Annexes to the Scientific report

A1 List of indicators developed and datasets provided to the ESPON Database

According to the fields of exposure the following sensitivity indicators were developed.

Exposure Field	Sensitivity Field	Source
erosion	% areas at risk of soil erosion	CLC
pollutants in soil	(pop+empl)/usable land	ESPON
share of artificial areas/soil sealing	% artificial area	CLC
water consumption	% inland water	ESPON on CLC
pollutants in ground/surface water	(pop+empl)/usable land	ESPON
pollutants in air	concentration of PM_{10}	5th Cohesion Report
emissions of CO_2	((vehicles per 1000 inhab)+(dens pop))/2	EUROSTAT+ESPON
heavy rain/flood hazard/occurrence of landslides	risk of flood hazard	ESPON
biodiversity	areas in Natura2000	University of Natural Resources and Life Sciences, Vienna
conservation of natural heritage (landscape diversity)	% natural areas	DG Agriculture – Rural Development Report
conservation of cultural heritage	number of 3-star TCI	ESPON ATTREG Project
economic growth (GDP/capita)	GDP per capita	ESPON
innovation	Share of product &/or process innovation	ESPON
entrepreneurship	% self employment	EUROSTAT
employment in primary sector	GDP per capita	ESPON
% of arable area, permanent grass area, permanent crops area	% agricultural areas	ESPON on CLC
employment in secondary sector	employees in secondary sector as percentage of all employees	EUROSTAT
employment in tertiary sector	employees in tertiary sector as percentage of all employees	EUROSTAT
overnight stays	nights on population	EUROSTAT+ESPON
disposable income in PPS per capita	disposable income per capita	ESPON
equal income distribution	poverty index	5th Cohesion Report
employment rate	unemployment rate	5th Cohesion Report
out-migration/brain drain/"shrinking regions”	net migration balance	5th Cohesion Report
number of people exposed to noise	% population in urban areas	CLC
accident rate in transport	road fatalities	5th Cohesion Report
accident risk: industry/energy supply	technological &/or environmental risk	ESPON
healthy life expectancy at birth	life expectancy at birth	EUROSTAT
daily accessibility by air	potential accessibility by air	ESPON Data Base
daily accessibility by road	potential accessibility by road	ESPON Data Base

Exposure Field	Sensitivity Field	Source
daily accessibility by rail	potential accessibility by rail	ESPON Data Base
renewable energy	vulnerability to climate change	5th Cohesion Report
fossil fuel consumption	vulnerability to climate change	5th Cohesion Report
increase of urbanization relative to population growth	% discontinuous urban fabric	ESPON on CLC
transnational cooperation	INTERREG IIIa expenditures/cap	EUROSTAT

A2 List of tables, figures and maps

Tables

Table A 1: List of exposure fields 12
Table A 2: Scale of potential territorial impact 13
Table B 1: List of exposure fields 25
Table B 2: Scale of potential territorial impact 26
Table B 3: Scale of potential territorial impact 31
Table C 1: Relevance filter process 79
Table C 2: List of exposure fields 83
Table C 3: Regional Exposure: Definition of exposed regions, measurement and related data sources 92
Table C 4: Regional Sensitivity: Definition of indicators, measurement and related data sources 98

Figures

Figure A 1: Territorial impact combining exposure with sensitivity 9
Figure A 2: Conceptual model of the directive 2009/128/EC Directive on the sustainable use of pesticides 11
Figure B 1: Territorial impact combining exposure with sensitivity 22
Figure B 2: Conceptual model of the directive 2009/128/EC Directive on the sustainable use of pesticides 23
Figure B 3: Logical chain of the directive 44
Figure B 4: Logical chain of the directive 50
Figure B 5: Logical chain of the directive 59
Figure C 1: The territorial impact combining exposure with sensitivity 77
Figure C 2: Conceptual model of the directive 2009/128/EC Directive on the sustainable use of pesticides 81
Figure C 3: Assessment process of territorial impact of a EU Directive 88
Figure C 4: The Directives/Impact Cube 88
Figure C 5: Logical chain of the directive 102
Figure C 6: Logical chain of the directive 108
Figure C 7: Logical chain of the directive 115
Figure C 8: Energy production 117
Figure C 9: Logical chain of the directive 124
Figure C 10: Logical chain of the directive 125
Figure C 11: Logical chain of the directive 128
Figure C 12: Logical chain of the directive 140
Figure C 13: Logical chain of the directive 152
Figure C 14: Logical chain of the directive 164
Figure C 15: Logical chain of the directive 171
Figure C 16: Logical chain of the directive 183
Figure C 17: Logical chain of the directive 200

Maps

Map A 1:	Example for mapping the expected territorial impact for one indicator	13
Map B 1:	Territorial Impact of Directive 1 (branch a) on economic growth (GDP/capita)	46
Map B 2:	Territorial Impact of Directive 1 (branch b) on pollutants in air	46
Map B 3:	Territorial Impact of Directive 4 (branch b) on number of people exposed to noise	55
Map B 4:	Territorial Impact of Directive 4 (branch c) on fossil fuel consumption	55
Map B 5:	Territorial Impact of Directive 11 (branch a) on fossil fuel consumption	60
Map B 6:	Territorial Impact of Directive 11 (branch b) on employment in secondary sector	60
Map C 1:	Regions affected by Waterframe Directive	102
Map C 2:	Territorial Impact of Directive 2 on the share of agricultural areas	105
Map C 3:	Regions affected by Sewese Directive	109
Map C 4:	Territorial Impact of Directive 3 on disposable income in PPS/capita	111
Map C 5:	Territorial Impact of Directive 3 on healthy life expectancy at birth	111
Map C 6:	Territorial Impact of Directive 3 on transnational cooperation	111
Map C 7:	Regions affected by directive on promotion of use of biofuels	118
Map C 8:	Territorial Impact of Directive 5 (branch a) on employment of primary sector)	121
Map C 9:	Territorial Impact of Directive 5 (branch b) on economic growth (GDP/capita	121
Map C 10:	Regions affected by directive on recognition of qualifications	129
Map C 11:	Territorial Impact of Directive 8 (branch a) on entrepreneurship	134
Map C 12:	Territorial Impact of Directive 8 (branch a) on employment rate	134
Map C 13:	Territorial Impact of Directive 8 (branch b) on entrepreneurship	134
Map C 14:	Territorial Impact of Directive 8 (branch b) on out-migration/brain drain	134
Map C 15:	Regions affected by directive on critical infrastructure	141
Map C 16:	Territorial Impact of Directive 9 on employment in secondary sector	144
Map C 17:	Territorial Impact of Directive 9 on employment in tertiary sector	144
Map C 18:	Territorial Impact of Directive 9 on the accident risk in industry/energy supply	144
Map C 19:	Territorial Impact of Directive 9 on daily accessibility by air	144
Map C 20:	Territorial Impact of Directive 9 on daily accessibility by road	144
Map C 21:	Territorial Impact of Directive 9 on daily accessibility by rail	144

Map C 22: Regions affected by directive on sustainable use of pesticids 153
Map C 23 Territorial Impact of Directive 10 (branch a) on economic growth (GDP/capita) 156
Map C 24: Territorial Impact of Directive 10 (branch a) on healthy life expectancy at birth 156
Map C 25: Territorial Impact of Directive 10 (branch b) on employment in secondary sector 156
Map C 26: Territorial Impact of Directive 10 (branch b) on healthy life expectancy at birth 156
Map C 27: Regions affected by directive on energy performance of buildings 164
Map C 28: Territorial Impact of Directive 12 on conservation of cultural heritage 166
Map C 29: Territorial Impact of Directive 12 on equal income distribution 166
Map C 30: Territorial Impact of Directive 12 on fossil fuel consumption 166
Map C 31: Regions affected by directive on air quality branch b 173
Map C 32: Regions affected by directive on air quality branch b, E6 pollutants in the air 173
Map C 33: Territorial Impact of Directive 1a on economic growth (GDP/capita) 177
Map C 34: Territorial Impact of Directive 1b on economic growth (GDP/capita) 177
Map C 35: Territorial Impact of Directive 1b pollutants in air 177
Map C 36: Regions affected by directive on managing environmental noise branch a 185
Map C 37: Regions affected by directive on managing environmental noise branch b 185
Map C 38: Regions affected by directive on managing environmental noise branch c 185
Map C 39: Territorial Impact of Directive 4 (branch a) on fossil fuel consumption 191
Map C 40: Territorial Impact of Directive 4 (branch b) on landscape diversity 191
Map C 41: Territorial Impact of Directive 4 (branch b) on number of people exposed to noise 191
Map C 42: Territorial Impact of Directive 4 (branch c) on employment in secondary sector 191
Map C 43: Territorial Impact of Directive 4 (branch c) on healthy life expectancy at birth 191
Map C 44: Territorial Impact of Directive 4 (branch c) on fossil fuel consumption 191
Map C 45: Regions affected by directive on clean and energy-efficient road transport vehicles branch a 201
Map C 46: Regions affected by directive on clean and energy-efficient road transport vehicles branch b 201

Map C 47: Territorial Impact of Directive 11 (branch a) on fossil fuel consumption 205
Map C 48: Territorial Impact of Directive 11 (branch b) on economic growth (GDP/capita) 205
Map C 49: Territorial Impact of Directive 11 (branch b) on innovation 205
Map C 50: Territorial Impact of Directive 11 (branch b) on employment in secondary sector 205
Map A5 1: Regions affected by Directive on air quality (branch a) 239
Map A5 2: Regions affected by Directive on air quality (branch b) 240
Map A5 3: Regions affected by the Waterframework Directive 241
Map A5 4: Regions affected by the Seveso Directive 242
Map A5 5: Regions affected by Directive on managing environmental noise (branch a) 243
Map A5 6: Regions affected by Directive on managing environmental noise (branch b) 244
Map A5 7: Regions affected by Directive on managing environmental noise (branch c) 245
Map A5 8: Regions affected by Directive on promotion of use of biofuels 246
Map A5 9: Regions affected by Directive on recognition of qualifications 247
Map A5 10: Regions affected by Directive on critical infrastructure 248
Map A5 11: Regions affected by Directive on sustainable use of pesticides 249
Map A5 12: Regions affected by Directive on clean and energy-efficient road transport vehicles (branch a) 250
Map A5 13: Regions affected by Directive on clean and energy-efficient road transport vehicles (branch b) 251
Map A5 14: Regions affected by Directive on the energy performance of buildings 252

A3 List of missing indicators and data

Fields	Subject or Topic	Data missing for
F1	% areas at risk of soil erosion	BE10, CH, CY, ES (30, 53-70), FR (91-94), GR (30-41), IS, LI, MT, NO, PT (20-30), SE, SK01, UKI1,
F3, F4,	Corine Land Cover	CH, NO, LI, IS, FR (91-94), PT (20-30)
F6	PM_{10} concentration	CH, ES70, FR (91-94), IS, LI, NO,
F7	Vehicles per 1000 inhabitants	Fr (91-94), IS, PT (20-30),
F9	% Natura 2000 areas	CH, FR (91-94), IS, LI, NO, UK
F10	% natural areas	CH, FR (91-94), IS, LI, NO, PT (20-30)
F12	GDP per capita	LI
F13	% product and/or process innovation	Fr (91-94), LI
F14	% self-empl on employment	LI
F15	Market barriers	all regions
F16	Empl primary sector – GDP per cap	LI
F17	Corine Land Cover	CH, NO, LI, IS, FR (91-94), PT (20-30),
F18	Empl secondary sector – GDP per cap	Fr (91-94), LI
F19	Empl tertiary sector – GDP per cap	Fr (91-94), LI
F20	Total overnight stay per total population	ES(63-63), FR (91-94)
F21	Disposable income per capita	CH, IS, LI, NO
F22	Income distribution (Poverty index)	CH, FR (91-94), IS, LI, NO
F24	Net migration balance	CH, IS, LI, NO, UKM5,
F25	% Population in urban areas	CH, IS, LI, NO
F26	Road fatalities	CH, IS, LI, NO, PT(20-30)
F27	Env/tech risk	IS, LI,
F29	Accessibility by air	FR (91-94), PT(20-30)
F30	Accessibility by water	all regions
F31	Accessibility by road	FR (91-94), PT(20-30)
F32	Accessibility by rail	FR (91-94), PT(20-30)
F33, F34	Vulnerability to climate change	CH, ES70, FR (91-94), IS, LI, NO, PT(20-30)
F35	% of discontinuous urban fabric	CH, FR (91-94), PT(20-30)
F36	Mixed land use	all regions
F37	Efficiency of government/governance mechanisms	all regions
F38	Duration or complexity of planning procedures	all regions
F39	Participation rate	all regions
F40	Societal transfers (e.g. tax added)	all regions
F41	Funding pc in INTERREG	BG, CH, DK, IS, LI, NO, RO, SI, UKM5, UKM6

Directive	Type of Region	Data missing for
11a	Agglomerated	IS, LI
3,9,	Areas at highest tech/env risk	none
10b	Chemical industries	none
4a, 4b, 4c	Densely populated	CH07, ES70, FR (91-94), IS, LI, MT, PL52, PT (20-30)
5a	Forest	CH07, CY, ES70, FR (91-94), GR30, IS, LI, MT, PL52, PT (20-30), SI
5b	Harbour regions	CH07, ES70, FR (91-94), IS, LI, MT, PL52, PT (20-30)
4a, 4b, 4c	High density of rail	CH, IS, LI
7, 9	High density of rail/road	CH07, ES70, FR (91-94), IS, LI, MT, PL52, PT (20-30)
4a, 4b, 4c	High density of road	none
11b	High employment in automotive	FR (91-94), IS, LI, PT (20-30)
1b, 6	Industrial regions	none
4a, 4b, 4c	Major airport location	DE(50-60; 91-91; B2-3), DK, EE, ES (22,23,43,52,53,64), GR (21,41,42), LI, LT, LU, LV, MT, NL13, PL31, SI, UKD1
5a	Natural areas	none
4a, 4b, 4c, 8a, 12	Agglomerated and Urban	CH, ES70, FR (91.94), IS, LI, NO
1a	PM10 – TOP20P	CH, IS, LI, NO
5a, 10a	Rural	CH, FR (91.94), IS, LI, NO, PT(20-30)
8b	Shrinking regions	CH, FR (91.94), IS, LI, NO, PT(20-30)
5a	Unprofitable farming	none
8a	Wealthy regions	LI

A4 List of abbreviations and glossary

ARTS	Assessment of Regional and Territorial Sensitivity
CAP	Capita
CO_2	Carbon Dioxide
DB	Database
DEM	Directive Exposure Matrix
EC/CE	European Commission
EU	European Union
EXP	Exposure
GDP	Gross Domestic Product
GVA	Gross Value Added
HNI	High negative impact
HPI	High positive impact
IA	Impact Assessment
IPPC	Intergovernmental Panel on Climate Change
KIS	Keep It Simple
LPD	Legislation, Policies and Directives
NUTS	Nomenclature of Statistical Territorial Units
PIM	Potential Impact
PPS	Purchasing Power Standard
REM	Regional Exposure Matrix
REX	Regional Exposure
RSM	Regional Sensitivity Matrix
S	Sensitivity
TIA	Territorial Impact Assessment
TIM	Territorial Impact Matrix
ToR	Terms of Reference
WFD	Water Framework Directive

A5 Additional maps not included in the core text of the report

Map A5 1: Regions affected by Directive on air quality (branch a)

Map A5 2: Regions affected by Directive on air quality (branch b)

Map A5 3: Regions affected by the Waterframework Directive

Map A5 4: Regions affected by the Seveso Directive

Map A5 5: Regions affected by Directive on managing environmental noise (branch a)

Map A5 6: Regions affected by Directive on managing environmental noise (branch b)

Map A5 7: Regions affected by Directive on managing environmental noise (branch b)

Map A5 8: Regions affected by Directive on promotion of use of biofuels

Map A5 9: Regions affected by Directive on recognition of qualifications

Map A5 10: Regions affected by Directive on critical infrastructure

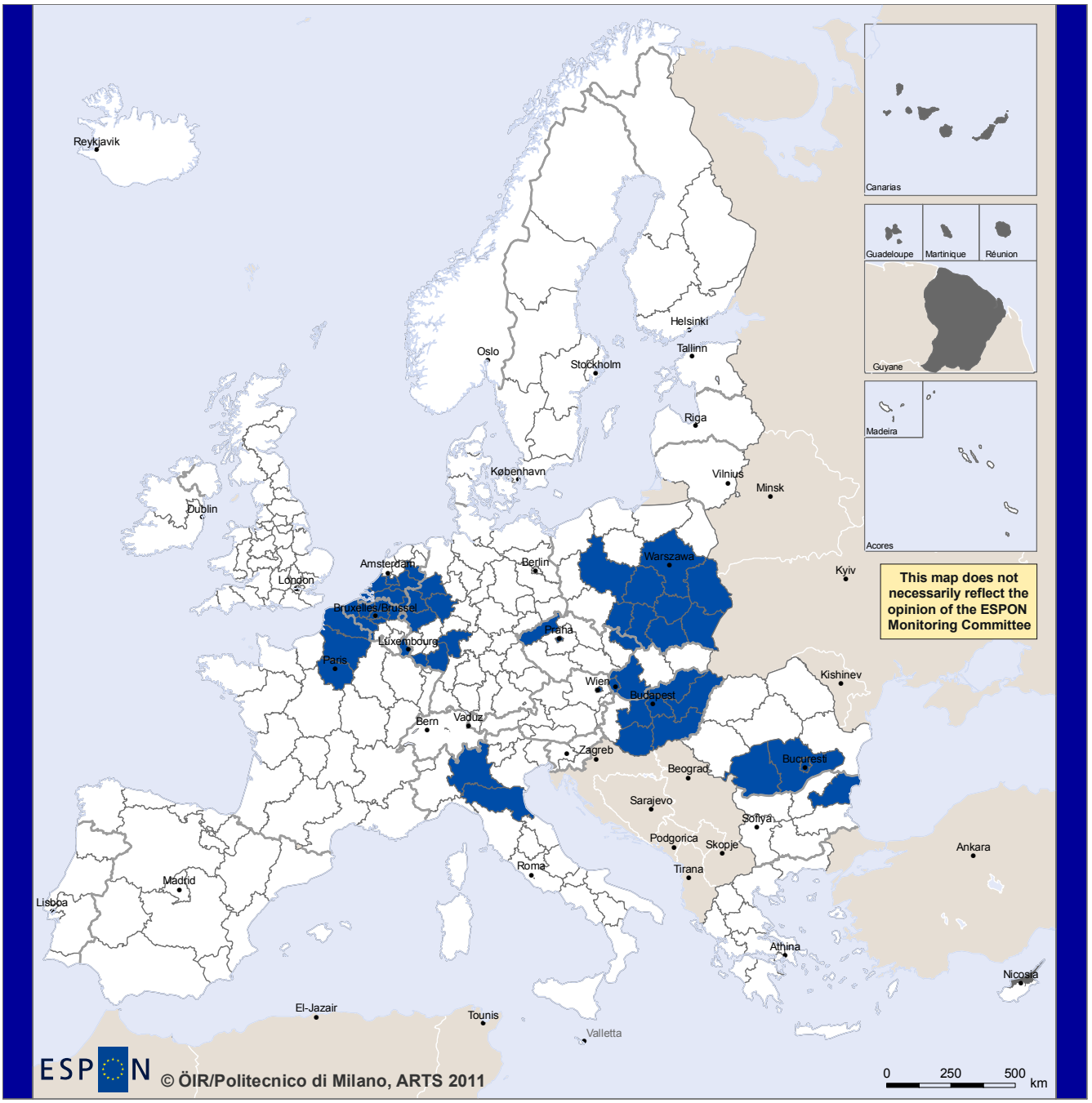
Map A5 11: Regions affected by Directive on sustainable use of pesticides

Map A5 12: Regions affected by Directive on clean and energy-efficient road transport vehicles (branch a)

Map A5 13: Regions affected by Directive on clean and energy-efficient road transport vehicles (branch b)

Map A5 14: Regions affected by Directive on the energy performance of buildings

Regions affected by Directive on air quality branch a



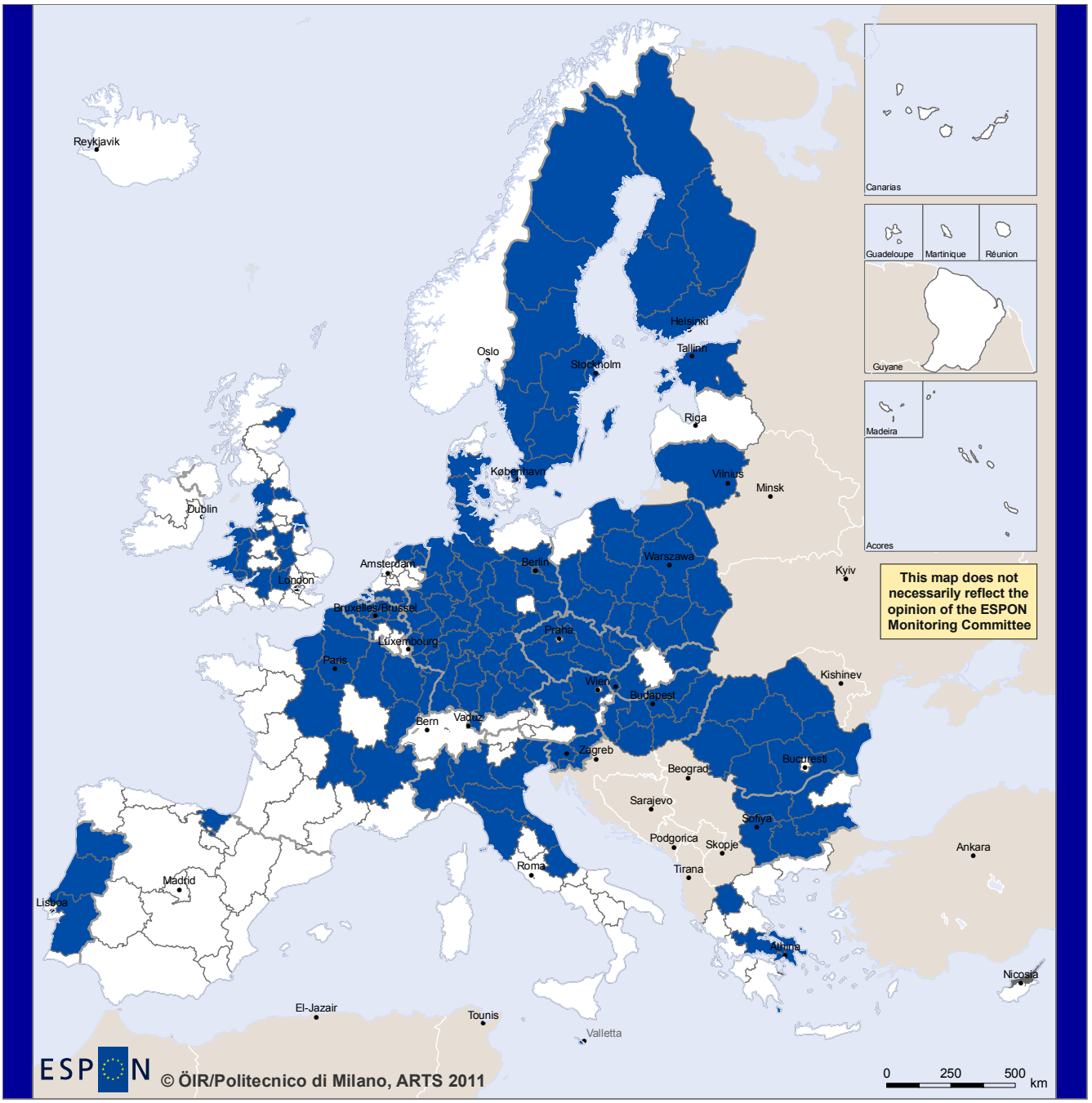
EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: NUTS 2
Transformation and Compilation of Data based on:
ESPON Projects, EUROSTAT, EEA Corine Land Cover,
5th Cohesion Report, BOKU University, DG AGRI
© EuroGeographics Association for administrative boundaries

- Affected
- Not Affected
- Neighbourhood Countries
- No Data

Types of regions affected: high particulate air pollution

Regions affected by Directive on air quality branch b



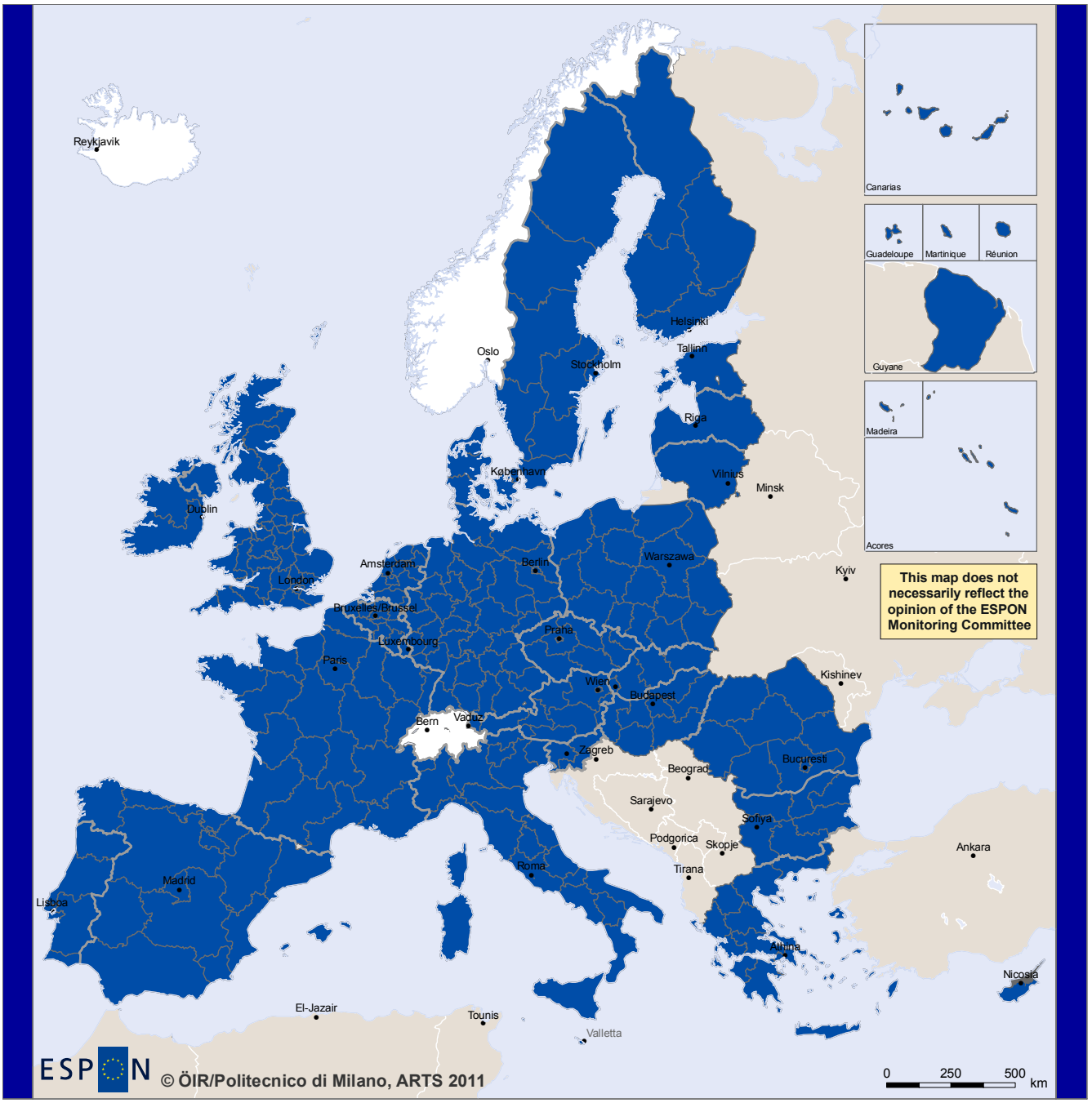
EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: NUTS 2
Transformation and Compilation of Data based on:
ESPON Projects, EUROSTAT, EEA Corine Land Cover,
5th Cohesion Report, BOKU University, DG AGRI
© EuroGeographics Association for administrative boundaries

- Affected
- Not Affected
- Neighbourhood Countries
- No Data

Types of regions affected: industrial regions

Regions affected by Waterframe Directive



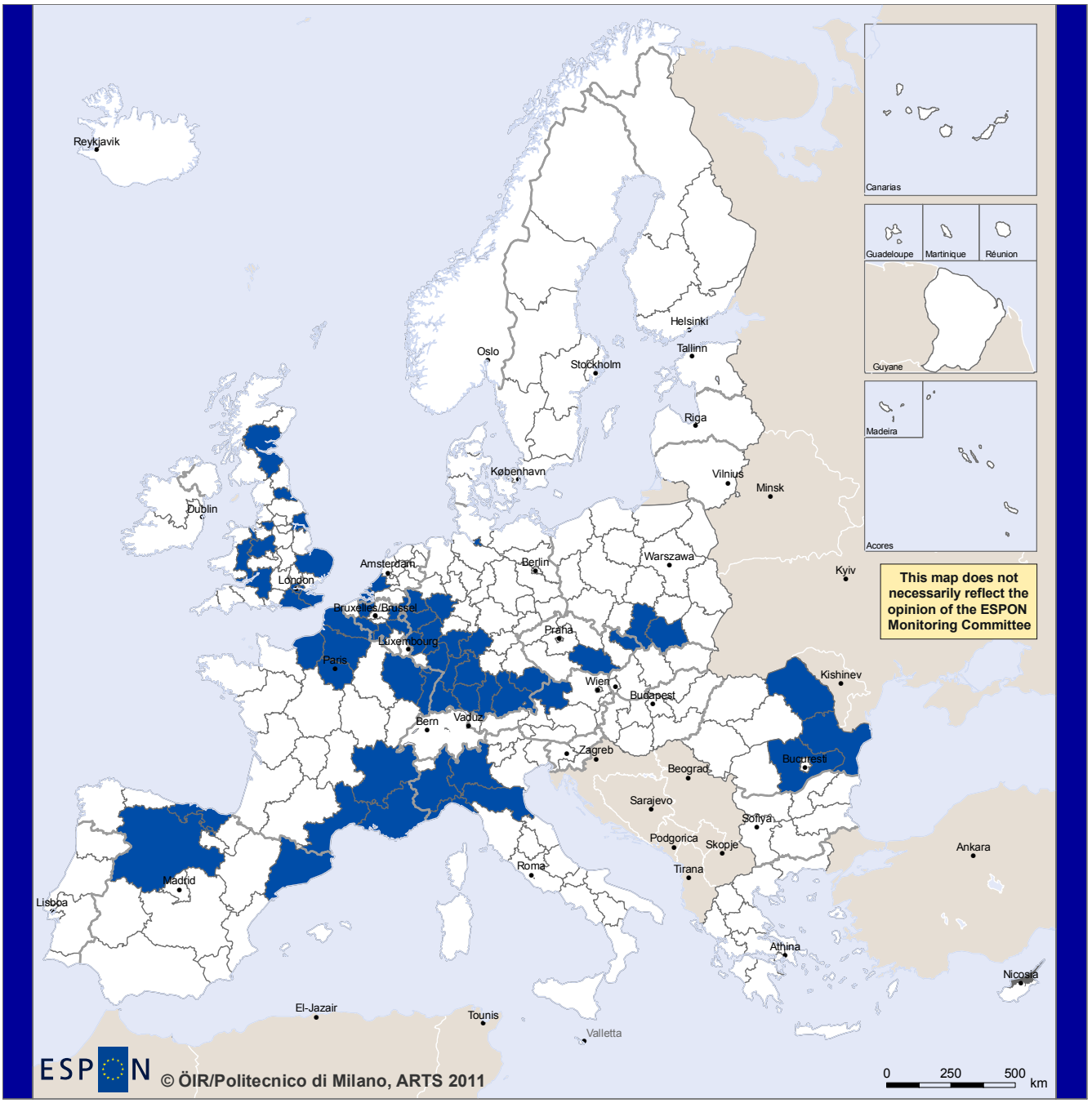
EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: NUTS 2
Transformation and Compilation of Data based on:
ESPON Projects, EUROSTAT, EEA Corine Land Cover,
5th Cohesion Report, BOKU University, DG AGRI
© EuroGeographics Association for administrative boundaries

- Affected
- Not Affected
- Neighbourhood Countries
- No Data

Types of regions affected: all regions

Regions affected by Seweso Directive



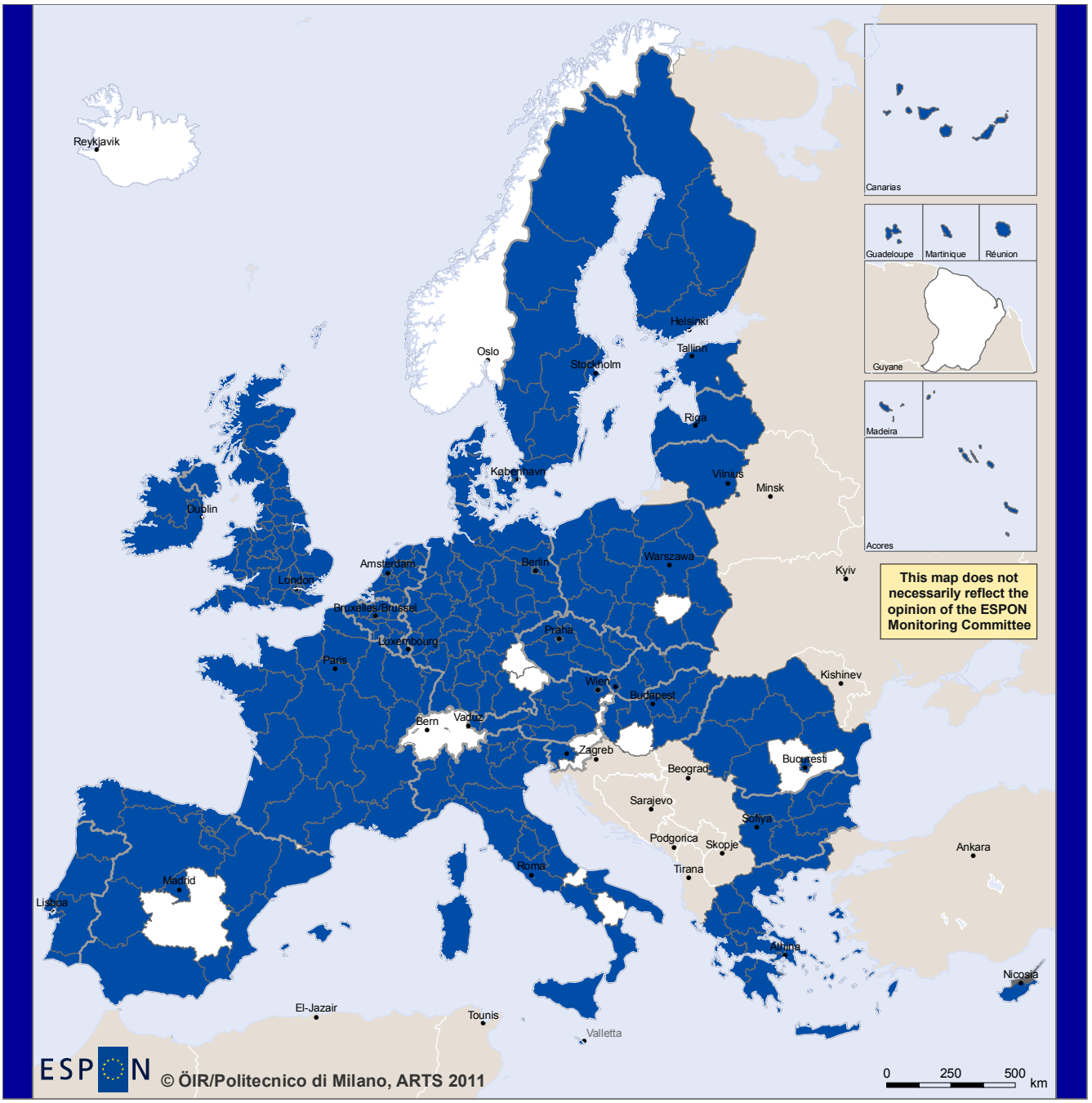
EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: NUTS 2
Transformation and Compilation of Data based on:
ESPON Projects, EUROSTAT, EEA Corine Land Cover,
5th Cohesion Report, BOKU University, DG AGRI
© EuroGeographics Association for administrative boundaries

- Affected
- Not Affected
- Neighbourhood Countries
- No Data

Types of regions affected: areas at highest technological/environmental risk

Regions affected by Directive on managing environmental noise branch a



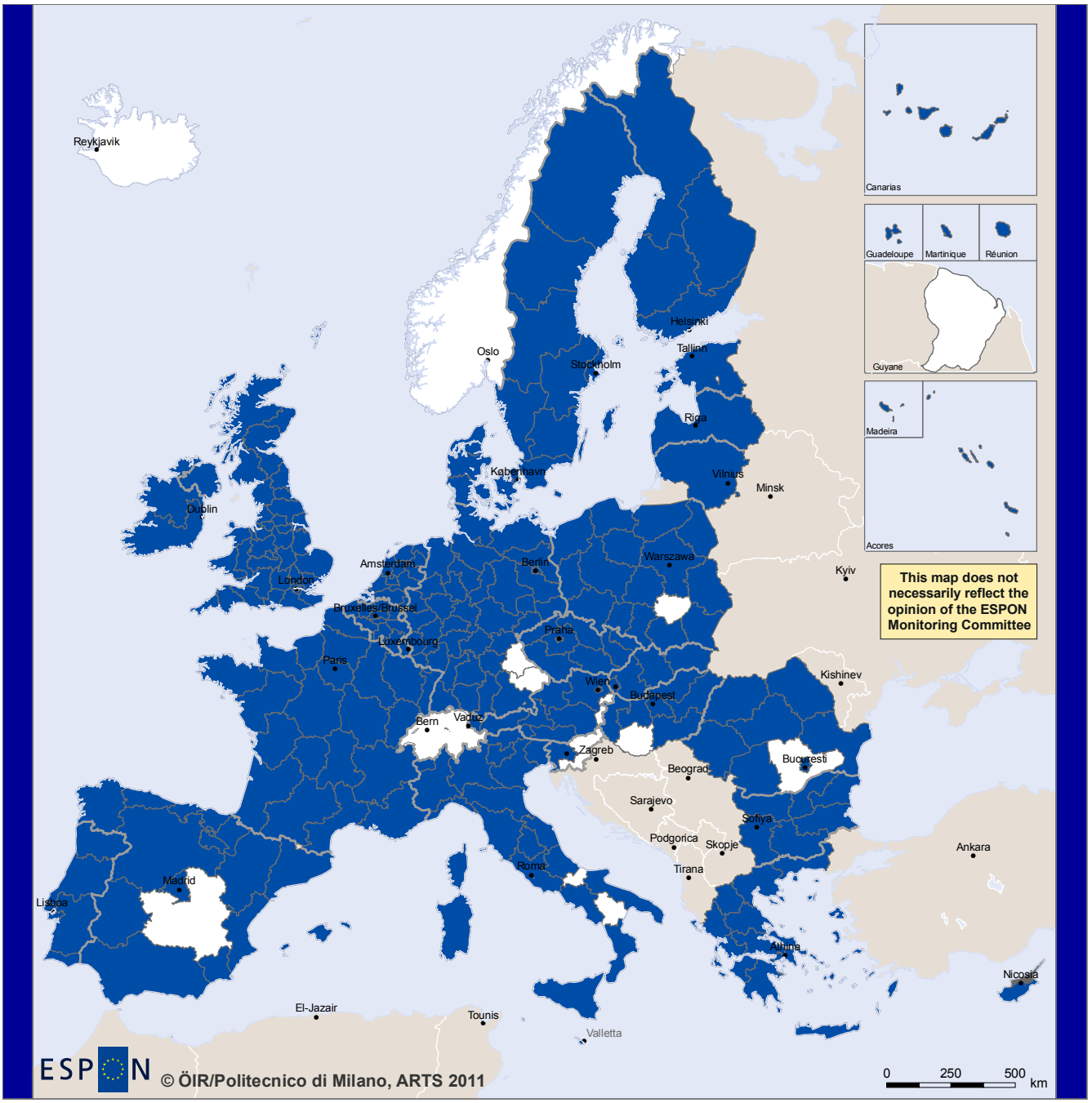
EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: NUTS 2
Transformation and Compilation of Data based on:
ESPON Projects, EUROSTAT, EEA Corine Land Cover,
5th Cohesion Report, BOKU University, DG AGRI
© EuroGeographics Association for administrative boundaries

- Affected
- Not Affected
- Neighbourhood Countries
- No Data

Types of regions affected: urban, agglomerated, densely populated, high densitiy of roads, high density of rail, major airport location

Regions affected by Directive on managing environmental noise branch b



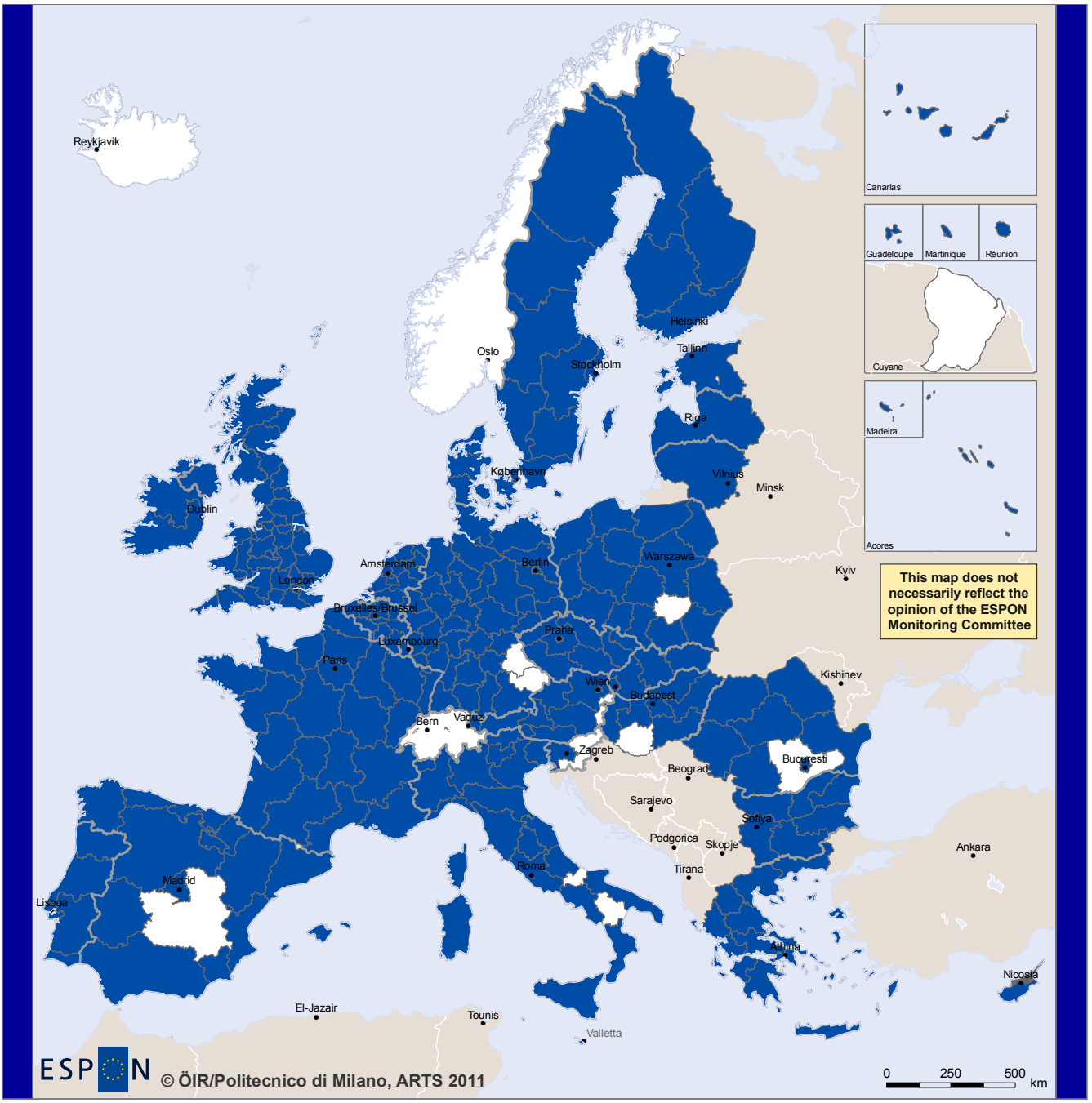
EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: NUTS 2
Transformation and Compilation of Data based on:
ESPON Projects, EUROSTAT, EEA Corine Land Cover,
5th Cohesion Report, BOKU University, DG AGRI
© EuroGeographics Association for administrative boundaries

- Affected
- Not Affected
- Neighbourhood Countries
- No Data

Types of regions affected: urban, agglomerated, densely populated, high densitiy of roads, high density of rail, major airport location

Regions affected by Directive on managing environmental noise branch c



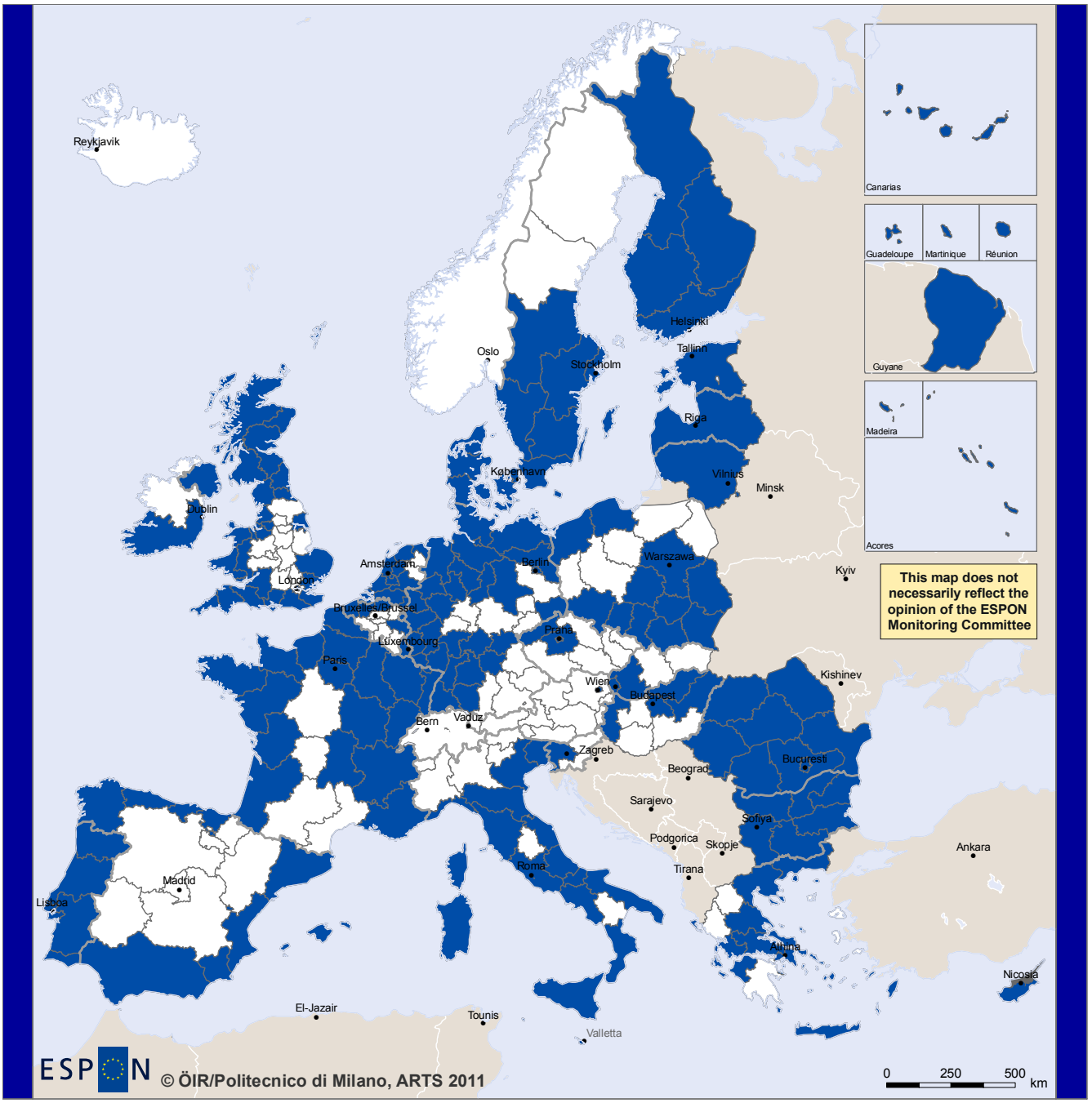
EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: NUTS 2
Transformation and Compilation of Data based on:
ESPON Projects, EUROSTAT, EEA Corine Land Cover,
5th Cohesion Report, BOKU University, DG AGRI
© EuroGeographics Association for administrative boundaries

- Affected
- Not Affected
- Neighbourhood Countries
- No Data

Types of regions affected: urban, agglomerated, densely populated, high densitiy of roads, high density of rail, major airport location

Regions affected by Directive onpromotion of use of biofuels



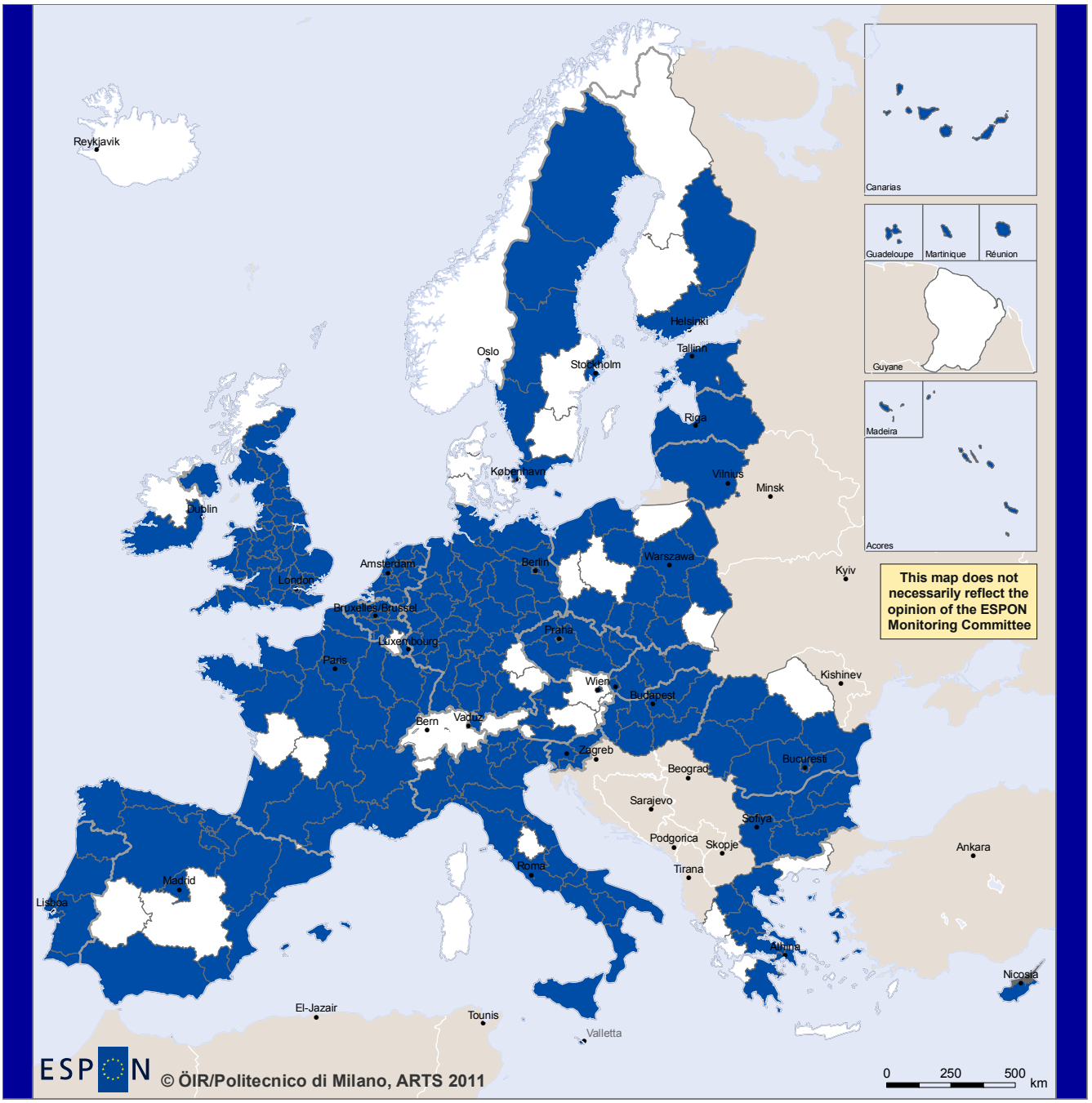
EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: NUTS 2
Transformation and Compilation of Data based on:
ESPON Projects, EUROSTAT, EEA Corine Land Cover,
5th Cohesion Report, BOKU University, DG AGRI
© EuroGeographics Association for administrative boundaries

- Affected
- Not Affected
- Neighbourhood Countries
- No Data

Types of regions affected: rural, unprofitable farming, natural areas, forest, harbour regions

Regions affected by Directive on recognition of qualifications



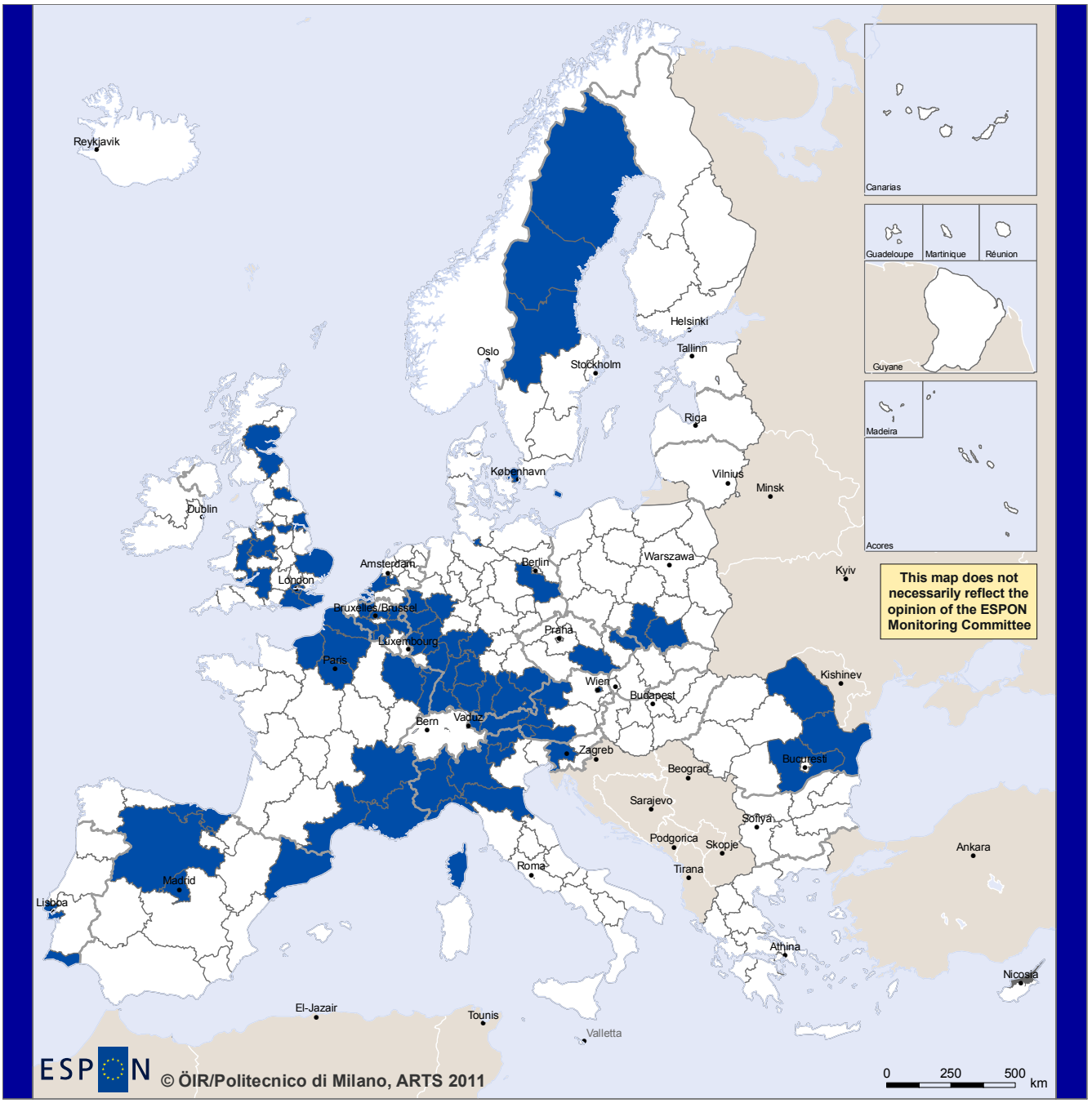
EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: NUTS 2
Transformation and Compilation of Data based on:
ESPON Projects, EUROSTAT, EEA Corine Land Cover,
5th Cohesion Report, BOKU University, DG AGRI
© EuroGeographics Association for administrative boundaries

- Affected
- Not Affected
- Neighbourhood Countries
- No Data

Types of regions affected: wealthy regions, urban, agglomerated, shrinking regions

Regions affected by Directive on critical infrastructure



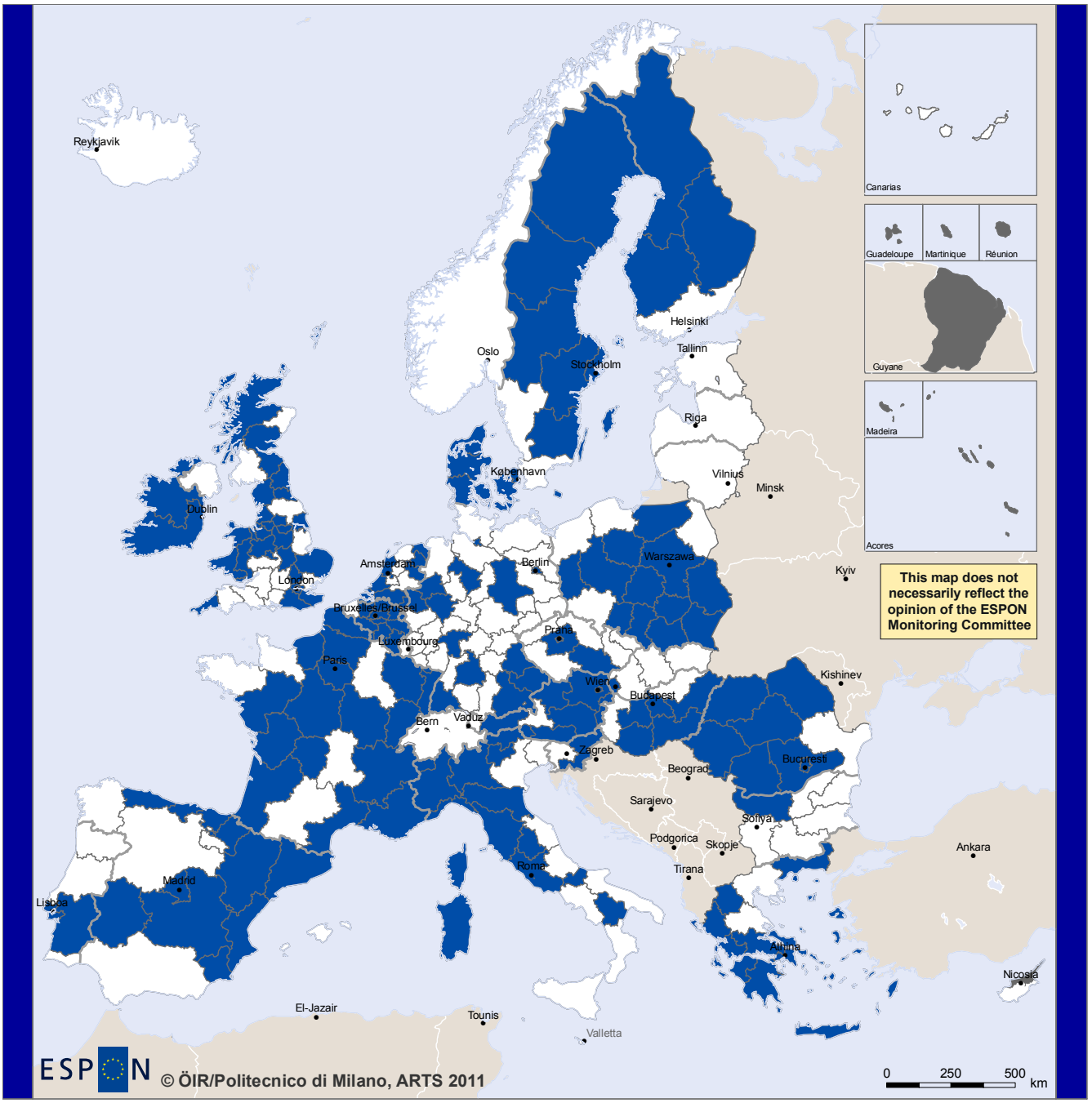
EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: NUTS 2
Transformation and Compilation of Data based on:
ESPON Projects, EUROSTAT, EEA Corine Land Cover,
5th Cohesion Report, BOKU University, DG AGRI
© EuroGeographics Association for administrative boundaries

- Affected
- Not Affected
- Neighbourhood Countries
- No Data

Types of regions affected: highest density of rail and road network, areas at highest technologicel/environmental risk

Regions affected by Directive on sustainable use of pesticides



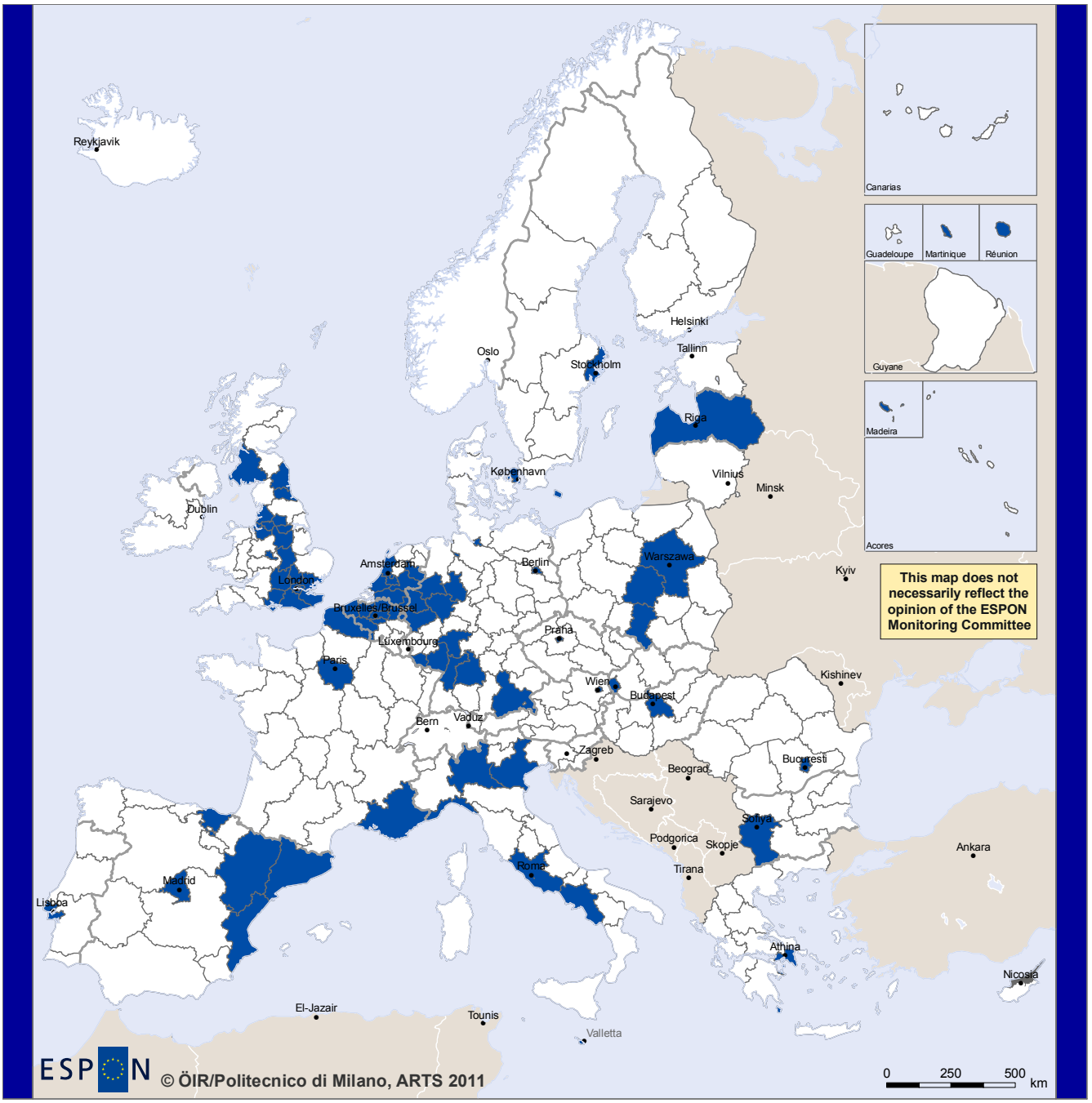
EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: NUTS 2
Transformation and Compilation of Data based on:
ESPON Projects, EUROSTAT, EEA Corine Land Cover,
5th Cohesion Report, BOKU University, DG AGRI
© EuroGeographics Association for administrative boundaries

- Affected
- Not Affected
- Neighbourhood Countries
- No Data

Types of regions affected: rural, chemical industries

Regions affected by Directive on clean and energy-efficient road tranport vehicles branch a



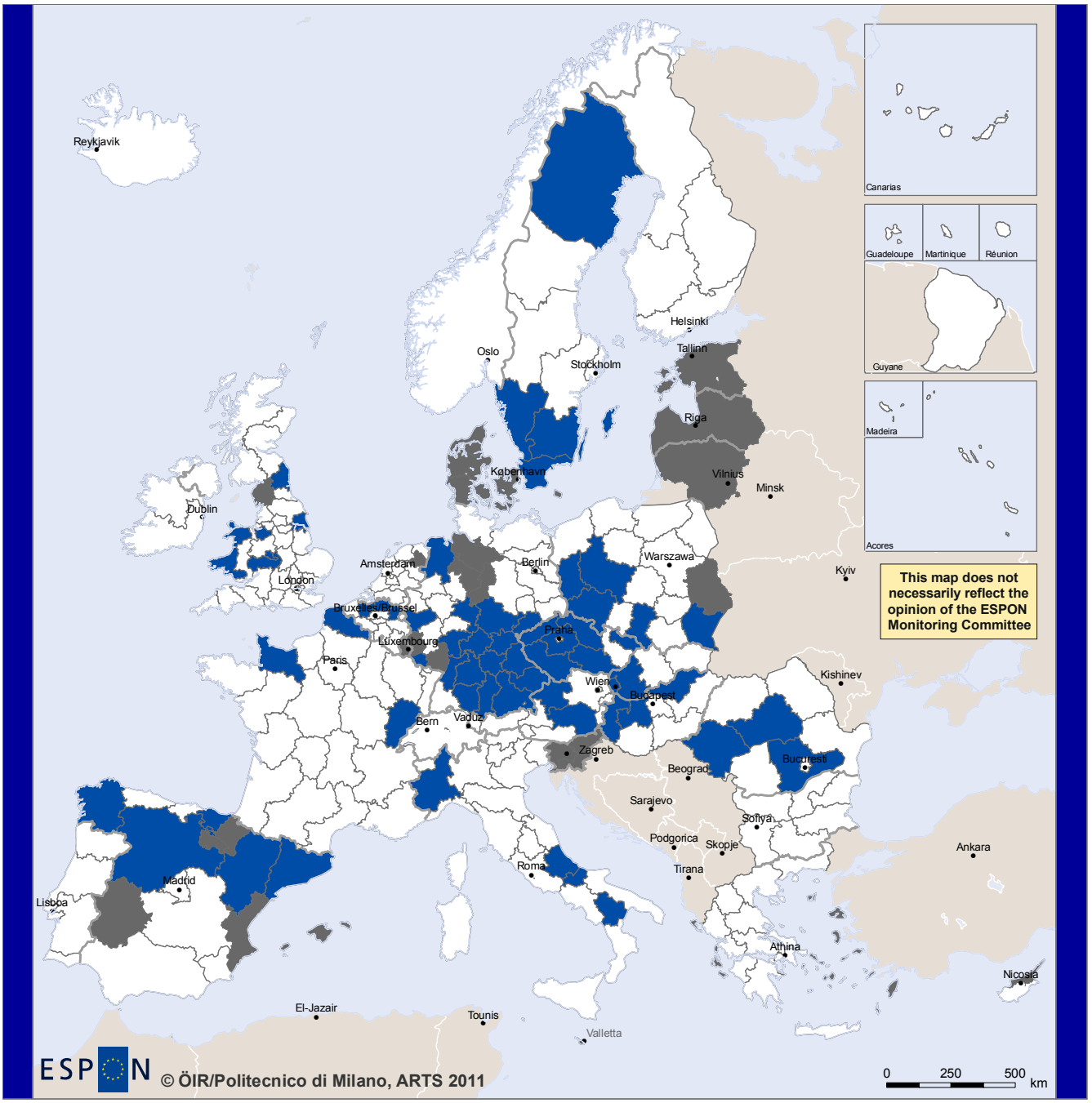
EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: NUTS 2
Transformation and Compilation of Data based on:
ESPON Projects, EUROSTAT, EEA Corine Land Cover,
5th Cohesion Report, BOKU University, DG AGRI
© EuroGeographics Association for administrative boundaries

- Affected
- Not Affected
- Neighbourhood Countries
- No Data

Types of regions affected: agglomerated

Regions affected by Directive on clean and energy-efficient road tranport vehicles branch b



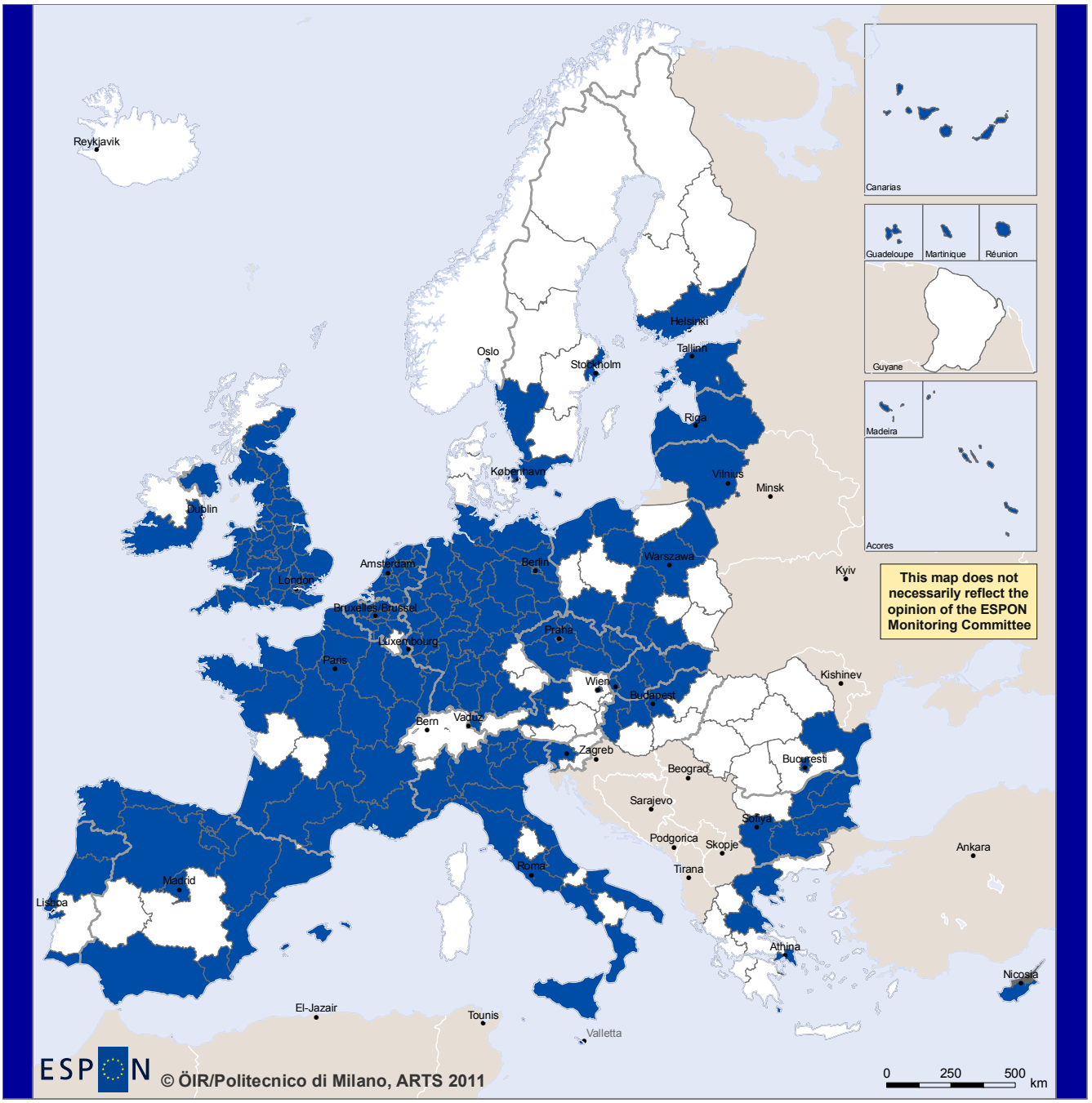
EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: NUTS 2
Transformation and Compilation of Data based on:
ESPON Projects, EUROSTAT, EEA Corine Land Cover,
5th Cohesion Report, BOKU University, DG AGRI
© EuroGeographics Association for administrative boundaries

- Affected
- Not Affected
- Neighbourhood Countries
- No Data

Types of regions affected: highest share of employement in automotive

Regions affected by Directive on the energy performance of buildings



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

Regional level: NUTS 2
Transformation and Compilation of Data based on:
ESPON Projects, EUROSTAT, EEA Corine Land Cover,
5th Cohesion Report, BOKU University, DG AGRI
© EuroGeographics Association for administrative boundaries

- Affected
- Not Affected
- Neighbourhood Countries
- No Data

Types of regions affected: urban, agglomerated

A6 Governance questionnaire

ESPON ARTS Questionnaire

The governance aspect of the territorial impact of EU directives

(Disseminated at the ESPON Contact Point meeting 19 November 2010, Liège)

Introduction, aims and objectives

The main objective of the ESPON ARTS project is to assess the *territorial sensitivity* of regions to EU directives. A basic assumption underlying the project is that this sensitivity can be explained to a large extent from specific regional territorial characteristics relating to soil, air and water.

However, it is understood that territorial characteristics alone cannot completely explain the territorial effects of a directive within a region; an important additional element is the factor *governance*. So, a part of the ESPON ARTS project is about developing a more thorough understanding of the role of governance as an explaining factor for the territorial impact of EU directives. The basic hypothesis underlying this focus is that domestic governance structures can have either an *amplifying* or a *mitigating* effect on the potential territorial impact of EU directives.

This leads to the following question: how does the factor governance amplify or mitigate the potential territorial impact of EU directives? The answer can be found in the four policy stages that directives go to:

(1) Development of the EU directive

(2) Transposition/translation in national legislation

(3) Implementation into existing policies or by issuing new policies

(4) Actual use and jurisprudence (if any) in relation to this actual use.

In each of these four policy stages government and governance decisions play a role and can lead to unexpected territorial impact. For example:

Ad1. During the *development* of an EU directive member state delegations have to be sensitive for its possible effects on territory and existing domestic legislation and will very likely use knowledge about this to define negotiation boundaries.

Ad 2. *Transposing* a directive into domestic legislation can be done in many different ways depending on how a member state interprets the directive in the context of its own legislative system. Some member states act pragmatically and, if possible, copy-paste directives in their domestic legislation, while others add additional objectives or relate the directive to specific legislation in other policy fields.

Ad 3. The *implementation* of a directive depends on a variety of decisions regarding the question how the objectives of the directive can be best met given the existing domestic policy system and mechanisms. In one case existing policies already cater for meeting the directive's objectives, in other cases existing policies need to be revised or complemented by new policies and instruments.

Ad 4. The *actual use* of a policy depends amongst others on the organization and functioning of the public administration, available governance capacity and resources and on the *legal system* within a member state or region and whether the decision made in the transposition and implementation phases allow certain degrees of flexibility.

This questionnaire aims to perform a very first preliminary analysis to filter out which domestic governance characteristics might amplify or mitigate the territorial effects of EU directives on domestic territories. Based on these characteristics the project will identify member states where territorial impact of specific directives might cause significant impact. These member states will be indicated by a *Flag*. The focus is on the *member state level* because governance characteristics are usually similar for all regions within a country. This is of course an assumption and respondents are invited to provide counter-evidence in those cases where this assumption does not seem to be valid. The outcome of this questionnaire is not only relevant for the ESPON ARTS project but may form the basis for further analysis in future ESPON projects.

In order to find out through a preliminary analysis how governance structures affect the territorial impact of EU directives across the ESPON space, the ESPON ARTS project has selected three directives for further case study analysis. The case study directives that have been selected are the following:

(1) **Water Framework Directive** – Council Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for Community action in the field of water policy

(2) **Air Quality Directive** – Council Directive 1999/30/EC of 22 April 1999 relating to limit values for sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter and lead in ambient air

(3) **Environmental Noise Directive** – Council Directive 2002/49/EC of the European Parliament and of the Council relating to the assessment and management of environmental noise

Selection criteria include: 1) the directive should be transposed and in force and 2) should have clear direct territorial impact.

The questionnaire itself is structured around four hypotheses on how government and governance structures may amplify or mitigate potential territorial impact of a directive. Also, by means of introduction and conclusion, two more open questions are posed. Depending on its appropriateness you can answer the questions by either referring to one of the three EU directives indicated above, or to another directive which has caused territorial impact in your country/region. The final question offers the opportunity to issue comments and suggestions as well as to provide further information on experiences related to the territorial impact of EU directives in your country. Relevant documentation to support your answers is welcomed and can be e-mailed or posted to the addresses below.

ESPON ARTS Questionnaire
Governance as an explaining factor for territorial impact

Liège, 17-18 November 2010

Respondent

Name: E-mail: Country: Affiliation:

Date/Place

General questions

1. Have any of the three directives (Water Framework Directive, Air Quality and Environmental noise) mentioned above caused unexpected territorial impact in your country? What kind of (major) impact did the directive cause and was this considered negatively or positively?
2. Do you know of any other EU directive having caused unwanted or unexpected territorial impact in your member state? If so, indicate which directive or directives and what briefly characterize the impact, its main reasons and how this was dealt with.
3. Has negative impact of EU directives led to more political attention for territorial impact? And if so, how did this materialize?

Answers/comments/suggestions

Hypothesis 1 – EU directives will lead to unexpected territorial impacts when their substance and internal logic do not (closely) match existing policies and instruments at the domestic level. This may result from the fact that their transposition into domestic legislation and policies will require many additional decisions.

Questions to be answered in relation to the three directives mentioned above, or any other directive that has had clear territorial impact:

1. Do objectives of the directive run counter to domestic objectives in the same policy field?
2. Have completely new objectives and methodologies been introduced in the domestic policy system?
3. Was it easy to fit the directive in the existing legislative and policy system? (For example, the Water Framework Directive poses a fundamental institutional requirement by asking member states to install management authorities at the level of water bodies.)
4. Any other relevant observation.

Answer/comments/suggestions

Hypothesis 2 – Unexpected territorial impact of EU directives can be avoided if the transposition and implementation of the directive is made subject to sound inter-sectoral coordination and (informal) consultation of important domestic stakeholders which are affected by the directive(s) in question (ngo's, private sector, civic organizations and others).

Questions to be answered in relation to the three directives mentioned above or any other directive that has had clear territorial impact:

1. Which branches of government have been responsible for translating EU directives into domestic policy in the case of the directives mentioned above and was this translation the subject of inter-sectoral coordination and wider consultation?
2. Is there a tendency to relate the directive to other domestic policy objectives or add additional objectives to those of the directive?
3. Have there been any complications during the transposition and implementation and in what mitigating measures were taken?
4. Any other relevant observations?

Answers/comments/suggestions

Hypothesis 3 – Unexpected territorial impact of EU directives can be avoided when member states start a dialogue with the European Commission.

Questions to be answered in relation to the three directives mentioned above or any other directive that has had clear territorial impact:

1. Was there any sort of dialogue with the European Commission?
2. If so: when did it occur in the policy process (expert, comitology, transposition, implementation) and what caused this dialogue?
3. What have been the results of this dialogue in terms of solutions to be applied to deal with certain unwanted situations?
4. Any other relevant observations?

Answers/comments/suggestions

Hypothesis 4 – There is a positive correlation between the unexpected territorial impacts of EU directives and the opportunities that the judicial system offers for stakeholders to file a case to the court.

Questions to be answered in relation to the three directives mentioned above or any other directive that has had clear territorial impact:

1. Does the judicial system of your country offer the possibility for specific groups of actors/stakeholders to formally object to certain decisions on the basis of EU directives? And do stakeholders use these opportunities?
2. Did this result in some unexpected behaviour like a widening of the scope for formal complaints?
3. Is the legal interpretation of the policy different and more strict than expected?
4. Any other relevant observations?

Answers/comments/suggestions

Any remarks, suggestions, comments that you would like to make in relation to

1. The general assumptions underlying this project
2. This questionnaire and its hypotheses
3. Territorial impact and the factor governance in your country
4. Other?

Answer/comments/suggestions

Thank you very much for your time and effort!

On behalf of the ESPON ARTS team
Wil Zonneveld and Bas Waterhout

W.A.M.Zonneveld@tudelft.nl/B.Waterhout@tudelft.nl
+31(0)15 278 1038/+31(0)15 278 7950

Delft University of Technology
OTB Research Institute for the Built Environment
P.O. Box 5030
2600 GA Delft
The Netherlands

A7 TIA quick check – Standard Version

ESPON

The TIA quick check

Standard Version

A methodology for a TIA ex-ante quick check

ESPON ARTS aims to develop a tool by which to analyse the impact of EU legislation that takes the sensitivity of regions into account. The analysis of regional sensitivity to EU directives and policies is intended as a simplified, evidence-based procedure of Territorial Impact Assessment (TIA). This 'quick check' should be as simple, comprehensible and user-friendly as possible.

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

List of Authors

ÖIR – Austrian Institute for Regional Studies and Spatial Planning

- Erich Dallhammer
- Bernd Schuh
- Joanne Tordy

Dipartimento BEST, Politecnico di Milano

- Roberto Camagni
- Camilla Lenzi

OTB Research Institute, Delft University of Technolgy

- Bas Waterhout
- Wil Zonneveld

PBL – Planbureau voor de Leefomgeving, Netherlands Environmental Assessment Agency

- David Evers
- Joost Tennekes

The 'TIA quick check' was developed within the Applied Research Project ESPON ARTS. This project was conducted within the framework of the ESPON 2013 Programme, partly financed by the European Regional Development Fund.

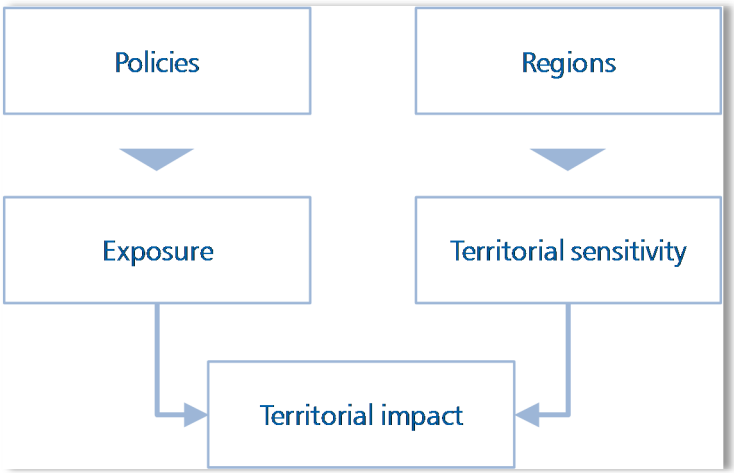
Information on the ESPON Programme and projects can be found on www.espon.eu

The methodology: based on the vulnerability concept

The TIA quick check is based on the vulnerability concept developed by the Intergovernmental Panel on Climate Change (IPCC). In this case, the effects deriving from a particular policy measure (exposure) are combined with the characteristics of a region (territorial sensitivity) to produce potential territorial impacts. In the TIA quick check the following definitions are used:

- The *exposure* describes the intensity by which EU directives and policies potentially affect European territory through a double logical chain. On the one hand single directives and policies may affect specific classes of regions (*regional exposure*), without reference to the specificity of each region; on the other hand they may affect particular "fields" of the territorial realm, e.g. surface water quality, emissions, sectoral production (*field exposure*);
- The (territorial) *sensitivity* describes how *single* territories/regions are subject and evaluate impacts in specific exposure fields, due to their socio-economic and geographical characteristics and to the social values and priorities they are likely to show;
- The *territorial impact* is the final, likely effect of a given EU policy or directive as a product of exposure and regional sensitivity. The impact can be direct or indirect along specific cause-and-effect logical chains.

Figure 1
Territorial impact combining exposure with sensitivity



The result: An excel tool and a procedure for a TIA quick check

The objective of ESPON-ARTS was to devise a user-friendly methodology that allows one to make a 'quick and dirty' ex-ante analysis of the potential impact of EU legislation, policies and directives on the development of regions. To this end, the methodology combines a standardised indicator-based tool developed in Excel with a means to systematically collect expert knowledge in a workshop setting. The expert contribution serves as input for the analysis and for providing the interpretation of the output of the impact indicators.

The TIA quick check uses the indicators and typologies as developed in the ESPON ARTS project. It covers the full range of potential impacts at a general level with common indicators for European NUTS 2 regions.

How to do the advanced TIA quick check

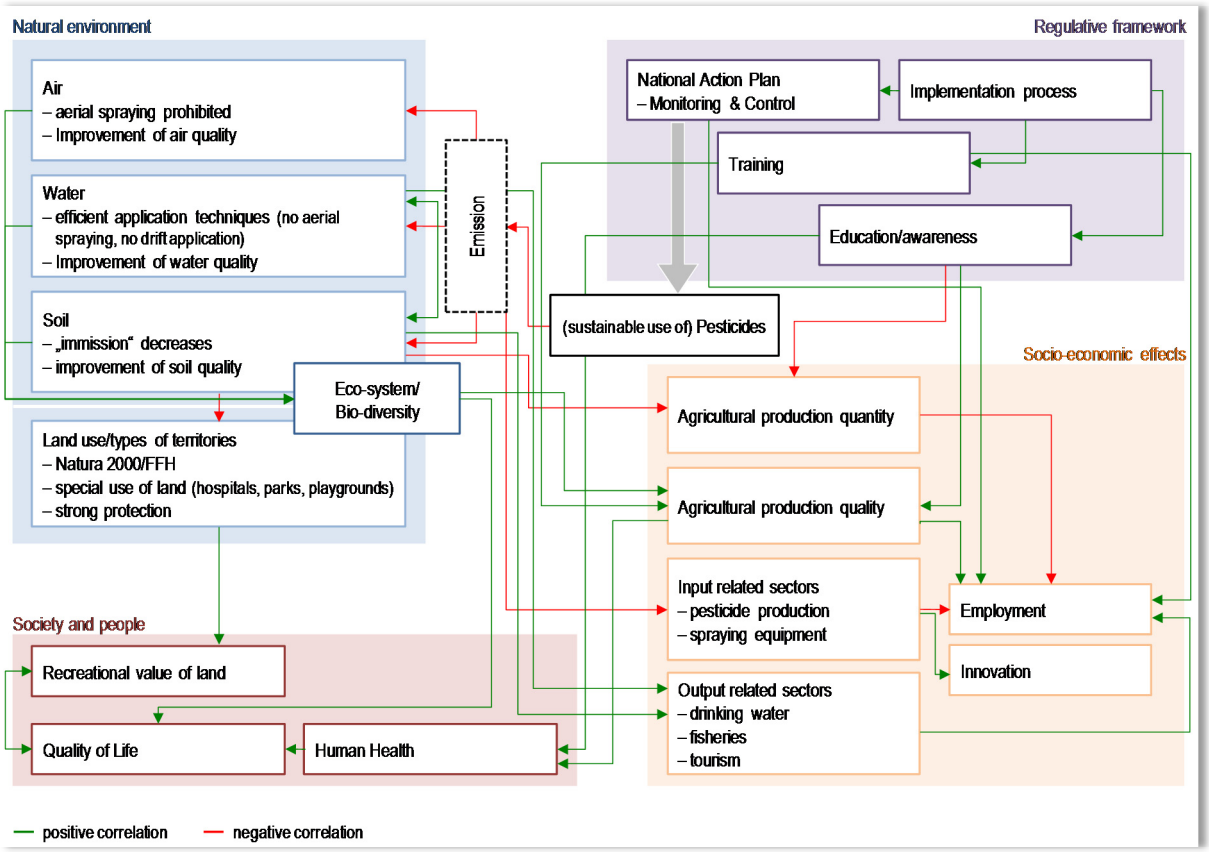
The standardised TIA quick check is done in nine steps using expert knowledge and a set of standardised indicators and types of regions. It can be performed in a workshop atmosphere; preferably with a group of experts in the field of the policy proposal and experts on regional development.

(1) The conceptual model: How does a policy affect the development of regions?

In a first step, it is necessary to detect the potential effects of a policy (in the case of ARTS, EU-directives were chosen) on territorial development. Based on a careful study of the actual text of the proposal, the experts then draw a conceptual model that translates the text into cause/effect relations (the intervention logic). Not only intended effects, but also unintended and indirect effects are considered, and on as many different fields as possible. This exercise is best done in an informal workshop setting so as to maximize the amount of input.

The cause/effect relationships can then be drawn out. Here, links between all the effects deriving from the policy proposal (exposure in the vulnerability concept) and the receptive capacity of a region (sensitivity in the vulnerability concept) are made explicit. The result is a systemic picture or flowchart showing the conceptual model of the proposal according to its intervention logic and potential effects (see following example).

Figure 2
Conceptual model of the directive 2009/128/EC / Directive on the sustainable use of pesticides



(2) Dealing with discrete cause/effect chains (branching)

In some cases, a policy will have only one chain of effects. In most cases, there are different, often mutually exclusive alternatives. For example, some policies only set targets, allowing member states to implement their own measures to meet these targets. Depending on the measure, the policy can have quite different territorial impacts. In other cases, the effects of a policy will vary according to type of region. In order to deal with this variability the policy is "branched" into different cause/effect chains, and each one is analysed separately.

(3) Which types of regions are affected? (regional exposure)

A policy proposal may affect only particular regions (e.g. coastal regions, regions with presence of particular productions or facilities like nuclear power plants etc.) or different types of regions could be affected in different ways. Therefore, it is essential to only include those regions being affected in the analysis. Exposed regions are selected using typologies (e.g. rural/urban, central/peripheral, advanced/lagging, high/low presence of certain sectors). ESPON ARTS provides a set of pre-selected types of NUTS2 regions to choose from, but in theory any typology or selection is possible.[1]

(4) What is the intensity of exposure on different fields? (exposure matrix)

In the next step, the conceptual model is translated into a set of indicators that describe the intensity of policy exposure. This is done using a predefined set of thematic fields such as natural environment, regional economy as well as society and people. To do this, the project produced a Directive-Exposure Matrix (DEM) Excel tool which allows data to be entered according to each field.

Table 1
Example for filling in the Directive Exposure Matrix (DEM)

		Effects on ...	Natural environment					
Directive on good weather		**Details**	Soil			Landscape and cultural heritage		Air
		Detailed effects on ...	erosion	pollutants in soil	share of artificial areas / soil sealing	conservation of natural heritage (landscape	conservation of cultural heritage	pollutants in air
potential effects on:		**Indicator value**						
1	Tourist		no effect	no effect	decrease	increase	no effect	no effect
1	Urban		no effect	decrease	no effect	no effect	increase	strong decreas
comments							reduction of acid rain	
Transformation: from indicator value to territorial welfare								
exposure type: cost or benefit for region?			**cost**	**cost**	**cost**	**benefit**	**benefit**	**cost**
potential effect on terr.welfare								
1	Tourist		0	0	1	1	0	0
1	Urban		0	1	0	0	1	2

[1] The following types of NUTS2 regions are available at the moment: Agglomerated regions, areas at highest technological/environmental risk, regions with relevant chemical industries, densely populated regions, forest regions, harbour regions, regions with a high density of rail, regions with a high density of road, regions with highest density of rail and road network, regions with highest share of employment in automotive, industrial regions, major airport location, regions with a high share of natural areas, rural regions, shrinking regions, regions with unprofitable farming, urban regions, wealthy regions, regions exposed to PM_{10}.

Table 2
List of exposure fields

Natural environment				
Soil	Water	Air	Climatic factors	Fauna/Flora/Habitat
erosion pollutants in soil share of artificial areas/soil sealing	water consumption pollutants in ground/surface water	pollutants in air	emissions of CO2 heavy rain/flood hazard/occurrence of landslides	biodiversity conservation of natural heritage (landscape diversity) conservation of cultural heritage
Regional economy				
Economic development	Agriculture	Industry	Services	Tourism
economic growth innovation entrepreneurship market barriers	employment in primary sector % of arable area, permanent grass/-crop area	employment in secondary sector	employment in tertiary sector	overnight stays
Society and people				
Social disparities	Demography	Accessibility	Built environment	Governance
disposable income in PPS per capita equal income distribution Employment rate	out-migration/brain drain/"shrinking" regions number of people exposed to noise accident rate in transport accident risk: industry/energy supply healthy life expectancy at birth	daily accessibility by air daily accessibility by waterways daily accessibility by road daily accessibility by rail renewable energy fossil fuel consumption	increase of urbanization relative to population growth mixed land use	efficiency of government/governance mechanisms duration or complexity of planning procedures participation rate societal transfers (e.g. tax added) transnational cooperation between member states

For each field, the level of exposure is defined by expert judgement according to the following classes:

++ strong advantageous effect on territorial welfare (strong increase)
+ weak advantageous effect on territorial welfare (increase)
O no effect
- weak disadvantageous effect on territorial welfare (decrease)
- - strong disadvantageous effect on territorial welfare (strong decrease)
? Unknown effect / effect cannot be specified
+/- direction cannot be specified (diverse effects)

These classes are then converted into numerical terms so as to allow further computation.

(5) What is the territorial impact in European regions? (Territorial Impact Matrix, TIM)

Once the Directive Exposure Matrix in the previous step has been filled in, the impact values are calculated using predefined sensitivity adjustments. These are determined for each field and called the Regional Sensitivity Matrix. The Territorial Impact Matrix (TIM) calculates the impact for each thematic exposure field and for each NUTS 2 region (= 42 fields x 287 NUTS 2 regions) and sorts the results into 9 classes:

Table 3
Example for the Territorial Impact Matrix (TIM)

		E1	E2	E3	E10	E11	E12	E13	E14
AT11	Burgenland	0,00	0,00	0,00	0,00	0,00	0,00	na	0,00
AT12	Niederösterreich	0,00	0,00	0,00	0,00	0,00	0,00	na	0,00
AT13	Wien	0,00	0,00	-1,06	-0,77	0,00	0,78	na	1,79
AT21	Kärnten	0,00	0,00	0,00	0,00	0,00	0,00	na	0,00
AT22	Steiermark	0,00	0,00	0,00	0,00	0,00	0,00	na	0,00
AT31	Oberösterreich	0,00	0,00	-0,77	-0,78	0,00	0,81	na	1,78
AT32	Salzburg	0,00	0,00	-0,76	-0,99	0,00	0,80	na	1,74
AT33	Tirol	0,00	0,00	0,00	0,00	0,00	0,00	na	0,00
AT34	Vorarlberg	0,00	0,00	-0,78	-1,04	0,00	0,80	na	1,78
BE10	Région de Bruxelles-Capi	na	0,00	-1,19	-0,75	0,00	0,76	na	1,69
BE21	Prov. Antwerpen	0,00	0,00	-0,91	-0,76	0,00	0,80	na	1,74
BE22	Prov. Limburg (B)	0,00	0,00	-0,88	-0,78	0,00	0,84	na	1,76
BE23	Prov. Oost-Vlaanderen	0,00	0,00	-0,88	-0,75	0,00	0,83	na	1,73
BE24	Prov. Vlaams Brabant	0,00	0,00	-0,91	-0,75	0,00	0,81	na	1,74

F1	erosion	F11	conservation of culture heritage
F2	pollutions in soil	F12	economic growth
F3	soil sealing	F13	innovation
F10	landscape diversity	F14	entrepreneurship

Table 4
Scale of potential territorial impact

very high positive impact	minor negative impact
high positive impact	moderate negative impact
moderate positive impact	high negative impact
minor positive impact	very high negative impact
no exposure	

(6) Do the results make sense? (plausibility and quality check)

The results calculated in the territorial impact matrix allows for a first plausibility check. Usually the results show that a proposal only affects a few thematic fields. The results should be discussed with the experts along two lines:

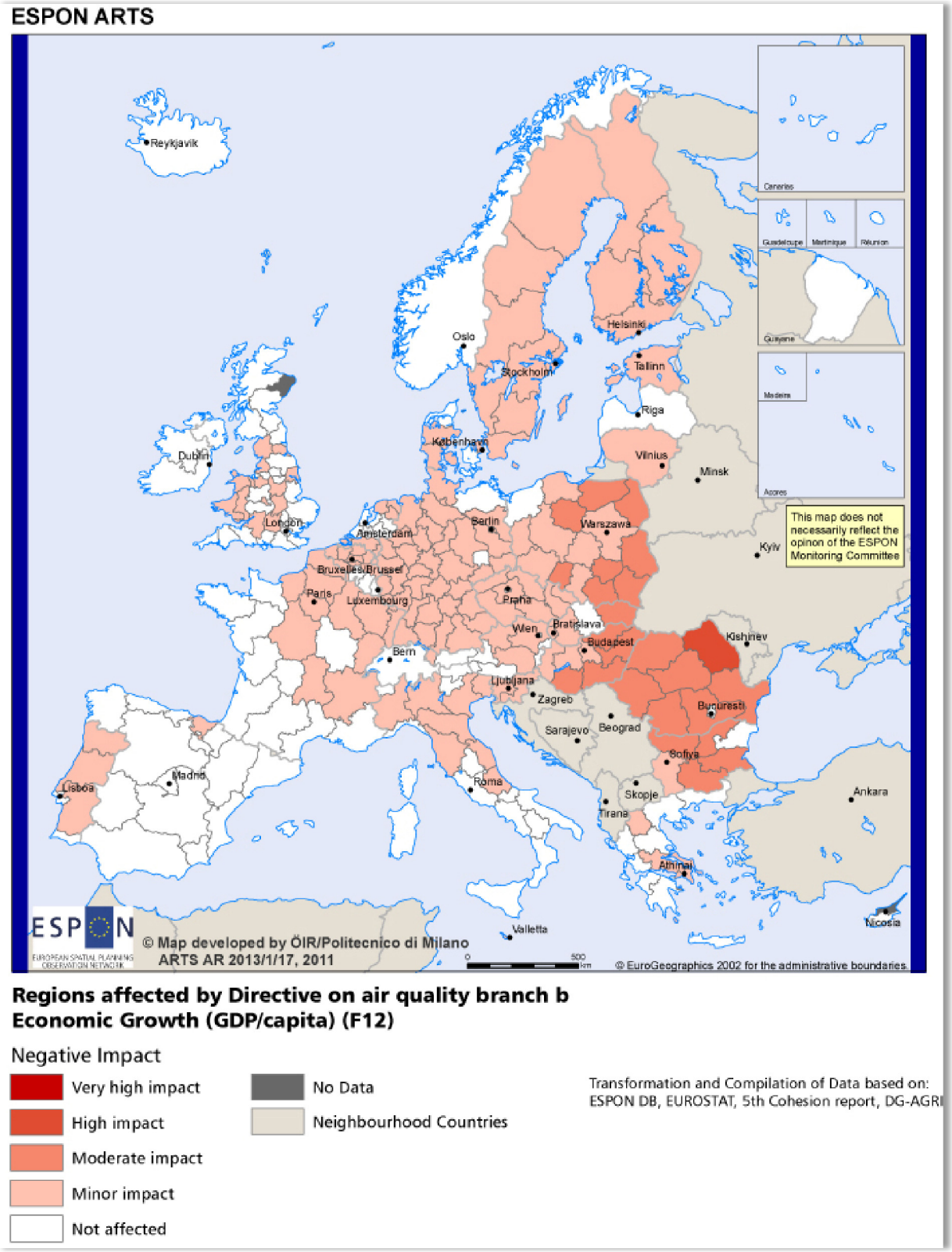
- Does the selection of regions provide a plausible picture? If not, the selection of the types of regions may need to be modified.
- Is the relationship between the different fields of exposure plausible? If not, the expert judgment about the intensity of exposure may need to be modified.

Once adjustments are made, the Territorial Impact Matrix (TIM) can be recalculated with the new values

(7) Which regions will be affected in which fields? (mapping)

When the results are reliable, maps showing the impact of different indicators can be drawn up. This can be followed by another plausibility check. In the trial run using 12 directives, several TIMs were recalculated after scrutinising the final maps.

Map 1
Example for a Map depicting the territorial impact on one field



(8) What are the policy implications? (discussion)

The maps provide the framework for the subsequent discussion on policy implications. The territorial patterns of both the positive impacts and negative effects are examined and discussed. Furthermore, the issue of potential adaptive capacity should be raised, as well as governance strategies to facilitate a successful implementation

(9) How to communicate the results (reporting)

Based on the results of the territorial impact assessment and the expert discussion, a short report should be drawn up including maps on relevant indicators. This communicates the results of the ex-ante analysis to the relevant audience.

Proposed agenda of a TIA workshop

9:00: Step 1:
The conceptual model: how does a policy affect the development of regions?
Result: a systemic picture showing the conceptual model of the policy proposal investigated according to its intervention logic and potential effects

11:00 Coffee break

11:30 Step 2:
Dealing with discrete cause/effect chains (branching)
Step 3:
Which types of regions are affected? (regional exposure)
Result: decision about different logical chains (branches) deriving from one policy proposal and about the types of regions affected (regionally exposed)

12:00 Step 4:
What is the intensity of exposure on different fields? (exposure matrix)
Result: the translation of the conceptual model into a set of indicators that describe the intensity of policy exposure (directive exposure matrix) for each branch

13:00 Lunch break

14:00 Step 5:
What is the territorial impact on regions? (Territorial Impact Matrix, TIM)
Step 6:
Do the results make sense? (plausibility and quality check)
The impact values are calculated using predefined sensitivity adjustments automatically. The TIM provides information about the relevant fields touched by the policy proposal.
Result: a stable result of the territorial impact of a policy proposal

15:00 Step 7:
Which regions are affected in which fields? (mapping the results)
Result: maps of the territorial impact for the relevant indicators

15:30 Step 8:
What are the policy implications? (adaptive capacity discussion)
Result: information about policy implications, and the potential adaptive capacity and governance strategies to facilitate a successful implementation.

17:00 End of the meeting

After the meeting:
Step 9:
How to communicate the results (write-up)
result: minutes

www.espon.eu

A8 TIA quick check – Advanced Version

ESPON

The TIA quick check

Advanced Version

A methodology for a TIA ex-ante quick check

ESPON ARTS aims to develop a tool by which to analyse the impact of EU legislation that takes the sensitivity of regions into account. The analysis of regional sensitivity to EU directives and policies is intended as a simplified, evidence-based procedure of Territorial Impact Assessment (TIA). This 'quick check' should be as simple, comprehensible and user-friendly as possible.

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

List of Authors

ÖIR – Austrian Institute for Regional Studies and Spatial Planning

- Erich Dallhammer
- Bernd Schuh
- Joanne Tordy

Dipartimento BEST, Politecnico di Milano

- Roberto Camagni
- Camilla Lenzi

OTB Research Institute, Delft University of Technolgy

- Bas Waterhout
- Wil Zonneveld

PBL – Planbureau voor de Leefomgeving, Netherlands Environmental Assessment Agency

- David Evers
- Joost Tennekes

The 'TIA quick check' was developed within the Applied Research Project ESPON ARTS. This project was conducted within the framework of the ESPON 2013 Programme, partly financed by the European Regional Development Fund.

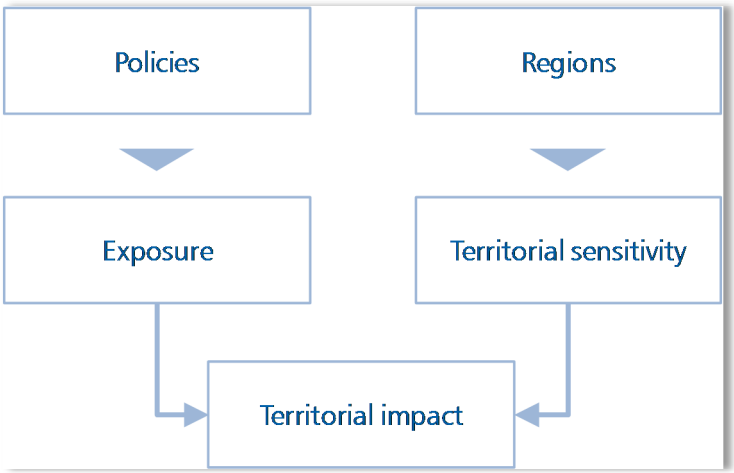
Information on the ESPON Programme and projects can be found on www.espon.eu

The methodology: based on the vulnerability concept

The TIA quick check is based on the vulnerability concept developed by the Intergovernmental Panel on Climate Change (IPCC). In this case, the effects deriving from a particular policy measure (exposure) are combined with the characteristics of a region (territorial sensitivity) to produce potential territorial impacts. In the TIA quick check the following definitions are used:

- The *exposure* describes the intensity by which EU directives and policies potentially affect European territory through a double logical chain. On the one hand single directives and policies may affect specific classes of regions (*regional exposure*), without reference to the specificity of each region; on the other hand they may affect particular "fields" of the territorial realm, e.g. surface water quality, emissions, sectoral production (*field exposure*);
- The (territorial) *sensitivity* describes how *single* territories/regions are subject and evaluate impacts in specific exposure fields, due to their socio-economic and geographical characteristics and to the social values and priorities they are likely to show;
- The *territorial impact* is the final, likely effect of a given EU policy or directive as a product of exposure and regional sensitivity. The impact can be direct or indirect along specific cause-and-effect logical chains..

Figure 1
Territorial impact combining exposure with sensitivity



The result: An excel tool and a procedure for a TIA quick check

The objective of ESPON-ARTS was to devise a user-friendly methodology that allows one to make a 'quick and dirty' ex-ante analysis of the potential impact of EU legislation, policies and directives on the development of regions. To this end, the methodology combines a standardised indicator-based tool developed in Excel with a means to systematically collect expert knowledge in a workshop setting. The expert contribution serves as input for the analysis and for providing the interpretation of the output of the impact indicators.

The advanced TIA quick check enables one to use the standard methodological framework and also allowing users to define special indicators describing the exposure to policy proposals combine these with new indicators describing regional sensitivity. In this case, the tool provides the technical framework, but the indicators are defined individually.

How to do the advanced TIA quick check

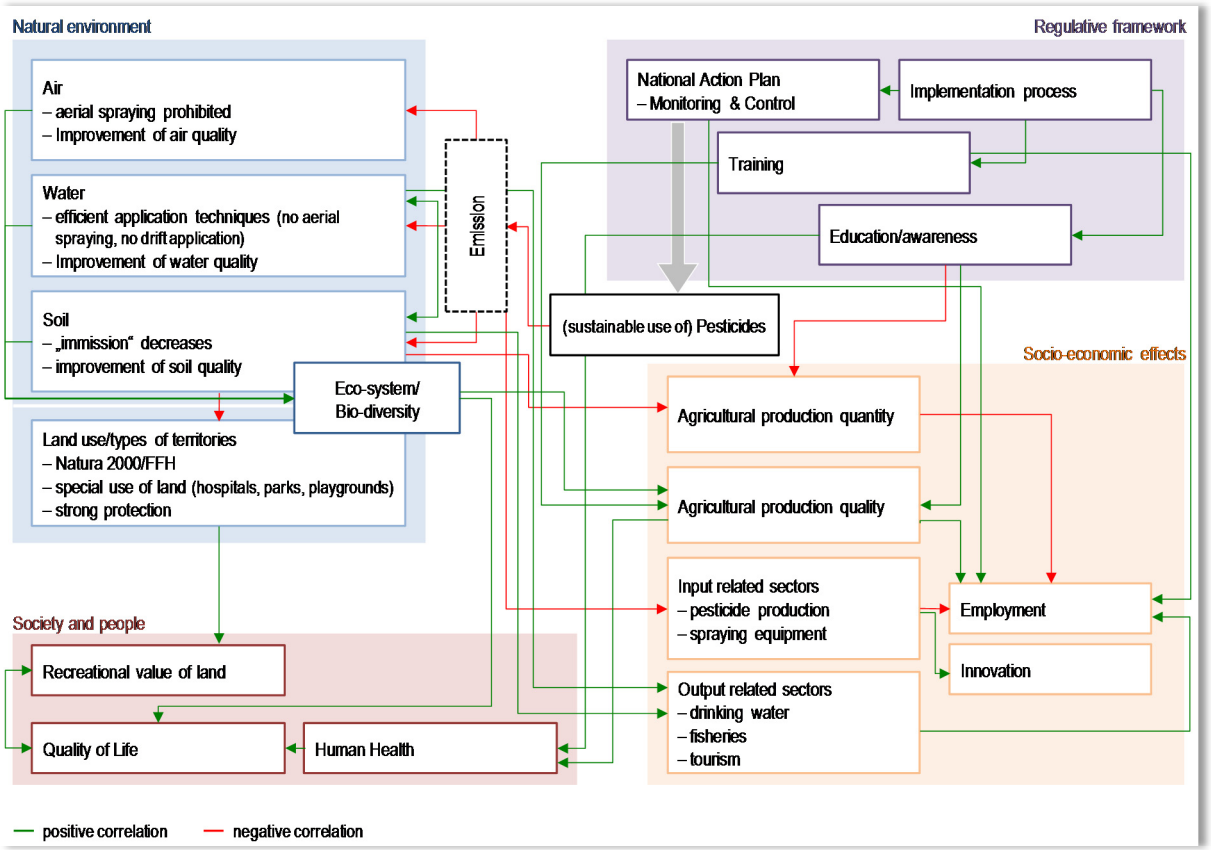
The advanced TIA quick check enables one to assess the impact of a policy proposal along self-defined thematic fields using new indicators for exposure and sensitivity of regions. The TIA-tool provides the technical setting for linking the exposure and sensitivity indicators, but the indicators themselves need to be defined individually. In principle the nine steps of the TIA quick check are the same as in the standardised quick check. However, the introduction of new indicators and hence new data requires some readjusting within the Excel tool. These changes to the tool take place in step (3) and (4), and if necessary, as consequence of the plausibility check (6).

(1) The conceptual model: How does a policy affect the development of regions?

In a first step, it is necessary to detect the potential effects of a policy (in the case of ARTS, EU-directives were chosen) on territorial development. Based on a careful study of the actual text of the proposal, the experts then draw a conceptual model that translates the text into cause/effect relations (the *intervention logic*). Not only intended effects, but also unintended and indirect effects are considered, and on as many different fields as possible. This exercise is best done in an informal workshop setting so as to maximize the amount of input.

The cause/effect relationships can then be drawn out. Here, links between all the effects deriving from the policy proposal (*exposure* in the vulnerability concept) and the receptive capacity of a region (*sensitivity* in the vulnerability concept) are made explicit. The result is a systemic picture or flowchart showing the conceptual model of the proposal according to its intervention logic and potential effects (see following example).

Figure 2
Conceptual model of the directive 2009/128/EC / Directive on the sustainable use of pesticides



(2) Are there discrete cause/effect chains? (branching)

In some cases, a policy will have only one chain of effects. In most cases, there are different, often mutually exclusive alternatives. For example, some policies only set targets, allowing member states to implement their own measures to meet these targets. Depending on the measure, the policy can have quite different territorial impacts. In other cases, the effects of a policy will vary according to type of region. In order to deal with this variability the policy is “branched” into different cause/effect chains, and each one is analysed separately.

(3) Which types of regions are affected?

A policy proposal may affect only particular regions (e.g. coastal regions, regions with presence of particular productions or facilities like nuclear power plants etc.) or different types of regions could be affected in different ways. Therefore, it is essential to only include those regions being affected in the analysis. Exposed regions are selected using typologies (e.g. rural/urban, central/peripheral, advanced/lagging, high/low presence of certain sectors). ESPON ARTS provides a set of pre-selected types of NUTS2 regions to choose from, but the advanced TIA quick check allows one to define specific types of regions that could be affected.

The user has to fill the Regional Exposure Matrix (REM) by assigning each NUTS 2 region either an ‘0’, indicating that a region is not that type of region, or ‘1’, classifying a region as being part of that specific type of region.

Figure 3
Example for filling in a new type of regions in the Regional Exposure Matrix (REM)

	A	B	C
1			type of region "tourist"
2	AT11	Burgenland	0
3	AT12	Niederösterreich	0
4	AT13	Wien	0
5	AT21	Kärnten	0
6	AT22	Steiermark	0
7	AT31	Oberösterreich	1
8	AT32	Salzburg	0
9	AT33	Tirol	0
10	AT34	Vorarlberg	0
11	BE10	Région de Bruxelles-Capitale,	0

(4) What are the fields of exposure and how can the sensitivity of regions towards this exposure be described?

In the next step, the conceptual model is translated into a set of indicators that describe the intensity of policy exposure.

- One indicator describing the potential exposure deriving from an LPD. – This indicator will be filled in into the Directive Exposure Matrix (DEM).

For each defined field the exposure of a directive is defined by expert judgement in a qualitative attitude along the following classes: high positive exposure intensity (strong increase) / low positive exposure intensity (increase) / no exposure / high negative exposure intensity (strong decrease) / low negative exposure intensity (decrease).

Besides identifying a fitting indicator, the exposure field also needs to be evaluated as being either harmful ('cost') or favourable ('benefit') for the regions welfare. The tool will automatically transform the experts rating into numbers for further calculation

Table 1
Example for filling in the Directive Exposure Matrix (DEM)

		Effects on ...	Natural environment					
		Details	Soil			Landscape and cultural heritage		Air
Directive on good weather		Detailed effects on ...	erosion	pollutants in soil	share of artificial areas / soil sealing	conservation of natural heritage (landscape	conservation of cultural heritage	pollutants in air
potential effects on:		Indicator value						
1	Tourist		no effect	no effect	decrease	increase	no effect	no effect
1	Urban		no effect	decrease	no effect	no effect	increase	strong decreas
comments							reduction of acid rain	
Transformation: from indicator value to territorial welfare								
exposure type: cost or benefit for region?			cost	cost	cost	benefit	benefit	cost
potential effect on terr.welfare								
1	Tourist		0	0	1	1	0	0
1	Urban		0	1	0	0	1	2

- One Indicator describing the sensitivity of a region. This indicator will be normalized in the range 0.75 to 1.25. – This indicator will be filled in into the Regional Sensitivity Matrix (RSM).

The normalization follows a linear procedure and normalized values range from 0.75 up to 1.25. Basically, normalized sensitivity indicators represent coefficients that can increase (if greater than 1) or decrease (if lower than 1) each directive's impact on a specific field.

For this step the following definitions are needed:

$Xnorm_i$ the normalized value of the sensitivity indicator for impact field i

X_i the original value of the sensitivity indicator for impact field i

$Xmin_i$ the minimum original value of the sensitivity indicator for impact field i

$Xmax_i$ the maximum original value of the sensitivity indicator for impact field i

Then, normalization follows this formula:

$$Xnorm_i = 0{,}75+((1.25-0.75)*((X_i - Xmin_i)/(Xmax_i - Xmin_i)))$$

(5) What is the territorial impact in European regions? (Territorial Impact Matrix, TIM)

Based on the Directive Exposure Matrix and the pre-defined sensitivity of the regions the territorial impact is calculated automatically and sorted into 9 classes of impact.

Table 2
Example for the Territorial Impact Matrix (TIM)

		E1	E2	E3	E10	E11	E12	E13	E14
AT11	Burgenland	0,00	0,00	0,00	0,00	0,00	0,00	na	0,00
AT12	Niederösterreich	0,00	0,00	0,00	0,00	0,00	0,00	na	0,00
AT13	Wien	0,00	0,00	-1,06	-0,77	0,00	0,78	na	1,79
AT21	Kärnten	0,00	0,00	0,00	0,00	0,00	0,00	na	0,00
AT22	Steiermark	0,00	0,00	0,00	0,00	0,00	0,00	na	0,00
AT31	Oberösterreich	0,00	0,00	-0,77	-0,78	0,00	0,81	na	1,78
AT32	Salzburg	0,00	0,00	-0,76	-0,99	0,00	0,80	na	1,74
AT33	Tirol	0,00	0,00	0,00	0,00	0,00	0,00	na	0,00
AT34	Vorarlberg	0,00	0,00	-0,78	-1,04	0,00	0,80	na	1,78
BE10	Région de Bruxelles-Capi	na	0,00	-1,19	-0,75	0,00	0,76	na	1,69
BE21	Prov. Antwerpen	0,00	0,00	-0,91	-0,76	0,00	0,80	na	1,74
BE22	Prov. Limburg (B)	0,00	0,00	-0,88	-0,78	0,00	0,84	na	1,76
BE23	Prov. Oost-Vlaanderen	0,00	0,00	-0,88	-0,75	0,00	0,83	na	1,73
BE24	Prov. Vlaams Brabant	0,00	0,00	-0,91	-0,75	0,00	0,81	na	1,74

F1	erosion	F11	conservation of culture heritage
F2	pollutions in soil	F12	economic growth
F3	soil sealing	F13	innovation
F10	landscape diversity	F14	entrepreneurship

Table 3
Scale of potential territorial impact

very high positive impact	minor negative impact
high positive impact	moderate negative impact
moderate positive impact	high negative impact
minor positive impact	very high negative impact
no exposure	

(6) Do the results make sense? (plausibility and quality check)

The results calculated in the territorial impact matrix allows for a first plausibility check. Usually the results show that a proposal only affects a few thematic fields. The results should be discussed with the experts along two lines:

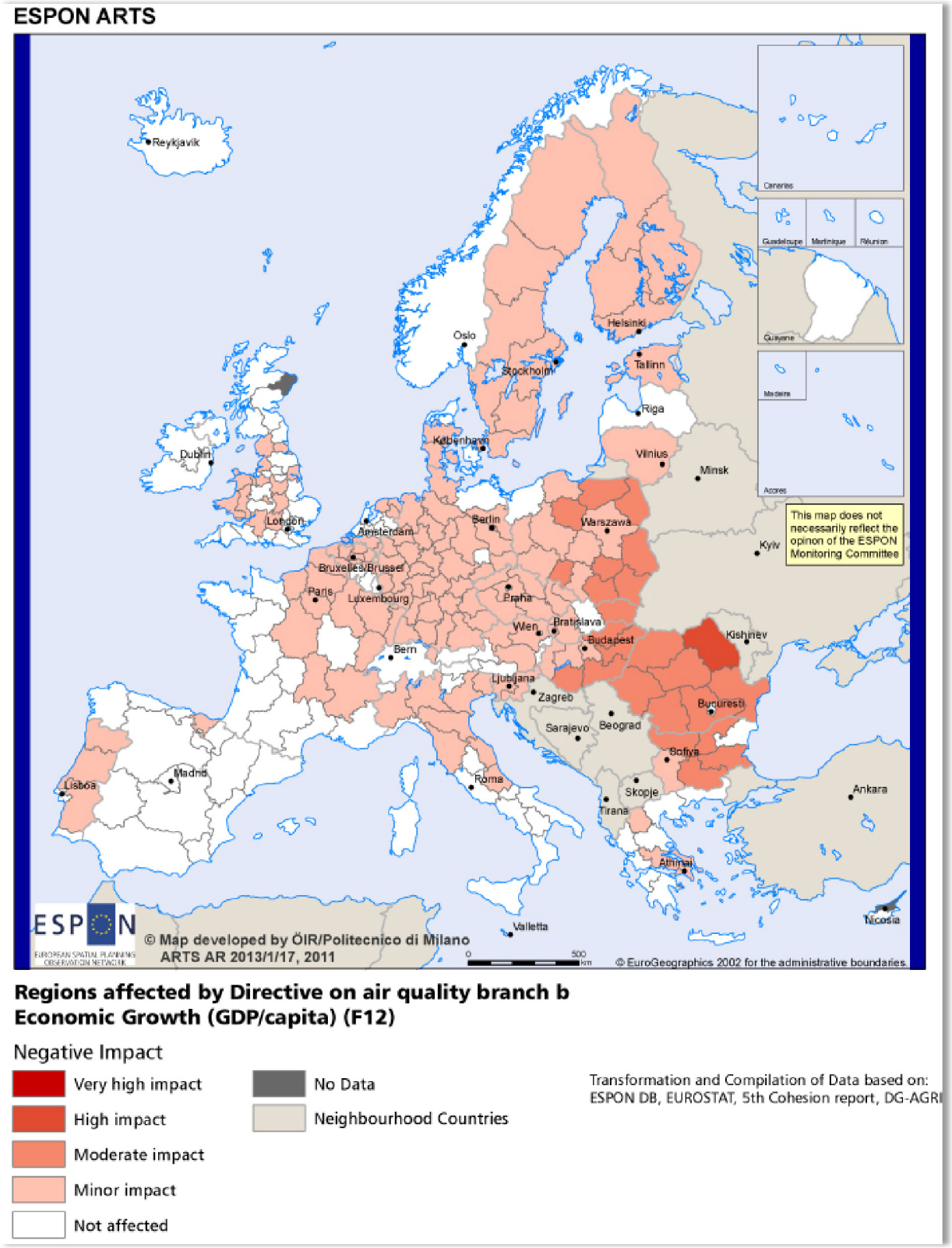
- Does the selection of regions provide a plausible picture? If not, the selection of the types of regions may need to be modified.
- Is the relationship between the different fields of exposure plausible? If not, the expert judgment about the intensity of exposure may need to be modified.

All values, typologies of regions and decisions about the exposure can be changed at this stage. The modified Territorial Impact Matrix (TIM) is then recalculated with the new values.

(7) Which regions will be affected in which fields? (mapping)

When the results are reliable, maps showing the impact along the different indicators can be drawn up. This can be followed by another plausibility check.

Map 1
Example for a Map depicting the territorial impact on one field



(8) What are the policy implications? (discussion)

The maps provide the framework for the subsequent discussion on policy implications. The territorial patterns of both the positive impacts and negative effects are examined and discussed. Furthermore, the issue of potential adaptive capacity should be raised, as well as governance strategies to facilitate a successful implementation

(9) How to communicate the results (reporting)

Based on the results of the territorial impact assessment and the expert discussion, a short report should be drawn up including maps on relevant indicators. This communicates the results of the ex-ante analysis to the relevant audience.

www.espon.eu

A9 Directive/Exposure Matrix

Directive #	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	F13	F14	F15	F16	F17	F18	F19	F20	F21	F22	F23	F24	F25	F26	F27	F28	F29	F30	F31	F32	F33	F34	F35	F36	F37	F38	F39	F40	F41
1a	0	1	0	0	1	1,5	1	0	0	0	1	-1	0	0	-1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	-1	0	0	0	0	0	0	0	0	0	0
1b	0	1	0	0	1	1,5	0	0	0	0	0	-1	1	0	-1	0	0	?	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	1,5	0	0	1	1,5	1,5	0	0	1	0	0	-1	-1,5	-1	1	?	-1	0	0	0	0	0	0	0	0	-1	0	0	?	0	0	0	-1	-1,5	0	-1	1
3	0	1	-1	0	1	1	0	0	1	0	0	0	1	0	1	1	1	0	1	0	-1	0	0	0	0	0	1,5	1	0	0	0	0	0	0	0	-1	1	-1	1	0	1,5
4a	0	1	0	0	1	1	1	0	1	0	1	?	0	0	0	0	0	?	0	1	?	0	0	0	1,5	1	0	1	-1	0	-1	-1	0	1	0	0	1	-1	1	0	0
4b	0	0	-1	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	-1	-1	0	0	-1	-1	1	-1	1	0	1
4c	0	0	0	0	0	0	-1	0	1	-1	0	1	1	1	0	0	0	1	1	1	1	-1	1	0	1,5	0	0	1	0	0	0	0	0	-1	0	0	1	-1	1	0	0
5a	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	-1	0	0	0	0	0	0	0
5b	0	0	-1	0	0	-1	-1	0	-1	0	0	1	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	-1	0	0	0	0	0	0	1
6	0	1	0	0	1	1	0	0	0	0	0	0	1	0	-1	0	0	0	0	0	-1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	-1	1	0	0
7	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8a	0	0	-1	0	0	0	-1	0	0	-1	0	1	1	1,5	1,5	-1	?	1	1	1	?	1	1,5	1	0	0	0	1	0	0	0	0	0	-1	-1	0	1	0	0	0	0
8b	0	0	0	0	0	0	-1	0	0	1	0	-1	1	1,5	1,5	-1	?	-1	-1	1	?	1,5	-1	-1,5	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0
9	1	1	-1	0	0	0	0	0	0	-1	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	1,5	1,5	1,5	1,5	0	0	0	0	1	-1	0	0	1
10a	0	1,5	?	0	1,5	1	0	0	1	?	0	-1	1	0	0	1	-1	-1,5	1	?	1	-1	1	1	0	0	1	1,5	0	0	0	0	0	0	0	0	0	-1	0	0	0
10b	0	1	?	0	1	1	0	0	0	?	0	-1	1	0	0	1	-1	-1,5	1	?	-1	-1	-1	-1	0	0	1	1,5	0	0	0	0	0	0	0	0	0	-1	0	0	0
11a	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
11b	0	0	0	0	0	0	0	0	0	0	0	1	1,5	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	1	-1	0	1	1	0	0	0	-1,5	1	1,5	1	0	0	0	1	1	0	0	-1,5	0	0	0	0	0	?	0	0	0	0	0	1,5	-1	1	-1	0	0	0	0

Legende

1,5	strong advantageous effect on territorial welfare
1	weak advantageous effect on territorial welfare
0	no effect
-1	weak disadvantageous effect on territorial welfare
-1,5	strong disadvantageous effect on territorial welfare
?	unknown effect / effect cannot be specified

A10 Regional Exposure Matrix

		1a	1b	2	3	4a	4b	4c	5a	5b	6	7	8a	8b	9	10a	10b	11a	11b	12
AT11	Burgenland	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
AT12	Niederösterreich	0	1	1	0	1	1	1	0	0	1	0	0	0	0	1	1	0	0	0
AT13	Wien	1	0	1	0	1	1	1	0	1	0	1	1	0	1	0	1	1	0	1
AT21	Kärnten	0	0	1	0	1	1	1	0	0	0	1	0	1	1	1	0	0	0	0
AT22	Steiermark	0	1	1	0	1	1	1	0	0	1	0	0	0	0	1	0	0	1	0
AT31	Oberösterreich	0	1	1	1	1	1	1	0	0	1	0	1	0	1	0	1	0	1	1
AT32	Salzburg	0	0	1	0	1	1	1	0	0	0	1	1	0	1	0	0	0	0	1
AT33	Tirol	0	0	1	0	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0
AT34	Vorarlberg	0	1	1	0	1	1	1	0	0	1	1	1	0	1	0	0	0	0	1
BE10	Région de Bruxelles-Capitale	1	1	1	0	1	1	1	0	0	1	1	1	0	1	0	1	1	1	1
BE21	Prov. Antwerpen	1	1	1	0	1	1	1	0	1	1	0	1	0	0	0	1	1	1	1
BE22	Prov. Limburg (B)	1	1	1	1	1	1	1	0	0	1	0	1	0	1	0	1	1	1	1
BE23	Prov. Oost-Vlaanderen	1	1	1	1	1	1	1	0	1	1	0	1	0	1	0	1	1	1	1
BE24	Prov. Vlaams Brabant	1	1	1	0	1	1	1	0	0	1	1	1	0	1	0	1	1	0	1
BE25	Prov. West-Vlaanderen	1	1	1	0	1	1	1	0	1	1	0	1	0	0	0	0	1	0	1
BE31	Prov. Brabant Wallon	1	1	1	0	1	1	1	0	0	1	0	1	0	0	0	1	1	0	1
BE32	Prov. Hainaut	1	1	1	1	1	1	1	0	0	1	0	1	0	1	0	1	1	0	1
BE33	Prov. Liège	0	1	1	1	1	1	1	0	1	1	0	1	0	1	0	1	0	0	1
BE34	Prov. Luxembourg (B)	0	0	1	0	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0
BE35	Prov. Namur	0	0	1	1	1	1	1	0	0	0	0	1	0	1	0	1	0	0	1
BG31	Severozapaden	0	1	1	0	1	1	1	1	1	1	0	0	1	0	1	0	0	0	0
BG32	Severen tsentralen	0	1	1	0	1	1	1	1	1	1	0	1	1	0	0	0	0	0	1
BG33	Severoiztochen	1	0	1	0	1	1	1	1	1	0	0	1	1	0	0	0	0	0	1
BG34	Yugoiztochen	0	1	1	0	1	1	1	1	1	1	0	1	1	0	0	0	0	0	1
BG41	Yugozapaden	0	1	1	0	1	1	1	1	0	1	0	1	1	0	0	0	1	0	1
BG42	Yuzhen tsentralen	0	1	1	0	1	1	1	1	0	1	0	1	1	0	0	0	0	0	1
CH01	Région lémanique	na	na	1	0	1	1	1	na	0	na	0	1	0	0	0	1	0	0	1
CH02	Espace Mittelland	na	na	1	1	1	1	1	na	0	na	0	1	0	1	0	1	0	0	1
CH03	Nordwestschweiz	na	na	1	1	1	1	1	na	0	na	0	1	0	1	0	1	1	0	1
CH04	Zürich	na	na	1	1	1	1	1	na	0	na	0	1	0	1	0	1	1	0	1
CH05	Ostschweiz	na	na	1	0	1	1	1	na	0	na	0	1	0	0	0	0	0	0	1
CH06	Zentralschweiz	na	na	1	1	1	1	1	na	0	na	0	1	0	1	0	0	0	0	1
CH07	Ticino	na	na	1	0	1	1	1	na	0	na	na	1	0	0	0	0	0	0	1
CY00	Cyprus	0	0	1	0	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1
CZ01	Praha	1	0	1	0	1	1	1	0	1	0	0	1	0	0	0	1	1	0	1
CZ02	Strední Cechy	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	1	0	1	1
CZ03	Jihozápad	0	1	1	0	1	1	1	0	0	1	0	1	0	0	0	0	0	1	1
CZ04	Severozápad	1	1	1	0	1	1	1	0	1	1	0	1	0	0	0	0	0	1	1
CZ05	Severovýchod	0	1	1	0	1	1	1	0	0	1	0	1	0	0	0	0	0	1	1
CZ06	Jihovýchod	0	1	1	1	1	1	1	0	0	1	0	1	1	1	0	1	0	1	1
CZ07	Strední Morava	0	1	1	0	1	1	1	0	0	1	0	1	1	0	0	0	0	0	1
CZ08	Moravskoslezko	1	1	1	1	1	1	1	0	0	1	0	1	1	1	0	0	0	1	1
DE11	Stuttgart	0	1	1	1	1	1	1	0	1	1	0	1	0	1	0	1	1	1	1
DE12	Karlsruhe	0	1	1	1	1	1	1	0	1	1	0	1	0	1	0	0	1	1	1
DE13	Freiburg	0	1	1	1	1	1	1	0	1	1	0	1	0	1	0	1	0	0	1
DE14	Tübingen	0	1	1	1	1	1	1	0	1	1	0	1	0	1	0	0	0	1	1
DE21	Oberbayern	0	1	1	1	1	1	1	0	0	1	0	1	0	1	0	1	1	1	1
DE22	Niederbayern	0	1	1	1	0	0	0	0	0	1	0	0	0	1	1	0	0	1	0
DE23	Oberpfalz	0	1	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0
DE24	Oberfranken	0	1	1	0	1	1	1	0	1	1	0	1	1	0	0	0	0	1	1
DE25	Mittelfranken	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	0	0	1	1
DE26	Unterfranken	0	1	1	1	1	1	1	0	1	1	0	1	0	1	0	0	0	1	1
DE27	Schwaben	0	1	1	1	1	1	1	0	0	1	0	1	0	1	0	0	0	1	1
DE30	Berlin	0	1	1	0	1	1	1	0	1	1	0	1	1	0	0	1	1	0	1
DE41	Brandenburg - Nordost	0	1	1	0	1	1	1	0	1	1	0	1	1	0	0	0	0	0	1
DE42	Brandenburg - Südwest	0	1	1	0	1	1	1	0	0	1	1	1	1	1	0	0	0	0	1
DE50	Bremen	0	1	1	0	1	1	1	0	1	1	0	1	1	0	0	0	1	na	1
DE60	Hamburg	0	1	1	1	1	1	1	0	1	1	0	1	0	1	0	1	1	na	1
DE71	Darmstadt	1	1	1	1	1	1	1	0	1	1	0	1	0	1	0	1	1	1	1
DE72	Gießen	0	1	1	0	1	1	1	0	0	1	0	1	1	0	0	0	0	0	1
DE73	Kassel	0	1	1	0	1	1	1	0	0	1	0	1	1	0	0	0	0	1	1
DE80	Mecklenburg-Vorpommern	0	0	1	0	1	1	1	0	1	0	0	1	1	0	0	0	0	0	1
DE91	Braunschweig	0	1	1	0	1	1	1	0	1	1	0	1	1	0	0	0	0	na	1
DE92	Hannover	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	1	0	na	1
DE93	Lüneburg	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	0	0	na	1
DE94	Weser-Ems	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	0	0	1	1
DEA1	Düsseldorf	1	1	1	1	1	1	1	0	1	1	0	1	1	1	0	1	1	0	1
DEA2	Köln	1	1	1	1	1	1	1	0	1	1	0	1	0	1	0	0	1	1	1
DEA3	Münster	1	1	1	0	1	1	1	0	1	1	0	1	0	0	0	1	1	0	1
DEA4	Detmold	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	0	1	0	1
DEA5	Arnsberg	1	1	1	1	1	1	1	0	1	1	0	1	1	1	0	1	1	0	1
DEB1	Koblenz	0	1	1	1	1	1	1	0	1	1	0	1	0	1	0	0	0	0	1
DEB2	Trier	0	1	1	1	1	1	1	0	1	1	0	1	0	1	0	0	0	na	1
DEB3	Rheinhessen-Pfalz	1	1	1	1	1	1	1	0	1	1	0	1	0	1	0	0	1	na	1
DEC0	Saarland	1	1	1	0	1	1	1	0	1	1	0	1	1	0	0	0	1	1	1
DED1	Chemnitz	0	1	1	0	1	1	1	0	0	1	0	1	1	0	0	0	0	1	1
DED2	Dresden	0	1	1	0	1	1	1	0	1	1	0	1	1	0	0	0	0	0	1
DED3	Leipzig	0	0	1	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	1
DEE0	Sachsen-Anhalt	0	1	1	0	1	1	1	0	1	1	0	1	1	0	0	1	0	0	1
DEF0	Schleswig-Holstein	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	0	0	0	1
DEG0	Thüringen	0	1	1	0	1	1	1	0	0	1	0	1	1	0	0	0	0	1	1
DK01	Hovedstaden	0	1	1	0	1	1	1	0	1	1	1	1	0	1	0	1	1	na	1
DK02	Sjælland	0	0	1	0	1	1	1	0	1	0	0	0	0	0	1	1	0	na	0
DK03	Syddanmark	0	1	1	0	1	1	1	0	1	1	0	0	0	0	1	1	0	na	0
DK04	Midtjylland	0	1	1	0	1	1	1	0	1	1	0	0	0	0	1	1	0	na	0
DK05	Nordjylland	0	0	1	0	1	1	1	0	1	0	0	0	0	0	1	1	0	na	0
EE00	Estonia	0	1	1	0	1	1	1	0	1	1	0	1	1	0	0	0	0	na	1
ES11	Galicia	0	0	1	0	1	1	1	0	1	0	0	1	0	0	0	0	0	1	1
ES12	Principado de Asturias	0	0	1	0	1	1	1	0	1	0	0	1	1	0	0	1	0	0	1
ES13	Cantabria	0	0	1	1	1	1	1	0	1	0	0	1	0	1	0	1	0	0	1
ES21	Pais Vasco	0	1	1	1	1	1	1	0	1	1	1	1	0	1	0	1	1	1	1
ES22	Comunidad Foral de Navarra	0	0	1	0	1	1	1	0	0	0	0	1	0	0	0	1	0	na	1
ES23	La Rioja	0	0	1	0	1	1	1	0	0	0	0	1	0	0	0	0	0	na	1
ES24	Aragón	0	0	1	0	1	1	1	0	0	0	0	1	0	0	0	1	1	1	1
ES30	Comunidad de Madrid	0	0	1	0	1	1	1	0	0	0	1	1	0	1	0	1	1	0	1
ES41	Castilla y León	0	0	1	1	1	1	1	0	0	0	0	1	0	1	0	0	0	1	1
ES42	Castilla-la Mancha	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
ES43	Extremadura	0	0	1	0	1	1	1	0	0	0	0	0	0	0	1	0	0	na	0
ES51	Cataluña	0	0	1	1	1	1	1	0	1	0	0	1	0	1	0	1	1	1	1
ES52	Comunidad Valenciana	0	0	1	0	1	1	1	0	1	0	0	1	0	0	0	1	1	na	1
ES53	Illes Balears	0	0	1	0	1	1	1	0	1	0	0	1	0	0	0	0	0	na	1

		1a	1b	2	3	4a	4b	4c	5a	5b	6	7	8a	8b	9	10a	10b	11a	11b	12
ES61	Andalucia	0	0	1	0	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1
ES62	Región de Murcia	0	0	1	0	1	1	1	0	1	0	0	1	0	0	0	1	0	0	1
ES63	Ciudad Autónoma de Ceuta	0	0	1	0	1	1	1	0	1	0	1	1	0	1	0	0	1	na	1
ES64	Ciudad Autónoma de Melilla	0	0	1	0	1	1	1	0	1	0	1	1	0	1	0	0	1	na	1
ES70	Canarias (ES)	na	0	1	0	1	1	1	0	1	0	na	1	0	0	0	0	0	0	1
FI13	Itä-Suomi	0	1	1	0	1	1	1	0	1	1	0	0	1	0	1	0	0	0	0
FI18	Etelä-Suomi	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	0	0	0	1
FI19	Länsi-Suomi	0	1	1	0	1	1	1	0	1	1	0	0	0	0	1	1	0	0	0
FI1A	Pohjois-Suomi	0	1	1	0	1	1	1	0	1	1	0	0	0	0	1	0	0	0	0
FI20	Åland	0	0	1	0	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0
FR10	Île de France	1	1	1	1	1	1	1	0	1	1	0	1	0	1	0	1	1	0	1
FR21	Champagne-Ardenne	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	0	0	0	1
FR22	Picardie	1	1	1	1	1	1	1	0	1	1	0	1	0	1	0	1	0	0	1
FR23	Haute-Normandie	0	1	1	1	1	1	1	0	1	1	0	1	0	1	0	1	0	0	1
FR24	Centre	0	1	1	0	1	1	1	0	0	1	0	1	0	0	0	1	0	0	1
FR25	Basse-Normandie	0	0	1	0	1	1	1	0	1	0	0	1	0	0	0	0	0	1	1
FR26	Bourgogne	0	0	1	0	1	1	1	0	1	0	0	1	0	0	0	1	0	0	1
FR30	Nord - Pas-de-Calais	1	1	1	1	1	1	1	0	1	1	0	1	0	1	0	1	1	1	1
FR41	Lorraine	0	1	1	1	1	1	1	0	1	1	0	1	0	1	0	1	0	0	1
FR42	Alsace	0	1	1	1	1	1	1	0	1	1	0	1	0	1	0	1	0	0	1
FR43	Franche-Comté	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	1	0	1	1
FR51	Pays de la Loire	0	0	1	0	1	1	1	0	1	0	0	1	0	0	0	1	0	0	1
FR52	Bretagne	0	0	1	0	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1
FR53	Poitou-Charentes	0	0	1	0	1	1	1	0	1	0	0	0	0	0	1	1	0	0	0
FR61	Aquitaine	0	0	1	0	1	1	1	0	1	0	0	1	0	0	0	1	0	0	1
FR62	Midi-Pyrénées	0	0	1	0	1	1	1	0	0	0	0	1	0	0	0	0	0	0	1
FR63	Limousin	0	0	1	0	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0
FR71	Rhône-Alpes	0	1	1	1	1	1	1	0	1	1	0	1	0	1	0	1	0	0	1
FR72	Auvergne	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	0	0	0	1
FR81	Languedoc-Roussillon	0	0	1	1	1	1	1	0	0	0	0	1	0	1	0	1	0	0	1
FR82	Provence-Alpes-Côte d'Azur	0	0	1	1	1	1	1	0	1	0	0	1	0	1	0	1	1	0	1
FR83	Corse	0	0	1	0	1	1	1	0	1	0	1	0	0	1	1	0	0	0	0
FR91	Guadeloupe (FR)	na	0	1	0	1	1	1	0	1	0	na	1	0	0	0	na	0	0	1
FR92	Martinique (FR)	na	0	1	0	1	1	1	0	1	0	na	1	0	0	0	na	1	0	1
FR93	Guyane (FR)	na	0	1	0	0	0	0	0	1	0	na	0	0	0	1	na	0	0	0
FR94	Reunion (FR)	na	0	1	0	1	1	1	0	1	0	na	1	0	0	0	na	1	0	1
GR11	Anatoliki Makedonia, Thraki	0	0	1	0	1	1	1	0	1	0	0	0	0	0	1	0	0	0	0
GR12	Kentriki Makedonia	0	0	1	0	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1
GR13	Dytiki Makedonia	0	1	1	0	1	1	1	0	0	1	0	0	1	0	1	0	0	0	0
GR14	Thessalia	0	0	1	0	1	1	1	0	1	0	0	1	1	0	0	0	0	0	1
GR21	Ipeiros	0	0	1	0	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0
GR22	Ionia Nisia	0	0	1	0	1	1	1	1	1	0	0	0	0	0	1	0	0	na	0
GR23	Dytiki Ellada	0	0	1	0	1	1	1	0	1	0	0	0	0	0	1	0	0	0	0
GR24	Sterea Ellada	0	1	1	0	1	1	1	0	1	1	0	0	1	0	1	0	0	0	0
GR25	Peloponnisos	0	0	1	0	1	1	1	0	0	0	0	0	1	0	1	0	0	0	0
GR30	Attiki	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	1	1	0	1
GR41	Voreio Aigaio	0	0	1	0	1	1	1	0	0	0	0	0	1	0	1	0	0	na	0
GR42	Notio Aigaio	0	0	1	0	1	1	1	0	1	0	0	0	0	0	1	0	0	na	0
GR43	Kriti	0	0	1	0	1	1	1	0	1	0	0	0	0	0	1	0	0	0	0
HU10	Közép-Magyarország	1	1	1	0	1	1	1	1	1	1	0	1	0	0	0	1	1	0	1
HU21	Közép-Dunántúl	1	1	1	0	1	1	1	0	0	1	0	1	1	0	0	1	0	1	1
HU22	Nyugat-Dunántúl	0	1	1	0	1	1	1	1	0	1	0	1	1	0	0	0	0	1	1
HU23	Dél-Dunántúl	1	1	1	0	0	0	0	0	0	1	0	0	1	0	1	0	0	0	0
HU31	Észak-Magyarország	1	1	1	0	1	1	1	1	0	1	0	1	1	0	0	0	0	1	1
HU32	Észak-Alföld	1	1	1	0	1	1	1	1	0	1	0	0	1	0	1	1	0	0	0
HU33	Dél-Alföld	1	1	1	0	1	1	1	0	0	1	0	0	1	0	1	0	0	0	0
IE01	Border, Midlands and Weste	0	0	1	0	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0
IE02	Southern and Eastern	0	0	1	0	1	1	1	0	1	0	0	1	0	0	0	1	0	0	1
IS00	Iceland	na	na	1	na	1	1	1	na	1	na	na	1	0	na	0	na	0	0	1
ITC1	Piemonte	0	1	1	1	1	1	1	0	0	1	0	1	0	1	0	1	0	1	1
ITC2	Valle d'Aosta/Vallée d'Aoste	0	0	1	0	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0
ITC3	Liguria	0	0	1	1	1	1	1	0	1	0	0	1	0	1	0	1	1	0	1
ITC4	Lombardia	1	1	1	1	1	1	1	0	0	1	0	1	0	1	0	1	1	0	1
ITD1	Provincia Autonoma Bolzano	0	0	1	0	1	1	1	0	0	0	1	1	0	1	0	1	0	0	1
ITD2	Provincia Autonoma Trento	0	0	1	0	1	1	1	0	0	0	1	1	0	1	0	1	0	0	1
ITD3	Veneto	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	0	1	0	1
ITD4	Friuli-Venezia Giulia	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	0	0	0	1
ITD5	Emilia-Romagna	1	1	1	1	1	1	1	0	1	1	0	1	0	1	0	1	0	0	1
ITE1	Toscana	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	1	0	0	1
ITE2	Umbria	0	0	1	0	1	1	1	0	0	0	0	0	0	0	1	1	0	0	0
ITE3	Marche	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	0	0	0	1
ITE4	Lazio	0	0	1	0	1	1	1	0	1	0	0	1	0	0	0	1	1	0	1
ITF1	Abruzzo	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	0	0	1	1
ITF2	Molise	0	0	1	0	0	0	0	0	1	0	0	0	1	0	1	1	0	1	0
ITF3	Campania	0	0	1	0	1	1	1	0	1	0	0	1	0	0	0	0	1	0	1
ITF4	Puglia	0	0	1	0	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1
ITF5	Basilicata	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0
ITF6	Calabria	0	0	1	0	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1
ITG1	Sicilia	0	0	1	0	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1
ITG2	Sardegna	0	0	1	0	1	1	1	0	1	0	0	0	0	0	1	0	0	0	0
LI00	Liechtstein	na	na	1	na	1	1	1	na	0	na	na	0	0	na	0	na	1	na	1
LT00	Lithuania	0	1	1	0	1	1	1	1	1	1	0	1	1	0	0	0	0	na	1
LU00	Luxembourg (Grand-Duché)	1	0	1	0	1	1	1	0	1	0	0	1	0	0	0	0	0	na	1
LV00	Latvia	0	0	1	0	1	1	1	1	1	0	0	1	1	0	0	0	1	na	1
MT00	Malta	0	1	1	0	1	1	1	0	1	1	na	1	0	0	0	0	1	na	1
NL11	Groningen	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	1	0	0	1
NL12	Friesland	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	0	0	0	1
NL13	Drenthe	0	1	1	0	1	1	1	0	0	1	0	1	0	0	0	1	0	na	1
NL21	Overijssel	1	0	1	0	1	1	1	0	0	0	0	1	0	0	0	1	1	0	1
NL22	Gelderland	1	0	1	0	1	1	1	0	1	0	0	1	0	0	0	0	1	0	1
NL23	Flevoland	0	0	1	0	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1
NL31	Utrecht	1	0	1	0	1	1	1	0	1	0	1	1	0	1	0	0	1	0	1
NL32	Noord-Holland	0	0	1	0	1	1	1	0	1	0	0	1	0	0	0	1	1	0	1
NL33	Zuid-Holland	1	0	1	1	1	1	1	0	1	0	0	1	0	1	0	1	1	0	1
NL34	Zeeland	1	1	1	1	1	1	1	0	1	1	0	1	0	1	0	1	0	0	1
NL41	Noord-Brabant	1	1	1	0	1	1	1	0	1	1	0	1	0	0	0	1	1	0	1
NL42	Limburg (NL)	1	1	1	1	1	1	1	0	1	1	0	1	0	1	0	1	1	0	1
NO01	Oslo og Akershus	na	0	1	0	1	1	1	na	1	0	0	1	0	0	0	1	0	0	1
NO02	Hedmark og Oppland	na	0	1	0	1	1	1	na	0	0	1	0	0	1	1	0	0	0	0
NO03	Sør-Østlandet	na	1	1	0	1	1	1	na	1	1	1	0	0	1	1	1	0	0	0
NO04	Agder og Rogaland	na	1	1	0	1	1	1	na	1	1	0	1	0	0	0	1	0	0	1

		1a	1b	2	3	4a	4b	4c	5a	5b	6	7	8a	8b	9	10a	10b	11a	11b	12
NO05	Vestlandet	na	1	1	0	1	1	1	na	1	1	0	0	0	0	1	0	0	0	0
NO06	Trøndelag	na	0	1	0	1	1	1	na	1	0	0	0	0	0	1	0	0	0	0
NO07	Nord-Norge	na	0	1	0	1	1	1	na	1	0	0	0	0	0	1	0	0	0	0
PL11	Lódzkie	1	1	1	0	1	1	1	1	0	1	0	1	1	0	0	1	1	0	1
PL12	Mazowieckie	1	1	1	0	1	1	1	0	1	1	0	1	0	0	0	1	1	0	1
PL21	Malopolskie	1	1	1	1	1	1	1	1	0	1	0	1	0	1	0	1	0	0	1
PL22	Slaskie	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	1	1	1
PL31	Lubelskie	1	1	1	0	1	1	1	1	0	1	0	0	1	0	1	0	0	na	0
PL32	Podkarpackie	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	1	0
PL33	Swietokrzyskie	1	1	1	0	0	0	0	1	0	1	0	0	1	0	1	0	0	0	0
PL34	Podlaskie	0	1	1	0	1	1	1	0	0	1	0	1	1	0	0	0	0	0	1
PL41	Wielkopolskie	1	1	1	0	1	1	1	0	0	1	0	0	0	0	1	0	0	1	0
PL42	Zachodniopomorskie	0	0	1	0	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1
PL43	Lubuskie	0	1	1	0	1	1	1	0	0	1	0	0	0	0	1	0	0	1	0
PL51	Dolnoslaskie	0	1	1	0	1	1	1	1	0	1	0	1	1	0	0	0	0	1	1
PL52	Opolskie	1	1	1	0	1	1	1	0	1	1	na	1	1	0	0	1	0	0	1
PL61	Kujawsko-Pomorskie	0	1	1	0	1	1	1	0	0	1	0	1	0	0	0	1	0	0	1
PL62	Warminsko-Mazurskie	0	1	1	0	1	1	1	0	0	1	0	0	0	0	1	0	0	0	0
PL63	Pomorskie	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	0	0	0	1
PT11	Norte	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	0	0	0	1
PT15	Algarve	0	0	1	0	1	1	1	0	1	0	1	1	0	1	0	0	0	0	1
PT16	Centro (PT)	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	0	0	0	1
PT17	Lisboa	0	0	1	0	1	1	1	0	1	0	1	1	0	1	0	1	1	0	1
PT18	Alentejo	0	1	1	0	1	1	1	0	1	1	0	0	1	0	1	0	0	0	0
PT20	Região Autónoma dos Açore	0	0	1	0	1	1	1	0	1	0	na	1	0	0	0	na	0	0	1
PT30	Região Autónoma da Madei	0	0	1	0	1	1	1	0	1	0	na	1	0	0	0	na	1	0	1
RO11	Nord-Vest	0	1	1	0	1	1	1	1	0	1	0	0	1	0	1	0	0	0	0
RO12	Centru	0	1	1	0	1	1	1	1	0	1	0	0	1	0	1	0	0	1	0
RO21	Nord-Est	0	1	1	1	1	1	1	1	0	1	0	0	0	1	1	0	0	0	0
RO22	Sud-Est	0	1	1	1	1	1	1	1	1	1	0	1	1	1	0	0	0	0	1
RO31	Sud	1	1	1	1	0	0	0	1	1	1	0	0	1	1	1	0	0	1	0
RO32	Bucaresti	1	0	1	0	1	1	1	1	0	0	0	1	0	0	0	1	1	0	1
RO41	Sud-Vest	1	1	1	0	1	1	1	1	1	1	0	0	1	0	1	0	0	0	0
RO42	Vest	0	1	1	0	1	1	1	1	0	1	0	0	1	0	1	0	0	1	0
SE11	Stockholm	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	1	1	0	1
SE12	Östra Mellansverige	0	1	1	0	1	1	1	0	1	1	0	0	0	0	1	0	0	0	0
SE21	Småland med öarna	0	1	1	0	1	1	1	0	1	1	0	0	0	0	1	0	0	1	0
SE22	Sydsverige	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	0	0	1	1
SE23	Västsverige	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	0	0	1	1
SE31	Norra Mellansverige	0	1	1	0	1	1	1	0	1	1	1	0	1	1	1	0	0	0	0
SE32	Mellersta Norrland	0	1	1	0	1	1	1	0	0	1	1	0	1	1	1	0	0	0	0
SE33	Övre Norrland	0	1	1	0	1	1	1	0	0	1	1	0	1	1	1	0	0	1	0
SI01	Slovenia	0	1	1	0	0	0	0	0	0	1	0	0	1	0	1	0	0	na	0
SI02	Slovenia	0	1	1	0	1	1	1	0	1	1	1	1	0	1	0	0	0	na	1
SK01	Bratislavský	1	1	1	0	1	1	1	0	1	1	0	1	1	0	0	1	1	1	1
SK02	Západné Slovensko	1	1	1	0	1	1	1	0	1	1	0	1	1	0	0	0	0	1	1
SK03	Stredné Slovensko	0	0	1	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	1
SK04	Východné Slovensko	0	1	1	0	1	1	1	0	0	1	0	1	0	0	0	0	0	0	1
UKC1	Tees Valley and Durham	0	1	1	1	1	1	1	0	1	1	0	1	0	1	0	1	1	0	1
UKC2	Northumberland, Tyne and	0	0	1	0	1	1	1	0	1	0	0	1	1	0	0	1	1	1	1
UKD1	Cumbria	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	1	0	na	1
UKD2	Cheshire	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	1	1	1	1
UKD3	Greater Manchester	0	0	1	1	1	1	1	0	1	0	0	1	0	1	0	1	1	0	1
UKD4	Lancashire	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	1	1	0	1
UKD5	Merseyside	0	0	1	0	1	1	1	0	1	0	0	1	1	0	0	1	1	0	1
UKE1	East Riding and North Lincol	0	1	1	1	1	1	1	0	1	1	0	1	0	1	0	1	0	1	1
UKE2	North Yorkshire	0	0	1	0	1	1	1	0	0	0	0	1	0	0	0	0	0	0	1
UKE3	South Yorkshire	0	0	1	0	1	1	1	0	0	0	1	1	0	1	0	1	1	0	1
UKE4	West Yorkshire	0	0	1	0	1	1	1	0	0	0	0	1	0	0	0	1	1	0	1
UKF1	Derbyshire and Nottingham	0	1	1	0	1	1	1	0	0	1	0	1	0	0	0	1	1	0	1
UKF2	Leicestershire, Rutland and	0	1	1	0	1	1	1	0	0	1	0	1	0	0	0	1	1	0	1
UKF3	Lincolnshire	0	0	1	0	1	1	1	0	0	0	0	1	0	0	0	0	0	0	1
UKG1	Herefordshire, Worcestersh	0	0	1	0	1	1	1	0	0	0	0	1	0	0	0	0	0	1	1
UKG2	Shropshire and Staffordshire	0	0	1	1	1	1	1	0	0	0	0	1	0	1	0	1	0	0	1
UKG3	West Midlands	0	1	1	0	1	1	1	0	0	1	1	1	0	1	0	1	1	1	1
UKH1	East Anglia	0	0	1	1	1	1	1	0	1	0	0	1	0	1	0	1	0	0	1
UKH2	Bedfordshire, Hertfordshire	0	0	1	0	1	1	1	0	0	0	0	1	0	0	0	1	1	0	1
UKH3	Essex	0	0	1	0	1	1	1	0	1	0	0	1	0	0	0	0	1	0	1
UKI1	Inner London	0	0	1	0	1	1	1	0	1	0	0	1	0	0	0	1	1	0	1
UKI2	Outer London	0	0	1	1	1	1	1	0	0	0	0	1	0	1	0	1	1	0	1
UKJ1	Berkshire, Bucks and Oxford	0	1	1	0	1	1	1	0	0	1	0	1	0	0	0	0	1	0	1
UKJ2	Surrey, East and West Susse	0	0	1	1	1	1	1	0	1	0	0	1	0	1	0	1	1	0	1
UKJ3	Hampshire and Isle of Wight	0	0	1	0	1	1	1	0	1	0	0	1	0	0	0	0	1	0	1
UKJ4	Kent	0	0	1	1	1	1	1	0	1	0	0	1	0	1	0	1	1	0	1
UKK1	Gloucestershire, Wiltshire a	0	1	1	1	1	1	1	0	1	1	0	1	0	1	0	0	0	0	1
UKK2	Dorset and Somerset	0	0	1	0	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1
UKK3	Cornwall and Isles of Scilly	0	0	1	0	1	1	1	0	1	0	0	1	0	0	0	1	0	0	1
UKK4	Devon	0	0	1	0	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1
UKL1	West Wales and The Valleys	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	1	0	1	1
UKL2	East Wales	0	1	1	1	1	1	1	0	1	1	0	1	0	1	0	1	0	0	1
UKM2	Eastern Scotland	0	0	1	1	1	1	1	0	1	0	0	1	0	1	0	1	0	0	1
UKM3	South Western Scotland	0	0	1	0	1	1	1	0	1	0	0	1	1	0	0	0	1	0	1
UKM5	North Eastern Scotland	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	0	0	0	1
UKM6	Highlands and Islands	0	0	1	0	1	1	1	0	1	0	0	0	0	0	1	0	0	0	0
UKN0	Northern Ireland	0	0	1	0	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1

A11 Bibliography

Allio, L., M-H. Fandel (2006) Making Europe work: Improving the transposition, implementation and enforcement of EU legislation, EPC Working Paper No. 25, Brussels: European Policy Centre.

Backes, C. W., Koelmeijer, R. B. A., van Nieuwerburgh, T (2005) Transformation of the First Daughter Directive on Air Quality in Several EU Mebmer States and its Application in Practice. European Energy and Environmental Law Review, 14, 157 – 164.

Backes, Ch. W. (2006) Internationale vergelijking implementatie EU-richtlijnen luchtkwaliteit. Utrecht, Centrum voor Omgevingsrecht en Beleid/NILOS, Universiteit Utrecht.

Barca, F. (2009): An Agenda for a Reformed Cohesion Policy: a place based approach to meeting European Union challenges and expectations; Independent Report, Brussels.

Beunen, R. (2006) European nature conservation legislation and spatial planning: For better or for worse?, Journal of Environmental Planning and Management 49(4): 605-619.

Böhme, K. & T. Eser (2008) Territorial Impact Analysis of EU policies, in: A. Faludi (ed.) European Spatial Research and Planning, Cambridge (MA): Lincoln Institute of Land Policy: 43-66.

Borghetto, E., Franchino, F. (2010) The role of subnational authorities in the implementation of EU directives. Journal of European Public Policy, 17: 6, 759 – 780.

Börzel, T. A. (2002) Pace-Setting, Foot-Dragging, and Fence-Sitting: Member State Responses to Europeanization, Journal of Common Market Studies 40 (2): 193-214.

Buunk, W. (2003) The Locus of European Integration, Delft: Eburon.

Camagni R. (2006) "Territorial Impact Assessment (TIA): a methodological proposal", in Scienze Regionali – Italian Journal of Regional Science no. 2/2006, pp. 135-146.

Camagni R. (2007), “Territorial development policies in the European Model of Society”, in Faludi A., Territorial cohesion and the European Model of Society, Lincoln Institute of Land Policy, Cambridge MA., pp. 129-144.

Camagni R. (2009), “Territorial Impact Assessment for European regions: a methodological proposal and an application to EU transport policy”, Evaluation and program planning, 32, 342-350.

Capello R., Camagni R., Chizzolini B., Fratesi U. (2008), Modelling regional scenarios for the enlarged Europe, Springer, Berlin.

CEC – Commission of the European Communities (1997) The EU compendium of spatial planning systems and policies. Regional Development Studies 28. Luxembourg: Office for Official Publications of the European Communities.

CEC – Commission of the European Communities – DGXI (1998), A Handbook on Environmental Assessment of Regional Development Plans and EU Structural Funds programmes, Environmental Resources Management, London.

CEC – Commission of the European Communities (2002), Impact Assessment (COM (2002) 276). Communication from the Commission, Brussels.

CEC – Commission of the European Communities (2004), Impact Assessment: next steps (SEC (2004) 1377). Commission Staff Working Paper, Brussels.

CEC – Commission of the European Communities (2005) Cohesion policy in support of growth and Jobs: Community strategic Guidelines, 2007-2013, communication from the Commission, COM(2005) 0299, 5 July, Brussels.

CEC – Commission of the European Communities (2009a) Impact Assessment Guidelines, SEC (2009) 92, Brussels: 15.1.2009.

CEC – Commission of the European Communities (2009b) Commission Staff Working Document; Impact Assessment Board Report for 2008, SEC(2009) 55, Brussels, 28.1.2009.

Council of State/Raad van State (2010) Jaarverslag 2010, Den Haag: Raad van State.

Dallhammer, E. (2004) “Wonderworld X“ – A sustainable Leisure park in the Vienna Region?: Spatial Impact Assessment for Megaprojects. Pp: 83-99. In: Critical Planning. 11(Summer).

Dallhammer, E. (2008) “Territorial Impact Assessment” in Österreich, Ergebnisse einer Stakeholderbefragung als Grundlage für einen Beitrag zur Aktion 2.2 “Territorial impact” des Aktionsprogramms zur Territorialen Agenda der EU.

Dühr, S., C. Colomb & V. Nadin (2010) European Spatial Planning and Territorial Cooperation, London: Routledge.

ECTP/CSD – European Council of Town Planners & Committee on Spatial Development (2001) Proceedings of the one-day conference on Territorial Impact Assessment, 26 October 2001, Louvain-la-Neuve, Belgium

EEAC Working Group on Governance (2006) Impact Assessment of the European Commission Policies: Achievements and Prospects, Statement of the EEAC Working Group on Governance, Brussels: European Environment and Sustainable Development Advisory Council.

Eggenberger M., Partidario M. R., (2000), “Development of a framework to assist the integration of environmental, social and economic issues in spatial planning”, in Impact Assessment and Project Appraisal,18(3).

Eickhout, B. et al. (2008), Local and global consequences of the EU renewable directive for biofuels, Bilthoven: Netherlands Environmental Assessment Agency.

European Environmental Assessment Agency (2005), How much biomass can Europe use without harming the environment?t, Copenhagen, EEA.

Evers, D. (2011/forthcoming) Territorial Impact Assessment: a critical examination of current practice, in: Farinós, J. (eds.) From Strategic Environmental Assessment to Territorial Impact Assessment: Reflections about evaluation practice, Valencia, Publicacions de la Universitat de València (Valencia, Valencia University Publications Office).

Evers, D. et al. 2009) Territorial Impact Assessment of Territorial Cohesion, Netherlands Environmental Assessment Agency, The Hague.

Faludi, A. (2003) Unfinished business: European spatial planning in the 2000s, in: A. Faludi (ed.) Special Issue on the Application of the European Spatial Development Perspective, Town Planning Review, 74(1), 121-140

Farinos Dasi, J./ESPON 2.3.2 (2007) Governance of Territorial and Urban Policies from EU to Local Level, www.espon.eu.

Featherstone, K. (2003) In the name of Europe, in K. Featherstone and C.M. Radaelli (eds.) The Politics of Europeanization, Oxford: Oxford University Press: 3-26.

Golobič, M. and Marot, N. (2008), Territorial Impact Assessment: A policy development tool for territorial cohesion. Presentation at EASY-ECO Vienna Conference, 11-14 March, Governance by Evaluation.

Hague, C. (2010) European Perspectives on Territorial Impact Assessment. A Background paper for the ESPON EATIA Project (available from: http://www.rtpi.org.uk/download/9133/European-Perspectives-on-Territorial-Impact-Assessment-April-2010.pdf).

Hague, C., J. Crawford & K. Gracie (2008) UK Experience of using Territorial Impact Assessment – Report to Communities and Local Government by the ESPON UK Contact Point, June 2008.

Haverland, M., B. Steunenberg & F. Van Waarden (2011) Sectors at different speeds: Analysing the transposition deficits in the European Union, Journal of Common Market Studies 49(2): 265-291.

Heritier, A., Kerwer D., Knill C., Lehmkuhl D., Teutsch M., Douillet A.-C., (Eds.) (2001) Differential Europe: the European union impact on national policymaking, Lanham, Md.: Rowman & Littlefield Publishers.

Janssen, R. and G. Munda, (1999), Multi-Criteria Methods for Quantitative, Qualitative and Fuzzy Evaluation Problems, in: J.C.J.M. Van den Bergh (ed.), Handbook of Environmental and Resource Economics, Aldershot: Edgar Elgar.

Korthals Altes, W. K. (2006) The single European market and land development. Planning Theory and Practice 7(3): 247–266.

Lee, N. & C. Kirkpatrick (2006) Evidence-based policy-making in Europe: an evaluation of European Commission integrated impact assessments, Impact Assessment and Project Appraisal, 24(1), pp. 23-33.

Lenschow, A. (2006) Europeanisation of public policy, in: J. Richardson (Ed.) European Union: Power and Policy Making, Third Edition, Abingdon: Routledge: 55-71.

Lysen, E. & S. van Egmond (ed.) (2008), Biomassa assessment, Den Haag/Bilthoven: Netherlands Environmental Assessment Agency.

Munda, G. (1995), Multicriteria Evaluation in a Fuzzy Environment; Theory and Application in Ecological Economics. Heidelberg, Physika Verlag.

Nadin, V., D. Stead (2008) European Spatial Planning Systems, Social Models and Learning, disP 172.1/2008: 35-47.

Neven, M.G.G., Kistenkas, F.H (2005) Streken vergeleken; hoodlijnen imago, implementatie, interpretatie en integratie van Natura 2000 in Europees perspectief. Alterra Rapport 1222.2.

Newman, P., A. Thornley (1996) Urban Planning in Europe: International Competition, National Systems, and Planning Projects. Routledge, London.

Nijkamp P., Rietveld P., Voogd H. (eds.), (1990), Multicriteria evaluation in physical planning, North Holland Publ., Amsterdam.

Nijkamp, J, Ouwersloot, J. (1997), Multidimensional Sustainability Analysis: the Flag Model, in: J.C.J.M. van den Bergh and M.W. Hofkes (eds.), Theory and Implementation of Economic Models for Sustainable Development, Kluwer Academic Publishers, Dordrecht/Boston/London, 255-273.

OECD (2001), Territorial Outlook, Paris.

OECD (2005), Handbook on constructing composite indicators: methodology and user guide, OECD Statistics Working Paper, STD/DOC(2005)3.

ÖIR (2000), Territorial Impact Analysis (TIAn) Raumwirksamkeitsanalyse (RWA), Vorstudie zu einem INTERREG IIIb Projekt.ÖIR, Wien.

Olsen, J. P. (2007), Europe in Search of Political Order, Oxford: Oxford University Press.

Olsen, J.P. (2002) The many faces of Europeanization, Journal of Common Market Studies 40(5): 921-952.

Prechal, S., van den Brink, T. (2010) Methoden van omzetting van EU-recht in het Nederlandse recht. Onderzzoeksrapprot ten behoeve van de Raad van State. Utrecht. Universiteit Utrecht, Not printed.

Priemus, H., Schutte-Postma, E. (2009) Notes on the Particulate Matter Standards in The European Union and the Netherland. International Journal of Environmental Research and Public Health, 6, 1155-1173.

Radaelli, C.M. (2003) The Europeanization of public policy, in: K. Featherstone and C.M. Radaelli (Eds.) The Politics of Europeanization, Oxford, Oxford University Press: 27-56.

Ravesteyn, N. van & D. Evers (2004) Unseen Europe: A survey of EU politics and its impact on spatial development in the Netherlands, The Hague: Ruimtelijk Planbureau.

Rawls, J. (1971) A Theory of Justice, Harvard University Press, Cambridge, MA.

Renda, A. (2006) Impact assessment in the EU: The state of the art and the art of the state, Brussels: Centre for European Policy Studies.

Rienks, W., B. Elbersen, Igor Staritsky, M. van Eupen & Kees van Diepen (2009), Ruimte voor biomassa in Europa [Room for biomass in Europe], Geografie (2), pp. 16-19).

Rietveld, P. (1980), Multiple Objective Decision Methods and Regional Planning. Amsterdam: North-Holland.

Robert, J., M.A. Figueiredo, M. Hollanders, C.J. Reincke, T. Stumm & J.M. de Vet (2001), Spatial impacts of Community policies and costs of non-coordination, European Commission, Brussels

Rood, J., van Keule, M., Nollen, S., Arts, G. (2005) Nederland en de totstandkoming van EU-milieurichtlijnen. Eindrapport. The Hague, Nederlands Instituut voor International Betrekkingen, 'Clingendael'.

Rutz, D. & R. Janssen (2007), Biofuel technology handbook, WIP Renewable Energies, München.

Schindegger, F. (2001), Prospects for further work on TIA, in: European Council of Town Planners & Committee on Spatial Development. Proceedings of the one-day conference on Territorial Impact Assessment, 26 October, Louvain-la-Neuve, Belgium.

Steunenberg, B., Voermans, W. (2005) De omzetting van Europese richtlijnen: Instrumenten, technieken en processen in zes lidstaten vergeleken. Leiden, Universiteit Leiden, WODC/Ministerie van Justitie.

Tennekes, J. & W. Hornis (2008), Ruimtelijke-effectanalyse van EU-beleid. Een leidraad, Rotterdam/Den Haag: NAi Uitgevers/RPB.

Urbanistčni Inštitut RS. (2008), Monitoring and assessment of the spatial impacts of sectoral policies, Target Research Programme, Competitiveness of Slovenia 2006-2013, Final Report.

Van Hoorn, A., H.J. Tennekes & R. van Wijngaarden (2010), Quick scan energie en ruimte, raakvlakken tussen energiebeleid en ruimtelijke ordening, Netherlands Environmental Assessment Agency (PBL). The Hague.

Van Oorschot, M., J. Ros & J. Notenboom (2010), Evaluation of the indirect effects of biofuel production on biodiversity: assessment across spatial and temporal scales, The Hague/Bilthoven: Netherlands Environmental Assessment Agency.

VROM, Ministry of Housing, Spatial Planning and the Environment (2009) Report EU Seminar on Territorial Impact of EU policies; Thursday 5 March 2009, Amsterdam, Action 2.2 of the Action Programme for the implementation for the EU Territorial Agenda [unpublished report], The Hague: VROM.

VROM-raad (2008) Brussels lof. Handreiking voor ontwikkeling en implementatie van Europees Recht en Beleid, Den Haag: VROM-raad.

Waterhout, B. (2008) The Institutionalisation of European Spatial Planning, Amsterdam: IOS press.

Weston, J (2007) Implementing International Environmental Agreements: The Case of the Wadden Sea. European Planning Studies, 15: 1, 133 – 152.

Williams R., Connolly P., Healy A. (2000), Territorial impact assessment: a scoping study, Final Draft submission to the Committee on Spatial Development, CREUE, Newcastle and ECOTEC.

Zonneveld, W. & B. Waterhout (2009) EU Territorial Impact Assessment: Under What Conditions? Paper presented at the 49th European Congress of the Regional Science Association (ERSA), 25th – 29th August 2009, Łódź, Poland.

www.espon.eu

The ESPON 2013 Programme is part-financed by the European Regional Development Fund, the EU Member States and the Partner States Iceland, Liechtenstein, Norway and Switzerland. It shall support policy development in relation to the aim of territorial cohesion and a harmonious development of the European territory.

ISBN 978-2-919777-02-0