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## **Two Faces of Territorial Cooperation in Europe: Twinning Cities and European Territorial Cooperation Programmes**

Adam Płoszaj

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ADAM PŁOSZAJ <sup>1</sup>

## **2.1 TWO FACES OF TERRITORIAL COOPERATION IN EUROPE: TWINNING CITIES AND EUROPEAN TERRITORIAL COOPERATION PROGRAMMES**

### **INTRODUCTION**

This chapter discusses cooperation between entities from various European regions taking place within so-called twinning cities and projects financed from EU funds in the frame of INTERREG B and INTERREG C programmes. City twinning is an interesting phenomenon with various spatial aspects. It comprises formal cooperation agreements made between local commune (city) authorities usually located in different countries. The INTERREG analysis concerns two types of cooperation: transnational cooperation and interregional cooperation. Transnational cooperation takes place across large multi-national spaces; interregional cooperation concerns non-contiguous regions across the whole territory of the EU. The cooperation takes place as part of projects financed from ERFD funds. In 2000-2006, transnational cooperation was financed within 11 operational programmes within the INTERREG IIIB initiative. In 2007-2013, transnational cooperation is financed as part of 13 transnational programmes under the European Territorial Cooperation Objective (the name INTERREG is not officially used, but due to large similarity of the initiatives in this paper, for the sake of brevity, the term INTERREG IVB will be used). In addition, interregional cooperation is financed from ERDF funds, in 2000-2006 within the INTERREG IIIC programme and in 2007-2013 within INTERREG IVC.

### **Sources of Data**

The analysis uses data on INTERREG III and IV projects collected from official publications (databases, reports, project lists, etc.) by

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<sup>1</sup> EUROREG, University of Warsaw.

institutions managing particular programmes. Due to the low importance given to spatial analyses of ESPON space, the analysis excludes one INTERREG IIIB programme, namely 'Madeira-Azores-Canary Islands' and three INTERREG IVB programmes, namely 'Indian Ocean Area', 'Macronesia' and 'Caribbean Area'. Source data represent the state of affairs as at the beginning of 2011 – consequently, they include all of the completed programmes from 2000-2006, and for programmes from 2007-2013 the data are fragmentary and include projects that had been started or approved for implementation by the beginning of 2011. Based on the primary data, a database of projects and associated partners was built, encompassing all the programmes taken into account. Subsequently, project partners were ascribed to particular European regions at NUTS 2 level (according to the location of the headquarters of the organisation, or the location of the division taking part in the project). Partners were located qualitatively, which required manual ascription of each record. It is important to underline that the project used primary data on projects and partners (above all, derived from programme-level databases). However, during the TERCO project lifetime, the KEEP tool and database was developed by the INTERACT programme.<sup>2</sup> The KEEP database contains datasets for projects and partners from the 2000-2006 INTERREG and 2007-2013 European Territorial Cooperation programmes. This database offers considerable opportunities for research in territorial cooperation, but due to the TERCO project timeline, the KEEP tool was not used for this project.

The data collected for twinning cities were based on an analysis of Wikipedia pages of communes and cities. Use of this source of data was determined by the lack of official sources. The data from Wikipedia were collected in the period of July-October 2011 through the use of crawling software and data mining and cleaning algorithms created for the purpose of the study.<sup>3</sup>

## **SPATIAL PATTERNS OF TRANSNATIONAL COOPERATION (INTERREG IIIB AND IVB)**

The implementation of projects within INTERREG IIIB and IVB programmes took place within predetermined areas, both in the EU countries and neighbouring countries. The cooperation areas within par-

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<sup>2</sup> KEEP is an online tool and internet portal containing comprehensive information on all European Territorial Cooperation projects. It was developed within INTERACT Project. Read more: [http://www.interact-eu.net/keep/what\\_is\\_keep/227/2259](http://www.interact-eu.net/keep/what_is_keep/227/2259)

<sup>3</sup> The author would like to take the opportunity to thank Jakub Herczyński for the help with crawling and processing the data.



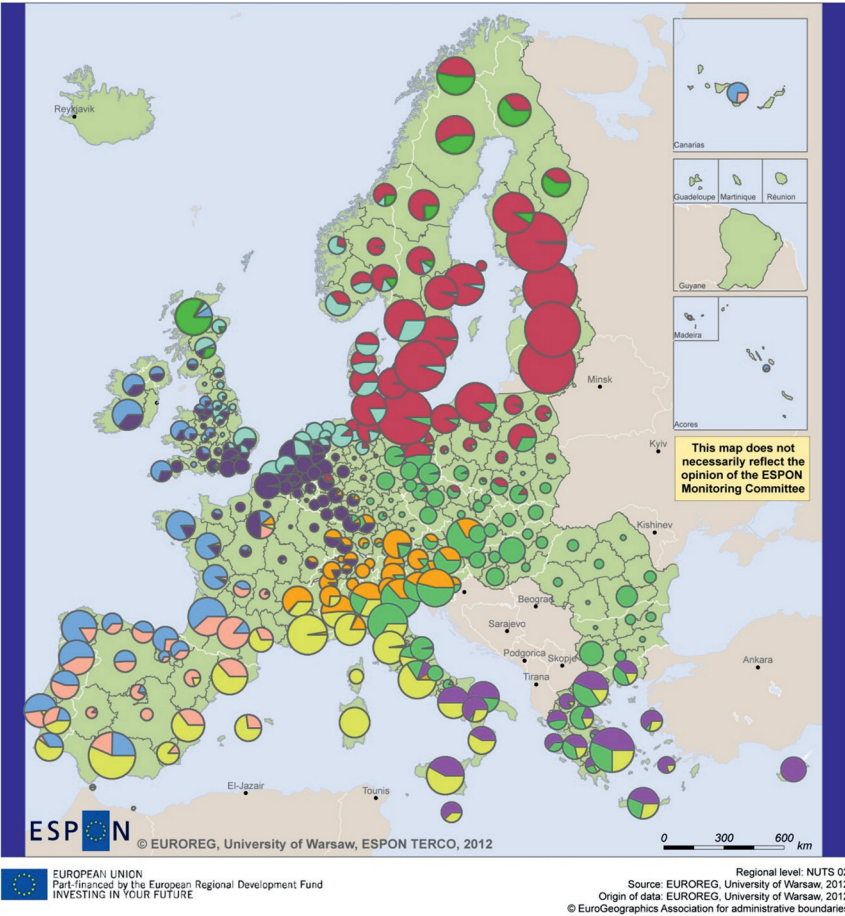
ticular programmes are presented in Figures 1 and 2. Note that the areas of cooperation changed to some extent in both of the analysed periods. Moreover, the areas of particular programmes are not mutually exclusive, i.e. some regions may participate in more than one programme (and in a maximum of four).

In ten programmes within the INTERREG IIIB initiative, fewer than 1,000 projects were implemented, in which about 9,000 partners participated (a partner is interpreted as each participation of a given entity in a project, i.e. if a given entity took part in two projects it is counted as two partners). On the other hand, within INTERREG IVB programmes, 500 projects had started implementation by the beginning of 2011, with over 5,200 partners. Particular programmes are quite diverse, both in terms of the number of implemented projects and the number of partners, but also with regard to the number of NUTS 2 regions from which the partners originated. The relative measures characterising the programmes are also diversified, such as the average number of partners per project and the number of projects per region in which the projects within a given programme were implemented. The large diversity of programmes – within both INTERREG IIIB and INTERREG IVB – makes general comparative analyses or analyses including the whole ESPON space more difficult, and their results depend largely on the characteristics of the programmes, which in turn result from the principles assumed within particular programmes.

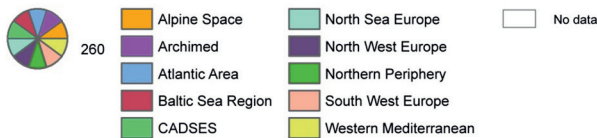
European regions (NUTS 3) differ significantly in terms of their involvement in the implementation of projects within INTERREG IIIB and IVB initiatives. This is connected to some extent with the aforementioned diversity of particular programmes. Moreover, an important factor determining the diversity is the fact that some regions could have benefited from more than one programme in both the INTERREG IIIB and the INTERREG IVB implementation periods. Therefore, the observed diversity should be treated as largely resulting from the accepted set-up of INTERREG IIIB and IVB initiatives and particular programmes within them.

In the case of projects within the INTERREG IIIB initiative, there is a very high level of activity of institutions from the Baltic Sea Region programme area. A large number of projects is also typical for Italian regions and those French, Spanish and Portuguese regions located in the Mediterranean or the Atlantic Ocean region – in their case the projects were implemented within more than one programme. In the case of some countries – particularly Spain, France, Germany and Poland – there is a perceptible difference in the level of activity between coastal regions, which are characterised by a large number of project partners, and the hinterland regions, where the number of partners implementing projects was significantly smaller (see Figure 1).

In the subsequent period (INTERREG IVB), the pattern of participation in implementation of transnational cooperation projects is quite similar (see Figure 2). There is still greater interest in projects in coastal and Atlantic regions than in those in the hinterland of particular countries. One of the more pronounced changes is the relative decline in the number of projects implemented in the Baltic Sea basin. Moreover, the large



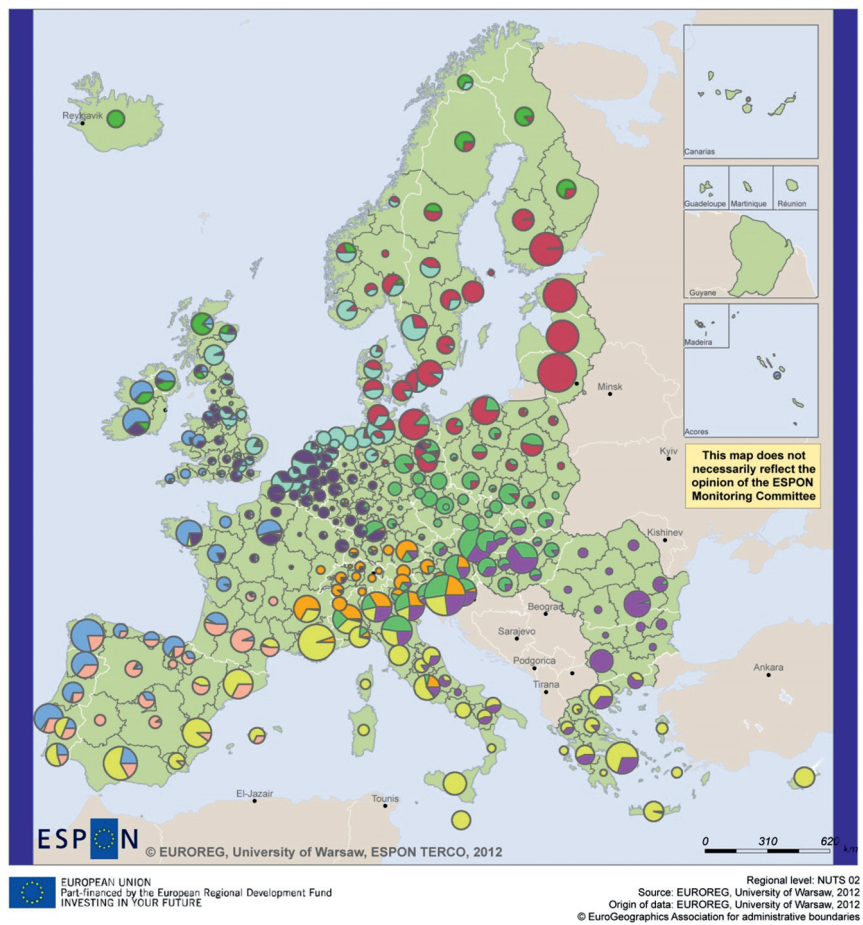
**Legend**  
Number of project partners in INTERREG IIIB programmes



**Figure 1** Number of project partners in INTERREG IIIB programmes

Source: Author's elaboration.

involvement of regions in Northern Italy and Slovenia is notable, which are active in as many as four programmes (which should be interpreted as one more manifestation of the influence of the set-up of the initiative under discussion, i.e. the entities from regions ascribed to more than one programme use the opportunities created to implement projects within various macro-regions designated in particular programmes).

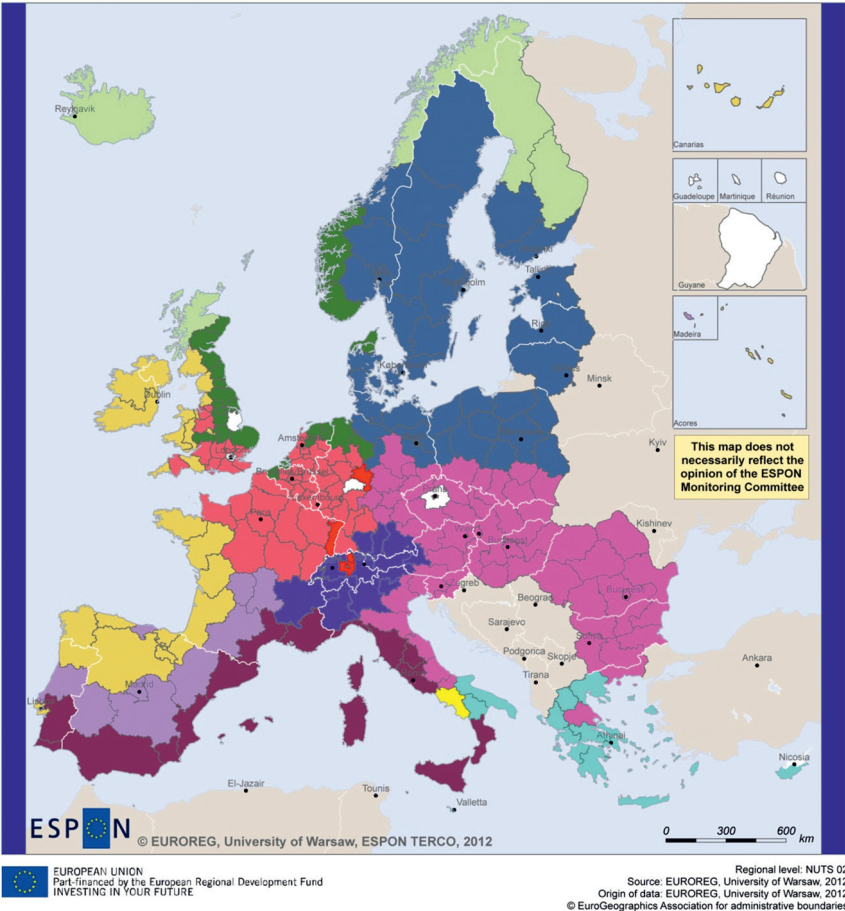


**Legend**  
Number of project partners in INTERREG IVB programmes (as of January 2011)



**Figure 2** Number of project partners in INTERREG IVB programmes  
Source: Author's elaboration.

Entities located in a large part of the regions could take part in more than one transnational cooperation programme (as can be seen in Figures 1 and 2), making it possible to analyse their preferences of participation in particular programmes. By ascribing each region to the programme in which the highest number of its partners participated, a simpler typology of cooperation areas within transnational cooperation can be derived.



**Legend**

Dominating programmes in regions (highest number of project partners)

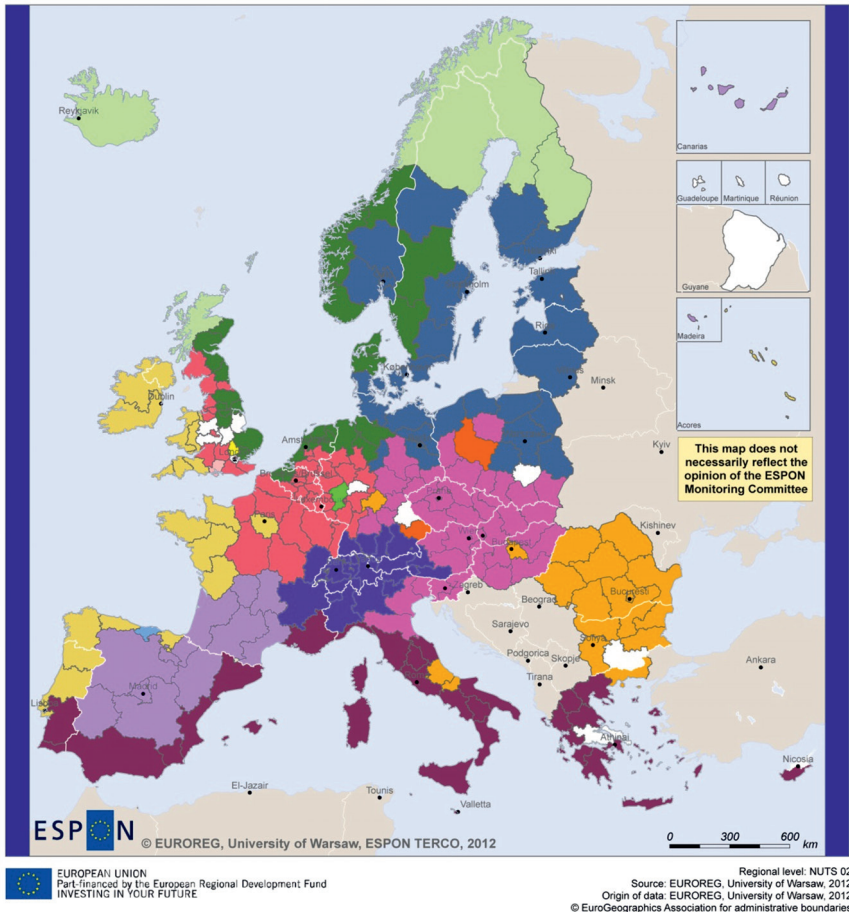
- |                   |                    |  |
|-------------------|--------------------|--|
| Alpine Space      | CADSES             | South West Europe                        |
| Archimed          | North Sea Europe   | Western Mediterranean                    |
| Atlantic Area     | North West Europe  | Alpine Space = North West Europe         |
| Baltic Sea Region | Northern Periphery | Archimed = Western Mediterranean         |
|                   |                    | no data (no project partners identified) |

**Figure 3** Dominating INTERREG IIIB programmes

Source: Author's elaboration.



Due to predetermined areas of particular programmes, as well as the fact that some regions were included in only one programme, the results of such a typology must be interpreted with caution. Simultaneously, an unquestionable benefit of the proposed typology is the fact that it divides up the whole ESPON space (as opposed to the areas specified in particular



### Legend

Dominating programmes in regions (highest number of project partners)

Alpine Space	North Sea Region	Central Europe = Baltic Sea Region
Atlantic Area	North West Europe	Atlantic Area = South West Europe
Baltic Sea Region	Northern Periphery	Atlantic Area = Mediterranean = North Sea Region
Central Europe	South East Europe	Atlantic Area = North West Europe = North Sea
Mediterranean	South West Europe	Alpine Space = Central = North West = South East
		no data (no project partners identified)

**Figure 4** Dominating INTERREG IVB programmes

Source: Author's elaboration.

transnational cooperation programmes, which are not mutually exclusive) in a complete and exclusive manner.

In the case of INTERREG IIIB, the typology of areas of preference in cooperation within particular programmes seems to form functional areas (see Figure 3), such as, for example, the Baltic Sea basin, the North Sea basin, the Alpine Space, the Mediterranean coast, the Atlantic coast, hinterland areas of Spain and France, and the European Pentagon area (but excluding its southern part). Of particular interest is the division between the countries in the area that are included in whole or in significant part in more than one programme. Therefore, in the case of Poland, a sensible and obvious division can clearly be seen with the northern part predisposed towards cooperation with the Baltic Sea area and the southern part cooperating with the Central and Eastern European regions.

The typology resulting from the analysis of INTERREG IVB is very similar (see Figure 4). Larger differences are associated with changes in the programmes' areas. This applies in particular to the division of the CADSES programme (from the INTERREG IIIB initiative) into two programmes – Central Europe and South East Europe – as well as combining two previously separate areas of the Western Mediterranean and Archimed into one area of Mediterranean programme. The pattern emerging from the analysis of predominance of INTERREG IVB programmes is less pronounced than in the case of the previous initiative. This outcome results from the fact that the programmes are still under implementation, and therefore the number of partners and projects taken into account is two times lower than in the case of INTERREG IIIB – it should be expected that, when all projects are taken into account, the coherence of areas thus established will increase.

The simple typology presented seems to confirm firstly the fact that the areas of particular programmes are determined quite broadly, and secondly that such delimitation allows (or rather does not prevent) the entities implementing the projects to reconstruct the functional areas of cooperation.

The location of project leaders is an important factor determining the European transnational cooperation space. Despite the partner-based, cooperative character of the projects, the role of a consortium leader is privileged. This can usually be seen in the decisive influence on the subject-related shape of the project (determined largely at the stage of preparation of the concept of the project by the future leader, who can, but does not have to, take into account the propositions of the partners); and also in the higher level of financing related to the greater amount of coordination work that the project leader must perform. The fact that the project leader has

considerable freedom in selecting partners for the project implementation is also important.

The analysis of the spatial distribution of INTERREG IIIB project leaders mostly shows a small number of leaders coming from new Member States, i.e. from the EU12. This confirms the predominance of cooperation within this initiative by partners from so-called 'old' EU countries, who are concentrated only in certain regions. This situation probably results from the lesser experience in project implementation of entities from the new Member States. Consequently, the benefits from cooperation may be unevenly distributed, to the disadvantage of the regions of the new Member States (providing that the coordinators from the 'old' EU more-or-less consciously shape the projects in a way that is better suited to the needs of their home regions). In the subsequent programme period (INTERREG IVB), the situation remains very similar, which may result from the still-limited experience and slow pace of organisational learning by entities from the new Member States (or constantly growing potential and competitive advantage resulting from accumulation of experience in the case of the 'old' EU countries).

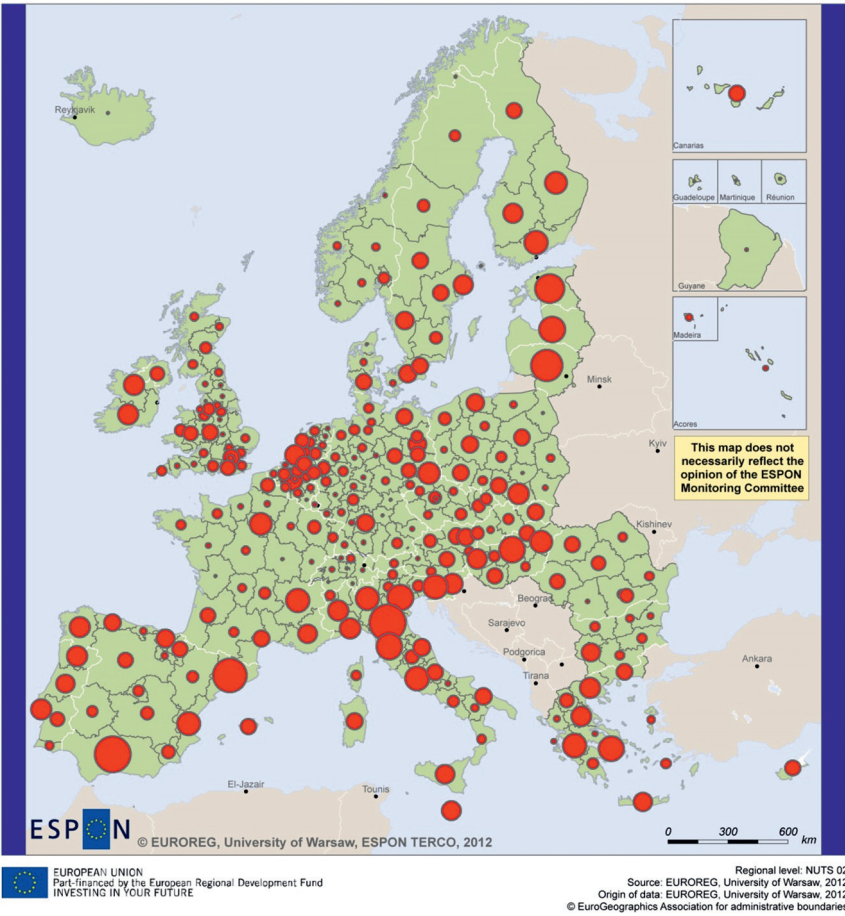
### **SPATIAL PATTERNS OF INTERREGIONAL COOPERATION IN INTERREG IIIC AND IVC**

Interregional cooperation projects within INTERREG IIIC and INTERREG IVC initiatives could have been implemented by project consortia from the whole ESPON space. This means that the entities from particular regions had formally equal opportunities in the implementation of projects. Thus, it seems that in this case the cooperation network has a more natural character than the cooperation networks in transnational cooperation (INTERREG IIIB and IVB), where the cooperation had to fit the predetermined areas. INTERREG IIIC and IVC have exactly the same spatial delimitation, and for that reason they can be analysed together (unlike IIIB and IVC, where spatial delimitation has significantly changed between the 2000-2006 and 2007-2013 periods). However, it should be noted that the INTERREG IIIC and IV programme requirements also impact on the shape of cooperation network, as they prefer project consortia comprising representatives of various European regions and macro-regions.

Under the INTERREG IIIC and IVC initiatives, 384 projects were implemented (as of January 2011) with over 4,000 partners. The spatial distribution of project partners is presented in Figure 5. Similarly, as in the case of transnational cooperation (INTERREG IIIB and IVB), a small

number of project leaders coming from regions of the new member countries (EU12) is also noticeable within INTERREG IIIC and IVC.

The cooperation network between regions within the ESPON space built upon the participation of entities from particular regions in project consortia creates a coherent component with typical network characteristics – it is primarily a scale-free network, i.e. the distribution of the number of relations to other regions is not a natural distribution, but an exponential



**Figure 5** INERREG IIIC and IVC – partners in regions

Source: Author's elaboration.



one – there is a large number of regions with a small number of relations to other regions, and few regions with links to numerous other regions. Therefore, the analysed regional cooperation network typically has a so-called ‘scale-free network’ shape.

Correlational analysis of the number of projects and the number of partners in particular regions as well as the basic measures describing the regional cooperation network within INTERREG IIIC and IVC – the number of relations with partners from other regions and the number of regions with which there is at least one relation – shows very high correlation coefficients, amounting to over 0.9. This means that the basic factor explaining the spatial distribution of the cooperation network is in this case simply the number of implemented projects in regions or entities – project partners – involved in them (moreover, the spatial pattern based on all four analysed measures is very similar, and consequently there is no need to make detailed analyses – i.e. create and analyse maps – for each of these dimensions).

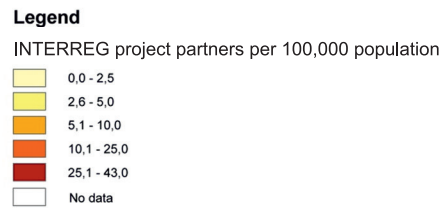
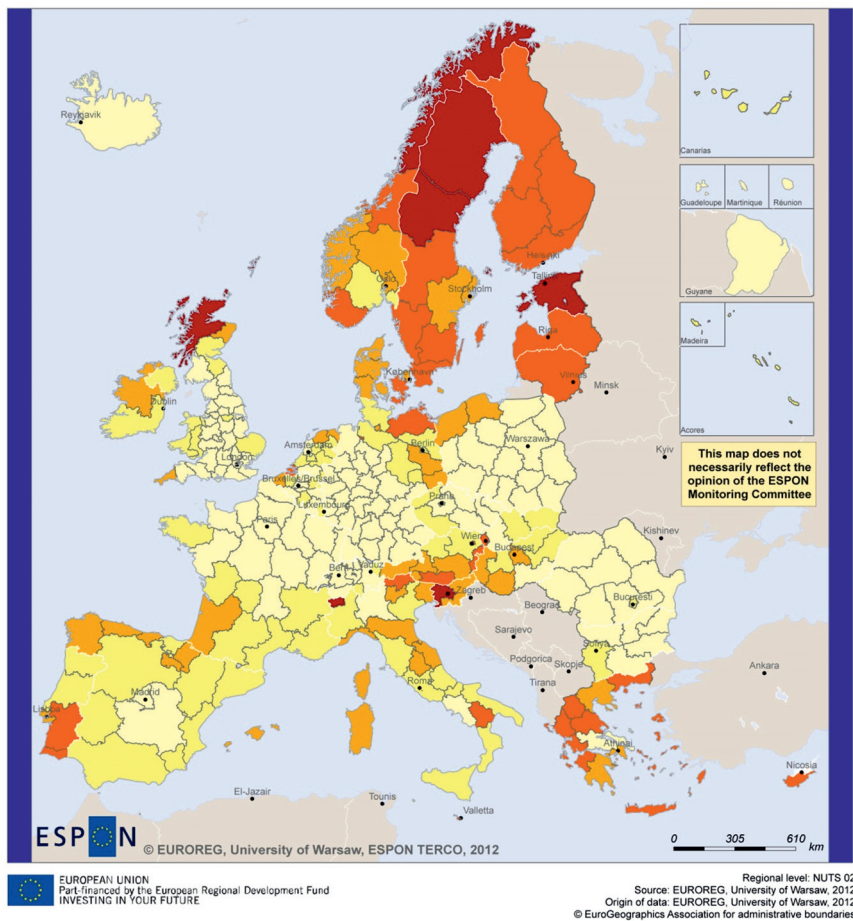
## **TRANSNATIONAL AND INTERREGIONAL COOPERATION – RELATIVE MEASURES**

The analyses presented above were drawn from the basic absolute data. In order to better understand the spatial diversity, it is also worth looking at the relativised data. To do so, the data on transnational and interregional cooperation projects were related to the number of inhabitants of the regions, to the regional GDP, and also to the number of local authorities in a given region. The analyses are based on the total data for all projects implemented within the discussed INTERREG IIIB, IVB, IIIC and IVC programmes.

Relativisation of the number of project partners with the number of inhabitants of regions can be interpreted as a form of measure of intensity of involvement in cooperation. The highest values of this index are recorded in regions with large number of projects, but also those with a small population. The activity of Scandinavian regions is particularly noticeable. It complies with a general trend for greater intensity of cooperation in regions located in the spatial peripheries as compared to the European centre. Worth noting is especially the small relative involvement in implementation of projects in the vast majority of regions constituting the continental centres, i.e. the so-called Pentagon (see Figure 6).

A quite similar picture emerges from the map representing the number of project partners in regions relativised with the value of the regional GDP (see Figure 7). In this case, however, the predominance of Scandinavian regions is less pronounced – of course due to the fact that their GDP is very high – and the relatively poorer regions of Central and Eastern Europe,

the Balkans or the Iberian Peninsula have a stronger position. From this perspective, the European Pentagon does not seem to be an area of particularly intensive transnational and interregional cooperation.

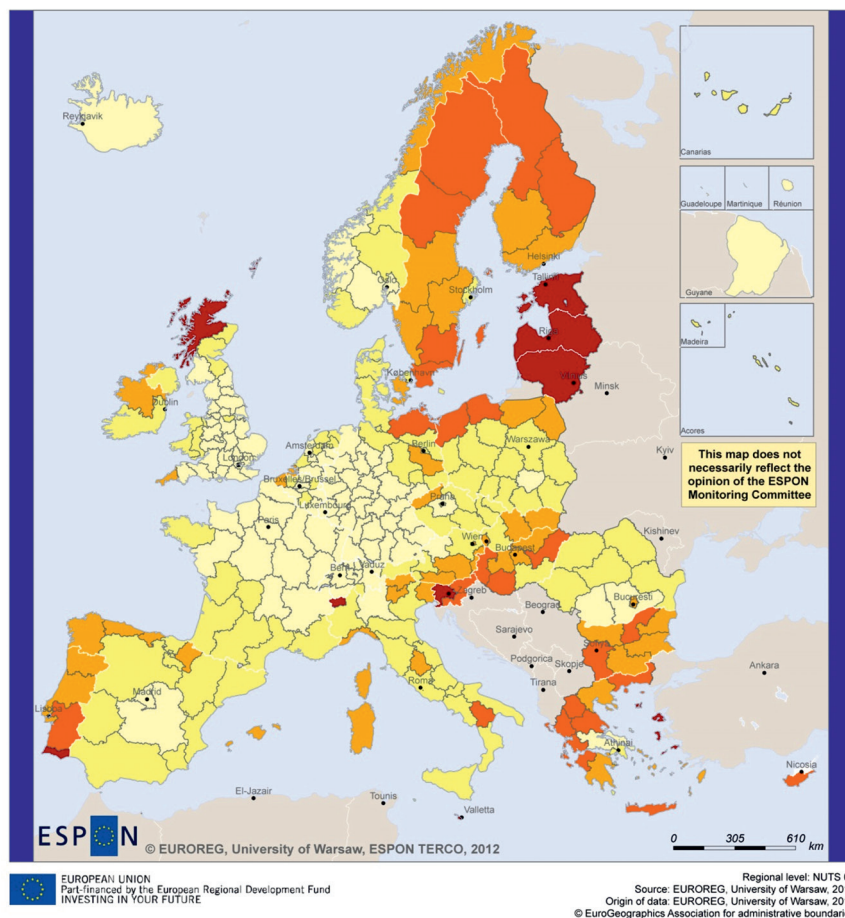


**Figure 6** INERREG projects partners per 100,000 population

Source: Author's elaboration.

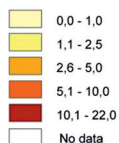
In constructing the third relative measure, data on the number of local authorities in the region were used, defined for the purpose as the number

of NUTS 5 units in a given NUTS 2 region. It should be stressed that due to various approaches employed by local authorities in particular countries to establish their competences, including territorial competence, the countries differ significantly in the number of NUTS 5 units within an average region. For example, in France there is a large number of communes with small areas, and in Sweden communes are vast and consequently their number



### Legend

INTERREG project partners per €1 million GDP



**Figure 7** INTERREG projects partners per €1 million GDP

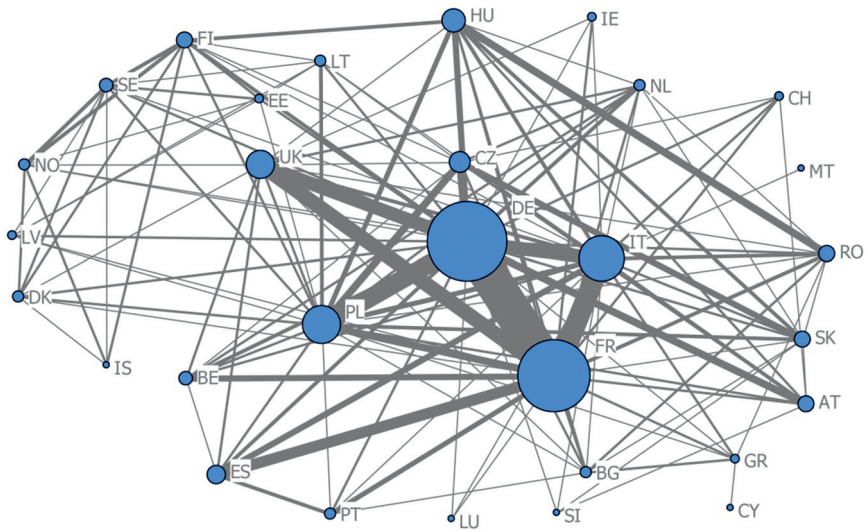
Source: Author's elaboration.

is much smaller. Therefore, it comes as little surprise that the regions of countries in which communes are relatively large, and which consequently have a smaller number in NUTS 2 regions, have the highest values of the discussed index (Scandinavian and Baltic countries). Attention should also be directed to the regions of the Netherlands and Belgium, which recorded mean results in the previously discussed two relative approaches, but which stand out in this approach. High values of the index are also recorded – for obvious reasons – in regions consisting of one city that simultaneously constitutes a region, such as Prague, Bucharest or Berlin.

**TWINNING CITIES**

**Twinning Cities – National Level**

By aggregating all twinning-cities agreements at the national level, the general pattern of cooperation within this form of cooperation in ESPON space can be traced. The largest number of twinning-cities agreements was recorded in Germany (3.3 thousand), France (2.5 thousand), Italy (2 thousand), Poland (1.2 thousand), Spain (0.9 thousand) and the United Kingdom (0.8 thousand). The analysed number of twinning-cities agreements depends, of course, on the size of the country, and in particular



**Figure 8** Twinning cities at country level\*

Source: Author's elaboration.

\* The size of the nodes corresponds to the number of twinning-cities agreements in a given country.  
The thickness of the lines joining the nodes corresponds to the number of twinning-cities agreements between specific countries.

on the number of communes (cities) that can enter into such agreements. The highest numbers of twinning-cities agreements per commune (local administrative unit) are in Finland (1.15), Sweden (1), Estonia (0.59), the Netherlands (0.55), Belgium (0.54), Norway (0.54), Iceland (0.52), Malta (0.51), Poland (0.5), Slovenia (0.45) and Luxemburg (0.45). Taking into account the number of relations between particular countries, the highest number of agreements is observed between communes (cities) of France and Germany (0.65 thousand), France and Italy (0.35 thousand), Germany and Poland (0.31 thousand), France and the United Kingdom (0.24 thousand), Germany and Italy (0.22 thousand), and Germany and the United Kingdom (0.22 thousand) (see Figure 8).

### **Twinning Cities – Regional Level**

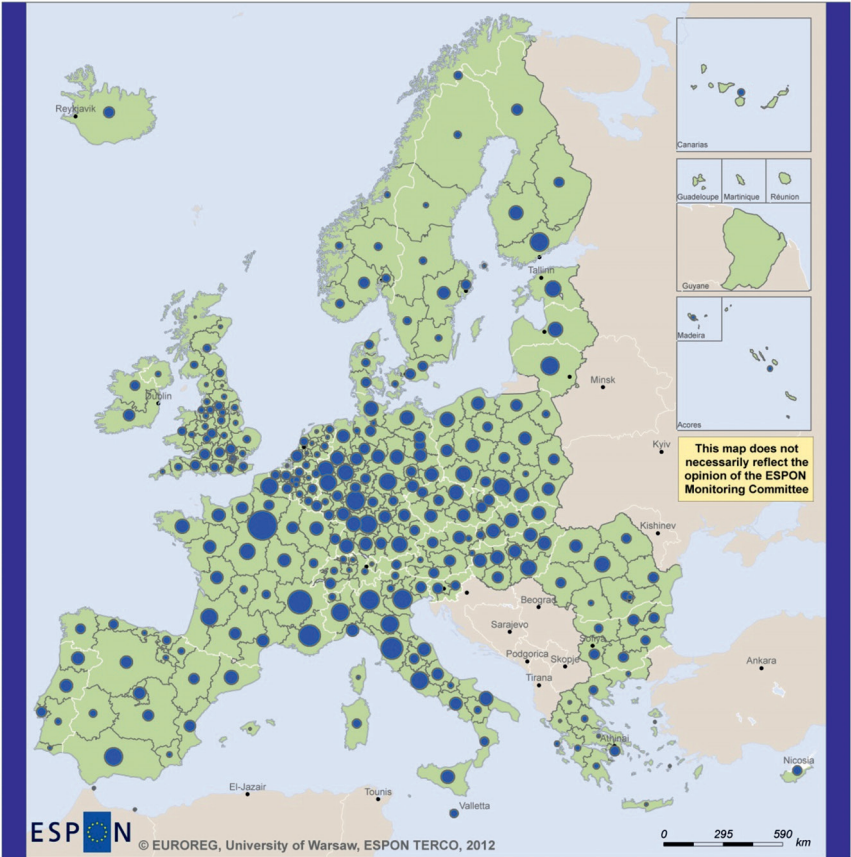
All the analyses presented in the following part of the paper were made at the NUTS 2 level, i.e. they use data on twinning-cities agreements aggregated at the regional level. The largest number of twinning-cities agreements among regions in ESPON space is recorded in Île-de-France region, which has 474 agreements. The next region, Rhône-Alpes, has a significantly smaller number of twinning-cities agreements, with 305. Generally speaking, all regions in ESPON space are involved in cooperation in the form of twinning cities, even though there are obvious differences in the intensity of this cooperation, understood as the number of agreements per communes of a given region (see Figure 9). More detailed analyses of the values relativised with the regions' population, size of the regional GDP, and the number of local authorities show even more dimensions of diversification.

In respect of the number of twinning-cities agreements per 100,000 inhabitants of a region, the regions that stand out are Iceland, regions of Finland, some regions of Norway, Estonia, regions of Eastern Germany and Western Poland, the Czech Republic, Slovakia, and Hungary (see Figure 10). On the other hand, particularly low values of the discussed index are recorded in the regions of the United Kingdom, which probably results from the relatively limited competences of the local authorities in this country (they have no appropriate potential for developing cooperation), as well as the fact that the regions there are quite populous.

On the other hand, looking at the number of twinning-cities agreements relative to the size of the regional GDP, a high position for Central and Eastern European countries can be observed (see Figure 11) – in this case the results depend both on high activity in this form of cooperation and on relatively low values of regional GDP in the area.



Other features of diversities can be observed when comparing the number of twinning-cities agreements to the number of local authorities in the regions. In this case, the regions that particularly stand out are the Nordic countries (excluding Denmark, however) as well as regions of Northern-Western Germany (Ruhr region) (see Figure 12).



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Regional level: NUTS 02  
Source: EUROREG, University of Warsaw, 2012  
Origin of data: EUROREG, University of Warsaw, 2012  
© EuroGeographics Association for administrative boundaries

**Legend**

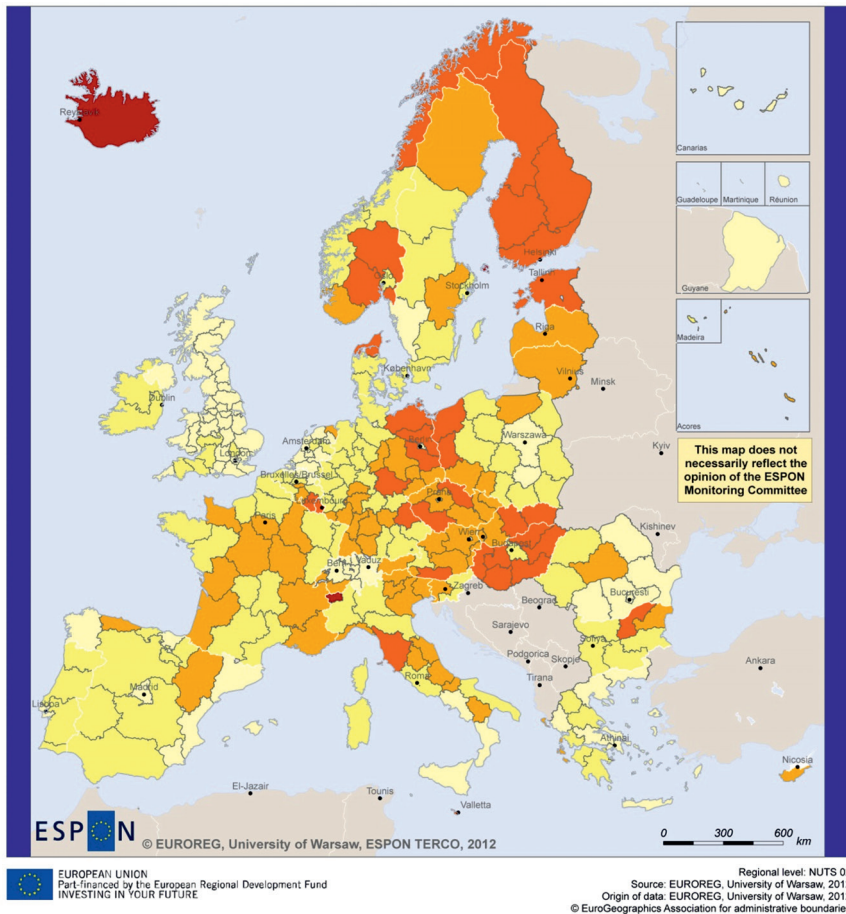
**Number of twinning-cities agreements**

- 474
- 200
- 50
- No data

**Figure 9 City twinning**

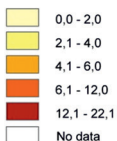
Source: Author's elaboration.

In the majority of European regions, only a small percentage of communes have twinning-cities agreements (see Figure 13). Only some regions does this form of cooperation involve more than 20 percent of the communes – in Sweden, Norway and Finland, Belgium, Netherlands, North-Western Germany, Western Poland, and Central Italy.



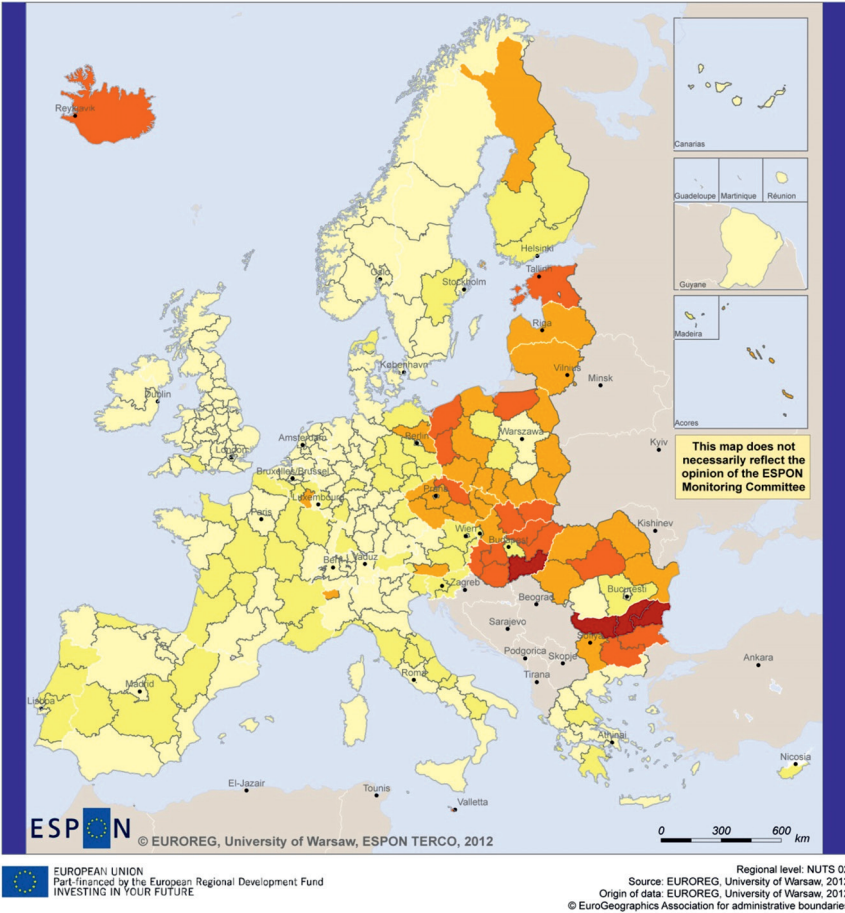
### Legend

Twinning-cities agreements per 100,000 population



**Figure 10** Twinning-cities agreements per 100,000 population

Source: Author's elaboration.



Legend

Twinning-cities agreements per €1 million GDP

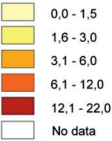
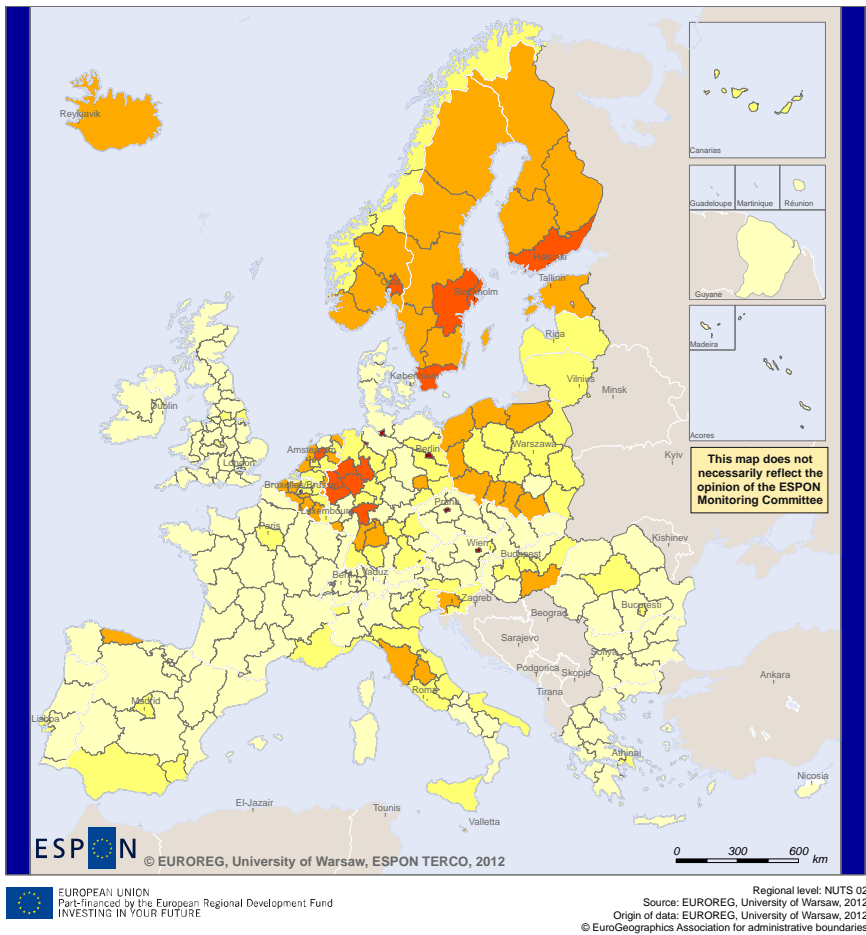


Figure 11 Twinning cities agreements per €1 million GDP

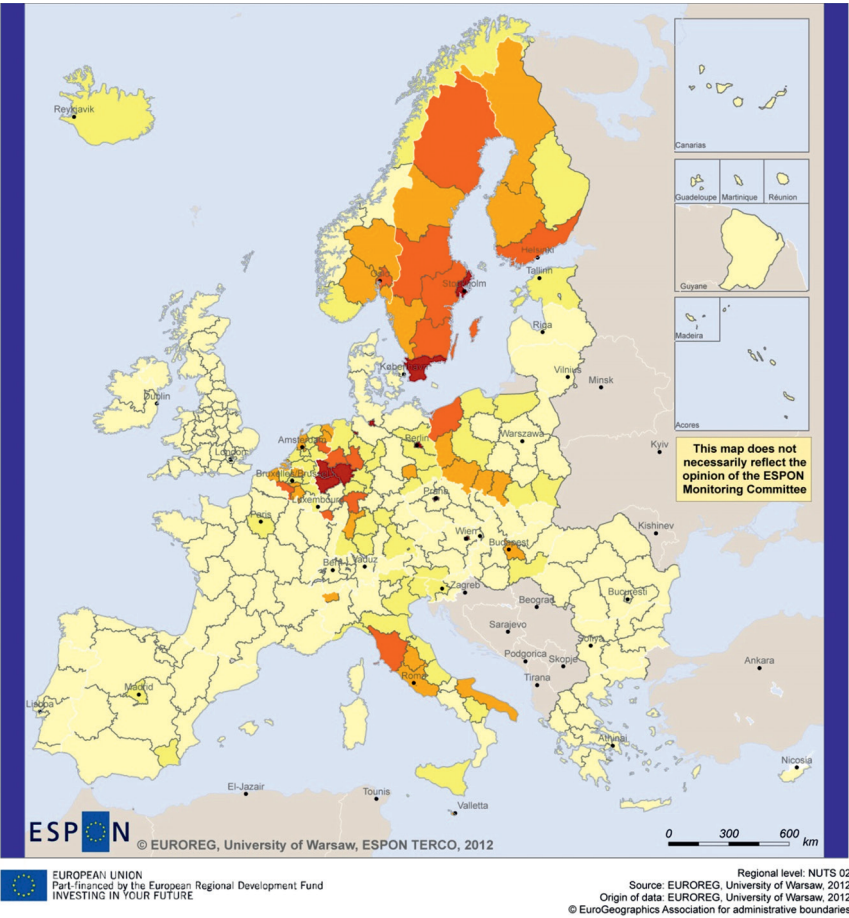
Source: Author's elaboration.





**Figure 12** Twinning-cities agreements per local government

Source: Author's elaboration.



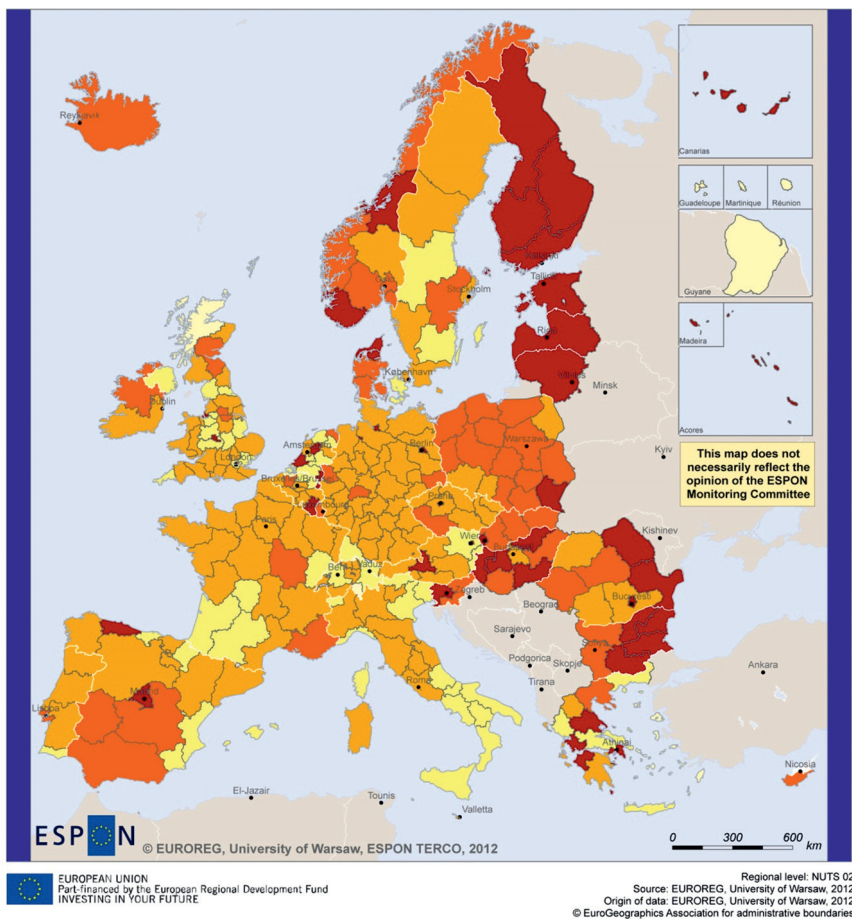
Legend

Percentage of municipalities with twinning-cities agreements

- 0 - 10
- 11 - 20
- 21 - 30
- 31 - 50
- 51 - 100
- no data

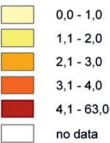
**Figure 13** Percentage of municipalities with twinning-cities agreements

Source: Author's elaboration.



**Legend**

**Average number of twinning-cities municipality with at least one twinning-cities agreement**



**Figure 14** Average number of twinning cities per municipality with at least one twinning-cities agreement

Source: Author's elaboration.

Taking into account the mean number of twinning-cities agreements per commune with at least one such agreement, it can be seen that most regions have an average of two or three agreements (see Figure 14). Higher values of the index, i.e. four, five or more agreements, are recorded mostly in regions located in the Eastern part of ESPON space (in particular Finland, the Baltic countries, Poland, Slovakia, Hungary, Romania, and Bulgaria).

Twinning-Cities – Cooperation Within and Beyond ESPON Space

The data on cooperation within twinning-cities agreements also allows the analysis of cooperation extending beyond the ESPON space (as twinning-cities agreements are made between communes and cities throughout the world). Particular regions within ESPON space differ in their involvement in cooperation outside of this space (see Figure 15),

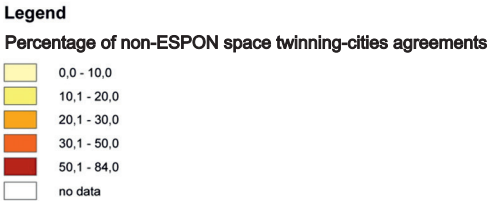
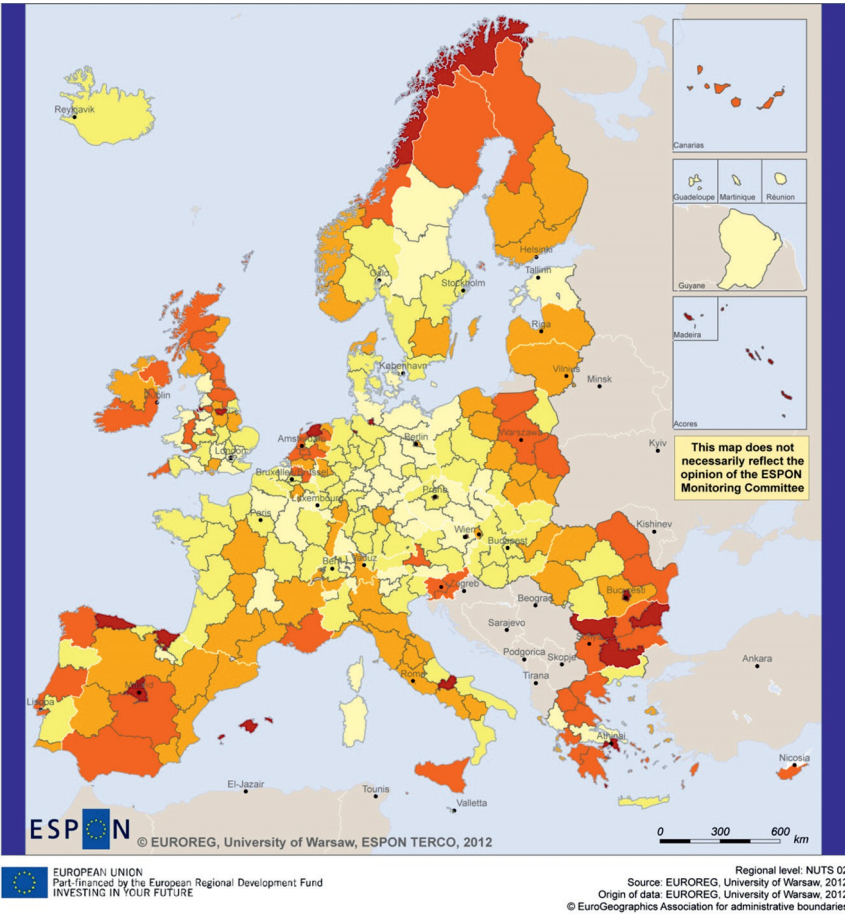
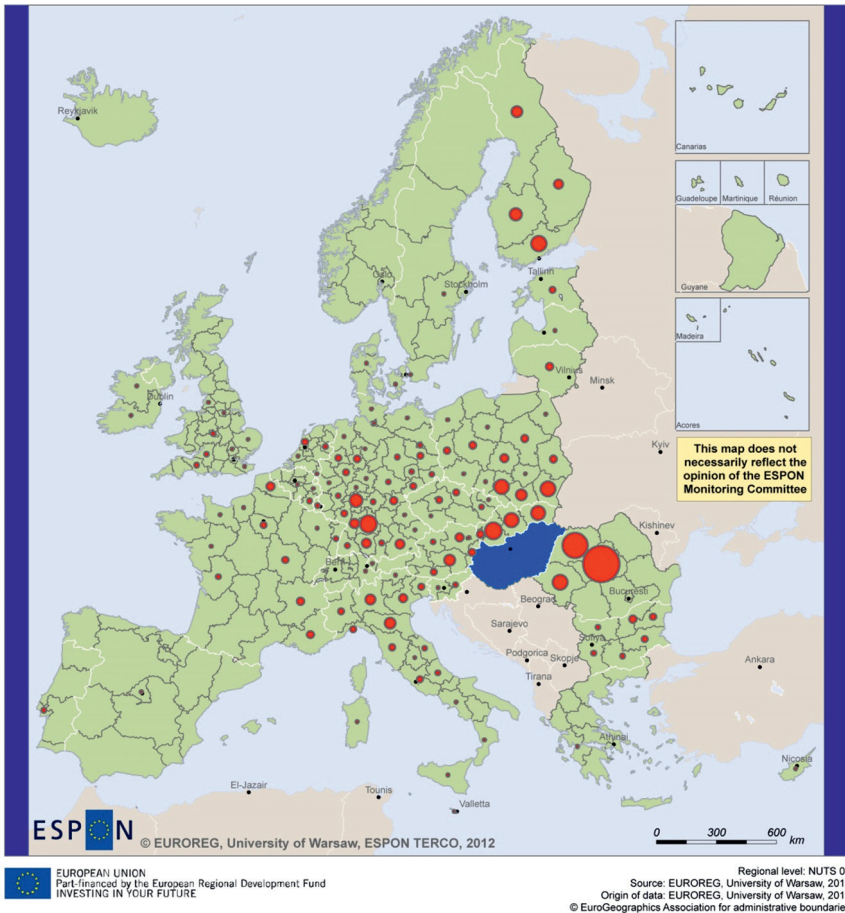


Figure 15 Percentage of non-ESPON space twinning-cities agreements

Source: Author's elaboration.



### Legend

#### Twinning-cities agreements with Hungary



**Figure 16** Twinning-cities – Hungary

Source: Author's elaboration.

with greater involvement visible in regions located in the peripheries of the analysed space. It should be underlined, however, that the regions of Netherlands are an exception to this rule, as they are located in the geographical and economic centre of the EU but have significant cooperation beyond the ESPON space.

The intensity of cooperation with selected countries (regions) of the world differs significantly throughout the regions of Europe. Cooperation

with communes and cities in the USA as part of twinning cities takes place in almost all regions of ESPON space, but it is significantly more frequent in the west of the continent. Particularly noticeable is the significant involvement of Irish communes and cities in cooperation with communes and cities in the USA. On the other hand, with regard to cooperation with countries from Latin America, Spain, Portugal, and Northern regions of Italy are particularly active. This shows the importance of cultural closeness and the influence of history on the directions of cooperation within twinning cities. Similar explanation may be offered for cooperation with Russia and the Ukraine, although in this case cultural factors and the spatial proximity are both important.

The basic conclusion that can be formulated based on the analysis of twinning-cities cooperation within ESPON space concerns the great importance of spatial proximity. For all countries, it is visible that cooperation is particularly intensive with the closest neighbours, while relations with regions located far away occur relatively rarely. An additional factor apart from spatial proximity is connected with historical and cultural determinants (it should be underlined that they are usually inextricably connected with spatial proximity). These are precisely the historical and cultural factors that can explain particularly intensive cooperation between communes and cities from Hungarian and Romanian regions, i.e. North-West, Centre, and West, which in the past used to be the Transylvania region connected with Hungary (see Figure 16).

## **CONCLUSIONS – SIMILAR OR DIFFERENT SPATIAL PATTERNS OF COOPERATION?**

Cooperation within INTERREG B and C programmes and twinning cities is diversified in many respects. This pertains both to the entities undertaking cooperation (in the case of twinning cities, these can only be local authorities, but in the case of INTERREG the catalogue of eligible entities is much broader), determining the spatial scope of cooperation (predetermined macro-regions in the case of INTERREG B vs. total freedom in the case of twinning cities), and finally the topics of cooperation. Bearing those differences in mind, there is still scope to compare the spatial patterns of cooperation in both forms. Such analysis can primarily serve to determine whether macro-regions within INTERREG B were well defined, i.e. for particular regions, if a large part of relations within twinning cities takes place solely within the frames of their respective macro-regions, this may confirm proper delimitation of such macro-regions.



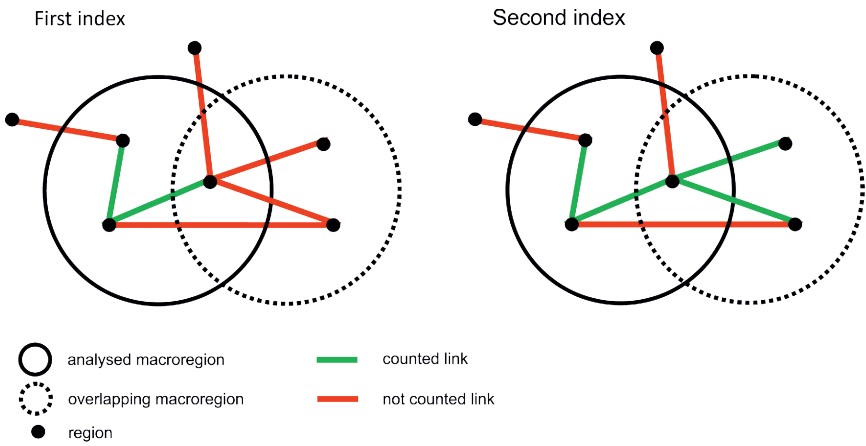
### **INTERREG C and Twinning Cities**

Comparing the directions of cooperation within INTERREG C and twinning cities is quite simple, as cooperation within the INTERREG C initiative included the whole ESPON space – therefore it is possible to compare exactly the same areas for both forms of cooperation. For the purposes of this analysis, a comparison was made for each country of ESPON space of the pattern of cooperation at the NUTS 2 level within INTERREG and twinning cities. More precisely, two variables were correlated for each country: the number of twinning-cities agreements and the number of INTERREG IIIC and IVC project partners in all NUTS 2 regions in ESPON space that cooperated under these forms with entities from a given country. The values of the resulting Pearson correlation coefficients are low and very low. Only for three countries (Iceland, Germany, and Poland) was the correlation coefficient higher than 0.3 (the highest value was for Iceland – 0.34). For the remaining countries, the values were lower or significantly lower. This means that the spatial patterns of cooperation (or the cooperation networks) at regional level in each of the analysed forms are rather different. To some extent, this is connected with the different character of the analysed forms of cooperation. As shown earlier in this chapter, cooperation within twinning cities is largely influenced by spatial proximity. On the other hand, spatial proximity is not important in the case of INTERREG C, in fact it is quite the opposite: projects that link partners from different parts of the continent are preferred. The discussed results can be interpreted as a manifestation of a positive phenomenon of complementarity of the two modes of cooperation. Within twinning cities, the cooperation takes place with spatially closer partners; in the case of INTERREG C, the spatial scope of cooperation is significantly broader.

### **INTERREG IVB and Twinning Cities**

Comparison of the spatial pattern of cooperation within twinning cities and INTERREG IVB must take into account the fact that the cooperation within the latter form could take place within predetermined macro-regions. Consequently, a parallel analysis for INTERREG C and twinning cities would be unjustified. Therefore, a different approach was used in this case. Firstly, for each of the INTERREG IVB macro-regions, the percentage of relations within twinning cities in a given macro-region was calculated (in the case of this index and the next index, twinning cities within the limits of the ESPON space were used as a reference point). Secondly, for each of the macro-regions, a calculation was made of the percentage of relations within twinning cities limited to single INTERREG IVB macro-regions

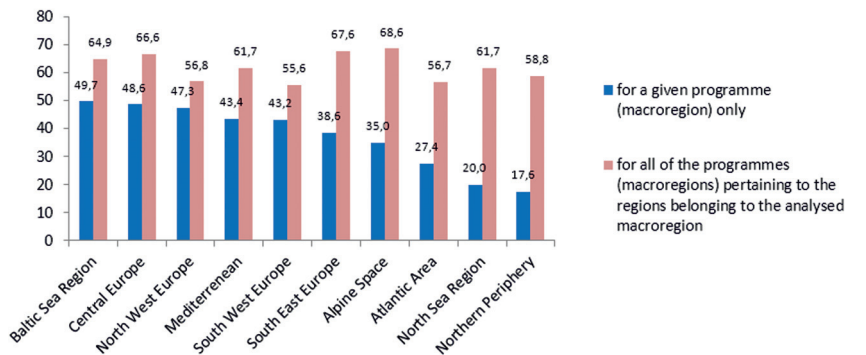
pertaining to each of the regions belonging to the analysed macro-region. The first and second indexes differ, in that in the first case only the area of a given macro-region is analysed, while in the second case all regions included in a macro-region are analysed, plus – for each of them – all macro-regions to which they were ascribed. The second index takes into account all possibilities for cooperation (in all eligible macro-regions) open to regions from a given macro-region (see Figure 17).



**Figure 17** Construction of indexes used in the analysis

Source: Author's elaboration.

Both indexes are presented in a diagram (see Figure 18). In the case of the first index, there is a significant diversification of the value of nearly 16 to 50 percent of twinning-cities agreements limited solely to the macro-

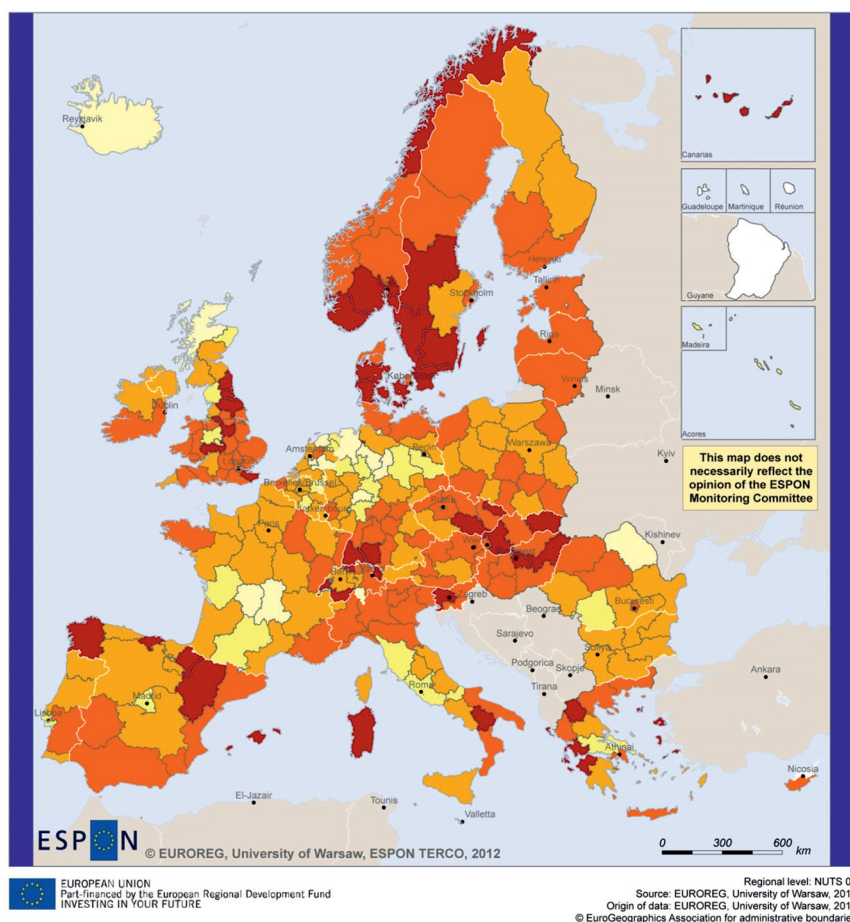


**Figure 18** Percentage of twinning-cities agreements within eligible INTERREG IVB areas

Source: Author's elaboration.



region. In this perspective, INTERREG IVB macro-regions best adjusted to the cooperation network within twinning-cities agreements comprise the Baltic Sea Region, Central Europe, and North West Europe. The weakest in this respect are the Northern macro-regions of the Northern Periphery and the North Sea Region. However, a completely different picture emerges from the value of the second index, which takes into



account the fact that particular regions were frequently ascribed to more than one INTERREG IVB macro-region. In this case, the values of the index are not so diversified and vary between 55 percent and 69 percent. It is significant that the values of the second index are also high in the case of macro-regions with low values obtained from the first perspective. This means that on this basis it can be deduced that, firstly, the delimitation of INTERREG IVB macro-regions is appropriate and, secondly, that from the point of view of shaping appropriate cooperation networks for regions, the overlapping of areas of macro-regions is useful, as this allows regional entities to select appropriate cooperation partners.

The third perspective on the spatial comparison of cooperation patterns of INTERREG IVB and twinning cities is offered by analysis at the regional level. In this case, a calculation was made for each of the regions of the percentage of relations within twinning cities limited to INTERREG IVB macro-regions to which a given region was ascribed (twinning cities within the ESPON space were used as a reference point). The results of the analysis show that in a significant majority of regions the cooperation within twinning cities is limited to the INTERREG IVB macro-regions to which they are ascribed. In the case of some macro-regions, the index is very high, exceeding 80 percent. Only for a few regions is the index lower than 40 percent and 20 percent. This pertains particularly to the central and north-west regions of Germany, regions of the Massif Central in France, the Romanian North-East region, northern peripheries of Scotland and to Iceland (see Figure 19). It seems that the results presented can be interpreted as confirming the good delimitation of INTERREG IVB macro-regions that correspond to preferences regarding the directions of cooperation expressed in grassroots relations and in the form of twinning cities.