new land contracting/ rental arrangements where they do not exist at present.
   - Also there is a need to improve the skills and qualifications of farmers entering the wider job market.

   A wider policy implication is the need to design policy for "two agricultures" – small/part time and large/full time. The case studies show this differentiation is appearing in most regions. Small agriculture depends much more on Pillar 2 since the availability and accessibility off farm work is paramount to sustain the incomes of small farm families. Investment subsidies are of less importance to small farms while direct aids to enhance producer returns are invariably limited by the small scale of the business

10. *Support for Co-operation:* The realisation of economies of size by small-scale farmers requires continued and further co-operation among farmers. For many farmers in the NMS the idea of such co-operation is hampered by the negative experiences of forced collectivisation during socialist times. Nevertheless agricultural cooperatives can be efficiently run[284]. Empirical studies comparing co-operatives and other forms of corporate farming show that they are not inherently less efficient, than family farms. Even where the average corporate farm is less productive than the average family farm, some individual co-operatives and companies can register high total factor productivity scores[285] .
    The policy implication is the same as stated at 9 above.

11. *Support for adaptation to the new environment:* CAP reform, especially full decoupling, is creating a sudden shift away from high direct subsidy support. However, the new models of competitive farming in a European context do not yet exist. A lack of confidence or lack of a vision for the future is appearing in some areas and result in individuals making poor choices between leaving the industry and finding more profitable ways to farm.
    Policy directions could include;
    - More and more effective extension activity and agricultural outlook programmes
    - More and more effective applied innovative research

12. *Increasing awareness of the CAP in the NMS*: The NMS12 cases show that there is still a need to improve the implementation and administration of the CAP and to increase the knowledge of many farmers on the CAP. This has both effects on prices and farm income as well as on employment.
    For policy this might include:
    - Simplify the system of direct payments, e.g. by including the national top-ups into the SAPS.

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[284] Gorton, M. and Davidova, S., "Farm Productivity and Efficiency in the CEE Applicant Countries: A Synthesis of Results" *Agricultural Economics* 30, (2004), 1-16.

[285] Hughes, 2000a; Mathijs and Vranken, 2000, Davidova, S., Gorton, M., Ratinger, T. Zawalinska, K. and Iraizoz, B., "Farm Productivity and Profitability: a comparative analysis of acceding countries and EU Member States" Comparative Economic Studies (forthcoming).

- Information and publicity initiatives which increase the knowledge of farmers on the CAP (see 11 above).
- Make sure that those market organisations with an intervention system work properly especially in landlocked countries in years with exceptional high yields.

13. *Training and Farm Advice*: The importance of human capacity for successful farming (as shown by large differences in performance levels between farms) as well as for finding off farm employment is widely acknowledged. The case studies and the literature show that the educational level of those employed in agriculture is often below the national average. This particularly holds for those countries with a large share of small-sized farms.
    For policy this might include to
    - Support advisory and extension services
    - Improve vocational training
    - Recognise and reduce the costs of accessing training and alternative employment by farm family members (search, travel and subsistence, clothing, relocation costs).

14. *Supporting Value Added Activities*: The cases suggest that employment confidence is best where there are strong regional added value activities.
    The policy implication, as described earlier, is to support value adding activities and marketing infrastructure especially in disadvantaged regions. Also to adopt measures to reduce the risks of value adding enterprises through supporting innovation and enhancing market knowledge.

15. Modernisation of the downstream sector: In the NMS12 the prospects of agricultural employment depends *inter alia* on the necessary further modernisation of the downstream sector.
    For policy this suggest to continue to support the modernisation of the food processing sector in these countries, enhancing competition, attracting foreign direct investment and supporting linkages throughout the food chain.

16. *Regionally differentiated policy:* The case studies show up large regional differences in the direction of farming, in production systems, in non farming economic opportunities, in education levels and a range of other factors. These regional differences have grown with the last EU enlargement.
    The policy implication of this, which is already well understood, is that any policy while sharing common principles throughout the EU, must be tailored to local circumstances. Also, the ability to adopt different models and approaches is critically important for innovation. Avoid policies which discriminate against specific farm sizes or legal types.

17. *Milk quota adjustment:* Milk production is labour intensive. In countries like Poland, an important share of milk is currently produced for own consumption in the farm household. It is likely that this subsistence production will decrease more rapidly within the next five or ten years than the additional milk quota foreseen as a restructuring reserve. This will have a negative impact on agricultural employment in these countries.
    - For policy a fairly simplistic suggestion from an employment perspective is to increase the milk quota by the same amount as subsistence production goes down. More generally policies on milk quotas should not be used to artificially distort the

allocation of resources in the dairy sector nor impede the exploitation of comparative advantage in milk production between countries and regions.

18. *Addressing age structure issues:* In many case studies the unfavourable age structure is mentioned. In addition, particularly in the NMS12 there is a need to reduce agricultural employment in order to improve the income opportunities for those staying in the sector.
    - In the light of continued concern about age structures in the farming industry, the social costs and benefits of early retirement schemes (which show only modest impacts so far) should be carefully assessed. The opportunity costs of retirees, and the realism of the expectations of new entrants are particularly worthy of careful analysis. Since CAP reform can accelerate succession processes, training for mature "returnees" to farming would be appropriate in many regions.
    - The reduction in the size of the agricultural labour force often comes about by young people not staying on their family farms. Making sure that young people have alternative job opportunities which they are fitted for would seem to be one of the best ways bringing about structural change.

11.3 Rural Labour Markets, CAP Reform/Introduction, and the Lisbon Employment Targets

11.3.1 *The Lisbon Employment Targets in relation to Rural Europe*

The analysis of employment rates provided earlier in the report has shown that these tend to be highest in urban regions, and lowest in PR regions. SR regions seem to occupy an intermediate, (and improving) position. This suggests that the in order to meet the Lisbon objective (70% employment rate overall), without simultaneously increasing rural-urban disparities (and thus undermining cohesion objectives), it is the PR regions of the EU which need to make the greatest progress in terms of their rate of labour market participation.

As regards the female employment rate target (60%), the biggest challenges are in the rural regions of some southern member states (IT, GR,ES) in some of the New Member States (PL, HU) and in scattered rural regions of FR, BE, DE and IE. Again, the simple message is that in order to achieve the Lisbon Target, whilst maximising cohesion, it will be desirable to find policy approaches which address the particular labour market conditions in these regions.

11.3.2 *The role of non-agricultural activities*

Before turning to the specific issue of the impact of CAP Reform on the ability of rural areas to meet the Lisbon employment targets something should be said about role of the rest of the rural economy. Part of the solution must lie in accelerated and geographically inclusive structural change. Traditional primary activities may provide some additional employment through increased value added, marketing of regional and quality products, and so on, but more substantial growth is more likely through increased involvement in the secondary and tertiary sectors. This will necessitate upgrading of information technology infrastructure (Chapter 8), and "re-skilling" of elements of the rural workforce (Chapter 7). It must also be selective, some parts of the tertiary sector (such as tourism) are more appropriate for rural regions than others (such as high level financial services).

Rural regions have substantial advantages in terms of environment and quality of life. The established process of counter-urbanisation is evidence of this. However many PR regions, especially those which are more remote and sparsely populated suffer from handicaps of poor infrastructure and access to basic services (Chapter 8). Less tangible factors (beyond the remit of this project) which have been highlighted by the recent literature on rural economic development include the need for effective local governance, strong business networks, "social capital" and an entrepreneurial culture.

11.3.3 *The role of the farm sector*

The farm sector, while it generally contributes only a small and decreasing part of total rural employment has still large potential adjustments to make. A continuation of past trends for the next decade could lead to several million people with relatively low skills leaving (or not entering) the sector across the EU27. The case studies have indicated that the outlook for rural labour markets, especially those in which farming accounts for a significant share of the workforce, is particularly difficult because the "release" of underemployment (hidden unemployment) following the exposure to global market forces as a result of CAP Reform will probably act as a brake on progress in terms of employment rates, and will depress incomes for the farm sector.

However such impacts are likely to be concentrated in regions with a greater dependence upon agriculture, and a paucity of alternative opportunities. Generally speaking these will be PR regions, and particularly those which are peripheral. These are also the regions most likely to be affected by "masculinisation" and demographic ageing.

By contrast, the labour markets of the majority of SR regions, especially those which are more accessible, are unlikely to be significantly affected, because agriculture is of minor importance, and their more positive employment trends are driven by activities outside the primary sector, often with close ties to adjacent urban areas. In such regions the adjustment needs of the farm households are all too easily ignored.

11.3.4 *Broad policy implications*

In both PR and SR contexts, rural policy should find the right balance between recognizing the specific difficulties faced by farm households adjusting to the new policy and market environment, while at the same time acknowledging the fact that new employment opportunities are most likely to be outside the primary sector. Although it must be assumed that the service sector will be the main engine for employment growth in the countryside, due account must also be taken of the continuing relationship between many new rural enterprises and on-farm work (via the involvement of pluriactive farm households). Specific policies addressing the needs of part-time farm households will have a greater chance of success if they form just one strand of a broader intervention addressing the needs of rural business generally. After all, in many rural regions the whole labour market (including farm workers) is characterised by low employment rates, low wages, low levels of human capital, poor demographic status with poor access to better educational, health and employment facilities.

The third axis of the 2005 Rural Development Regulation is clearly extremely important in this respect, in that it supports the necessary diversification of the rural economy, enhancement of quality of life, and support for education and training. However the challenge is a very substantial one, and careful targeting of resources will be necessary.

Many of the issues described in this report are also recognised in Structural Fund and Cohesion policy, others are addressed by Leader+ (the fourth axis of the new rural development regulation). Most member states also have national rural/regional development initiatives. In this respect the role of the current report is to provide a consistent EU-wide evidence base, which may also suggest priorities for future policy formulation.

For instance, given the recurrent differences between the SR and PR regions (and accessible and peripheral parts of them) it would seem appropriate to consider some means of focusing Pillar 2 assistance. Whether this means targeting those regions with the "weakest" labour markets, or alternatively giving preferential treatment to those which show signs of vitality is currently a matter for debate. This leads us, finally, to the typologies presented in Chapter 9, which, it is argued, provide the foundation upon which a resource allocation scheme based on relative labour market performance could be built.

11.4 Recommendations for Typologies to support CAP and RDR policy development

As has already been discussed in Chapter 9, it is important to distinguish between the delimitation of urban and rural regions (including differentiating between different degrees of rurality), and the second step of classifying rural regions according to various socio-economic characteristics. The recommendations below deal with each of these issues in turn, within the context of the probable future requirements of CAP and RDR policy for typologies to support targeting of assistance.

Although agricultural policy targeting has in the past generally been on the basis of individual holding characteristics, decoupling perhaps provides an opportunity for a move towards an allocation mechanism which takes account of Lisbon employment objectives at a regional level. In order to achieve this it would be necessary to have information both about regional labour market characteristics, and about the prevailing farm structures and agricultural employment patterns/trends.

1. ***Delimit rural regions using a strengthened OECD typology***: Assuming that the analysis must be carried out at NUTS 3 (because this is the only geographical framework for which a reasonable amount of socio-economic data is available), it is recommended that the existing OECD typology is retained, at least as a starting point. Given the substantial shortcomings of NUTS 3 as a regional framework, it is believed that little is to be gained from switching to an entirely new approach. The advantages of this include the fact that the typology is already widely known and used, it is also transparent and easy to understand. However, as demonstrated in Chapter 9, the typology can be enhanced by:
    - Taking account of differences in accessibility/peripherality (within the SR and PR categories).
    - Differentiating between the two types of "intermediate" or SR regions, those which have a fairly uniform moderate population density, and those which contain both sparsely populated areas and a substantial urban centre.

2. **Use simple transparent disaggregative classification methods**: The recommendations below assume the use of simple disaggregative "multi-criteria" methodologies, rather than aggregative multi-variate statistical techniques, such as factor or cluster analysis. The pros and cons of these different approaches have already been discussed in Chapter 9. However the particular advantages of multi-criteria approaches in a policy context are worth stressing here:
   - They are easy and straightforward for policy makers and policy clients to understand. Aggregative techniques tend to be seen as "black boxes" by the latter group particularly.
   - The "user" is in full control, able to tailor the indicators and criteria to reflect policy objectives. Aggregative methods, although claimed to be "more objective", can only be "steered" in a rather crude way by selection and/or transformation of indicators.
   - Multi-criteria typologies can easily be updated, results tend to be fairly stable. Aggregative techniques tend to be less stable in this respect, updating (or adding/removing) indicators can often result in difficult to interpret "flipping" of the results.

3. ***Differentiate between rural regions in terms of their overall labour market characteristics***: This has also been addressed in Chapter 9, where an attempt has been made to create a simple typology which simultaneously takes account of employment/unemployment rates, of differential rates of "employment inclusion", and of demographic trends and flows which may distort these rates.

4. **Further development of regional typologies based on agricultural characteristics**: It is recommended that further development takes place of regional typologies based upon farm structural characteristics, and agricultural employment patterns/trends. One example would be to attempt to operationalise the dichotomy between small part time and larger full-time holdings, mentioned above. Most of the available data has already been assembled and described in Chapter 4 of this report. The value of such regional typologies would be in providing a broad overview of the likely geographical pattern of impact of different policy options.

11.5 A Final Word

A wide-ranging discussion based on detailed empirical evidence, such as that required by the terms of reference of the current report, often makes it difficult to "see the wood for the trees" (including, perhaps especially, for the authors). However, the key messages of this report can perhaps be distilled to three broad assertions:

- The rural regions of Europe have a pivotal role to play in achieving the Lisbon employment targets, since they include among their number some of the "weakest" labour markets in the EU27.
- However, in addressing such weaknesses it is very important to retain flexibility, and to recognise that rural labour markets differ widely in the nature and degree of their disadvantage. A "one size fits all" rural policy is not appropriate, and in this respect the "menu based" approach of the Rural Development Regulation is to be welcomed.

- Future rural employment growth will not be based in the primary sector, rather it will be predominantly driven by service sector activities. However it is nevertheless very important to recognise the central role of part-time farming, as a reservoir of underutilized labour, and as a “seedbed” for entrepreneurial activity. The challenge is to tap into, and integrate, these resources more effectively into the non-farm rural economy. This will, among other things, require development of the skills and adaptability of farm household labour, and perhaps new, flexible, ways of working by rural enterprise.

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