

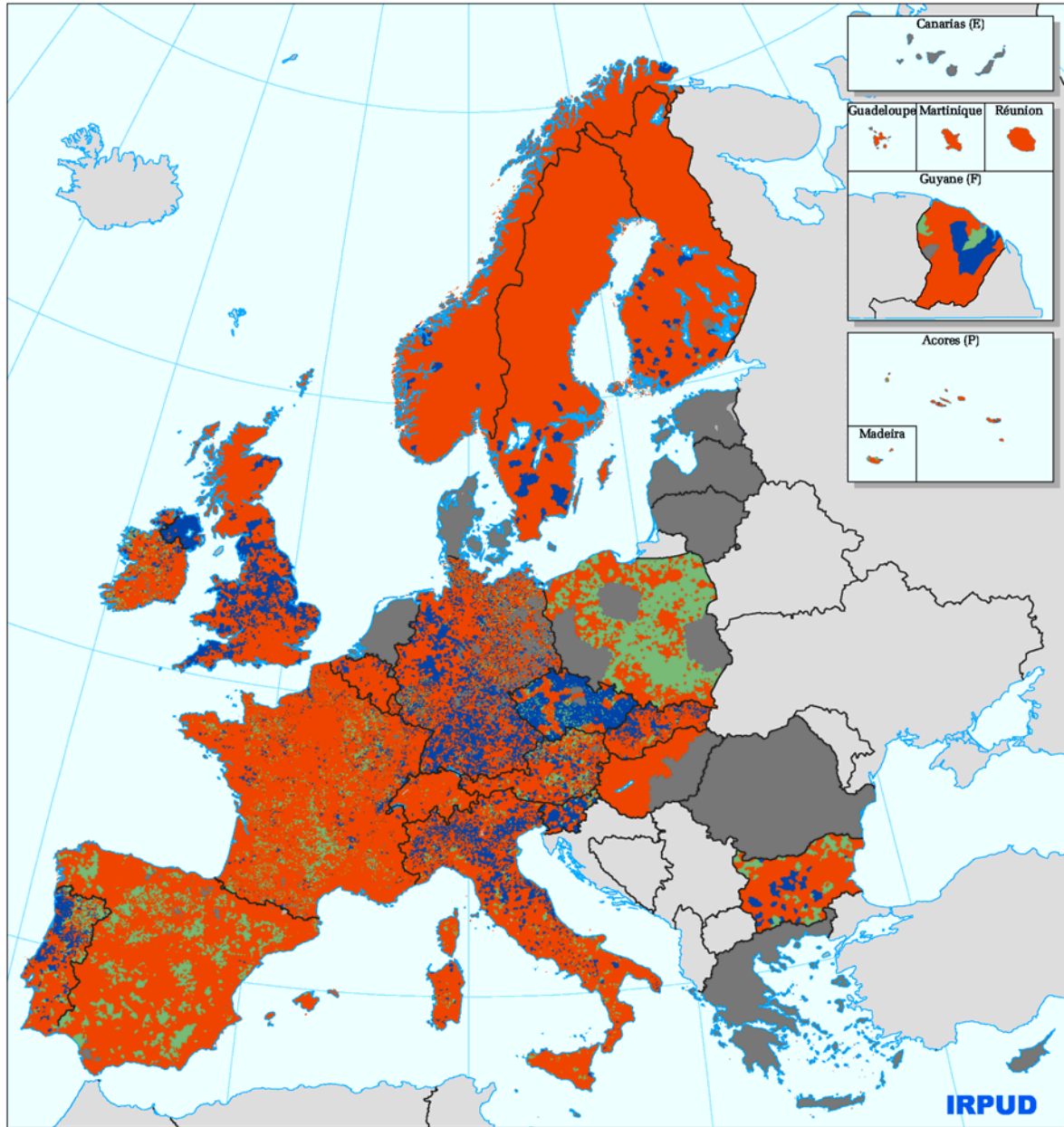
## 6. Economic characterisation of mountain areas

The economies of Europe's mountain areas are highly diverse at all spatial scales. While agriculture and forestry are often perceived as vital in local economies and for cultural identity, employment in other sectors is higher except in a relatively small number of municipalities. Pluriactivity is very common, at various temporal scales. For instance, an individual may work in a factory during the day and in agriculture in the evenings and weekends; or in forestry in summer and in tourism in winter. This chapter explores the economies of mountain areas from the viewpoint of employment, recognising that employment statistics are often rather simplistic and cannot show the complex reality characterising many mountain people. While it would have been desirable to address other issues, such as GDP and income, data for all the countries of the study area are not available at a level of detail allowing clear differentiation of the situation in mountain areas in comparison to other parts of their countries, though many studies of specific regions and sectors have been undertaken, e.g., with regard to the Single Programming Documents for Objective 1 and 2 areas. The compilation, synthesis, and critical evaluation of such studies would be a useful contribution to policy debates given that comparable data for the mountains of the study area are unlikely to be available for some time at an adequately differentiated scale. Chapters 8 and 9 provide qualitative descriptions of current situations and trends with regard to mountain economies, based on information from the national reports.

This initial economic characterisation of mountain areas is based on analyses both of the number of people employed in each sector and of unemployment patterns. As with the demographic data, analyses are of two types. The first consider both mountain areas in comparison to lowland areas and national averages: a series of graphs show the relative proportion of employment in each sector for the lowland and mountain parts of countries; for nations as a whole; and also for individual countries of the study area with mountains. Data are presented for all countries with mountains except for Greece and Cyprus. The second consider only mountain areas. All available data have been used in these analyses (see Annex 1).

To provide a common basis for comparison, the maps in the three following sections present the deviation in the proportion of employment in each sector from the average for the study area: 4% in the primary sector (agriculture, forestry, fishing), 26% in the secondary sector (manufacturing, construction and mining), and 70% in the tertiary (service) sector. However, this approach may mean that characteristics identified for a particular massif reflect national characteristics (see Figure 6.1), rather than being specific to the massif. The data on which these maps are based are shown in Tables 6.1 and 6.2. Care should, of course, be taken with statements based on these data because of differences in national definitions. It should also be recognised that the number in employment varies in one massif greatly across the study area, from a few thousand to over a million in seven massifs: in Austria (Austrian Alps 1.62 million), Italy (northern Apennines 1.09 million, southern Apennines 1.07 million, Central Alps 1.05 million), Slovakia (Carpathians 1.03 million), Spain (Catalan range 1.13 million), and Switzerland (Mittelland 1.67 million). Large numbers of employed people are also found in some of the isolated mountain areas, in Germany (northern low mountains 1.66 million, southern low mountains 2.89 million), Hungary (Transdanubian mountains 1.44 million), and Spain (Madeira 1.03 million).

Figure 6.1 Predominant economic sector in terms of employment by municipality



Predominant economic sector in terms of employment by municipality

- |  |  |
|--|--|
| <span style="color: green;">■</span> Agricultural sector | <span style="color: grey;">■</span> Data not available   |
| <span style="color: blue;">■</span> Manufacturing sector | <span style="color: lightgrey;">■</span> Other countries |
| <span style="color: orange;">■</span> Services           |  |
- Source: National statistical institutes

0 500Km

Administrative boundaries: EuroGeographics, ESRI Romania, NCRD, Okeos, Swiss Federal Statistical Office, Eurostat/GISCO

Table 6.1. Proportion of employment per sector in massifs

Mountain range	Massif	Country	Proportions of employment in			Employed active population
			Primary Sector	Secondary Sector	Tertiary sector	
Alpine range	Koszeg	HU	3,0%	30,7%	66,3%	368
Alpine range	Bavarian Alps	DE	8,0%	33,6%	58,4%	225068
Alpine range	Austrian Alps	AT	5,9%	32,9%	61,2%	1615343
Alpine range	North Slovenia Alps	SI	4,6%	47,0%	48,4%	304616
Alpine range	Swiss Alps	CH	5,5%	28,0%	66,5%	882434
Alpine range	Central Alps	IT	2,8%	38,4%	58,9%	1049358
Alpine range	Eastern Alps	IT	4,9%	37,9%	57,2%	514167
Alpine range	Western Alps	IT	5,1%	33,3%	61,5%	349230
Alpine range	Northern Alps	FR	2,8%	21,9%	75,4%	790166
Alpine range	Mediterranean Alps	FR	3,6%	11,5%	85,0%	459927
Appennines	Northern Appennines	IT	6,4%	29,2%	64,4%	1088822
Appennines	Central Appennines	IT	5,2%	32,1%	62,8%	736169
Appennines	Southern Appennines	IT	12,1%	21,3%	66,5%	1068620
Balkans	Stara Planina	BG	10,6%	36,8%	52,6%	264389
Balkans	Sredna Gora	BG	6,9%	46,4%	46,7%	101710
Balkans	Western mountains	BG	0,7%	23,2%	76,0%	553579
Balkans	Rodopi Planina	BG	15,2%	37,7%	47,1%	324668
Balkans	Rodopi	GR	n/a	n/a	n/a	n/a
Balkans	Olympos and Central Greece	GR	n/a	n/a	n/a	n/a
Balkans	Evia - Viotia - Attiki	GR	n/a	n/a	n/a	n/a
Balkans	Pindos	GR	n/a	n/a	n/a	n/a
Basque Mountains	Basque Mountains	ES	1,4%	37,2%	61,4%	609078
Betic Systems	Betic Systems	ES	12,2%	27,1%	60,7%	1461364
Black forest - Schwabian and Frankonian Alb	Schwabian Alb (Swiss)	CH	10,6%	30,8%	58,6%	2701
Black forest - Schwabian and Frankonian Alb	Black forest - Schwabian and Frankonian Alb	DE	4,6%	47,8%	47,6%	784657
Bohemian range	Sumava - Cesky Les	CZ	9,2%	50,4%	40,5%	57848
Bohemian range	German Bohemian mountains	DE	12,8%	42,1%	45,1%	120343
Bohemian range	Austrian Bohemian mountains	AT	20,6%	28,6%	50,8%	103953
Bothnian Arc	Norrbottnen	SE	2,1%	22,7%	75,2%	80905
Bothnian Arc	Vaesterbotten	SE	5,6%	32,4%	62,0%	3858
Bothnian Arc	Ostrobothnia and coastal hinterland	FI	4,4%	32,4%	63,3%	131418
Bothnian Arc	Aangermanland	SE	3,1%	30,5%	66,3%	72715
Cantabrian Range	Cantabrian Range	ES	10,0%	31,2%	58,8%	292029
Carpathian range	Polish Carpathian mountains	PL	20,3%	29,7%	50,0%	513175

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Mountain range	Massif	Country	Proportions of employment in			Employed active population
			Primary Sector	Secondary Sector	Tertiary sector	
Carpathian range	Czech Carpathian Mountains	CZ	3,1%	54,8%	42,1%	136018
Carpathian range	North Hungarian mountain areas	HU	2,6%	26,4%	71,0%	59073
Carpathian range	Slovak Carpathian mountains	SK	6,8%	38,3%	54,9%	1029552
Carpathian range	Eastern Romanian Carpathian mountains	RO	0,8%	33,1%	66,1%	456910
Carpathian range	Muntii Apuseni	RO	0,9%	31,6%	67,5%	255287
Carpathian range	Southern Romanian Carpathian mountains	RO	1,2%	34,8%	63,9%	558617
Catalan Range	Catalan Range	ES	1,5%	40,3%	58,2%	1126432
Central Scandinavian mountain areas	Jamtland - Harjedalen - Dalarna	SE	4,2%	20,3%	75,5%	52787
Central Scandinavian mountain areas	Border area - Troendelag	NO	0,5%	25,8%	73,7%	75563
Central System	Cordilheira central	PT	7,3%	35,3%	57,4%	176844
Central System	Central System	ES	3,5%	28,5%	68,1%	262931
Corsica	Corsica	FR	5,3%	7,1%	87,6%	64757
Crete	Crete	GR	n/a	n/a	n/a	n/a
Dinaric Mountains	Italian Dinaric mountains	IT	0,5%	18,1%	81,5%	87426
Dinaric Mountains	Dinaric Mountains	SI	5,2%	40,0%	54,8%	141526
Galician-Portuguese Massif	Galician Massif	ES	15,7%	31,9%	52,4%	696878
Galician-Portuguese Massif	Macico Noroeste	PT	8,4%	48,8%	42,9%	616523
Highlands and Islands	Highlands and Islands	UK	3,6%	35,7%	60,8%	187549
Iberic System	Iberic System	ES	14,0%	33,6%	52,5%	417623
Jura	Swiss Jura	CH	5,9%	35,3%	58,9%	180527
Jura	French Jura	FR	4,2%	31,2%	64,6%	249664
Massif Central	Massif Central	FR	8,4%	23,8%	67,9%	875908
Mittelland - Upper Rhine Valley	Upper Rhine Valley	DE	3,4%	27,1%	69,5%	32405
Mittelland - Upper Rhine Valley	Upper Rhine valley	DE	1,0%	77,2%	21,8%	6927
Mittelland - Upper Rhine Valley	Mittelland plateau	CH	3,0%	24,1%	73,0%	1667202
Mountains of Sardinia	Mountains of Sardinia	IT	8,5%	24,8%	66,7%	163037
Mountains of Sicily	Mountains of Sicily	IT	9,5%	17,1%	73,5%	701161
Northern English Mountains	Northern English Mountains	UK	2,4%	48,8%	48,9%	451868
Northern Fennoscandia	Finnmark and northern Troms	NO	0,8%	16,9%	82,3%	63545
Northern Fennoscandia	Mountain Lapland	FI	11,3%	9,0%	79,8%	3755
Northern Fennoscandia	Forest Lapland	FI	5,8%	16,6%	77,7%	34674
Northern Fennoscandia	Kainuu and Koillisma - Hill region	FI	12,8%	22,9%	64,4%	58458
Northern Fennoscandia	Nordland - Troms	NO	0,7%	19,9%	79,4%	114927
Northern Fennoscandia	Lapland	SE	3,0%	27,0%	70,0%	41478

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Mountain range	Massif	Country	Proportions of employment in			Employed active population
			Primary Sector	Secondary Sector	Tertiary sector	
Ore mountains	Czech Ore mountains	CZ	1,7%	47,8%	50,5%	172581
Ore mountains	German Ore mountains	DE	6,7%	41,2%	52,2%	343104
Peloponnesean mountains	Peloponnesean mountains	GR	n/a	n/a	n/a	0
Pentadaktylos	Pentadaktylos	CY	n/a	n/a	n/a	0
Pyrenees	French Pyrenees	FR	10,4%	15,8%	73,8%	123732
Pyrenees	Spanish Pyrenees	ES	4,7%	38,2%	57,1%	533548
Rhenish Slate Mountains	Belgian Ardennes	BE	1,3%	25,6%	73,2%	19477
Rhenish Slate Mountains	Luxembourg Ardennes	LU	7,0%	28,4%	64,7%	1649
Rhenish Slate Mountains	French Ardennes	FR	0,9%	43,9%	55,2%	12079
Rhenish Slate Mountains	Rhenish Slate Mountains (German part)	DE	4,2%	41,3%	54,5%	643890
Rhenish Slate Mountains	Northern Vosges	FR	2,3%	36,6%	61,1%	3667
Sierra Morena	Sierra Morena	ES	20,8%	26,9%	52,4%	97992
Southern Scandinavian mountain areas	Jotunheimen - Rondane - Dovre	NO	0,1%	26,4%	73,6%	46252
Southern Scandinavian mountain areas	Vaermland	SE	7,0%	22,3%	70,8%	5500
Southern Scandinavian mountain areas	Oestland mountain areas	NO	0,0%	17,3%	82,7%	598072
Southern Scandinavian mountain areas	Hardangervidda - Southern mountain areas	NO	0,1%	28,1%	71,8%	59287
Southern Scandinavian mountain areas	Coastal mountain areas	NO	0,5%	28,1%	71,4%	320991
Sudetes	German Sudetes	DE	6,6%	33,0%	60,4%	8860
Sudetes	Polish Sudetes	PL	n/a	n/a	n/a	n/a
Sudetes	Czech Sudetes	CZ	4,5%	53,8%	41,7%	262008
Toledo Mountains	Toledo Mountains	ES	16,1%	29,1%	54,7%	105506
Transmontano - Leonese Plateau	Leon Mountains	ES	4,5%	34,5%	61,1%	51592
Transmontano - Leonese Plateau	planalto transmontano - Beirao	PT	19,1%	27,3%	53,7%	90010
Troodos	Troodos	CY	n/a	n/a	n/a	n/a
Welsh Mountains	Welsh Mountains	UK	3,2%	49,8%	47,1%	356972
Vosges	Vosges	FR	3,7%	34,9%	61,5%	173732

Table 6.2. Proportion of employment per sector in isolated mountain areas

Massif	Country	Proportions of employment in			Employed active population
		Primary Sector	Secondary Sector	Tertiary sector	
Southern Uplands	UK	7,9%	38,1%	54,0%	30501
Donegal mountains	IE	10,8%	46,6%	42,7%	4870
Northern Ireland Mountains	UK	2,6%	51,0%	46,4%	31134
Cumbria	IE	22,6%	29,0%	48,3%	1877
Connacht mountains	IE	23,7%	31,5%	44,8%	2070
Mourne Mountains (UK)	UK	5,5%	58,5%	35,9%	8074
Mourne mountains (IE)	IE	7,2%	41,9%	50,9%	2260
Slieve Bloom Mountains	IE	31,3%	32,3%	36,3%	300
Wicklow	IE	6,2%	26,4%	67,4%	9689
Waterford Mountains	IE	23,1%	28,0%	48,9%	2067
Kerry mountains	IE	21,3%	28,5%	50,3%	11379
Dartmoor and Exmoor	UK	4,5%	45,7%	49,8%	37976
German low mountains, northern part	DE	5,5%	37,9%	56,6%	165762
Brdy	CZ	6,3%	47,6%	46,2%	22333
German low mountains, southern part	DE	4,0%	38,2%	57,8%	289003
Moravian hills	CZ	8,9%	55,2%	35,9%	46888
Acores - grupo ocidental	PT	14,1%	25,8%	60,1%	1266
Transdanubian Mountains	HU	1,6%	18,6%	79,8%	143923
Morvan	FR	11,3%	21,6%	67,2%	12543
Muntii Macinului	RO	18,6%	1,7%	79,7%	172
Cotes bourguignonnes	FR	10,7%	18,0%	71,3%	16492
Mecsek	HU	5,3%	20,7%	74,1%	52613
Acores - Grupo central	PT	12,9%	25,0%	62,1%	35185
Acores - grupo oriental	PT	15,4%	31,0%	53,5%	28524
Complexo estremenho	PT	3,0%	34,0%	63,1%	51127
non-massif mountain areas	PT	5,9%	24,2%	69,8%	12947
Balearic Islands	ES	1,5%	25,8%	72,7%	39457
Serra Algarvia	PT	8,3%	27,3%	64,4%	7962
Aegian island mountains	GR	n/a	n/a	n/a	n/a
ilha da Madeira	PT	8,6%	25,4%	66,1%	103420
Canary Islands	ES	n/a	n/a	n/a	n/a

## 6.1 Primary sector

Figure 6.2 shows a very clear difference between the EU Member States and the acceding and candidate countries when it comes to employment in the primary sector. In all of the former, as well as Norway and Switzerland, employment in this sector is proportionately higher in mountain than lowland areas. In three countries, the mountain proportion is more than twice that in the lowlands: Ireland (mountain 15.1%, lowland 6.9%), Portugal (9.1%, 3.7%), and Luxembourg (7.0%, 1.7%). In four others, the mountain proportion is at least 50 % higher than in the lowlands:

Finland (6.9%, 4.5%), Spain (8.3%, 5.2%), Sweden (3.1%, 1.9%), and the UK (3.1%, 1.6%). In contrast, in all acceding and candidate countries except for Slovakia (3.1%, 1.6%), agricultural employment is proportionately higher in lowland areas. The predominance of agriculture in Poland is clear, but the proportion employed in the primary sector in the mountains (20.3%) is much less in the lowlands (29.3%) where most farmers live.

Figure 6.2. Proportion of employment in the primary sector by area (purple=lowland, burgundy=mountain, cream=national)

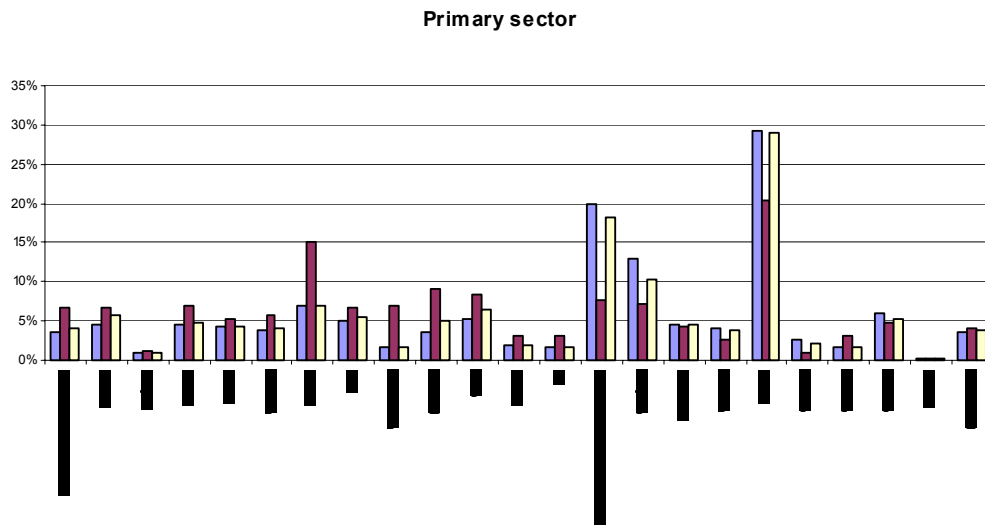
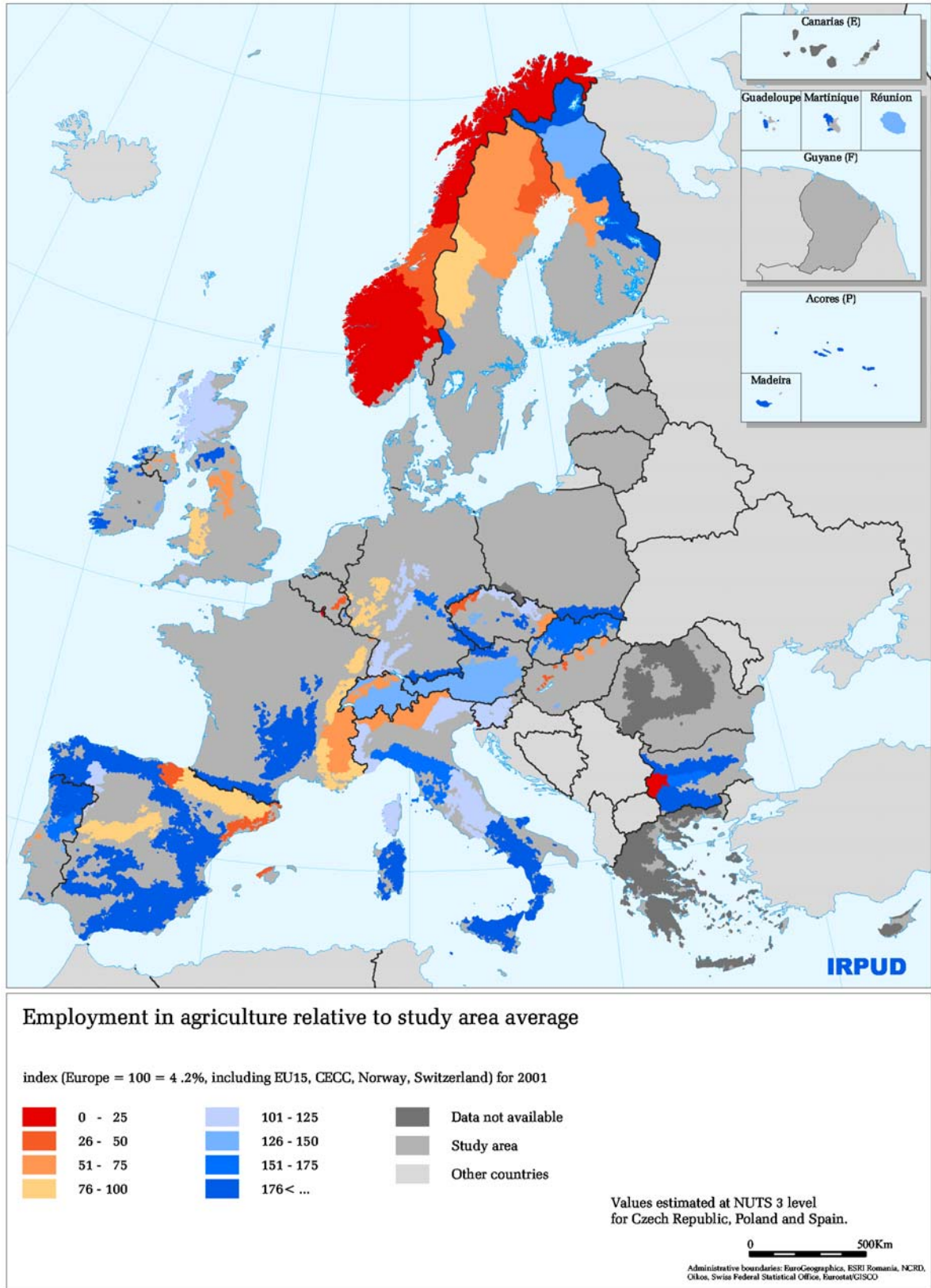


Figure 6.3 shows the proportion of employment in the primary sector relative to the study area average. Particularly because this average is a rather small proportion of total employment (4%), some of the deviations are rather large. The largest number of massifs with a very high proportion of employment in this sector are in the Iberian peninsula, where the proportion is often over 10%, reaching 20.8% in the Sierra Morena (Spain) and 19.1% in the Transmontano-Leonese Plateau of Portugal. Elsewhere in the EU15, proportions are high in Ireland (most over 20%), the Bohemian mountains of Austria (20.6%) and Germany (12.8%), the French Pyrenees (10.4%) and Massif Central (8.4%), as well as the Azores (13-15%). In the acceding and candidate countries of the study area, the highest proportion in any massif is for the Polish Carpathians (20.3%); in Bulgaria, the proportions are particularly high in the Rodopi Planina (15.2%) and Stara Planina (10.6%). Proportions are also at least double the study area average in Sumava and the isolated massifs of the Czech Republic. Conversely, rather low proportions in primary employment are also found in most of the same countries: the Basque and Catalan ranges and Balearic islands of Spain, the western mountains of Bulgaria, and the Ore mountains and White Carpathians of the Czech Republic. Rather low proportions are also found in most of the Hungarian mountains. Finally, the Nordic countries have both high proportions in Finland (up to 12.8% in the Kiainuu and Koillisma-Hill region) and very low proportions for all of Norway (under 0.8%). This great diversity of situations clearly underlines the need for region-specific policies for mountain agriculture and forestry within broader national policy contexts.

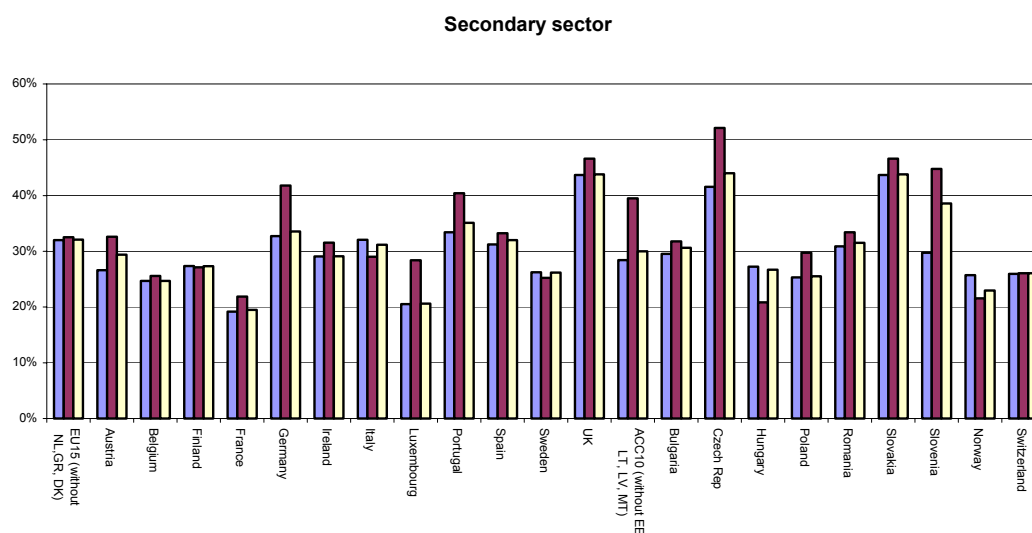
Figure 6.3. Employment in the primary sector relative to study area average



## 6.2 Secondary sector

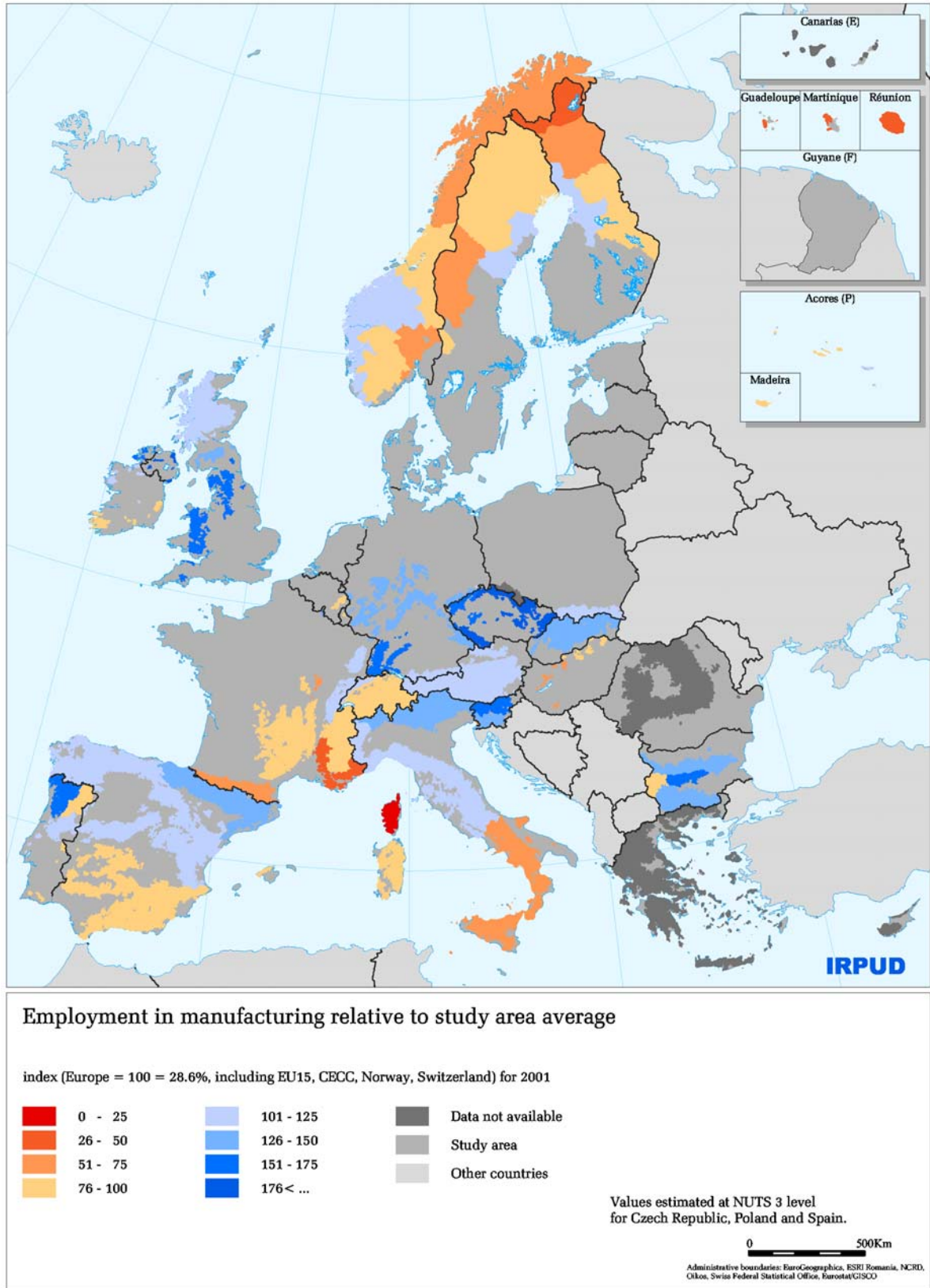
Figure 6.4 shows that, across the 12 EU Member States, the proportion of employment in the secondary sector is similar in mountain and lowland areas. In most individual countries, this is also true. However, there are four countries with notable differences, and in all of these, the proportion of employment in mountain areas is higher: Germany (41.8%, 32.7%), Portugal (40.4%, 33.4%), Austria (mountain 32.6%, lowland, 26.6%), and Luxembourg (28.4%, 20.5%). In the seven acceding and candidate countries, the proportion of employment in the secondary sector is notably higher in mountain areas (39.5%) than in lowland areas (28.4%). All but one of these countries exhibits the same pattern, most notably Slovenia (mountain 44.8%, lowland 29.7%) and the Czech Republic (52.1%, 41.6%). However, in Hungary, the pattern is reversed (20.9%, 27.2%).

Figure 6.4. Proportion of employment in the secondary sector by area (purple=lowland, burgundy=mountain, cream=national)



In contrast to the primary sector, a smaller number of massifs depart very significantly from the study area average (Figure 6.5). The mountains of the Czech Republic have very high proportions of employment in the secondary sector (47.6-55.2%), as do those of the UK apart from Scotland (45.7-58.5%), Slovenia (Alps 47.0%, Dinaric mountains 40.0%), Slovakia (38.3%) and Bulgaria (36.8-46.4%, except for the western mountains). Other highly industrialised massifs include the German Black Forest (47.8%), the Italian central Alps (38.4%) and others in Portugal (Macico noroeste, 48.8%) and Spain (Catalan range 40.3%, Pyrenees 38.2%). Conversely, the massifs with the lowest proportions of employment in this sector are found in northern Fennoscandia (Mountain Lapland and Forest Lapland in Finland 9.0% and 16.6%; Finnmark and Nordland- Troms, Norway, 16.9%), and in southern France (Pyrenees 15.8%, Mediterranean Alps 11.5%, Corsica 7.1%). Again, these trends reflect a great diversity of situations, and particularly the extent to which large cities with major industrial capacity are included in areas defined as mountainous in this study.

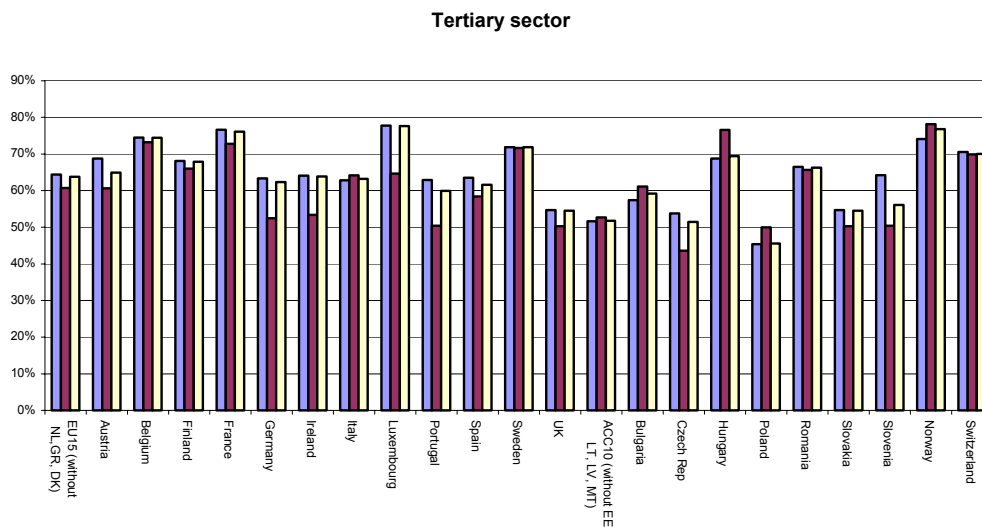
Figure 6.5. Employment in secondary sector relative to study area average



### 6.3 Tertiary sector

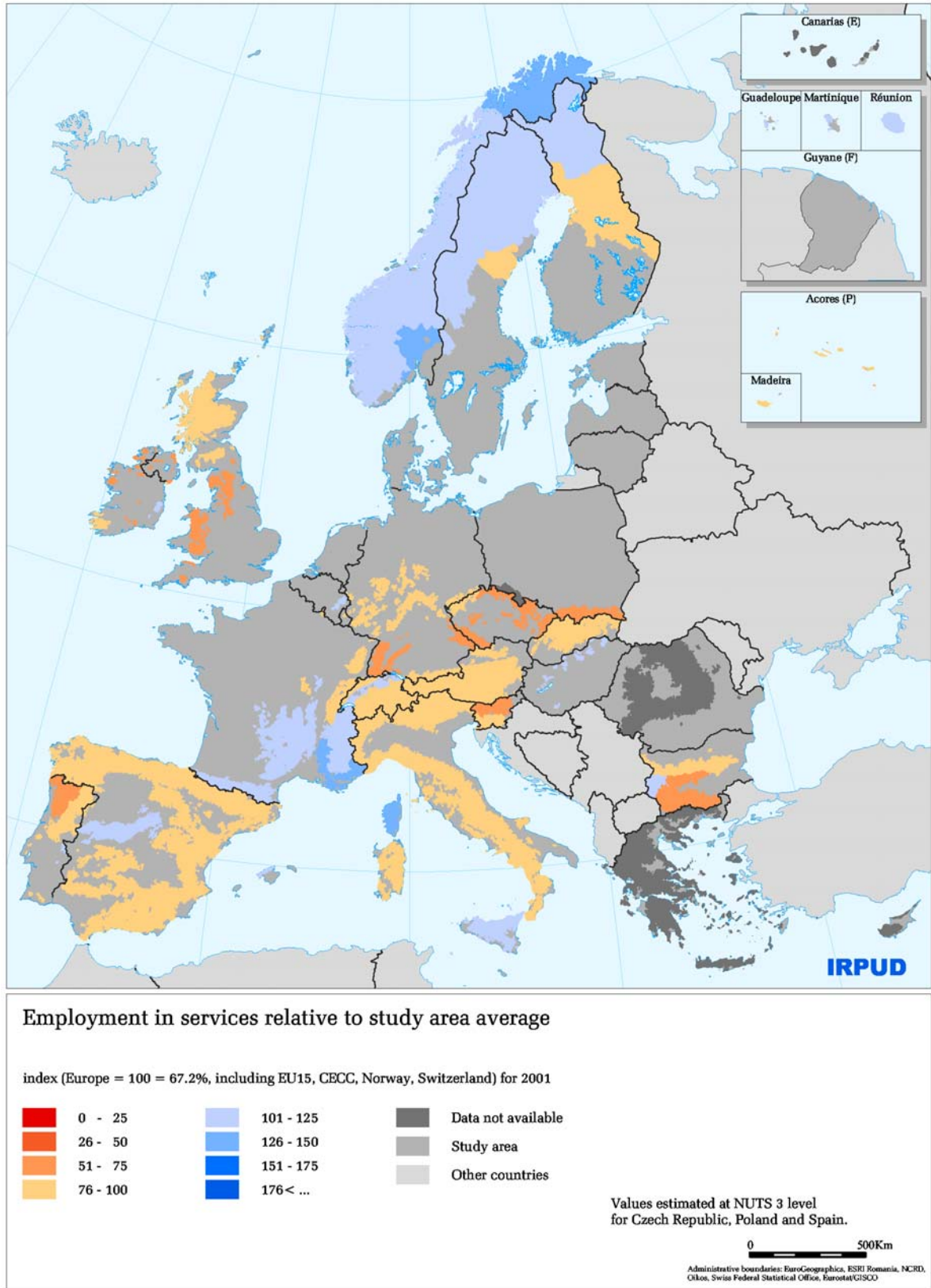
The tertiary sector accounts for the greatest proportion of employment in all the countries of the study area; only in the Czech Republic is the relative proportion in mountain areas below 50%. Figure 6.6 shows that, in nearly all of the EU Member States, relative employment in the tertiary sector is lower in mountain than in lowland areas, particularly in Portugal (mountain 50.4%, lowland 62.9%), Luxembourg (64.6%, 77.8%), Ireland (53.4%, 64.1%), and Germany (52.5%, 63.3%). The only Member State where the relative proportion in mountain areas is higher is Italy (64.2%, 62.8%); this is also true in Norway (78.2%, 74.1%). In the acceding and candidate countries, the patterns vary. In four, the proportion in mountain areas is lower, with particularly large differences in Slovenia (mountain 50.4%, lowland 64.2%) and the Czech Republic (43.6%, 53.8%). Conversely, the proportion in mountain areas is higher in three countries, with the greatest difference in Hungary (76.6%, 68.8%), the acceding country with the greatest national proportion of tertiary employment.

Figure 6.6. Proportion of employment in the tertiary sector by area (purple=lowland, burgundy=mountain, cream=national)



Given the dominance of this sector across the study area, deviations in individual massifs are generally smaller than for the other two sectors (Figure 6.7). Proportions are higher than average for the study area across most of the Nordic countries: as high as 82.7% in Oestland (Norway) and just below 80% in Mountain Lapland (Finland) and Nordland-Troms (Norway). In contrast to the secondary sector, proportions are high in southern France, especially the Mediterranean Alps (85 %) and Corsica (87.6 %). For most of the massifs, however, employment in services is lower than the average for the study area, counting for no more than half of total employment in a number of diverse areas including most of the mountains of Ireland (35.9-50.9%); the mountains of the Czech Republic (35.9-50.5%) and the adjacent German Bohemian mountains (45.1%); the Macico Noroeste (Portugal (42.9 %); the German Black Forest (47.6%); the Slovenian Alps (48.4 %); the mountains of Wales (47.1%) and northern England (48.9%); the Polish Carpathians (50.0%); and much of Bulgaria (around 50% except for the western mountains).

Figure 6.7. Employment in tertiary sector relative to study area average



#### **6.4 Overall structure of employment**

With regard to the overall structure of employment, Figure 6.8 shows a complex pattern. High proportions of service activity correspond to both economically prosperous mountain areas (e.g., French Northern Alps, Swiss Mittelland) and declining areas, where public service provision is the main remaining activity (e.g., northern Norway). Many mountain areas in all parts of Europe (Hardangervidda and the southern mountains of Norway, northern England, Wales, the Czech Sudetes, the Black Forest of Germany, Catalunya and the Basque Country in Spain) still have a relatively high share of employment in the secondary sector. Mountain areas with a dominant primary profile are, on the other hand, concentrated in southern Europe (e.g., Bulgaria, Spain, French Pyrenees and Massif Central, Corsica, Sardinia, Sicily and southern Italy), as well as in Poland, a country whose economy has an unusually high level of employment in this sector. One can therefore identify some significant economic profiles at massif level. However, the potential for development based on this profile largely depends on the proximity of an urban network and on the presence of a satisfactory local service provision. These aspects are explored in Chapters 7 and 10.

#### **6.5 Patterns of unemployment**

To complement the analyses of employment, unemployment rates in massifs were calculated and compared to national rates of unemployment. The data used were not official unemployment rates, but employed population per sector. The results are shown in Figure 6.9. As with patterns of employment, patterns of unemployment are complex across the study area; though it is notable that relative levels of unemployment are high in the most peripheral areas: the northern parts of the Nordic countries, Scotland and Northern Ireland in the UK, the southern ranges of Spain, Corsica, and southern Italy and Sicily. Conversely, the lowest rates are generally in massifs near or including major urban industrial centres, for instance in the Oestland mountain areas of Norway, the mountains of England and Wales, the Black Forest of Germany, the northern Apennines of Italy, and along the northern and southern edges of the Alps in France, Germany, Italy and Switzerland. However, there are some exceptions to this general trend, notably in the low mountains of Germany, the Belgian Ardennes, and the Ore Mountains of the Czech Republic and Germany, all of which have relatively high unemployment.

Figure 6.8. Classification of massifs according to the over- or under-representation of economic sectors

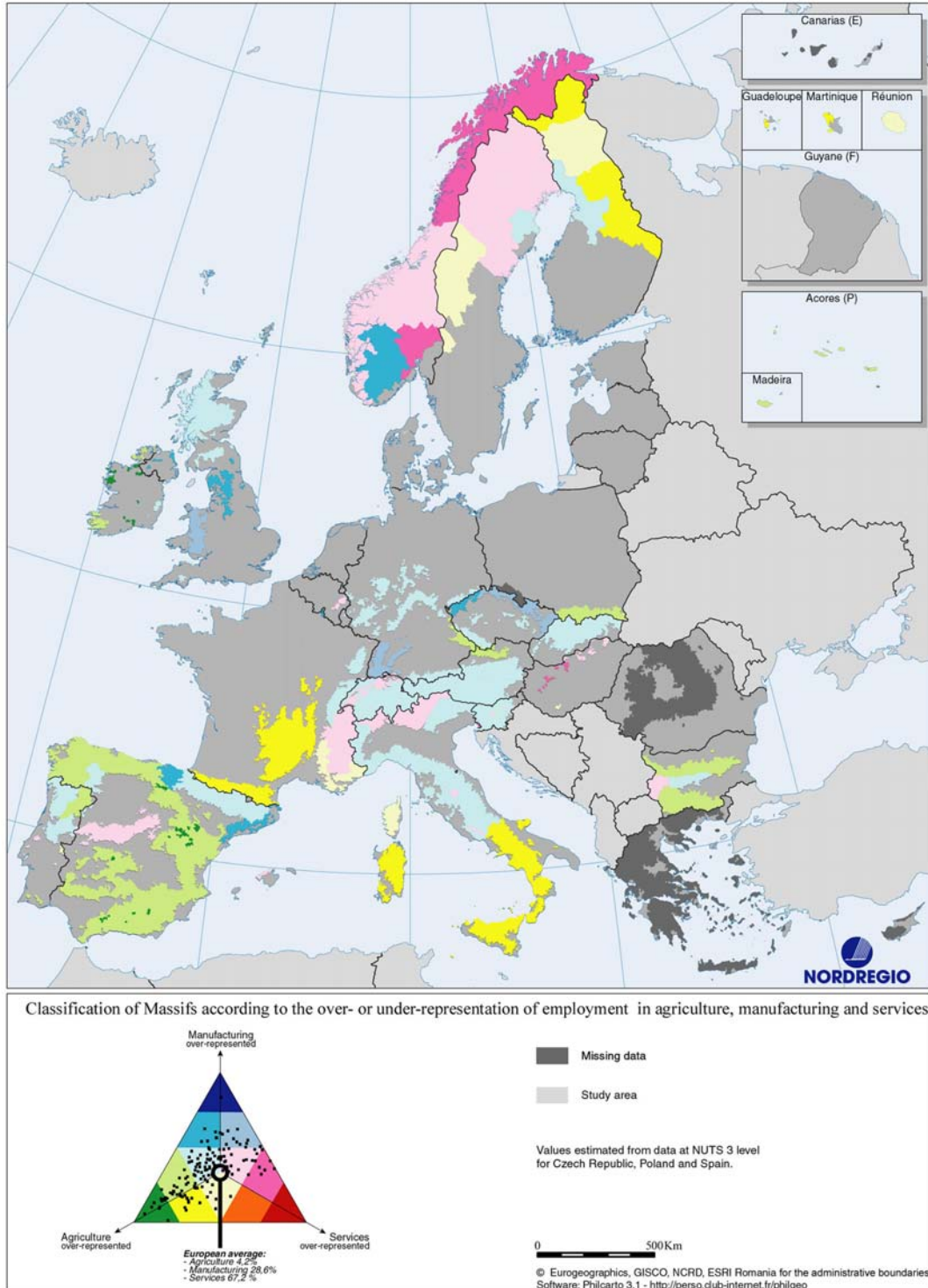
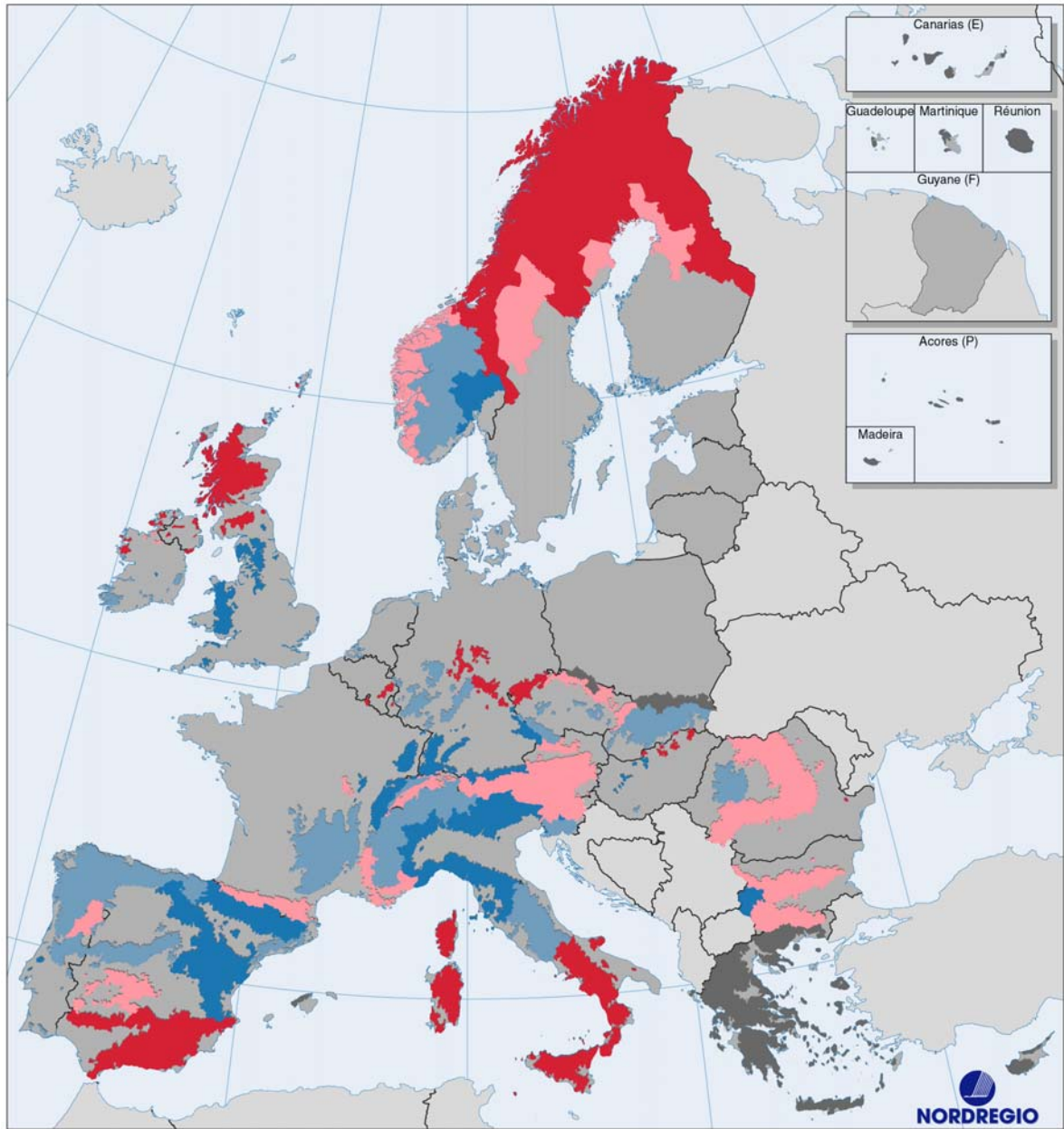


Figure 6.9. Proportion of unemployed per massif compared to national values



Proportion of unemployed per massif compared to national values

Deviation from national value

- under 75 % of national value
- 75 - 100 % of national value
- 100 - 125 % of national value
- over 125 % of national value

- Missing data
- Study area
- Other countries

0 500Km

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Software: Philcarto 3.1 - <http://perso.club-internet.fr/philgeo>

