

# TPM

## Territorial Performance Monitoring

### Annexes

Applied Research 2013/02/13

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This report presents a more detailed overview of the analytical approach to be applied by the project. This Targeted Analysis is conducted within the framework of the ESPON 2013 Programme, partly financed by the European Regional Development Fund.

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

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## I. Regional annexes

### I.1 Dublin

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Walter Foley	Mr	Dublin Regional Authority (DRA)	DRA is responsible for the development of the Greater Dublin Region 'Regional Planning Guidelines (RPG's). The RPG is the main planning document that must be adhered to when developing plan within the Greater Dublin Region.	Research and Policy Development Officer	wfoley@rpg.ie	+353 1 8074482	All themes	Yes	Yes
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Brendan Bartley	Mr	National Institute for Regional and Spatial Analysis	Research body operating from the National University of Ireland, maynooth	Ex Deputy Director with a long history of working on planning in Ireland and specifically within the Dublin Regiona	brendan.bartley@nuim.ie and brendan.bartley@gmail.com	+353 86 3365925	All themes	no	
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• Documents

Title of document	Publishing institution	Date of publication	Description of content of document (abstract)	Area of relevance	Addresses climate change	Addresses energy issues	Addresses globalisation / economic development	Addresses demography
					For all of these challenges indicate through number of stars how much (to the best of your knowledge) the document addresses this issue (i.e. put *, ** or ***).			
National Development Plan 2007-2013 Transforming Ireland	Department of the Environment, Heritage and Local Government (DEHLG)	2007	This National Development Plan 2007-2013 sets out the economic and social investment priorities needed to realise the vision of a better quality of life for all. This better quality of life will be achieved by supporting the continued development of a dynamic and internationalised economy and society with a high commitment to international competitiveness, social justice and environmental sustainability. Chapters on Economic and Fiscal Framework, Regional Development, Rural Economy, All-Island Cooperation, Environment Sustainability, Economic Infrastructure Priorities, Enterprise Science and Innovation, Human Capital, Social Infrastructure, Social Inclusion	Ireland NUTS 1	**	**	**	**
Implementing the National Spatial Strategy: 2010 Update and Outlook	Department of the Environment, Heritage and Local Government (DEHLG)	4th oct 2010	In November 2002, the Government published the National Spatial Strategy (NSS) as a 20-year strategic planning framework for Ireland. Since 2002, the NSS has been a significant influence on both the planning system and public investment. Policy on spatial planning must be responsive to and pro-active in changing circumstances. As part of the wider global and domestic economic downturn that became apparent from 2008, Ireland has experienced: a significant slowdown in construction activity; contraction of GDP by 7.5% in 2009; an increase in unemployment from a rate of 5% at the end of 2007 to over 12% by the end of 2009; large and structural deficits in the public finances, requiring unprecedented levels of borrowing and curtailing of both capital and current expenditure; and net immigration being replaced by net emigration and slower population growth. Notwithstanding current challenges, a well-rounded strategy for economic recovery cannot ignore the spatial structure of the economy. The experience from developed economies around the world is that planning is vital because it sets priorities and a framework for coordinating policy and investment that is essential for long term progress. This NSS Update and Outlook report therefore represents both a re-affirmation of the Government's commitment to implementing long term planning frameworks included in the NSS and a statement of new priorities and objectives, taking account of experience since 2002 and the new environmental, budgetary and economic challenges. The purpose of this	Ireland NUTS 1, All NUTS 111 Regions	*	*	*	**

			document is to assess: what has worked well in terms of policy and practice; what hasn't worked well and why; the key implementation challenges remaining; how the NSS can contribute to national competitiveness and economic renewal; and new policy priorities for actions at national, regional and local levels.					
National Spatial Strategy 2002 to 2010	Department of the Environment, Heritage and Local Government (DEHLG)	2002	The NSS is a 20-year planning framework for the entire Country to guide policies, programmes and investment. It seeks to promote a better balance of social, economic and physical development between the Regions. The focus of the NSS is on fostering a closer match between where people live with where they work. The NSS established a detailed sustainable planning framework for strategic spatial planning to ensure development is targeted at the most appropriate locations. The NSS places emphasis on the creation of high quality living environments through urban design and the integration of social and community amenities.	Ireland NUTS 1, All NUTS 111 Regions	**	**	**	**
Regional Planning Guidelines for the Greater Dublin Region 2010-2022	Dublin Regional Authority and Mid-East Regional Authority	15th June 2010	The Regional Planning Guidelines (RPG's) is a policy document which aims to direct the future growth of the Greater Dublin Area over the medium to long term and works to implement the strategic planning framework set out in the National Spatial Strategy (NSS) published in 2002. It achieves this through appraisal of the critical elements involved in ensuring sustainable and good planning, and through the protection of sensitive and environmentally important locations. The RPG's inform and direct the City and County Development Plans of each of the counties within the Greater Dublin Area (Dublin City, South Dublin, Fingal, Dun Laoghaire Rathdown, Kildare, Wicklow and Meath). They provide the clear policy link between national policies - the National Development Plan and the National Spatial Strategy and other national policy documents and guidance, and Local Authority planning policies and decisions. The RPG aid each of the Councils in the Greater Dublin Area in working together for the better planning of the whole area of Dublin and the surrounding Mid-East Region.	Greater Dublin Region = two NUTS III regions of Dublin and the Mid-East	*	**	**	**
Retail Strategy for the Greater Dublin Area 2008-2016	Dublin Regional Authority	juil-08	The purpose of the retail strategy is to guide the activities and policies for retail planning across the seven Councils which make up the Greater Dublin Area- Dublin City, Dun Laoghaire Rathdown County, Fingal County, South Dublin County, Kildare County, Meath County and Wicklow County Councils. The Dublin and Mid-East Regional Authorities decided to undertake a review of the 2001 Greater Dublin Area Retail Strategy due to the many policy, economic and population changes that have taken place since 2001. New policies were adopted which impact on the Retail Strategy including inter alia, the National Spatial Strategy (NSS), the Regional Planning Guidelines (RPGs), the National Development Plan (NDP) and the revised Retail Planning Guidelines. Alongside this, the levels of economic and population growth experienced, as well as the	Greater Dublin Region = two NUTS III regions of Dublin and the Mid-East			**	*



			most recent population projections for the Greater Dublin Area are higher than those used in 2001. In addition, to align with the next series of City and County Development Plans, it was decided to extend the Strategy to 2016.					
Enterprise Strategy for the Dublin City Region	Dublin Regional Authority	nov-09	The Economic Development Action Plan establishes the framework conditions of strong civic leadership, the creation of a vibrant place and the nurturing, attraction and retention of creative people in order to support a balanced and sustainable quality of life and environment in the Dublin City Region. A dynamic and healthy enterprise sector is an essential driver of economic wellbeing and growth that will underpin the attainment of these desirable characteristics of a modern and vibrant metropolitan region. Accordingly, the development of an Enterprise Strategy for the Dublin Region is one of the actions specified in the Action Plan. The Enterprise Strategy has been developed in a manner that takes account of the views and opinions of those consulted; the imperative to develop a vibrant enterprise base in the Dublin Region; and is mindful of competitiveness issues and the challenges that will be posed by the local, national and international environment in which those businesses will operate in the short and medium term. It focuses in particular on the imperative to harness entrepreneurial talent for the region, to strengthen the existing SME base and to deepen the commitment of existing Foreign Direct Investment (FDI), while acting as a magnet for further knowledge intensive mobile FDI. Based on an analysis of what is required to achieve this, actions are proposed in a manner that facilitates their implementation and ensures that their impact is effective and measurable.	Dublin City Region=NUT S III Dublin			***	
Economic Development Action Plan for the Dublin City Region	Dublin Regional Authority	juil-09	The overarching aim of this Plan is to further develop the Dublin City Region, the engine of Ireland's economy, as a significant hub in the European knowledge economy through a network of thriving spatial and sectoral clusters providing a magnet for creative talent and investment. In 2008 Dublin City Council published the report 'Funding The Dublin City Region'. The mission statement of this report is 'To secure ongoing funding for projects in the Dublin City Region that enhance the quality of life and its competitive position with other city regions by addressing perceived deficiencies in the public realm and responding to the vision of city region as a global leader, as a place to live, to work in and to visit.' This Economic Action Plan supports that vision of Dublin as it focuses on both the quality of life and competitive advantage of Dublin in equal measure.	Dublin City Region=NUT S III Dublin			**	
Towards an Employment and Skills Strategy for	Dublin Regional Authority/WRC Social and Economic	janv-10	The strategic aim of the Employment and Skills Strategy is to ensure the ongoing economic viability of the DCR and its status as Ireland's only comparable metropolitan city region through ensuring the attractiveness of the region as a place in which to	Dublin City Region=NUT S III Dublin			***	

the Dublin City Region	Consultants		invest, to work and to live. The strategic objectives of the Employment and Skills Strategy for the DCR are to: Protect and generate jobs; Deliver high quality and relevant vocational education and training; Ensure the realisation of the full potential of the human capital of the city region; Enhance the productivity and competitiveness of the city region; Prepare the city region to take advantage of opportunities in the global economy; and, Protect the					
Ireland - National Climate Change Strategy 2007 to 2012	Department of the Environment, Heritage and Local Government (DEHLG)	avr-07	There is now a scientific consensus that global warming is happening, that it is directly related to man-made greenhouse gas emissions, and that we have little time remaining to stabilise and reduce these emissions if we are to avoid devastating impacts on our planet. There is also an economic consensus that the costs of inaction will greatly outweigh the costs of action, and that progressive climate change policies, based on innovation and investment in low-carbon technology, are consistent with global economic growth. Ireland's Response Ireland, as a member of the European Union, is committed to a concerted response to this challenge. As our contribution to the EU's commitment under the Kyoto Protocol, we must limit the growth in our emissions to 13% above the 1990 levels in the 2008- 2012 period. The EU has adopted a much more challenging reduction target for 2020. While Ireland's precise contribution within this new framework has yet to be agreed, it is likely to require a reduction to below our 1990 emission levels. This National Climate Change Strategy 2007-2012 follows on from the first national strategy, published in 2000 and reviewed in 2002, and takes account of the public consultation process which followed the further review in Ireland's Pathway to Kyoto Compliance (2006). The purpose of this Strategy is twofold: to show clearly the measures by which Ireland will meet its 2008-2012 commitment; and to show how these measures position us for the post-2012 period, and to identify the areas in which further measures are being researched and developed to enable	Ireland NUTS 1	****	**	**	**
Maximising Ireland's Energy Efficiency - The National Energy Efficiency Action Plan 2009-2020	Department of Communications, Energy and Natural Resources	janv-09	Fossil fuels accounted for 96% of all energy use in Ireland in 2007. Our reliance on these fuels means that Ireland, like the rest of the world, is faced with a dilemma. Our current trend of increasing energy use derived from fossil fuels is not sustainable, and with the threat of increasing oil prices as supply dwindles, action needs to be taken now to shift to a sustainable energy future. We have reached a point where we need to make major changes in our lifestyles, our business and the public sector. By reducing our dependence on imported energy, we protect ourselves against international energy price rises whilst reinforcing national competitiveness. Improving Ireland's energy efficiency is an essential component of our sustainable energy policy. Energy efficiency is internationally recognised as the most cost-effective means of reducing	Ireland NUTS 1	***	****	*	**

			<p>dependence on fossil fuels. The Government's energy policy framework for the period 2007 – 2020 incorporates this goal at its heart and is designed to steer Ireland towards a new and sustainable energy future; one that helps increase security of supply, makes energy more affordable, improves national competitiveness and reduces our GHG emissions. The International Energy Agency (IEA) recognises the importance of energy efficiency, stating that while technological progress is needed to achieve some emissions reductions, efficiency gains and deployment of existing low carbon energy accounts for most of the savings.<sup>1</sup> The IEA propose a climate policy scenario, the 450 Policy Scenario, which targets a stabilisation of GHG emissions at 450ppm CO<sub>2</sub>-eq and consists of a broad suite of policy measures designed to steer the world away from the harmful effects of dependence on fossil fuels. It is noticeable that the most significant savings can be realised from energy efficiency. Ireland's demand for energy has grown by 84% over the period 1990 – 2007, with usage increasing in every sector of the economy. Last year, approximately €6 billion was spent on imported energy, and demand is projected to grow by about 24% over the period 2007 – 20203 unless action is taken now to reduce demand and usage. The Government has committed to achieving by 2020 a 20% reduction<sup>4</sup> in energy demand across the whole of the economy through energy efficiency measures. A national target of 20% equates to a total of 31,925 Gigawatt hours (GWh) saved in 2020. Recognising that Government must lead by example, we are challenging the public sector to achieve a 33% reduction in public sector energy usage over the same period. Reducing energy demand and consumption also works towards achieving Ireland's climate change objectives. The National Climate Change Strategy 2007 – 2012 outlines how the various measures, taken across all sectors of the economy, will act to reduce Ireland's GHG emissions in the Kyoto period 2008 to 2012. It also identifies how the effect of the measures being pursued will position us for the post- Kyoto period, and which further measures are being researched and developed to enable us to meet our 2020 commitment.</p>					
Delivering a sustainable energy future for Ireland - 2007 to 2020	Department of Communications, Energy and Natural Resources	janv-07	<p>This White Paper sets out the Government's Energy Policy Framework 2007-2020 to deliver a sustainable energy future for Ireland. It is set firmly in the global and European context which has put energy security and climate change among the most urgent international challenges. In charting the course for Irish energy policy, the Government is taking full account of global and EU developments. Ireland faces similar energy challenges to those being confronted worldwide. Our situation is made more acute by our small energy market, peripherality and limited indigenous fuel resources. Sustained economic growth and population growth also add to the challenges for Irish</p>	Ireland NUTS 1	**	****		

			energy policy. We have however major opportunities to be realised in harnessing the full potential of our renewable and bio-energy resources. As committed members of the European Union, with specific energy policy objectives, Ireland supports the development of a European Energy Policy which delivers a sustainable energy future for Europe through measures to tackle climate change ensure energy security and enhance competitiveness.					
Platform for Change - Dublin Transport Strategy 2000 to 2016	Dublin Transport Office	nov-01	The Dublin Transportation Office Strategy 'A Platform for Change' outlines an integrated transportation strategy for the Greater Dublin Area for the period 2000 –2016. It was prepared to support and complement the strategic land planning framework outlined in the Regional Planning Guidelines. The Strategy envisages a wide range of benefits being achieved by 2016. These include: improved accessibility to work, leisure and retail opportunities, an improved transport system, people living within 10 minutes walking distance of public transport, reduced road congestion levels, reduced average journey times, improved environmental benefits, safer and more pleasant urban residential areas, reduced accident levels and more convenient cycling facilities. The National Transport Authority is currently reviewing the DTO document 'A Platform for Change'. The replacement document – '2030 Vision' – is due to be completed by late 2010. <a href="http://www.dto.ie/">http://www.dto.ie/</a>	Greater Dublin Region = two NUTS III regions of Dublin and the Mid-East	*	*		
2030 Vision for Greater Dublin Transport	National Transport Authority	draft	The "2030 Vision" Transportation Strategy, being developed by the Dublin Transportation Office (DTO) is a long-term plan for the Greater Dublin Area. It will be at the heart of all transportation planning in the region for the next two decades, from 2010 until 2030.	Greater Dublin Region = two NUTS III regions of Dublin and the Mid-East	**	**	*	*
Draft Dublin City Development Plan, 2011-2017	Dublin City Council	draft	The Dublin City Development Plan (2011 – 2017) provides a coherent spatial framework for the delivery of sustainable development to ensure an improved quality of life for its citizens. Following fifteen years of unprecedented growth, which has transformed the city, the recent economic downturn must be grasped as an opportunity to create a shared vision for a long term recovery, for the benefit of the city, the region and the country. The City Council has identified six broad themes which are integral to the future growth and development of the city. The application of the themes at all levels, from Plan making to urban projects and development management will help to deliver a better quality of life for all. The six themes constitute inter-related and essential elements of a sustainable approach to future development of the city. The six themes are: 1. Economic – Developing Dublin City as the heart of the Dublin region and the engine of the Irish economy with a network of thriving spatial and sectoral clusters, a focus for creative talent and creative assets 2. Social – Developing Dublin City as a	Dublin City NUTS 111	**	**	**	**

			compact city with a network of sustainable neighbourhoods which have a range of facilities and a choice of tenure and house types, promoting social inclusion and integration of all ethnic communities <sup>3</sup> . Cultural – Making provision for cultural facilities throughout the city and increase awareness of our cultural heritage and promoting safe and active streets through design of buildings and the public realm <sup>4</sup> . Urban Form and Spatial – Creating a connected and legible city based on active streets and quality public spaces with a distinctive sense of place <sup>5</sup> . Movement – Helping to build an integrated transport network and encouraging the provision of greater choice of transport. Planning and zoning objectives will be brought together to increase the opportunities to live and work close to transport hubs and corridors <sup>6</sup> . Environmental – Providing for an overall framework involving key principles, strategies and objectives to drive a vision of ‘Sustainable Dublin’ over the next 25 to 30 years, making sure that buildings can adapt to changing needs and encouraging better waste management strategies					
South Dublin: County Development Plan 2010 to 2016	South Dublin County Council	6th Oct 2010	The South Dublin County Council Development Plan 2010-2016 sets out a coherent spatial planning framework for the County within the context of national and regional policies. This section sets out the core strategy of this Development Plan which will be amplified and expanded upon in the policies and objectives contained within the rest of the Plan. The fundamental aim of this Development Plan is to respond in a coherent sustainable spatial fashion to the challenges facing this County while building on its strengths and introducing resilience to wider effects of climate change. This Plan strategy and content is framed against a wider economic downturn that, while severe, must be seen in the context of the six year horizon for the Development Plan. The main challenges facing this County are the maintenance and improvement of a sustainable economic base; the maintenance of existing jobs and the creation of new employment opportunities and the exploitation, development and delivery of renewable energy; the tackling of inequality, discrimination and disadvantage in order to enable all citizens and communities to participate fully and equally in society; the accommodation of our population in sustainable and integrated communities; the balancing of our natural environment with sustainable and appropriate development and the promotion of a built environment that is adaptable and resilient to climate change. It also articulates, at a County level, national and regional spatial policies as expressed in the National Spatial Strategy (2002) and the Dublin and Mid East Regional Planning Guidelines.	South Dublin NUTS 111	**	**	**	**
Dun Laoghaire Rathdown: County	Dun Laoghaire Rathdown County Council		The County Development Plan 2010 - 2016 has been prepared in accordance with the requirements and the various provisions of the Planning and Development Act 2000 as amended and	Dun Laoghaire Rathdown	**	**	**	**

Development Plan			the Planning and Development (Strategic Environmental Assessment) Regulations 2004. The Plan sets out Dún Laoghaire-Rathdown County Council's policies for the sustainable development of the County to 2016 and beyond and has been formulated following a period of consultation on issues to be included in the Plan. The consultation process included public displays and open days, various meetings with stakeholder groups and service providers and a series of workshops for elected representatives. The three key issues that generated the greatest degree of public interest were: Continuing densification of the built-up area requires a commensurate delivery of high quality public transport systems. The issue of building height - particularly in relation to apartment blocks. The need to ensure an appropriate level of social/community infrastructure and other amenities is provided at the formative stages of community development. These key issues, and the many others articulated through the various public consultation processes, have been taken on board and are addressed in the relevant chapters of the Plan.	NUTS 111				
Fingal: Development Plan	Fingal County Council	draft April 2010	The production of the Draft Development Plan is the second phase in the preparation of the Fingal Development Plan 2011-2017. This follows on the first phase, the Preliminary Consultation phase, which included a variety of public consultation exercises, the Manager's Report on the resulting submissions and observations, the consideration of the Manager's Report and the submissions by the Council, and the issuing of strategic directions to the Manager by the Council to guide the preparation of the Development Plan. The Fingal Development Plan 2011-2017 will set out Fingal County Council's policies and objectives for the development of the County over the Plan period. The Plan will seek to secure the development and improvement in a sustainable manner of the economic, environmental, cultural and social assets of the County.	Fingal NUTS 111	**	**	**	**
Meath: County Development Plan 2007 2013	Meath County Council	mars-07	The Development Plan plays a vital role in development promotion and regulation, and must therefore have a clear vision for the County, now and into the future. Under the Planning and Development Act 2000, as amended, each Planning Authority is obliged to make a Development Plan every six years. Development Plans comprise of a written statement and attendant maps that give a graphic representation of the objectives contained in the Plan. All Development Plans must have regard to national and regional policy. In accordance with the requirements of the Planning & Development Act 2000, as amended, this County Development Plan will remain in effect for six years, to cover the period 2007 - 2013, from its adoption on March 3rd 2007 with a review of it commencing no later than four years after its adoption. A number of strategic themes are set out within the plan: Settlement Strategy, Economic	Meath NUTS 111	**	**	**	**

			Development Strategy, Infrastructure Strategy, Housing Strategy, Rural Development, Social Strategy, Cultural, Heritage and Landscape Protection Strategy, Strategic Environment Assessment					
Wicklow: County Development Plan 2010 - 2016	Wicklow County Council	2010	The Wicklow County Development Plan 2010 – 2016 has been prepared in accordance with the Planning and Development Acts, 2000 – 2007. The plan embraces the entire County excluding the Town Council Areas of Bray, Wicklow and Arklow. However, components of the County Plan such as Population and Settlement Strategy, the Housing and Retail Strategies will advise and guide the development of these towns and find expression in the form and content of their respective Town Plans. The County Development Plan is the pre-eminent County Document that is central to the management of the County. It sets out an overarching vision, policies, strategies and objectives in the context of a coherent spatial framework that is crafted upon the principles of proper planning and sustainable development. It shall consist of a written statement and a plan or plans all of which indicate the development objectives of the county. County Development Board (CDB) Strategies and Development Plans exist as parallel statements on the future development of counties. However, their remit is different. The focus of the CDB strategy is on economic, social and cultural, while the focus of development plans is on physical development and land use and how this can serve wider economic social and environmental objectives. This plan builds upon its predecessor, the 2004 – 2010 County Development Plan, taking account of National, Regional and County Plans, Strategies and Policy Documents. It is also advised by issues of particular environmental importance that have evolved, and are now accepted as being critical to the formulation and implementation of sustainable development, such as climate change, flooding, renewable and alternative energy. While the County Development Plan specifically deals with the areas of flooding and alternative energy, the climate change challenge, as a plan dynamic, is addressed indirectly throughout the plan in statements of plan policy and policy formulation.	Wicklow NUTS 111	**	**	**	**
Kildare: Draft County Development Plan 2011 - 2017	Kildare County Council	draft	This Draft County Development Plan 2011-2017 has been prepared in accordance with the requirements and provisions of the Planning and Development Act 2000 as amended. It sets out an overall strategy for the proper planning and sustainable development of County Kildare over the period 2011-2017 and beyond to the horizon year of 2022. This Plan relates to the functional area of Kildare County Council, which is County Kildare, excluding the Town Council areas of Naas and Athy, as these are separate Planning Authorities. This Plan is however, relevant to the two Town Councils as it sets out an overall vision, strategies, policies and objectives for the county as a whole. Its successful implementation will have a positive impact	Kildare NUTS 111	**	**	**	**

			<p>on all areas within the county, including the Town Council areas. It builds on the Mid-term Review of the Kildare County Development Plan 2005-2011, taking into account recent key development trends, national, regional and local policy developments and the EU requirement to include the application of Strategic Environmental Assessment. This Draft County Development Plan 2011-2017 has been prepared in accordance with the requirements and provisions of the Planning and Development Act 2000 as amended. It sets out an overall strategy for the proper planning and sustainable development of County Kildare over the period 2011-2017 and beyond to the horizon year of 2022. This Plan relates to the functional area of Kildare County Council, which is County Kildare, excluding the Town Council areas of Naas and Athy, as these are separate Planning Authorities. This Plan is however, relevant to the two Town Councils as it sets out an overall vision, strategies, policies and objectives for the county as a whole. Its successful implementation will have a positive impact on all areas within the county, including the Town Council areas. It builds on the Mid-term Review of the Kildare County Development Plan 2005-2011, taking into account recent key development trends, national, regional and local policy developments and the EU requirement to include the application of Strategic Environmental Assessment. This Draft Plan is set out in a written statement, with accompanying maps. It comprises 19 chapters and appendices which can be grouped as follows; Chapters 1 and 2 set out the introduction, strategic context and core strategy for the proper planning and sustainable development of County Kildare. Chapters 3-14 set out detailed policies and objectives under a range of specific topic headings which the County Council seeks to achieve over the six-year life of this Plan e.g. settlement hierarchy, housing, economic development, retail, infrastructure, rural development, social and community, heritage and landscape. Chapters 15 and 16 outline urban and rural design guidance to promote quality developments. Chapters 17 and 18 incorporate village plans, a development strategy for settlements located within the rural areas of the county and environs plans. Chapter 19 sets out development management, standards to be applied to future development proposals in the county. The purpose of these standards and objectives is to guide and assist the formulation of development proposals and to regulate the impact of development on the environment. Appendices include, Housing Strategy, Record of Protected Structures, Record of Monument and Places, Landscape Character Assessment etc.</p>					
Smarter Travel - A sustainable transport	Department of Transport	2009	<p>"Smarter Travel" is the Government's action plan to free towns and cities from traffic congestion, substantially cut CO2 emissions and encourage car based commuters to leave their cars at home. This plan</p>	Ireland NUTS 1, All NUTS 111 Regions	***	***	*	*



Future (2009)			sets out 49 individual actions to encourage a shift toward walking, cycling and greater public transport usage. By 2020 the aim is to move 500,000 potential car based commuters to other more sustainable forms of transport and in doing so, cut CO2 emissions by at least 4 million tonnes. The Plan aims to ensure that electric vehicles account for 10% of all vehicles on the roads and to move over 150,000 people to work by bike each year. <a href="http://www.smartertravel.ie">www.smartertravel.ie</a>					
Transport 21	Department of Transport	2006	Transport 21 is the Government's capital investment framework for the development of transport infrastructure nationally for the ten-year period 2006-2016. The main purpose of Transport 21 is to address the transport infrastructure deficit that has been identified over a number of years as an impediment to the country's competitiveness. The Transport 21 Strategy for the Greater Dublin Area focuses on a major expansion of rail-based public transport (including Luas Lines B1 and B2) an increase in bus capacity and a near doubling of the quality Bus Corridor (QBC) network. <a href="http://www.transport21.ie/">http://www.transport21.ie/</a>		**	**	*	*

• *Data*

Title of dataset	Description (as detailed as possible) of the dataset	Spatial level of data	Version of spatial level (e.g. )	Date of validity of the data	Date of creation / compilation / publication of the data
	If publishing institution provides publication explaining data, just give a brief description and refer to publication for details, but then please annex the publication or give weblink.	NUTS level, LAU level	e.g. : « municipalities in their definition of 2008 »	Date to which the values of the variables apply– if a time series please list all dates for which the data is available or list start and end date and frequency of publication	Date at which the dataset was made available
Rol Census Data	Detailed Census data available every 5 years in Ireland. Data available at Regional level down to local ED level. Census data available for 1991, 1996, 2002, 2006 and next census is 2011. Main themes are Population, Economy, Housing, Households, Transport, Industry, Social etc Geographical boundaries are available for mapping and analysis. Detailed population data available - age, gender etc. Thousands of variables available here.	ED (local level approx 1,100 population per unit) to NUTS II and NUTS III		1991, 1996, 2002, 2006	generally one year after census
POWCAR	Place of Work Census of Anonymised Records. This is a origin-destination matrix that can be used for travel to work analysis. It is a by product from the Census and includes complete details on 1.8m workers in Ireland within origin and destination at ED level. Data is available for 2006 and will be also available from the 2011 census.	ED (local level approx 1,100 population per unit) to NUTS II and NUTS III		2006	2006
Population Density	Population density per sq km	ED (local level approx 1,100 population per unit) to NUTS II and NUTS III		1991, 1996, 2002, 2006	
Average Household Size	Average Household size	ED (local level approx 1,100 population per unit) to NUTS II and NUTS III		1991, 1996, 2002, 2006	
Population and Migration Estimates	Annual population and migration estimates for regions in Ireland. Breakdown by gender and age bands	NUTS II,III		annual	
Population Projections	Annual population projections from CSO. Many different projections based on different scenarios at the regional level from both the CSO and DEHLG Planning	NUTS II,III		annual	
County Incomes and Regional GDP	Regional and County Incomes, Regional GDP and GNP values	NUTS II, III		monthly	
Vehicles Licenced for the First Time	Car sales and registration	NUTS II, III		monthly	

Title of dataset	Description (as detailed as possible) of the dataset	Spatial level of data	Version of spatial level (e.g.)	Date of validity of the data	Date of creation / compilation / publication of the data
Residential Planning Applications and Approvals	New applications and approvals reflects the demand in the market for residential development	NUTS II, III		monthly	
House Completions (by housing type and sector)	Details on house completions by Local Authority Area	NUTS II, III		2001-onwards	
Commercial Planning Applications and Approvals	New applications and approvals reflects the demand in the market for commercial development	NUTS II, III			
Foreign Direct Investment Activity	FDI projects, jobs created, investment levels, expansion of existing FDI	GDA, NUTS III combined			
Loss of Foreign Direct Investment	FDI project closures, redundancies and loss by sector. Requirement to track the numbers and types of projects that Dublin city and counties are losing to other geographical regions	NUTS II, III			
Outward FDI Investment	Internationalisation of Irish companies is important in the global context	Companies - can be used for region		monthly	
Quarterly National Household Survey (Unemployment)	Most detailed data on labour force, employment and unemployment in Ireland	NUTS II, III		2000 onwards quarterly	
Live Register (Unemployment)	Monthly data from the Live Register monitor - this is a dataset containing information on those claiming benefits from the State	NUTS II, III, Local Office Level		2000 onwards monthly	
Education Levels of Population	Detailed data available through the Census	ED (local level approx 1,100 population per unit) to NUTS II and NUTS III		2002-2006	generally one year after census
University Data	Detailed information on university enrolments with details on the home location of students	NUTS II, III		2004-2009	
House Price data (new and second hand)	Detailed information on changing house prices in the Dublin region	NUTS II, III		2000 ONWARDS	
Number of Companies registered in Dublin Region	The number and size of companies in operation	NUTS III			
Productivity Levels - Regional GVA	Measure of the level of productivity of a region	NUTS III		2000 onwards	
Development of Brownfield Land	Total area of brownfield development, total area of brownfield sites available for development, % of development completed on brownfield sites	NUTS II, III		?	
Energy Usage	dependency by energy type (coal, gas, hydro, wind, oil, peat, solar)	NUTS II, III		?	
Water consumption	Total amount of water consumed per day, commercial/residential	NUTS II, III?		?	
Water Quality	% of population with access to drinking water from mains	NUTS II, III?		Monthly data	
Average Temperature of Warmest Month	Useful data on monitoring climate change	NUTS II, III		Monthly data	
Average Temperature of Coldest Month	Useful data on monitoring climate change	NUTS II, III		Monthly data	
Annual average rainfall	Useful data on monitoring climate change	NUTS II, III		Monthly data	
Number of days rain per annum	Useful data on monitoring climate change	NUTS II, III		Monthly data	
Number of days above (14 degrees)	Useful data on monitoring climate change	NUTS II, III		Monthly data	
Number of days below (0 degrees)	Useful data on monitoring climate change	NUTS II, III		Monthly data	

## I.2 Navarra

- *Contacts*

Name	Formal way of addressing	Institution	Brief description of institution	Function of contact in institution	Email address	Telephone number	Expected thematic competencies	Has already been contacted
Cernin Martínez Yoldi	Señor	Dirección General Política y Promoción Económica	General Management of the Economy and Treasure Department of the Government of Navarre	General Manager	<a href="mailto:cernin.martinez.yoldi@navarra.es">cernin.martinez.yoldi@navarra.es</a>	0034 848 427 202	Globalization	Yes
Juanjo Pons	Señor	Consejo Social de Política Territorial (CSPT)	The Social Council of Territorial Policies (CSPT), is an advisory body of the Government of Navarre, and a platform for participation. Through this council, institutional, social and economic representatives of Navarre have the opportunity to collaborate in the territorial development of the region.	Member	<a href="mailto:jpons@unav.es">jpons@unav.es</a>	0034 948 425 600	Demography	Yes
Javier Asín	Señor	Centro de Recursos Ambientales de Navarra (CRANA)	The Navarran Environmental Resource Centre (CRANA) is a non-profit foundation established on the initiative of the Government of Navarra. Its aim is to furnish Navarran society with knowledge on the environment as a means of leading it to take joint responsibility for its conservation and improvement.	General Manager	<a href="mailto:javier@crana.org">javier@crana.org</a>	0034 948 140 818	Climate Change	Yes
Jose Javier Armendáriz	Señor	Centro Nacional de Energías Renovables (CENER)	Highly qualified technology centre of international prestige, specialised in applied research and the development and promotion of renewable energies.	General Manager	<a href="mailto:snavarro@cener.com">snavarro@cener.com</a>	0034 948 252 800	Energy	Yes

**• Documents**

Title of document	Publishing institution	Date of publication	Description of content of document (abstract)	Area of relevance	Addresses climate change	Addresses energy issues	Addresses globalisation / economic development	Addresses demography	Other regional challenges highlighted by this document
					For all of these challenges indicate through number of stars how much (to the best of your knowledge) the document addresses this issue (i.e. put *, ** or ***).				
Estrategia Territorial de Navarra-Regional Strategy for Navarre	Government of Navarre	2005	The Regional Strategy for Navarre is an instrument of strategic planning for the whole region of our Comunidad Foral. The Strategy is an ambitious and innovative attempt to apply the principles of the European Spatial Development Perspective.	Navarre Region, NUT2		*	**	***	policentrism
Planes de Ordenación del Territorio- Regional Spatial Planning Programm	Government of Navarre	2011	The Regional Spatial Planning Programms of Navarra are Spatial Planning instruments whose field is constituted by geographic areas that differ by its territorial homogeneity and functional characteristics, or by areas that, due to its dimension and functional characteristics, require joint and coordinated consideration of its territorial problematic as well as a planning of integrated character.	Navarre Region, NUT2		**	***	**	policentrism
II Plan de formación ambiental para la Administración Navarra 2010-2013- Environmental training Plan for the Government	Government of Navarre	2010	Its principal aims are promote environmental integration into the sectoral policies; support the implantation and development of environmental and energetic policies of the Government of Navarra; as well as encourage greater environmental and energetic coherence in the facilities and buildings dependent on Foral Government.	Navarre Region, NUT2	***	***			
Plan forestal de Navarra- Forest Plan	Government of Navarre		The objectives set by the Forest Plan are eight: increase of the quality and quantity of forests; protection of biodiversity and quality of forest's resources;	Navarre Region, NUT2	***	*	*		

			defence of the forest against natural and human risks; sustainable protection of economic goods; adaptation to the social uses demands; an employment stabilizer competitive forest industry; increase the managing activity of the forestry sector actors; and development and improvement of the management tools and techniques.						
Estrategia para la gestión y el uso sostenible del agua en Navarra- Strategy for the sustainable management and use of water in Navarre	Government of Navarre	2004	A document where guidelines, principles and criteria are defined and should guide the actions related to the water use in agreement with the sustainable development.	Navarre Region, NUT2	***				
II Plan Integrado de Gestión de Residuos de Navarra 2010-2017- Waste management Plan	Government of Navarre	2010	Defines the criteria and coordinated action strategies of the administrators and economic sectors involved in the managing of the urban, industrial and agricultural wastes. It is, therefore, a strategic planning instrument for the optimized allocation of public and private resources to waste management.	Navarre Region, NUT2	***	*			
Estrategia Navarra para el Cambio Climático y su Plan de Acción por el clima de Navarra 2008-2012- Climate change Strategy and Plan	Government of Navarre	2007	Starting from a diagnostic and future strict scenarios, it will allow to the Foral Community of Navarra position itself in the fight against climate change and establish a new calendar of actions targeting the mitigation of greenhouse gas emissions, as well as to take the first steps to allow adaptation to the effects of this climate phenomenon.	Navarre Region, NUT2	***	**			
Plan especial de emergencias ante el riesgo de inundaciones- Flood risk special Plan	Government of Navarre	2002	The purpose of the current Plan is to establish organisation and acting procedures of the resources and public or private services, ensuring an operative coherence which guarantee a fast and effective coordinated action.	Navarre Region, NUT2	***			*	
Plan Moderna: nuevo modelo de desarrollo	Government of Navarre	2010	Strategic Plan in order to define a New Model of Economic Development for Navarra in the	Navarre Region, NUT2		*	***	*	

económico en el horizonte 2030-Moderna Plan: a new economic development model			medium and long term. It's a regional plan to 20 years ahead in order to change our productive model to another one more competitive, innovative, which allows keep on growing in the future and keep and increase the economic and welfare status. It's based on: the Education; the Innovation; and the Internationalization and for that it focuses on three big economic areas: the green economy, the health economy and the talent economy.						
Plan Internacional de Navarra 2008-2011- Internationalisation Plan	Government of Navarra	2008	Its purposes are to educate and sensitize the whole society of Navarra for a better personal and professional development inside a global environment, as well as support for Navarra's enterprises to compete in the international market.	Navarre Region, NUT2			***		
Plan de Acción para la Acogida e Integración de la Población Inmigrante en Navarra- Integration of the immigrant population Plan	Government of Navarra	2005	The Plan is a cooperation and coordination instrument in the subject of immigration between the Foral Government and the Ministry.	Navarre Region, NUT2				***	
Plan de formación en la investigación y el desarrollo- Development and research formation Plan	Government of Navarra	1987	Destined to the formation of college graduates and researcher personal	Navarre Region, NUT2			***		
Planes rectores de uso y gestión de las reservas naturales de Navarra- Nature reserve management and use Plan	Government of Navarra	1998	Documents that integrate the description of the natural values, the specific regulations of protection applicable, as well as the regulation of the activities that may happen, and the precise administrative actions for its conservation, management, maintenance and monitoring.	Navarre Region, NUT2	**				
Plan Gerontológico de Navarra- Gerontology Plan	Government of Navarra	2010	Emerges as a planning and coordination instrument of the public policies in medium term for the elderly.	Navarre Region, NUT2				***	

Plan de Movilidad Urbana Sostenible en la comarca de Pamplona- Sustainable urban mobility Plan in Pamplona	Government of Navarre	2007	They represent a new initiative in order to establish the most sustainable ways of transport, use more efficient forms of transport and reduce the impact on the citizens and environment.	Comarca de Pamplona, NUT4	***	***			
Plan del transporte urbano de la Comarca de Pamplona 2010- Urban transport Plan in Pamplona	Government of Navarre	2010	Focuses on an improvement of the public transport's quality and establishes measures that guarantee its competitiveness.	Comarca de Pamplona, NUT4	***	**			
III Plan tecnológico de Navarra 2008-2011- Technology Plan	Government of Navarre	2008	It's a Plan designed to stimulate the R&D&i activity in enterprises without a previous experience, but also to propitiate a R&D&i more radical and with more intensity among the experienced actors of the regional innovation system, through a bigger promotion of the cooperation in R&D&i among various agents, at regional, national and international levels.	Navarre Region, NUT2		*	***		
Plan energético de Navarra 2005 2010 Y Plan Energético Horizonte 2015- Energy Plan	Government of Navarre	2005	Plan designed in order to get the power supply not to be a limiting factor or condition for the socioeconomic development of Navarra in the coming years.	Navarre Region, NUT2	*	***			
IV Plan de empleo de Navarra 2009-2012- Employment Plan	Government of Navarre	2009	The Employment Plan of Navarra is the planning instrument of the active employment policies developed by the Government of Navarra. Its purpose is to consolidate full employment, as well as improve it's quality in order to keep the competitiveness and the social cohesion.	Navarre Region, NUT2				***	



**• Data**

Title of dataset		Spatial level of data	Version of spatial level (e.g. )	Date of validity of the data	Date of creation / compilation / publication of the data
<b>Demography</b>					
Total population	<a href="http://www.cfnavarra.es/estadistica/redie.asp?qry=0101">http://www.cfnavarra.es/estadistica/redie.asp?qry=0101</a> <a href="http://www.ine.es/inebmenu/mnu_cifraspop.htm">http://www.ine.es/inebmenu/mnu_cifraspop.htm</a> <a href="http://www.cfnavarra.es/estadistica/agregados/poblacion/censos_padrones/pobn_av_sexo_edad_nacion_10_pro.xls">http://www.cfnavarra.es/estadistica/agregados/poblacion/censos_padrones/pobn_av_sexo_edad_nacion_10_pro.xls</a>	NUT2 y NUT5	current official definition	Census every 10 years. Estimations every year.	
Total population by age groups and sex	<a href="http://www.cfnavarra.es/estadistica/agregados/poblacion/censos_padrones/pobn_av_sexo_edad_nacion_10_pro.xls">http://www.cfnavarra.es/estadistica/agregados/poblacion/censos_padrones/pobn_av_sexo_edad_nacion_10_pro.xls</a>	NUT 2 y 5	current official definition	Census every 10 years. Estimations every year.	
Live Births	<a href="http://www.cfnavarra.es/estadistica/redie.asp?qry=0101">http://www.cfnavarra.es/estadistica/redie.asp?qry=0101</a>	NUT2	current official definition	1990-2008	
Deaths	<a href="http://www.cfnavarra.es/estadistica/redie.asp?qry=0101">http://www.cfnavarra.es/estadistica/redie.asp?qry=0101</a>	NUT2	current official definition	1990-2008	
Internal migrations	<a href="http://www.cfnavarra.es/estadistica/redie.asp?qry=0101">http://www.cfnavarra.es/estadistica/redie.asp?qry=0101</a>	NUT2	current official definition	2001-2009	
National migrations	<a href="http://www.cfnavarra.es/estadistica/redie.asp?qry=0101">http://www.cfnavarra.es/estadistica/redie.asp?qry=0101</a>	NUT2	current official definition	2001-2009	
International migrations	<a href="http://www.cfnavarra.es/estadistica/redie.asp?qry=0101">http://www.cfnavarra.es/estadistica/redie.asp?qry=0101</a>	NUT2	current official definition	2001-2009	
Unemployment per sex and age	<a href="http://www.cfnavarra.es/estadistica/agregados/mercado_trabajo/paro_registrado/paro_ien_sexoedad.xls">http://www.cfnavarra.es/estadistica/agregados/mercado_trabajo/paro_registrado/paro_ien_sexoedad.xls</a>	NUT2	current official definition	1999-2010	
Unemployment per branches of activity and sex	<a href="http://www.cfnavarra.es/estadistica/agregados/mercado_trabajo/paro_registrado/paro_ien_actividades.xls">http://www.cfnavarra.es/estadistica/agregados/mercado_trabajo/paro_registrado/paro_ien_actividades.xls</a>	NUT2	current official definition	1999-2010	
Employment	<a href="http://www.cfnavarra.es/estadistica/agregados/mercado_trabajo/EPA_princip_re_sult.xls#Ocupados!A1">http://www.cfnavarra.es/estadistica/agregados/mercado_trabajo/EPA_princip_re_sult.xls#Ocupados!A1</a>	NUT2	current official definition	1999-2010	
Active population	<a href="http://www.cfnavarra.es/estadistica/agregados/mercado_trabajo/EPA_princip_re_sult.xls#Activos!A1">http://www.cfnavarra.es/estadistica/agregados/mercado_trabajo/EPA_princip_re_sult.xls#Activos!A1</a>	NUT2	current official definition	1999-2010	
Inactive population	<a href="http://www.cfnavarra.es/estadistica/agregados/mercado_trabajo/EPA_princip_re_sult.xls#Inactivos!A1">http://www.cfnavarra.es/estadistica/agregados/mercado_trabajo/EPA_princip_re_sult.xls#Inactivos!A1</a>	NUT2	current official definition	1999-2010	
Life expectancy	<a href="http://www.ine.es/jaxi/menu.do?type=pcaxis&amp;path=/t20/p318/&amp;file=inebase">http://www.ine.es/jaxi/menu.do?type=pcaxis&amp;path=/t20/p318/&amp;file=inebase</a>	NUT2	current official definition	1975-2009	
<b>Climate change</b>					
Particles emission	<a href="http://www.navarra.es/home_es/Temas/Medio+Ambiente/Calidad+del+aire/Estaciones/Red/">http://www.navarra.es/home_es/Temas/Medio+Ambiente/Calidad+del+aire/Estaciones/Red/</a>	Specific points	current official definition	2009	
Greenhouse effect gas emission	<a href="http://www.siam-cma.org/cambioclimaticogalicia/Descargas/Emisiones_GEI_por_CC.AA_serie_9_0_08.pdf">http://www.siam-cma.org/cambioclimaticogalicia/Descargas/Emisiones_GEI_por_CC.AA_serie_9_0_08.pdf</a>	NUT2	current official definition	1990-2008	
Soil surface with risk of desertification	<a href="http://www.mma.es/secciones/biodiversidad/desertificacion/desertificacion_espania/index.htm">http://www.mma.es/secciones/biodiversidad/desertificacion/desertificacion_espania/index.htm</a>	NUT2	current official definition	2010	

Title of dataset		Spatial level of data	Version of spatial level (e.g. )	Date of validity of the data	Date of creation / compilation / publication of the data
Dammed water	<a href="http://www.cfnavarra.es/estadistica/agregados/entornofisico/embalses.xls">http://www.cfnavarra.es/estadistica/agregados/entornofisico/embalses.xls</a>	NUT2	current official definition	2000-2010	
Protected natural spaces	<a href="http://www.cfnavarra.es/estadistica/agregados/entornofisico/espp.xls">http://www.cfnavarra.es/estadistica/agregados/entornofisico/espp.xls</a>	NUT2	current official definition	2001	
CO2 emissions	<a href="http://europa.eu/documentation/order-publications/databases-subject/index_es.htm">http://europa.eu/documentation/order-publications/databases-subject/index_es.htm</a>	NUT1	current official definition	2001-2004	
Available water volume	<a href="http://www.ine.es/jaxi/menu.do?L=0&amp;type=pcaxis&amp;path=%2Ft26%2Fp067%2Fp01&amp;file=inebase">http://www.ine.es/jaxi/menu.do?L=0&amp;type=pcaxis&amp;path=%2Ft26%2Fp067%2Fp01&amp;file=inebase</a>	NUT2	current official definition	1992-2008	
Supplied water volume	<a href="http://www.ine.es/jaxi/menu.do?L=0&amp;type=pcaxis&amp;path=%2Ft26%2Fp067%2Fp01&amp;file=inebase">http://www.ine.es/jaxi/menu.do?L=0&amp;type=pcaxis&amp;path=%2Ft26%2Fp067%2Fp01&amp;file=inebase</a>	NUT2	current official definition	1992-2008	
<b>Energy</b>					
Oil products consume	<a href="http://www.cfnavarra.es/estadistica/redie.asp?qry=0502">http://www.cfnavarra.es/estadistica/redie.asp?qry=0502</a>	NUT1	current official definition	1986-2008	
Electric energy consume	<a href="http://www.cfnavarra.es/estadistica/redie.asp?qry=0502">http://www.cfnavarra.es/estadistica/redie.asp?qry=0502</a>	NUT2	current official definition	1995-2010	
Electric energy production	<a href="http://www.cfnavarra.es/estadistica/redie.asp?qry=0502">http://www.cfnavarra.es/estadistica/redie.asp?qry=0502</a>	NUT2	current official definition	1986-2010	
Energetic self-sufficiency	<a href="http://www.navarra.es/Plantas/Navarra/Especificas/Estadisticas/PT_PlanesAnuales.aspx?NRMODE=Published&amp;NRNODEGUID=%7b89CB668B-5CB3-47A6-9DC8-7F954C59B620%7d&amp;NRORIGINALURL=%2Fhome_es%2FGobierno%2bde%2bNavarra%2fOrganigrama%2fLos%2bdepartamentos%2fInnovacion%2bEmpresa%2by%2bEmpleo%2fEstadistica%2fPlanes%2bde%2bestadistica%2f&amp;NRCACHEHINT=Guest">http://www.navarra.es/Plantas/Navarra/Especificas/Estadisticas/PT_PlanesAnuales.aspx?NRMODE=Published&amp;NRNODEGUID=%7b89CB668B-5CB3-47A6-9DC8-7F954C59B620%7d&amp;NRORIGINALURL=%2Fhome_es%2FGobierno%2bde%2bNavarra%2fOrganigrama%2fLos%2bdepartamentos%2fInnovacion%2bEmpresa%2by%2bEmpleo%2fEstadistica%2fPlanes%2bde%2bestadistica%2f&amp;NRCACHEHINT=Guest</a>	NUT2	current official definition	1989, 1999, 2005-2009	
Electricity generation	<a href="http://www.navarra.es/Plantas/Navarra/Especificas/Estadisticas/PT_PlanesAnuales.aspx?NRMODE=Published&amp;NRNODEGUID=%7b89CB668B-5CB3-47A6-9DC8-7F954C59B620%7d&amp;NRORIGINALURL=%2Fhome_es%2FGobierno%2bde%2bNavarra%2fOrganigrama%2fLos%2bdepartamentos%2fInnovacion%2bEmpresa%2by%2bEmpleo%2fEstadistica%2fPlanes%2bde%2bestadistica%2f&amp;NRCACHEHINT=Guest">http://www.navarra.es/Plantas/Navarra/Especificas/Estadisticas/PT_PlanesAnuales.aspx?NRMODE=Published&amp;NRNODEGUID=%7b89CB668B-5CB3-47A6-9DC8-7F954C59B620%7d&amp;NRORIGINALURL=%2Fhome_es%2FGobierno%2bde%2bNavarra%2fOrganigrama%2fLos%2bdepartamentos%2fInnovacion%2bEmpresa%2by%2bEmpleo%2fEstadistica%2fPlanes%2bde%2bestadistica%2f&amp;NRCACHEHINT=Guest</a>	NUT2	current official definition	2009	
Energetic consume per inhabitant	<a href="http://www.navarra.es/Plantas/Navarra/Especificas/Estadisticas/PT_PlanesAnuales.aspx?NRMODE=Published&amp;NRNODEGUID=%7b89CB668B-5CB3-47A6-9DC8-7F954C59B620%7d&amp;NRORIGINALURL=%2Fhome_es%2FGobierno%2bde%2bNavarra%2fOrganigrama%2fLos%2bdepartamentos%2fInnovacion%2bEmpresa%2by%2bEmpleo%2fEstadistica%2fPlanes%2bde%2bestadistica%2f&amp;NRCACHEHINT=Guest">http://www.navarra.es/Plantas/Navarra/Especificas/Estadisticas/PT_PlanesAnuales.aspx?NRMODE=Published&amp;NRNODEGUID=%7b89CB668B-5CB3-47A6-9DC8-7F954C59B620%7d&amp;NRORIGINALURL=%2Fhome_es%2FGobierno%2bde%2bNavarra%2fOrganigrama%2fLos%2bdepartamentos%2fInnovacion%2bEmpresa%2by%2bEmpleo%2fEstadistica%2fPlanes%2bde%2bestadistica%2f&amp;NRCACHEHINT=Guest</a>	NUT2	current official definition		
<b>Globalization</b>					
GDP at market prices	<a href="http://www.cfnavarra.es/estadistica/agregados/macromag-economicas/cuadro_macro economico_corrientes.xls">http://www.cfnavarra.es/estadistica/agregados/macromag-economicas/cuadro_macro economico_corrientes.xls</a>	NUT2	current official definition	2000-2010	
R&D expenditure per sector	<a href="http://www.cfnavarra.es/estadistica/redie.asp?qry=0601">http://www.cfnavarra.es/estadistica/redie.asp?qry=0601</a>	NUT2	current official definition	2000-2008	
R&D employment	<a href="http://www.cfnavarra.es/estadistica/redie.asp?qry=0601">http://www.cfnavarra.es/estadistica/redie.asp?qry=0601</a>	NUT2	current official definition	2001-2008	

Title of dataset		Spatial level of data	Version of spatial level (e.g. )	Date of validity of the data	Date of creation / compilation / publication of the data
Registered student in university education	<a href="http://www.cfnavarra.es/estadistica/agregados/educacion_cultura/educuniv.xls">http://www.cfnavarra.es/estadistica/agregados/educacion_cultura/educuniv.xls</a>	NUT2	current official definition	1990-2002	
Registered student per educational levels	<a href="http://www.cfnavarra.es/estadistica/agregados/educacion_cultura/educniveles.xls">http://www.cfnavarra.es/estadistica/agregados/educacion_cultura/educniveles.xls</a>	NUT2	current official definition	1996-2005	
Teachers per educational levels	<a href="http://www.cfnavarra.es/estadistica/agregados/educacion_cultura/educniveles.xls">http://www.cfnavarra.es/estadistica/agregados/educacion_cultura/educniveles.xls</a>	NUT2	current official definition	1996-2005	
Number of schools	<a href="http://www.cfnavarra.es/estadistica/agregados/educacion_cultura/educniveles.xls">http://www.cfnavarra.es/estadistica/agregados/educacion_cultura/educniveles.xls</a>	NUT2	current official definition	1996-2005	
Registration evolution per educational level	<a href="http://www.cfnavarra.es/estadistica/agregados/educacion_cultura/educmatricula.xls">http://www.cfnavarra.es/estadistica/agregados/educacion_cultura/educmatricula.xls</a>	NUT2	current official definition	1992-2005	
Workers affiliated to social security per sector	<a href="http://www.cfnavarra.es/estadistica/agregados/mercado_trabajo/afiliados_ss_sectores.xls">http://www.cfnavarra.es/estadistica/agregados/mercado_trabajo/afiliados_ss_sectores.xls</a>	NUT2	current official definition	1995-2010	
Export and import	<a href="http://www.cfnavarra.es/estadistica/redie.asp?qry=0509">http://www.cfnavarra.es/estadistica/redie.asp?qry=0509</a>	NUT2	current official definition	2002-2009	
People in work with higher education	<a href="http://www.ine.es/jaxi/menu.do?type=pcaxis&amp;path=%2Ft22/e308_mnu&amp;file=inebase&amp;L=0">http://www.ine.es/jaxi/menu.do?type=pcaxis&amp;path=%2Ft22/e308_mnu&amp;file=inebase&amp;L=0</a>	NUT2	current official definition	1976-2009	

### I.3 Flanders

• *Documents*

Title of document	Publishing institution	Date of publication	Description of content of document (abstract)	Area of relevance	Addresses climate change	Addresses energy issues	Addresses globalisation / economic development	Addresses demography	Other regional challenges highlighted by this document
					For all of these challenges indicate through number of stars how much (to the best of your knowledge) the document addresses this issue (i.e. put *, ** or ***).				
Ruimtelijk Structuurplan Vlaanderen: gecoördineerde versie april 2004	Ministerie van de Vlaamse Gemeenschap	2004	Het Ruimtelijk Structuurplan Vlaanderen is de basis voor het ruimtelijke beleid van het Vlaamse gewest. Hierin legt de Vlaamse overheid vast in welke richting ze de ruimtelijke structuur van Vlaanderen wil zien evolueren en welke engagementen ze daarvoor concreet aangaat. In 1997 heeft de Vlaamse regering het Ruimtelijk Structuurplan Vlaanderen definitief goedgekeurd als kader voor het ruimtelijk beleid van Vlaanderen tot 2007. Dit structuurplan moet, krachtens het decreet Ruimtelijke Ordening van 18 mei 1999, om de vijf jaar geëvalueerd en, indien nodig, herzien worden. Uit de evaluatie die gehouden werd in 2003, bleek dat het Ruimtelijk Structuurplan Vlaanderen op twee aspecten aan herziening toe was. Een eerste aspect van de herziening heeft betrekking op de ruimte voor wonen, meer bepaald over de gewenste verdeling van bijkomende woningen over de stedelijke gebieden en het buitengebied. Het tweede aspect gaat over de ruimte voor bedrijven: hoe interpreteren we herbestemmingen voor zonevreemde bedrijven in de ruimtebalans? Het gaat om eerder technische wijzigingen, die niet raken aan de visie die in het Ruimtelijk Structuurplan Vlaanderen vastgelegd werd. Deze herdruk van het Ruimtelijk Structuurplan Vlaanderen is niet zomaar een herdruk. Het is een officieuze coördinatie: de teksten en kaarten zijn waar nodig aangepast aan de herziening.	Vlaanderen Nuts 1	*	*	**	**	

RSV addendum informatief, richtinggevend en bindend	Ministerie van de Vlaamse Gemeenschap	2010	De Vlaamse Regering heeft op 17 december 2010 een tweede herziening van het Ruimtelijk Structuurplan Vlaanderen definitief vastgesteld (Besluit VR 17 dec 2010). Het gaat voornamelijk om een actualisering van het cijfermateriaal. Er worden ook enkele knelpunten aangepakt. Opgelet ! Met de definitieve vaststelling door de Vlaamse Regering op 17 december 2010 is de procedure van herziening niet afgerond. Conform de Vlaamse Codex Ruimtelijke Ordening moeten de bindende bepalingen van de herziening voorgelegd worden aan het Vlaams Parlement. De herziening treedt pas in werking als het Parlement die bindende bepalingen heeft bekrachtigd, en de vaststelling en bekrachtiging van de herziening in het Belgisch Staatsblad is gepubliceerd.	Vlaanderen Nuts 1	*	*	**	**	
Ruimtelijke Ordening Beleidsnota 2009 - 2014	Ministerie van de Vlaamse Gemeenschap	2009	Vlaanderen staat voor grote uitdagingen in de komende regeerperiode. Een voortdurend veranderende samenleving vraagt vanuit de overheid een krachtadig beleid om de maatschappelijke uitdagingen van antwoord te dienen. Dit is ook het geval voor het ruimtelijke orderingsbeleid. Alle geledingen van de samenleving verwachten antwoorden op de ruimtelijke uitdagingen vanuit een integrerende en coördinerende rol van de ruimtelijke ordening.	Vlaanderen Nuts 1	***	***	***	***	
Visienota 2020 - 2050	Steunpunt Ruimte en Wonen	2009	De bedoeling van de Visienota Ruimtegebruik en Ruimtebeslag 2020-2050 is eenbasis te leggen voor de discussie over de aanpak voor een ruimtelijk beleidsplan/Vlaanderen met als planhorizonten 2020 en 2050, hierna RSV 2020-2050 genoemd.De Nota werkt dus geen structuurplan uit.	Vlaanderen Nuts 1	***	***	***	***	
Pact 2020: Een nieuw toekomstpact voor Vlaanderen: 20 doelstellingen	Vlaamse Overheid	2009	De Vlaamse regering en de Vlaamse sociale partners hebben het initiatief genomen om naast Vlaanderen in Actie een nieuw toekomstpact voor Vlaanderen af te sluiten met doelstellingen en acties naar 2020: het Pact 2020. Het Pact 2020 weerspiegelt de gezamenlijke langetermijnvisie, -strategie en -acties van de Vlaamse regering en de sociale partners. Een langetermijnstrategie voor Vlaanderen is vandaag immers meer dan ooit noodzakelijk, gelet op de grote maatschappelijke uitdagingen waar we voor staan.	Vlaanderen Nuts 1	***	***	***	***	
Lissabonstrategie 2009	Vlaamse Overheid	2009	Tijdens de Europese Raad van Lissabon in maart 2000 hebben de staatshoofden en regeringsleiders de strategie van Lissabon gelanceerd. Die had tot doel van de Europese Unie vóór 2010 de meest competitieve economie ter wereld te maken en volledige werkgelegenheid te scheppen. Die strategie werd daarna op diverse bijeenkomsten van de Europese Raad verder uitgewerkt en berustte op drie pijlers (een	Vlaanderen Nuts 1	***	***	***	***	

			economische, een sociale en een milieupijler). Om de in 2000 vastgestelde doelen te bereiken werd een lijst met streefcijfers opgesteld. Omdat de betrokken beleidsgebieden grotendeels tot de exclusieve bevoegdheid van de lidstaten behoren, werd een open coördinatiemethode (OCM) ingevoerd, die ook het opstellen van nationale actieplannen inhield.						
Milieubeleidsplan 2003 - 2007	Vlaamse Overheid, LNE	2004	Op basis van het decreet Algemene Bepalingen inzake Milieubeleid (dabm, 1995) wordt om de 5 jaar een milieubeleidsplan opgesteld. Het Milieubeleidsplan 1997-2001 was het eerste in de rij. Het werd verlengd tot de goedkeuring van het voorliggendplan op 19 september 2003. We spreken nu over het mina-plan 3 of over het Milieubeleidsplan 2003-2007. De planperiode (tot 31 december 2007) spoort onvoldoend met de Vlaamse regeerperiode (zie ook hoofdstuk 'Beleidsvoorbereiding, -evaluatie en -opvolging'). Op korte termijn zal een initiatief worden genomen tot aanpassing van het decreet op dit vlak. Dit mina-plan 3 is vanzelfsprekend de opvolger van het mina-plan 2 en moet ook als dusdanig worden gelezen. Continuïteit was immers een belangrijk uitgangspunt bij het opstellen van dit plan. Het milieubeleidsplan staat niet op zich, maar baseert zich mede op het milieurapport en wordt geoperationaliseerd via milieujaarprogramma's. Het decreet geeft nauwkeurig aan op welke wijze het milieubeleid in Vlaanderen door de milieubeleidsplanning gestalte moet krijgen.	Vlaanderen Nuts 1	***	*	*	*	
Mina + doelstellingen 2008 - 2010	Vlaamse Overheid, LNE	2008	Op 21 december 2007 keurde de Vlaamse Regering de actualisatie van het MINA-plan 3 goed. Deze actualisatie was noodzakelijk om de periode 2008-2010 tot een nieuw MINA-plan 4 te overbruggen. In eerste instantie ging hierbij de aandacht naar het bijstellen van de doelstellingen die aflepen in 2007. Deze werden in ieder geval herbekeken in het licht van de gewijzigde planperiode. In functie van de bijgestelde doelstellingen werden ook de betrokken maatregelen/projecten herbekeken of eventueel nieuwe noodzakelijke maatregelen voorgesteld. De doorgevoerde aanpassingen zijn beperkt van aard en vooral bedoeld om het MINA-plan beter te laten aansluiten bij de huidige trends en de internationale ontwikkelingen. De voorafgaande evaluatie werd met dat voor ogen ook op een beperkte wijze ingevuld. Een grondige en volledige evaluatie van de milieubeleidsplanning wordt wel voorzien in de aanloop naar het MINA-plan 4. Al in 2008 wordt hiermee van start gegaan.	Vlaanderen Nuts 1	***	*	*	*	
Ontwerp Milieubeleids	Vlaamse Overheid, LNE	2011	Voorontwerp nieuw beleidsplan, consulteerbaar op het web	Vlaanderen Nuts 1	???	???	???	???	

plan 2011 - 2015									
Mira Indicatorenrapport 2010	Vlaamse Milieumaatschappij	2010	Het MIRA Indicatorrapport wordt dan wel elk jaar in een nieuw kleedje gestoken, de inhoud is vertrouwd: een selectie van milieu-indicatoren met de meest actuele data die het volledige milieudomein omvatten. Het MIRA Indicatorrapport 2010 is dan ook bedoeld als een handig naslagwerk voor zowel de milieuprofessional als de geïnteresseerde burger. Het is het vlaggenschip van het Milieurapport Vlaanderen (MIRA) van de Vlaamse Milieumaatschappij (cf. kader Driedelige opdracht Milieurapport Vlaanderen).	Vlaanderen Nuts 1	???	???	???	???	
NARA Natuurrapport Vlaanderen 2009	Instituut voor Natuur- en Bosonderzoek	2009	Vraagstukken inzake milieu en natuur vragen een blik op de toekomst. Het duurt soms jaren vooraleer problemen echt duidelijk worden, en daarom is vooruitkijken een must. Klimaatverandering is hiervan het voorbeeld bij uitstek. De transitie na een koolstofarme economie door het drastisch veranderen van onze productie- en consumptieprocessen is geen sinecure en vraagt (veel) tijd. Het langetermijnkarakter van de milieu- en natuurproblematiek en de onzekerheid over de impact ervan, mogen geen excuus vormen om beleidsmaatregelen uit te stellen. Het algemeen aanvaarde uitgangspunt van duurzame ontwikkeling houdt immers in dat de huidige generatie (mede) verantwoordelijk is voor het welzijn van toekomstige generaties. Een samenhangende visie op de toekomst is dan ook noodzakelijk. De Milieuverkenning 2030 en de Natuurverkenning 2030 willen dit langetermijnperspectief onderstreunen. Ze beschrijven – op een onafhankelijke en wetenschappelijke manier – hoe het milieu en de natuur in Vlaanderen er in de toekomst zou kunnen uitzien. De weg naar morgen is open, maar de keuzes die het beleid vandaag maakt, bepalen mee de toekomst van (over)morgen.		???	???	???	???	
Wetenschappelijk rapport MIRA 2009 & NARA 2009	VMM en INBO	2009	De Milieuverkenning 2030 (MIRA 2009) en de Natuurverkenning 2030 (NARA 2009) beschrijven de toekomst van het leefmilieu en van de natuur in Vlaanderen. Het doel is de beleidsmakers en het geïnteresseerde publiek inzicht te geven in te verwachten evoluties van het leefmilieu en van de natuur in Vlaanderen, bij bepaalde beleidskeuzes en binnen een gegeven sociaal-economische context. Dit wetenschappelijk rapport maakt deel uit van een reeks rapporten die de wetenschappelijke onderbouwing van MIRA 2009 en NARA 2009 bevatten.		???	???	???	???	
Beleidsnota Energie 2009		2009	Beleidsnoties van de nieuwe Vlaamse regering mbt aanpak energieproblematiek		*	***	*	**	

- 2014									
Vlaams Klimaatbeleidplan 2006 - 2012	Vlaamse Overheid, LNE	2006	Het nieuwe Vlaams Klimaatbeleidsplan omvat de volledige Kyoto-periode (2008 - 2012). Het VKP 2006 - 2012 hanteert de gemiddelde uitstoot tijdens de Kyoto-periode (2008 - 2012) als referentiepunt. Volgens het nationale lastenverdelingsakkoord moet Vlaanderen zijn emissies in de periode 2008 - 2012 met gemiddeld 5,2% verminderen tegenover die van 1990. In absolute cijfers betekent dit een beperking van de uitstoot in deze periode tot gemiddeld 83.436 kton CO2-eq per jaar. In een scenario zonder klimaatbeleid zouden de Vlaamse broeikasgasemissies met 18% toenemen tegenover die van 1990 en een niveau bereiken van iets meer dan 105,6 Mton CO2-eq. De uitdaging voor het Vlaamse klimaatbeleid is dus de uitstoot van broeikasgassen tegen 2010 met 22,2 Mton CO2-eq per jaar te verminderen tegenover het scenario zonder klimaatbeleid.	Vlaanderen Nuts 1	**	***	**	*	
Decreet Integraal Waterbeleid	Vlaamse Overheid, LNE	2010		Vlaanderen Nuts 1	***	???	???	???	
Witboek Stedenbeleid (project Stedenbeleid )	Ministerie van de Vlaamse Gemeenschap	2008	Dit Witboek is het resultaat van een intens proces dat in december 2000 door mijn voorganger is gestart. De toen geïnstalleerde Task Force kreeg als opdracht een Witboek rond Stedenbeleid te realiseren. Onze verwachtingen waren hooggespannen. We wilden namelijk een beeld krijgen van de gewenste ontwikkelingen voor de komende jaren om naar meer dynamische, evenwichtige en leefbare steden te evolueren. Een perspectief van 20 jaar werd daarbij vooropgesteld. Daarbovenop kwam de vraag om de geschetste perspectieven niet te beperken tot globale maatschappelijke stedelijke ontwikkelingen, maar ook oog te hebben voor de mogelijke beleidsimplicaties. Zelf zagen we vijf clusters waarrond gewerkt zou kunnen worden: een theoretisch kader om tot klare concepten en definities te komen, met daarnaast aandacht voor zowel de economische, de sociale, de fysieke als de bestuurlijke omgeving van onze steden.	Vlaanderen Nuts 1	???	???	???	???	
Beleidsnota Wonen 2009 - 2014	Vlaamse Overheid, Woonbeleid	2009	Beleidsacties van de nieuwe Vlaamse regering mbt aanpak woonbeleid	Vlaanderen Nuts 1	???	???	***	*	
Beleidsnota "Duurzame en creatieve steden" 2009 - 2014	Ministerie van de Vlaamse Gemeenschap, Stedenbeleid	2009	Beleidsacties van de nieuwe Vlaamse regering mbt aanpak stedenbeleid	Vlaanderen Nuts 1	???	???	???	???	
Programma van	Vlaamse Overheid,	2006		Vlaanderen Nuts 1	???	???	???	???	



plattelandson twikkeling Vlaanderen 2007 - 2013	departement Landbouw en Visserij								
Mobiliteitspla n Vlaanderen 2003	Vlaamse Overheid, ministerie Mobiliteit en Openbare Werken	2003	Ontwerp mobiliteitsplan 2003	Vlaanderen Nuts 1	???	???	???	???	
Beleidsnota Mobiliteit en Openbare Werken 2009 - 2014	Vlaamse Overheid, ministerie Mobiliteit en Openbare Werken	2009	Beleidsacties van de nieuwe Vlaamse regering mbt aanpak stedenbeleid	Vlaanderen Nuts 1	???	???	???	???	
Beleidsnota Economie 2009 - 2014	Vlaamse Overheid, ministerie van economie, wetenschap en innovatie	2009	Beleidsacties van de nieuwe Vlaamse regering mbt aanpak stedenbeleid	Vlaanderen Nuts 1	???	???	???	???	
Algemene beleidsnota mobiliteit	Federale Overheid	2009	Federale beleidsnota	België nuts 0	???	**	???	???	
Nationaal Klimaatplan van België 2009-2012	Federale Overheid	2008	In de Belgische context worden de beleidslijnen en de maatregelen met het oog op een verminderde uitstoot van broeikasgassen op verschillende bevoegdheidsniveaus uitgewerkt, afhankelijk van de verdeling van de bevoegdheden tussen de Federale staat en de gewesten. Elk bevoegdheidsniveau legt zijn eigen prioriteiten inzake klimaat- en milieubeleid vast. De Nationale Klimaatcommissie werd in het leven geroepen om het beleid van de Federale Regering en dat van de drie gewesten te harmoniseren en een onderlinge synergie tot stand te brengen. De algemene context voor de voorbereiding van het beleid en de maatregelen in verband met de klimaatverandering berust op een reeks oriënteringsplannen die werden opgesteld door de federale en gewestelijke overheden die de doelstellingen van de beleidslijnen en de strategieën bepalen.	België nuts 0	***	???	???	???	
Voorontwerp van het federale plan inzake duurzame ontwikkeling 2009 - 2012	Federale Overheid	2008	Wij hebben het genoegen u het voorontwerp van federaal plan inzake duurzame ontwikkeling 2009-2012 ter consultatie voor te leggen net zoals aan alle andere burgers van ons land. Deze raadpleging van de bevolking heeft als doel dit voorontwerp te verbeteren. Deze tekst die u wordt voorgelegd, is uitgewerkt door een ambtelijke werkgroep waaroverde	België nuts 0	???	???	???	???	

			regering zich nog niet heeft uitgesproken. Er is dus nog geen politiek akkoord in dit stadium. Op vraag van de regering heeft de ICDO akte genomen van dit voorontwerp en heeft ze beslist om het ter raadpleging van de bevolking voor te leggen en dit dus voor elk grondig politiek onderzoek .						
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• *Data*

Title of dataset	Description (as detailed as possible) of the dataset	Spatial level of data	Version of spatial level (e.g. )	Date of validity of the data	Date of creation / compilation / publication of the data
	If publishing institution provides publication explaining data, just give a brief description and refer to publication for details, but then please annex the publication or give weblink.	NUTS level, LAU level	e.g. : « municipalities in their definition of 2008 »	Date to which the values of the variables apply– if a time series please list all dates for which the data is available or list start and end date and frequency of publication	Date at which the dataset was made available
<b>DEMOGRAPHY</b>					
Total population	<a href="#">Bevolking volgens het Rijksregister</a>	Nuts0, NUTS1, NUTS2, NUTS3, LAU 1	308 gemeenten Vlaams Gewest (VG) + 19 gemeenten Brussels Hoofdstedelijk Gewest (BHG) '+ 262 gemeenten Waals gewest (WG)	1990, 1995 - 2008	unknown
Male population by age	<a href="#">Bevolking volgens het Rijksregister</a>	Nuts0, NUTS1, NUTS2, NUTS3, LAU 1	308 gemeenten Vlaams Gewest (VG) + 19 gemeenten Brussels Hoofdstedelijk Gewest (BHG) '+ 262 gemeenten Waals gewest (WG)	1990 - 2008	unknown
Female population by age	<a href="#">Bevolking volgens het Rijksregister</a>	Nuts0, NUTS1, NUTS2, NUTS3, LAU 1	308 gemeenten Vlaams Gewest (VG) + 19 gemeenten Brussels Hoofdstedelijk Gewest (BHG) '+ 262 gemeenten Waals gewest (WG)	1990 - 2008	unknown
<b>Title of dataset</b>	<b>Description</b>	<b>Spatial level of data</b>	<b>Version of spatial level (e.g. )</b>	<b>Date of validity of the data</b>	<b>Date of</b>

	(as detailed as possible) of the dataset				creation / compilation / publication of the data
Total population by nationality	<a href="#">Bevolking volgens het Rijksregister</a>	Nuts0, NUTS1, NUTS2, NUTS3, LAU 1	308 gemeenten Vlaams Gewest (VG) + 19 gemeenten Brussels Hoofdstedelijk Gewest (BHG) '+ 262 gemeenten Waals gewest (WG)	1990, 1995 - 2008	unknown
Household composition	<a href="#">Huishoudens en familiekerne</a>	Nuts0, NUTS1, NUTS2, NUTS3, LAU 1	308 gemeenten Vlaams Gewest (VG) + 19 gemeenten Brussels Hoofdstedelijk Gewest (BHG) '+ 262 gemeenten Waals gewest (WG)	1990, 1995 - 2008	unknown
Single households	<a href="#">Huishoudens en familiekerne</a>	Nuts0, NUTS1, NUTS2, NUTS3, LAU 1	308 gemeenten Vlaams Gewest (VG) + 19 gemeenten Brussels Hoofdstedelijk Gewest (BHG) '+ 262 gemeenten Waals gewest (WG)	2000 - 2008	unknown
Births	<a href="#">Geboorten</a>	Nuts0, NUTS1, NUTS2, NUTS3, LAU 1	308 gemeenten Vlaams Gewest (VG) + 19 gemeenten Brussels Hoofdstedelijk Gewest (BHG) '+ 262 gemeenten Waals gewest (WG)	1990 - 2007	unknown
Deaths	<a href="#">Aantal sterfgevallen</a>	Nuts0, NUTS1, NUTS2, NUTS3, LAU 1	308 gemeenten Vlaams Gewest (VG) + 19 gemeenten Brussels Hoofdstedelijk Gewest (BHG) '+ 262 gemeenten Waals gewest (WG)	1990 - 2007	unknown
Migration	<a href="#">Migratiebewegingen</a>	Nuts0, NUTS1, NUTS2, NUTS3, LAU 1	308 gemeenten Vlaams Gewest (VG) + 19 gemeenten Brussels Hoofdstedelijk Gewest (BHG) '+ 262 gemeenten Waals gewest (WG)	2000 - 2007	unknown
<b>LABOUR</b>					
Active population	<a href="#">Definities</a>	LAU 1	308 gemeenten Vlaams Gewest (VG) + 19 gemeenten Brussels Hoofdstedelijk Gewest (BHG) '+ 262 gemeenten Waals gewest (WG)	2003 - 2008 (voor 1997-2002 another methodology)	unknown
Unemployment rate	<a href="#">Definities</a>	LAU 1	308 gemeenten Vlaams Gewest (VG) + 19 gemeenten Brussels Hoofdstedelijk Gewest (BHG) '+ 262 gemeenten Waals gewest (WG)	2003 - 2008 (voor 1997-2002 another methodology)	unknown
Employment rate	<a href="#">Definities</a>	LAU 1	308 gemeenten Vlaams Gewest (VG) + 19 gemeenten Brussels Hoofdstedelijk Gewest (BHG) '+ 262 gemeenten Waals gewest (WG)	2003 - 2008 (voor 1997-2002 another methodology)	unknown
Employment per economic branches of activity	<a href="#">Definities</a>	LAU 1	308 gemeenten Vlaams Gewest (VG) + 19 gemeenten Brussels Hoofdstedelijk Gewest (BHG) '+ 262 gemeenten Waals gewest (WG)	2006 - 2008	unknown
vacatures	<a href="#">Definities</a>	LAU 1	308 gemeenten Vlaams Gewest (VG) + 19 gemeenten Brussels Hoofdstedelijk Gewest (BHG) '+ 262 gemeenten Waals gewest (WG)	2003 - 2009	unknown
<b>GLOBALIZATION</b>					
<b>Education and internationalization</b>					
<b>Education level of population</b>					
Erasmus students and destination country		Nuts1	Vlaams Gewest	2000/2001 - 2008/2009	unknown
mathematics, science and technology students per academic year		Nuts1	Vlaams Gewest	2000/2001 - 2006/2007	unknown
PhD-FWO mandates		Nuts1	Vlaams Gewest	1990 - 2006	unknown

Title of dataset	Description (as detailed as possible) of the dataset	Spatial level of data	Version of spatial level (e.g. )	Date of validity of the data	Date of creation / compilation / publication of the data
IWT mandates		Nuts1	Vlaams Gewest	1991 - 2006	unknown
...a couple other indicators on the level of Flanders					
<b>GDP</b>					
GDP at market prices by components of the demand and total. Current prices					
GDP per inhabitant. At current prices and comparison with neighbouring countries		Nuts1	Vlaams Gewest	1995 - 2009	
GPD per economic main sector		Nuts1	Vlaams Gewest	1995 - 2009	
growth of GDP		Nuts1	Vlaams Gewest	1997 - 2009	
regional gdp per capita (RESOC's)		RESOC's	RESOC's	1995 - 2007	
regional gdp per main economic sector (resoc's)		RESOC's	RESOC's	2008	
<b>Firm structure</b>					
<b>Foreign investment</b>					
Foreign investment in Flanders by branches of activity (milions of euros)					
Foreign investment in Flanders by economic areas (OCDE, EU, America, Africa, Asia and Oceania, Tax Havens)					
Foreign companies in Flanders					
<b>Flemish investment</b>					
Flemish investment abroad. By branches of activity					
Flemish investment abroad. By economic areas (OCDE, EU, America, Africa, Asia and Oceania, Tax Havens)					
<b>Foreign trade</b>					
Foreign trade (exports and imports) by country					
Foreign trade by branches of activity					
Foreign trade by TARIC sections					
Foreign trade by types of TARIC goods					
Foreign trade by means of transport					
Exports by EU country					
Exports and imports of goods				2002 - 2008	
<b>R&amp;D and Innovation</b>					
Internal expenditure on R&D over GDP by sectors (public, private, higher education)					
Innovative companies by type of innovation					
<b>Tourism</b>					
Tourist accommodation by type		address level (but privacy restrictions for aggregation)	adressen	???	
Tourist arrivals and overnight stays (distinction between Belgian and Foreign)		LAU1	308 gemeenten Vlaams Gewest (VG) + 19 gemeenten Brussels Hoofdstedelijk Gewest (BHG) '+ 262 gemeenten Waals gewest (WG)	2007 - 2009	

Title of dataset	Description (as detailed as possible) of the dataset	Spatial level of data	Version of spatial level (e.g. )	Date of validity of the data	Date of creation / compilation / publication of the data
<b>Schaalvergroting van bedrijven???</b>					
<b>CLIMATE CHANGE</b>					
Luchtkwaliteit in microgram/m <sup>3</sup> : ozon					
Luchtkwaliteit in microgram/m <sup>3</sup> : stikstofdioxide					
Luchtkwaliteit in microgram/m <sup>3</sup> : zwaveldioxide					
Luchtkwaliteit in microgram/m <sup>3</sup> : fijn stof					
Water quality					
Water treatment plants		per address		???	
Industrial waste. Primair en secundair geproduceerd		NUTS1	Vlaams Gewest	1992 - 2008	
Huishoudelijk afval (Europese methode)		NUTS1	Vlaams Gewest	1991 - 2009	
Afvalverwerking naar methode		NUTS1	Vlaams Gewest	1991 - 2008	
Gemiddelde neerslag: evolutie		NUTS1	Vlaams Gewest	1830 - 2009	
Evolutie neerslaghoeveelheid per half kalenderjaar		NUTS1	Vlaams Gewest	1833 - 2009	
Gemiddelde temperatuur: evolutie (en vergelijking met Europa en mondiaal)		NUTS1	Vlaams Gewest	1850 - 2009	
Emissie van broeikasgassen: totale emissie en per sector		NUTS1	Vlaams Gewest	1990, 1995, 2000 - 2009	
Emissie aan ozonafbrekende stoffen: per sector, per stof en per toepassing		NUTS1	Vlaams Gewest	1995 - 2008	
Atmosferische concentratie andere vervuilende stoffen		NUTS1	Vlaams Gewest	1990, 1995 (niet compleet),, 2000 - 2009 (compleet)	
Zeeniveau		NUTS1	Vlaams Gewest	1935 - 1966 (niet compleet), 1966 - 2009	
slachtoffers bij hittegolven in België: GEEN SYSTEMATISCHE INVENTARISATIE		NUTS1	Vlaams Gewest		1994
aantal gevallen van de ziekte van Lyme in België		NUTS0	Vlaams Gewest	1991 - 2004	
aantal gevallen van de ziekte van Lyme in België		NUTS3			
aankomstdatum van trekkende vogels		NUTS1	Vlaams Gewest	1985 - 2002	
lente index libellen		NUTS1	Vlaams Gewest	1984 - 2006	
piekmomenten stuifmeel bij berk		NUTS1	Vlaams Gewest	1974 - 2007	
trend Zuid-europese libellensoorten		NUTS1	Vlaams Gewest	1983 - 2007	
biodiversiteit					
aantal overstromingen: België in vergelijking met Europa		Nuts0	België	1970 - 2009	
<b>ENERGY</b>					
<b>Land use of municipalities</b>					
Surface areas and land uses: STRUCNET and LANDUSE		polygons	Vlaams Gewest		
Land classification of municipalities		LAU1	308 gemeenten Vlaams Gewest (VG) + 19 gemeenten Brussels Hoofdstedelijk Gewest (BHG) + 262 gemeenten Waals gewest (WG)	2003, 2007, 2009	1.1.2010

Title of dataset	Description (as detailed as possible) of the dataset	Spatial level of data	Version of spatial level (e.g. )	Date of validity of the data	Date of creation / compilation / publication of the data
Evolution in land use		Nuts1, Nuts0	Gewesten	1985, 1990, 1995, 1999-2009	
<b>Commuting and infrastructure</b>					
binnenkomende pendel (naar geslacht, leeftijd, hoofdsector,...)		Lau1	308 gemeenten	2006, 2007	
uitgaande pendel (naar geslacht, leeftijd, hoofdsector,...)		Lau1	308 gemeenten	2006, 2007	
Dichtheid weginfrastructuur		polyline (MerkatorNET)		1997, 2000, 2002, 2004, 2005, 2006	
bus- en tramaanbod De Lijn		LAU1	308 gemeenten	2008	could be updated?
<b>Wagenpark</b>					
aantal nieuwe en tweedehandse autovoertuigen per brandstof, gewest en type wagen		NUITS1	gewesten	2008, 2009	
voertuigenpark per provincie en volgens de aard van de voertuigen		NUITS2	provincies	2007 - 2009	
<b>Production and Consumption of energy</b>					
Production of primary energy by type					
Production of electrical energy		NUITS1	Vlaanderen	2003 - 2008	
Netto-invoer van elektriciteit		NUITS1	Vlaanderen	1990, 1994 - 2009	
End consumption of energy. By type and sectors		NUITS1	Vlaanderen	1990, 1995, 2000 - 2009	
Totaal energiegebruik naar soort gebruik		NUITS1	Vlaanderen	1990, 1994 - 2009	
Aandeel groene stroom uit hernieuwbare energiebronnen t.o.v. de totale energieconsumptie		NUITS1	Vlaanderen	1994 - 2009	
Locaties windturbines		location (will have to be aggregated)		momentopname	

## I.4 North Rhine–Westphalia

- *Contacts*

Name	Formal way of addressing	Institution	Brief description of institution	Function of contact in institution	Email address	Telephone number	Expected thematic competencies	Has already been contacted	Has already declared willingness to work with TPM
Wolfgang Rembierz	Herr	Staatskanzlei NRW	planning agency of the federal state	Referatsleiter	<a href="mailto:wolfgang.rembierz@stk.nrw.de">wolfgang.rembierz@stk.nrw.de</a>	0211 837 4127	LEP (development plan on federal state level)	yes	yes
Dagmar Everding	Frau Dr.	Staatskanzlei NRW	planning agency of the federal state	Referatsleiterin	<a href="mailto:dagmar.everding@stk.nrw.de">dagmar.everding@stk.nrw.de</a>	0211 837 4272	regional planning, metropolitan areas, solar energy	no	no
Hadia Köhler	Frau	Staatskanzlei NRW	planning agency of the federal state		<a href="mailto:hadia.koehler@stk.nrw.de">hadia.koehler@stk.nrw.de</a>	0211 837 4119	goods traffic, technical infrastructure (cables and lines)	yes	yes
Walter Proksch	Herr	Staatskanzlei NRW	planning agency of the federal state		<a href="mailto:walter.proksch@stk.nrw.de">walter.proksch@stk.nrw.de</a>	0211 837 2712	renewable energies / federal state planning	yes	unsure
Kerstin Ströker	Frau Dr.	IT.NRW	statistical state office		<a href="mailto:kerstin.stroeker@it.nrw.de">kerstin.stroeker@it.nrw.de</a>		demography	no	no
Britta Frie	Frau	IT.NRW	statistical state office		<a href="mailto:britta.frie@it.nrw.de">britta.frie@it.nrw.de</a>		eco-economic resource accounting	no	no
Peter Wasmund	Herr Dr.	MWEBWV NRW	ministry of economics		<a href="mailto:peter.wasmund@mwebwv.nrw.de">peter.wasmund@mwebwv.nrw.de</a>		economic analysis, demography	yes	yes
Michael Wolf	Herr Dr.	Bezirksregierung Münster	regional planning agency		<a href="mailto:michael.wolf@bezreg-muenster.nrw.de">michael.wolf@bezreg-muenster.nrw.de</a>		demography, economic development	yes	yes
All contact persons should be contacted via the ILS!									

## • Documents

Title of document	Publishing institution	Date of publication	Description of content of document (abstract)	Area of relevance	Addresses climate change	Addresses energy issues	Addresses globalisation / economic development	Addresses demography	Other regional challenges highlighted by this document
					For all of these challenges indicate through number of stars how much (to the best of your knowledge) the document addresses this issue (i.e. put *, ** or ***).				
Regional Development Plan of North Rhine-Westphalia	Ministry for economy, middle class and energies of the federal state of North Rhine Westphalia	11/05/1995	The North Rhine-Westphalia Regional Development Plan (LEP NRW) indicates the place occupied by North Rhine-Westphalia and its spatial components in the hierarchy of European and German regions. The LEP NRW contains the challenges of the development in NRW. Main aspects are globalisation challenges, especially transnational traffic and transnational cooperation's on all planning levels. More over the LEP NRW points out the importance of renewable energies and the security of energy supplies. Furthermore the LEP emphasizes the changing mobility and its impacts. Climate change is connected with the sustainable protection of nature and landscape and the rising danger of flooding.	North Rhine-Westphalia, NUTS 1	**	***	***	**	
Regional Development Plan of North Rhine-Westphalia, revision chapter "energy"	Ministry for economy, middle class and energies of the federal state of North Rhine Westphalia	19/05/2010	The revision of chapter energy in the Regional Development Plan North Rhine-Westphalia indicates the reducing of energy use in North Rhine-Westphalia. Furthermore it is necessary to reduce the CO <sub>2</sub> emissions and achieve an energy-mix of different producers. In addition to that the energy supply should be based on more renewable energy.	North Rhine-Westphalia, NUTS 1		***	*		
Economy in North Rhine-Westphalia 2010	Ministry for economy, middle class and energies of the federal state of North Rhine Westphalia	6/01/2010	The report Economy in North Rhine-Westphalia basically describes the economic growth in NRW and its challenges, problems and good examples of successful companies and sectors. It emphasises sustainable growth, promotion of cluster, "surviving technologies", creative economies and others. More over the report has got an other focus on energy. Especially the development of renewable energies and the master plan "Elektromobilität" are important. Furthermore the report describes some	North Rhine-Westphalia, NUTS 1	*	***	***	*	



			challenges of climate change and demography as improving integration policy and sustainable technologies for water management.						
Environment report North Rhine-Westphalia 2009	Ministerium für Umwelt und Naturschutz, Landwirtschaft und Verbraucherschutz des Landes Nordrhein-Westfalen	October 2010	The environmental report of North Rhine-Westphalia focuses on climate change and environmental aspects. For example safing biodiversity, improving linking of green areas, drinking water protection, improving air quality or flood protection. The document gives many information about specific data in noise, waste, water, soil protection and emissions. More over it includes energy- and climate protection strategies and environmental programs for companies. Globalisation and demographic challenges are rarely addressed.	North Rhine-Westphalia, NUTS 1	***	*	*		soil protection reduction contamination of noise and smell
Adaption in climate change - a strategy for North Rhine-Westphalia	Ministry for environment and nature protection, agriculture and consumer protection of NRW	?	According to the document adaption in climate change - a strategy for North Rhine-Westphalia, climate change in the future has to be charged according to the implications and the options for action. Especially water management of cities and agglomeration areas need options for action. Increasingly problems are rising differences of changes in precipitations. In addition to that weather extremes increase	North Rhine-Westphalia, NUTS 1	***				
Calculations of Population in cities and districts	IT.NRW	2009	The document contains data's of all cities and districts in North Rhine-Westphalia. The population development is constituted from 2008-2030 and divided in several age groups. The document emphasises a little decrease of the NRW population. Generally, the population in districts will more decrease than the population in cities. Furthermore the percentage of old people will increase in districts until 2030. But the Ruhrgebiet has got a exceptional position, because there will be more decrease in population and ageing as well.	North Rhine-Westphalia, NUTS 1				***	
Impacts of the demographic change - model calculations for the development of private households and working population	IT.NRW	2009	The document indicates the development of households in North Rhine-Westphalia. There are already more 2 person households than 3 or more persons households. Especially cities have got a strong development to one or 2 person households. More over the document points out the development of working population. NRW has got a significant decrease in working population and more older employed people than younger.	North Rhine-Westphalia, NUTS 1				***	
Database of the Statistical Office for North-Rhine-Westphalia:	federal state data base NRW	2010	Over the last ten years there are less person employed in North Rhine-Westphalia. But there are regional differences, for example cities like Cologne or Düsseldorf have got more employees	North Rhine-Westphalia, NUTS 1			***		

persons employed			than ten years ago. By contrast, many cities in the Ruhrgebiet still lose employees.						
Statistical Reports: Population in North Rhine 2008. population size ,population movements	IT.NRW	2010	The document indicates the demographic change in North Rhine-Westphalia. For the first time in 2008 North Rhine-Westphalia had a higher migration than immigration from other German states. Other challenges are the decline of the birth rate, fewer young people and ageing of the population.	North Rhine-Westphalia, NUTS 1				***	
demographic change in NRW - Data and facts	Ministry for generations, family, women and integration of the federal state of North-Rhine Westphalia	2009	the report faces the challenge of demographic change by providing a wide information basis on state and local level. By this means an open and constructive discourse about chances and risk of the demographic change shall be driven	North Rhine-Westphalia, NUTS 1 till City/ County Level, NUTS 3				***	
Regional land use plan Cityregion Ruhr	Planning Community Cityregion Ruhr	Dec. 2009	The cities of Bochum, Oberhausen, Mülheim a.d. Ruhr, Essen, Gelsenkirchen and Herne have produced a common regional development strategy for the core zone of the Ruhr area; it combines the regional development plan with the land use plans for each city	some cities of the Ruhr area, maybe NUTS 3		*	**	*	
North-Rhine-Westphalia the Business State. Creative and open to the world	Ministry for economy, middle class and energie of the federal state of North Rhine Westphalia	May 2007	a document presenting the economic and cultural strength of NRW and its international connections as well as NRW innovation potential	North Rhine-Westphalia, NUTS 1			**		
Regional development plan for the administrative district of Cologne	Planning authority of the administrative district Cologne	nov-09	The regional plan of the Regierungsbezirk Köln consists of the aims of the Regional Development Plan of North Rhine-Westphalia and faces for example the delivery of renewable energies or flood protection. It does not address demography issues, but specifically climate change. There are four other Regierungsbezirke which are Düsseldorf, Arnsberg, Detmold and Münster. They also have regional plans	Administrative District Cologne, NUTS 2	**	*	**		protection of historic monuments
Climate protection concept North Rhine-Westphalia	Ministry for economy, middle class and energies of the federal state of North Rhine Westphalia	October 2001	Underlining North Rhine-Westphalia's aim to reduce CO <sub>2</sub> with several measurements. Economical use of resources and energies. For example a campaign of climate protection in private households, integrated traffic planning or delivery of renewable elements.	North Rhine-Westphalia, NUTS 1	***	*	*		
Climate protection concept for the district Borken	District Borken	sept-09	The climate protection concept of the Kreis Borken is an example for the implementation of climate protection in a regional level. There are other Kreise as well who made this concept.	District Borken, NUTS 3	***	*	*		

• *Data*

Title of dataset	Description (as detailed as possible) of the dataset	Spatial level of data	Version of spatial level (e.g. )	Date of validity of the data	Date of creation / compilation / publication of the data
Statistical yearbook NRW 2010	An overall view of many different statistics and maps covering 21 topics like area and population, population change, health care, education and culture, law and public safety, elections, employment, environment, economy, etc. for NRW and its local authorities/ Als quantitative Gesamtschau der gesellschaftlichen und wirtschaftlichen Situation im Land umfasst das Jahrbuch Ergebnisse aus nahezu allen Bereichen der amtlichen Statistik und zeigt Strukturen und Entwicklungen auf. Neben gut 400 Tabellen und Grafiken mit Landesergebnissen werden auch einige Daten für die Kreise und kreisfreien Städte des Landes präsentiert, außerdem Vergleichszahlen für alle Bundesländer.	NUTS 0,1,2,3, LAU Level		different	15.Oct 2010
update of population	extrapolation of population and different aspects of it like nationality, sex, age, due date and population density on national, federal state level and municipality level - database of GENESIS-ONLINE or Landesdatenbank	NUTS 0, 1, 2,3, LAU 2 (Code in Landesdatenbank 12411)		For federal level: population, age and sex 31.12.1967-31.12.2009; nationality 31.12.2000-31.12.2009; population density 31.12.1995-31.12.2009; annual frequency; for LAU Level 1975 ongoing	permanent updating
prediction of population development	pre-calculated population development for sex and age, based on different methods for national and federal state level - database of GENESIS-ONLINE or Landesdatenbank	NUTS 0,1,2,3;LAU 2 (Code in Landesdatenbank: 12421)		31.12.2009-31.12.2060 annual frequency	permanent updating
naturalisation	statistics on naturalisation with relation to age, sex for national and federal level - database of GENESIS-ONLINE or Landesdatenbank	NUTS 0,1,3,LAU 2 (Code in Landesdatenbank: 12491-01ir)		For federal level:1998-2008, annual frequency; for LAU Level from 1962 ongoing	permanent updating
foreigners	statistics on foreigners with relation to age, sex and continents for national and federal level - database of GENESIS-ONLINE or Landesdatenbank	NUTS 0,1,2,3; LAU 2 (Code in Landesdatenbank: 12511-05ir)		For federal level: 31.12.2001-31.12.2008 annual frequency; for LAU Level 2000-2009	permanent updating
birth statistics	birth statistics by live births, summarised birthrate and birthrate related to sex, age, nationality of the mother for national, federal level and LAU level - database of GENESIS-ONLINE or Landesdatenbank	NUTS 0,1,3,LAU 2 (Code in Landesdatenbank: 12612)		1990-2009, only birth rate 2001-2009, annual frequency; life births for Lau Level from 192 onwards	permanent updating

Title of dataset	Description (as detailed as possible) of the dataset	Spatial level of data	Version of spatial level (e.g.)	Date of validity of the data	Date of creation / compilation / publication of the data
death statistics	death statistics by sex and age for national and federal level- database of GENESIS-ONLINE	NUTS 0,1,3; LAU 2 (Code in Landesdatenbank: 12613)		For federal level:1990-2009, annual frequency; LAU Level: 1962 onwards	permanent updating
migration statistics	migration statistics (immigration and emigration over national, federal, regional and municipality borders) in relation to age groups, nationality for national, federal, regional and municipality level - REGIONALDATENBANK Deutschland	NUTS 0,1,2,3		1995-2008, annual frequency	permanent updating
migration	immigration and emigration over the borders of NRW including migration saldo and origin and destination	NUTS 1,2,3; LAU 2 (Code in Landesdatenbank: 12711+12791)		1970-2009, annual frequency; LAU Level:1995-2008/ 2000-2009	40422
businesses and investments in environmental protection	investmens in environmental protection in Germany per year in relation to size of business volume classes/ employee classes, fields of environment, sectors of economy - database of GENESIS-ONLINE	NUTS 0		2003-2007	permanent updating
goods and services for environmental protection	unity, employees and business volume in the field of environmental protection for Germany and the federal states per year in relation to types of business volume and fields of environment - database of GENESIS-ONLINE	NUTS 0,1		2006-2008, annual frequency	permanent updating
foreign trade	information on the foreign trade statistics (import and export) of Germany and its federal states per year and month, good types and destinations and origins- database of GENESIS-ONLINE	NUTS 0,1		federal level: Jan.2002-Sep.2010, special good types Jan.2008-Sep.2010, monthly or annual frequency	permanent updating
employees in Germany and its federal states	employees, independant personal services and working family members in Germany and the federal states per year and in relation to sectos of economy of the WZ2003 -Landesdatenbank	NUTS 0,1		1991-2009; annual frequency	févr-10
total economic account - accrurement	GDP of the federal states by market prices and gross value by economic sectors (6 or 16) per year -Landesdatenbank	NUTS 1,3		2001-2009, annual frequency	Aug09/Feb10
total economic account - reallocation	Available income of private households and primary income of municipalities - Landesdatenbank	NUTS 1,2,3		private households: 1991-2010, municipalities 2004-2010	Spring 2010

Title of dataset	Description (as detailed as possible) of the dataset	Spatial level of data	Version of spatial level (e.g.)	Date of validity of the data	Date of creation / compilation / publication of the data
energy balance and CO2 balance in NRW 2008	primary energy consumption and end energy consumption for different energie sources; CO2 emissions (primary and end consumption) by energy sources and emission sources	NUTS 1		energy 1993-2008; CO2 1990-2008; or only 2008; annual frequency	nov-10
guests and overnight stays in touristic travel in NRW (August 2010)	guests (arrivals and overnights stays) in different types of accommodation in NRW and its local authorities by origin and travel area	NUTS 1,3, LAU level		August 2010, monthly frequency	nov-10
actual air quality (overall analysis of air quality)	actual air quality measured by Ozon, SO2, NO2, PM10 for all gauging stations within NRW	NRW wide, so close to NUTS 1		updated hourly; 2000-2009	updated hourly, annual frequency
energy productivity in NRW	energy productivity is a means for the energy use. It shows, if for the GDP much and few energy was consumed. The data set describes the energy use for different sectors in relation to their amount of the GDP	NUTS 1		1998-2007	2009
resource productivity	resource productivity describes how much of not renewable resources are used for the generated GDP. The extractation and use of resources causes space, materials and energy, material transport and polluting emissions. The resource productivity relies not only on the efficient use of resources but also on the economic structure, meaning the mixture of material-intesive (mining) and less material-intensive sectors (services).	NUTS 1		1998-2007	2009
primary energy consumption	The primary energy consumption is at the moment a good indicator for the consumption of resources and the causing of emissions. The stronger use of renewable energies supports climate protection and efficient use of resources.	NUTS 1		1998-2007	2009
CO2 emissions	The energy-caused CO2 emissions make up to 50 % of the anthropogen caused green house gas emissions. CO2 emissions are therefore a key indicator for climate change.	NUTS 1		1998-2007	2009
CO2 emissions by traffic		NUTS 1		1998-2007	2009
energy consumptions by private households	description of energy consumption of private households divided by different indicator in relation to the overall energy consumption and as cause for CO2 emissions.	NUTS 1		1998-2007	2009

Title of dataset	Description (as detailed as possible) of the dataset	Spatial level of data	Version of spatial level (e.g.)	Date of validity of the data	Date of creation / compilation / publication of the data
land consumption	land consumption means the loss of open space and soil due to a surplus of settlement and traffic area. Other uses and its functions (agriculture, biotops, recreations, etc.) + protected species and fresh air corridors are lost. This causes bad influences on landscapes and due to a high soil sealing the natural soil functions are getting destroyed. This has also negative influence on groundwater and surface water. More settlements areas means also more traffic and therefore more energy consumption and pollution emissions.	NUTS 1		1999-2007	2009
background demographic change	description of demographic change and its aspects in the Ruhr area by different indicators like population change, change in age structure, internationalisation and individualisation	NUTS 3; some LAU1+2		different, most of them 2007	nov-09
climate data in Germany	different types of climate data are available: 1. time line for 46 observation wards with date, day and month values on temperatures, height of precipitation, sunshineduration, wind speed, humidity, atmospheric pressure and cloudiness46 Beobachtungsstationen. 2. long lasting means from 1961-1990 for all observation wards. 3.time lines on area means for temperature, rainfall and sunshine duration for the federal states and whole Germany. 4.Phenological average seasons for 1961-1990 and from 1991 onwards. 5. daily data of the objective atmospheric conditions classification from 1979 onwards	NUTS 0,1 + observation wards		from 1961 onwards	2010, but constantly updating
tax revenue of the local authorities	Code in Landesdatenbank: B-A04.1-11	LAU 2		1995-2009, quarter	permanent updating
Commuters	Code in Landesdatenbank: 19321	LAU 2		30/06/2006	
land allocation	Code in Landesdatenbank: 33111	LAU 2		31.12.1994-31.12.2009	permanent updating
processing industrie and mining	companies, employees and volume of sales according to communes	LAU 2		2009	2008
building industry	Companies, employees, working hour, gross wages and volume of sales in the building industry	LAU 2		1995-2006	permanent updating
Tourism	statistics of hotels and guesthouses and their beds, arrivals and accommodations	LAU 2		1985-2008	permanent updating
business registration and deregistration	a statistic of all registrations and deregistrations o business on the LAU level in NRW	LAU 2		2001-2009	permanent updating
expenditures of communes	the expenditures an the gros income of communes in this statistic are divided for example into laour costs, investements in material assets, redemption of credits	LAU 2		1995-2008	permanent updating

## I.5 Catalonia

### • Data

Title of dataset	Description (as detailed as possible) of the dataset	Spatial level of data	Version of spatial level (e.g. )	Date of validity of the data	Date of creation / compilation / publication of the data
Total population	Since 1996, the <b>population register</b> , has been in operation, and so <b>official population figures</b> are now obtained annually for municipalities using data referring to January 1.	<a href="http://www.idescat.cat/pub/?id=ae&amp;n=247&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;n=247&amp;m=m&amp;lang=en</a>	NUTS 1,2,3 LAU 2	current official definitions	1975-1996 1996-2009 november 2010
Total population by age groups and sex	Population divided by sex and 8 age groups (from less than 20 years old until more than 80)	<a href="http://www.idescat.cat/pub/?id=ae&amp;n=255&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;n=255&amp;m=m&amp;lang=en</a>	NUTS 1,2,3, LAU 2	current official definitions	1999-2009 november 2010
Foreign residents by country of nationality	Foreign population by country of origin	Foreign population by country of origin	NUTS 1,2,3, LAU 2	current official definitions	2000-2009 november 2010
Household composition by type	Household: set of one or more people that reside in the same home, share some common expenses but are not necessarily family relatives. This particular variable differentiates between households without nucleus (non family) and with nucleus (couples with or without children, single parents, etc).	<a href="http://www.idescat.cat/pub/?id=ae&amp;n=275&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;n=275&amp;m=m&amp;lang=en</a>	NUTS, 1, 2, 3	current official definitions	1981, 1991, 1996, 2001, 2007 november 2010
Household composition by number	Households by number, from 1 to 6 and more than 6	<a href="http://www.idescat.cat/pub/?id=ae&amp;n=275&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;n=275&amp;m=m&amp;lang=en</a>	NUTS, 1, 2, 3	current official definitions	1996, 2001 november 2010
Natural growth rate	Increase or decrease in the population, which is obtained from the difference between births and deaths, for a specific period and territorial region.		NUTS, 1, 2, 3	current official definitions	1998-2009 november 2010
Active and Inactive population	Active population: People aged 16 years or more that have an occupation or are available to do so and are performing actions oriented towards finding employment / Inactive population: People aged 16 years or more that have not worked, are not looking for work and or are not available to work: those who exclusively do domestic work, students not working, people that are retired from economic activity, those that are incapacitated and unable to work and others.	<a href="http://www.idescat.cat/pub/?id=ae&amp;n=293&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;n=293&amp;m=m&amp;lang=en</a>	NUTS 1,2, 3	current official definitions	2001-2009 november 2010
Unemployment rate	Ratio between unemployed population and active population.		NUTS 1,2, 3	current official definitions	2005-2009 november 2010
Employment rate	Ratio between active population and population aged 16 years or more.	Ratio between active population and population aged 16 years or +	NUTS 1,2, 3	current official definitions	2005-2009 november 2010

Title of dataset	Description (as detailed as possible) of the dataset	Spatial level of data	Version of spatial level (e.g. )	Date of validity of the data	Date of creation / compilation / publication of the data	
Employment per branches of activity	Employees by sector, service sector being desagregated at 9 subactivities	employees by sector, service sector being desagregated at 9 subactivities of agriculture, manufacturing, construction and services	NUTS 1,2, 3	current official definitions	1991, 1996, 2001	Population Census 2001, 1996, 1991
Workers affiliated to social security (4 sectors)	Person that exercises a labour activity in exchange for payment that is affiliated to the general Social Security scheme and the special scheme for mining and coal workers that are working or in similar situations to being working such as temporary incapacity, suspended by reasons of redundancy, partially unemployed, etc.	<a href="http://www.idescat.cat/pub/?id=aec&amp;n=315&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=aec&amp;n=315&amp;m=m&amp;lang=en</a>	NUTS 1,2, 3, 4	current official definitions	2000-2009	trimester data
Education level of population	The highest level of studies completed by a person, whether or not they are still studying on the date of reference. The level of education is adapted to the following typology: cannot read or write, incomplete primary, basic general (EGB) 1st stage, basic general (EGB) 2nd stage, vocational training (FP) 1st and 2nd grade, BUO and COU, medium or higher certificate.	<a href="http://www.idescat.cat/pub/?id=aec&amp;n=886&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=aec&amp;n=886&amp;m=m&amp;lang=en</a>	NUTS 1, 2	current official definitions	2001 and 2007	population census 2001 and Demographic Survey 2007
Secondary education. Pupils. Weight over Spain	Educational level that covers: obligatory secondary education (ESO), Batxillerat and specific vocational training of medium and higher level.	<a href="http://www.idescat.cat/pub/?id=aec&amp;n=745&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=aec&amp;n=745&amp;m=m&amp;lang=en</a>	NUTS 2	current official definitions	2000 - 2009	annually
Bachelor, architecture and engineering degrees per academic year. Students qualified by areas of study and sex	Studies that if passed entitle obtainment of degree, architect or engineer certificates. They are of a duration of two academic years. The areas of study are divided in: Humanities, Sciences, Health Sciences, Social Sciences, management and Practice of Sport and Technology	<a href="http://www.idescat.cat/pub/?id=aec&amp;n=757&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=aec&amp;n=757&amp;m=m&amp;lang=en</a>	NUTS 2	current official definitions	1999 - 2009	annually
PhD Theses read. By areas of study	Studies that if passed entitle obtainment of a PhD certificate following the drafting and acceptance of a thesis. If they are homologated they are called PhD (doctorate) programmes. These can also be individual (unregulated) titles such as masters, postgraduate diplomas and university specialisation courses	<a href="http://www.idescat.cat/pub/?id=aec&amp;n=760&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=aec&amp;n=760&amp;m=m&amp;lang=en</a>	NUTS 2	current official definitions	1999 - 2009	annually
GDP at market prices by components of the demand and total. Current prices	Valuation of the final result of the production activity of a territory. It is calculated on the basis of the total production of goods and services, subtracting intermediate consumption and adding net taxes applied to products. If it is calculated on the basis of market prices, it is equal to the cost factor, but includes taxes on production and operating subsidies.	<a href="http://www.idescat.cat/pub/?id=aec&amp;n=352&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=aec&amp;n=352&amp;m=m&amp;lang=en</a>	NUTS 1, 2	current official definitions	2005 - 2009	annually
GDP per inhabitat. At current prices	GDP divided by total inhabitants. At current prices is an economic measure of a variable at a specific moment that reflects increases due to real variation and variations in price	<a href="http://www.idescat.cat/pub/?id=aec&amp;n=356&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=aec&amp;n=356&amp;m=m&amp;lang=en</a>	NUTS 1, 2	current official definitions	2004-2009	annually



Title of dataset	Description (as detailed as possible) of the dataset	Spatial level of data	Version of spatial level (e.g.)	Date of validity of the data	Date of creation / compilation / publication of the data	Title of dataset
GPD at basic prices by economic sector	Wealth generated over a period considered that is obtained from the difference between the production value and intermediate consumption used (prime materials, services and exterior supplies, etc.). In coherence with INE methodology applied to national accounts, the production imputed to bank services has been deducted from the gross added value of the service sector, rather than distributing it between all sectors of the economy.	<a href="http://www.idescat.cat/pub/?id=ae&amp;n=363&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;n=363&amp;m=m&amp;lang=en</a>	NUTS 1,2,3	current official definitions	2000-2007	annually
Firm Structure (companies by sector, size and legal status)	Number of firms with economic activity in Catalonia, without considering if they have the headquarter in the region or not. The sectors considered are manufacturing, services and construction. Sizes range from without workers to more than 200.	<a href="http://www.idescat.cat/economia/inec?tc=7&amp;id=6004&amp;lang=en">http://www.idescat.cat/economia/inec?tc=7&amp;id=6004&amp;lang=en</a>	NUTS 2	current official definitions	2000-2010	annually
Foreign investment in Catalonia by branches of activity (millions of euros)	Investment made by physical people that are not resident in Spain or legal bodies domiciled abroad, registered with the Ministry for the Economy. The investment originates from holdings in Spanish companies, opening or expansion of a branch office network, subscription to and the acquisition of tradable securities in representation of loans issued by residents, participation in investment funds and the acquisition of real estate in Spain valued at more than three million euros. The gross effective investment is considered, i.e. the investment recorded after discounting the acquisitions of shares and holdings by Spanish companies or other non resident ones and the multiple accounts of the same investment, as a consequence of the restructuring of business groups in Spain.	<a href="http://www.idescat.cat/pub/?id=ae&amp;n=371&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;n=371&amp;m=m&amp;lang=en</a>	NUTS 1, 2	current official definitions	2000-2009	annually
Foreign investment in Catalonia by economic areas (OCDE, EU, America, Africa, Asia and Oceania, Tax Havens)	idem as 3,4,1 but considering the geographical origin of the investment	<a href="http://www.idescat.cat/pub/?id=ae&amp;n=372&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;n=372&amp;m=m&amp;lang=en</a>	NUTS 2	current official definitions	2000-2009	annually
Foreign companies in Catalonia by country of origin	Percentage of foreign companies by country		NUTS 2	current official definitions	2008	2008
Catalan investment abroad. By branches of activity	Investment made by physical people that are resident in Catalonia or legal bodies domiciled in Catalonia, registered with the Ministry for the Economy	<a href="http://www.idescat.cat/pub/?id=ae&amp;n=373&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;n=373&amp;lang=en</a>	NUTS 2	current official definitions	2000-2009	annually

Title of dataset	Description (as detailed as possible) of the dataset	Spatial level of data	Version of spatial level (e.g. )	Date of validity of the data	Date of creation / compilation / publication of the data	Title of dataset
Catalan investment abroad. By economic areas (OCDE, EU, America, Africa, Asia and Oceania, Tax Havens)	idem as 3.5.1, but considering the geographical destination of the investment	<a href="http://www.idescat.cat/pub/?id=ae&amp;n=374&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;n=374&amp;lang=en</a>	NUTS 2	current official definitions	2000-2009	annually
Foreign trade (exports and imports) by country	The statistics on <b>foreign trade</b> are taken from the most relevant information derived from commercial relations with other countries, based on the single administrative document SAD, and on relations with other countries of the European Union on the basis of the Intrastat declaration. The data is provided to us by the State Agency for Tax Administration. The figures are presented in accordance with the integrated tariff of the European communities (TARIC) in terms of destination groups and products; and in accordance with the revised Classification of economic activities CCAE-2009 in terms of branches of activity	<a href="http://www.idescat.cat/pub/?id=ae&amp;n=380&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;n=380&amp;m=m&amp;lang=en</a>	NUTS 2	current official definitions	2000-2009	annually
Foreign trade by branches of activity	idem as 3.4.1	<a href="http://www.idescat.cat/pub/?id=ae&amp;n=375&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;n=375&amp;lang=en</a>	NUTS 2	current official definitions	2000-2009	annually
Foreign trade by TARIC sections	idem as 3.4.1	<a href="http://www.idescat.cat/pub/?id=ae&amp;n=377&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;n=377&amp;m=m&amp;lang=en</a>	NUTS 2	current official definitions	2000-2009	annually
Foreign trade by types of TARIC goods	idem as 3.4.1	<a href="http://www.idescat.cat/pub/?id=ae&amp;n=378&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;n=378&amp;lang=en</a>	NUTS 2	current official definitions	2000-2009	annually
Foreign trade by means of transport	idem as 3.4.1	<a href="http://www.idescat.cat/pub/?id=ae&amp;n=379&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;n=379&amp;lang=en</a>	NUTS 2	current official definitions	2000-2009	annually
Exports by EU country	Value of the goods that leave a certain country. Statistically this is measured as an FOB (freight on board) value that includes the cost of the goods, plus transport costs as far as departure from the territory. Classified by the main European countries destinataries of the exports.	<a href="http://www.idescat.cat/economia/i nec?tc=7&amp;id=0803&amp;lang=en">http://www.idescat.cat/economia/i nec?tc=7&amp;id=0803&amp;lang=en</a>	NUTS 2	current official definitions	Monthly since 1995	monthly
Internal expenditure on R&D over GDP by sectors (public, private, higher education)	To calculate R&D effort in Catalonia, it is calculated the internal expenditure in R&D done by each unity and the staff dedicated to this task in Full time equivalence.	<a href="http://www.idescat.cat/economia/i nec?tc=7&amp;id=6110&amp;lang=en">http://www.idescat.cat/economia/i nec?tc=7&amp;id=6110&amp;lang=en</a>	NUTS 2	current official definitions	2000-2008	annually

Title of dataset	Description (as detailed as possible) of the dataset	Spatial level of data	Version of spatial level (e.g. )	Date of validity of the data	Date of creation / compilation / publication of the data	Title of dataset
Innovative companies by type of innovation	Una innovació tecnològica, tal com es defineix en aquesta enquesta, és un producte (bé o servei) nou o sensiblement millorat introduït en el mercat, o un procés nou o sensiblement millorat introduït en l'empresa. L'estadística proporciona el nombre d'empreses amb activitats innovadores en funció de la despesa en les diferents activitats innovadores (R+D interna i externa, compra maquinària i equips, altres coneixements externs per a innovació, formació, introducció d'innovacions en el mercat, disseny i preparatius per a la distribució/producció). També proporciona dades sobre el nombre d'empreses segons el tipus d'innovació (de producte, de procés i de producte i procés).	<a href="http://www.idescat.cat/economia/i nec?tc=7&amp;id=6111&amp;lang=en">http://www.idescat.cat/economia/i nec?tc=7&amp;id=6111&amp;lang=en</a>	NUTS 1, 2	current official definitions	2001-2008	annually
Tourist accommodation by type	Tourism can be considered from the point of view of offer and demand. The <b>offer</b> includes the whole set of tourist facilities: camp siter, hotel establishment, pension, rural tourism	<a href="http://www.idescat.cat/pub/?id=ae c&amp;n=540&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=ae c&amp;n=540&amp;m=m&amp;lang=en</a>	NUTS 2, 3 and areas (Metropolit an Region of Barcelona is one of the areas)	current official definitions. Areas were created for `planning purposes. There are 7 in Catalonia, one being the Metropolitan Area of Barcelona, which includes 167 municipalities in 7 different counties	2002 - 2009	annually
Foreign visitors in Catalonia. By country of origin	Visitor who makes one or more overnight stay, whatever the type of accommodation that they stay in. In relation to foreign travellers, the main source is the Frontur survey by the Institute of Tourism Studies (IET).	<a href="http://www.idescat.cat/pub/?id=ae c&amp;n=569&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=ae c&amp;n=569&amp;m=m&amp;lang=en</a>	NUTS 2	current official definitions	2001 - 2009	annually
Foreign tourism in Catalonia. Tourism expenditure by country of origin	Expenditure of tourists by country of origin. Total and euros perperson and day.	<a href="http://www.idescat.cat/pub/?id=ae c&amp;n=572&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=ae c&amp;n=572&amp;m=m&amp;lang=en</a>	NUTS 2	current official definitions	2001 - 2009	annually
Index of economic activity	Comparative index of the economic activity per inhabitant in cities. It is obtained through the total sump of the activity tax that business have to pay to local administration	<a href="http://www.sostenibilidad-es.org/sites/default/files/1.1.6._ind ice_de_actividad_economica_urb ana.pdf">http://www.sostenibilidad-es.org/sites/default/files/1.1.6._ind ice_de_actividad_economica_urb ana.pdf</a>	LAU 2 (capitals of Spanish provinces)	current official definitions	2009	
Atmospheric pollution. Main contaminants. By town of location of the Authomatic Vigilance Network	<b>Atmospheric pollution</b> is generally measured in micrograms or milligrams per cubic metre of air. The main contaminants are PM 10, lead and benzene. Other compounds are also considered: hydrogen sulphur, sulphur dioxide, ozone, carbon monoxide and nitrogen dioxide, which are measured by the automatic network.	<a href="http://www.idescat.cat/pub/?id=ae c&amp;n=237&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=ae c&amp;n=237&amp;m=m&amp;lang=en</a>	LAU 2 (and average for Catalonia)	current official definitions	2000-2009	annually

Title of dataset	Description (as detailed as possible) of the dataset	Spatial level of data	Version of spatial level (e.g. )	Date of validity of the data	Date of creation / compilation / publication of the data	Title of dataset
Air Quality Index. By town of location of the Authomatic Vigilance Network	The main indicator to measure atmospheric pollution is the air quality index (AQI). This index is produced using data for the main atmospheric contaminants: PST, SO <sub>2</sub> , NO <sub>2</sub> and CO. It can take values between -400 (poorest quality) and 100 (best quality).	<a href="http://www.idescat.cat/pub/?id=ae&amp;n=236&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;n=236&amp;m=m&amp;lang=en</a>	LAU 1	current official definitions	2001 - 2009	annually
Water consumption. Invoicing	<b>Water consumption</b> , both by domestic uses and economic activities (industry, services and others) is obtained on the basis of the invoicing presented by the agents that supply it.	<a href="http://www.idescat.cat/pub/?id=ae&amp;n=231&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;n=231&amp;m=m&amp;lang=en</a>	NUTS 2, 3 and areas (Metropolitan Region of Barcelona is one of the areas)	current official definitions. The Metropolitan area of Barcelona includes 167 municipalities in 7 different counties	2004-2008	annually
Water Quality. Controls made for surface water	The data on <b>water quality</b> shows the controls registered in accordance with the Framework directive on water from the year 2007. For the study of the <b>bathing water</b> for beaches, rivers and lakes, the microbiological quality of the water is measured. For <b>wastewater treatment plants</b> , data is provided on the capacity of treatment, the population served and overall performance.	<a href="http://www.idescat.cat/pub/?id=ae&amp;n=232&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;n=232&amp;m=m&amp;lang=en</a>	NUTS 2	current official definitions	2007 - 2009	annually
Water treatment plants. By type	For <b>wastewater treatment plants</b> , data is provided on the capacity of treatment, the population served and overall performance.	<a href="http://www.idescat.cat/pub/?id=ae&amp;n=234&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;n=234&amp;m=m&amp;lang=en</a>	NUTS 2	current official definitions	2000 - 2009	annually
Water treatment plants. Overall performances	For <b>wastewater treatment plants</b> , data is provided on the capacity of treatment, the population served and overall performance.	<a href="http://www.idescat.cat/pub/?id=ae&amp;n=235&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;n=235&amp;lang=en</a>	NUTS 2	current official definitions	1997 - 2009	annually
Industrial waste. By sectors of activity (Tons)	<b>Industrial waste</b> is presented classified by types, by activity sectors and by counties, in accordance with the new Waste catalogue. Not included is waste resulting from mining activities or from the exploitation of stone, or radioactive waste or unclassified explosives. Neither is sanitary or municipal waste included, nor that from agricultural or livestock operations that is reused by the agricultural operation, or that which is managed as wastewater.	<a href="http://www.idescat.cat/pub/?id=ae&amp;n=239&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;n=239&amp;m=m&amp;lang=en</a>	NUTS 2	current official definitions	1998 - 2008	annually
Municipal waste. Selective collection	As for <b>municipal waste</b> the data is presented by counties. Not included are ashes from incinerators, slurry from treatment plants or waste from recycling and composting plants. Data is also included for <b>selective collection</b> by counties and by type of waste (glass, paper, tins and packaging, organic material, pruning and gardening and voluminous waste).	<a href="http://www.idescat.cat/pub/?id=ae&amp;n=243&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;n=243&amp;m=m&amp;lang=en</a>	NUTS 2, 3 and areas (Metropolitan Region of Barcelona is one of the areas)	current official definitions. The Metropolitan area of Barcelona includes 167 municipalities in 7 different counties	1999 - 2008	annually

Title of dataset	Description (as detailed as possible) of the dataset	Spatial level of data	Version of spatial level (e.g. )	Date of validity of the data	Date of creation / compilation / publication of the data	Title of dataset
Waste treatment facilities. By type	Gathering of industrial and municipal waste	<a href="http://www.idescat.cat/pub/?id=ae&amp;c&amp;n=244&amp;m=m&amp;t=1992&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;c&amp;n=244&amp;m=m&amp;t=1992&amp;lang=en</a>	NUTS 2	current official definitions	1992 - 2009	annually
Plan for spaces of Natural Interest (PEIN) Counties and areas	Data is presented for <b>protected natural spaces</b> in two tables: one that shows spaces of natural interest (PEIN) by counties, and one that shows the protection scheme (national parks, natural parks, reserves and other spaces of special interest).	<a href="http://www.idescat.cat/pub/?id=ae&amp;c&amp;n=219&amp;m=m">http://www.idescat.cat/pub/?id=ae&amp;c&amp;n=219&amp;m=m</a>	NUTS 2 and counties	current official definitions.	2000 - 2009	annually
Specially protected natural spaces. By type	Data is presented for <b>protected natural spaces</b> in two tables: one that shows spaces of natural interest (PEIN) by counties, and one that shows the protection scheme (national parks, natural parks, reserves and other spaces of special interest).	<a href="http://www.idescat.cat/pub/?id=ae&amp;c&amp;n=220&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;c&amp;n=220&amp;m=m&amp;lang=en</a>	Counties	Counties are a territorial division smaller than provinces and that group several municipalities.	2000 - 2009	annually
Green areas surface by inhabitant	Surface (m2) of parks and gardens in urban areas by number of inhabitants		LAU 2 (capitals of Spanish provinces)	current official definitions	2009	annually since 2005
Surface areas and land uses	According to different uses, the land is classified into: forest area, cropland, land with no vegetation and urban land, urbanisable land and infrastructures.	<a href="http://www.idescat.cat/pub/?id=ae&amp;c&amp;n=202&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;c&amp;n=202&amp;m=m&amp;lang=en</a>	NUTS 2, 3 and areas (Metropolitan Region of Barcelona is one of the areas)	current official definitions	2001-2008	annually
Land classification of municipalities	Quantification of land surfaces according to their type. The land is classified according to 35 categories, separated in urban land, non-vacant urban land, vacant urban land	<a href="http://www.ietcat.org/images/pdfnas/Observatori/DBasiques/Informe_sdbqua_2.pdf">http://www.ietcat.org/images/pdfnas/Observatori/DBasiques/Informe_sdbqua_2.pdf</a>	LAU 2	current official definitions	2009	2009
Land use of municipalities	Quantification of land surfaces according to their classification in the current urban planning in Catalonia. The categories follow those established by current legislation in urban planning and include categories as non-delimited urban land, delimited urban land, consolidated and non-consolidated urban land	<a href="http://www.ietcat.org/images/pdfnas/Observatori/DBasiques/Informe_sdbcla_1.pdf">http://www.ietcat.org/images/pdfnas/Observatori/DBasiques/Informe_sdbcla_1.pdf</a>	LAU 2	current official definitions	2009	2009
Jorneys from residence to work by means of transport	All of the data referring to <b>obligatory mobility</b> taken from the Population census of 2001 has been updated. The information has been extended through the publication of two new tables; one referring to the number of travellers that travel to work each day and another showing journeys from residence to work by time taken. Classic mobility tables are also published showing mobility by means of transport, and these were taken from the last census.	<a href="http://www.idescat.cat/pub/?id=ae&amp;c&amp;n=605&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;c&amp;n=605&amp;lang=en</a>	NUTS 2, 3 and areas (Metropolitan Region of Barcelona is one of the areas)	current official definitions. The Metropolitan area of Barcelona includes 167 municipalities in 7 different counties	2001	2001

Title of dataset	Description (as detailed as possible) of the dataset	Spatial level of data	Version of spatial level (e.g. )	Date of validity of the data	Date of creation / compilation / publication of the data	Title of dataset
Journeys from residence to job. By number of trips a day	All of the data referring to <b>obligatory mobility</b> taken from the Population census of 2001 has been updated. The information has been extended through the publication of two new tables; one referring to the number of travellers that travel to work each day and another showing journeys from residence to work by time taken. Classic mobility tables are also published showing mobility by means of transport, and these were taken from the last census.	<a href="http://www.idescat.cat/pub/?id=ae&amp;c&amp;n=607&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;c&amp;n=607&amp;m=m&amp;lang=en</a>	NUTS 2 and counties (can be aggregated to NUTS 3)	Counties are a territorial division smaller than provinces and that group several municipalities.	2001	2001
Production of primary energy by type	Local production of different types of energy (coal, petroleum, gas, nuclear energy, wind and solar energy, etc)	<a href="http://www.idescat.cat/pub/?id=ae&amp;c&amp;n=499&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;c&amp;n=499&amp;m=m&amp;lang=en</a>	NUTS 2	current official definitions	1993-2007	yearly until 2007
Production of electrical energy	Production of electrical energy in a given year by type. Differentiates between gross production, net production and available production.	<a href="http://www.idescat.cat/pub/?id=ae&amp;c&amp;n=500&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;c&amp;n=500&amp;m=m&amp;lang=en</a>	NUTS 2	current official definitions	1999 - 2007	yearly until 2007
Consumption of primary energy. By type and use	Aggregation of local production with the balance of import/export of energy, considering inventory variations and bunkers.	<a href="http://www.idescat.cat/pub/?id=ae&amp;c&amp;n=502&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;c&amp;n=502&amp;lang=en</a>	NUTS 2	current official definitions	1993 - 2007	yearly until 2007
End consumption of energy. By type and sectors	Quantity of energy consumed by users. Does not include consumption involving non energy transformation.	<a href="http://www.idescat.cat/pub/?id=ae&amp;c&amp;n=504&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;c&amp;n=504&amp;m=m&amp;lang=en</a>	NUTS 2	current official definitions	1993 - 2007	yearly until 2007
Main homes by installations and services (Levels of insulation)	Family home used as a permanent or habitual residence. Also includes accommodation structures. Insulation considers availability of heating and air conditioning	<a href="http://www.idescat.cat/pub/?id=ae&amp;c&amp;n=705&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;c&amp;n=705&amp;lang=en</a>	NUTS 2, 3 and areas (Metropolitan Region of Barcelona is one of the areas)	current official definitions. The Metropolitan area of Barcelona includes 167 municipalities in 7 different counties	2001	2001
Road network by type of road	Number of kilometers by type of road and public administration responsible of its construction.	<a href="http://www.idescat.cat/pub/?id=ae&amp;c&amp;n=584&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;c&amp;n=584&amp;m=m&amp;lang=en</a>	NUTS 2, 3 and areas (Metropolitan Region of Barcelona is one of the areas)	current official definitions. The Metropolitan area of Barcelona includes 167 municipalities in 7 different counties	2000 - 2008	annually
Railways. Transport of passengers and goods. Length of lines	Kilometers of railways constructed for passengers and goods transportation	<a href="http://www.idescat.cat/pub/?id=ae&amp;c&amp;n=602&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=ae&amp;c&amp;n=602&amp;m=m&amp;lang=en</a>	NUTS 2	current official definitions	2002 - 2009	annually

Title of dataset	Description (as detailed as possible) of the dataset	Spatial level of data	Version of spatial level (e.g. )	Date of validity of the data	Date of creation / compilation / publication of the data	Title of dataset
Ports of Catalonia. Movement of vessels and goods	Movement of the catalan ports (Tarragona, Barcelona and those depending on the Catalan Government). Comparison with Spain	<a href="http://www.idescat.cat/pub/?id=aec&amp;n=611&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=aec&amp;n=611&amp;m=m&amp;lang=en</a>	NUTS 2 / Ports	current official definitions	2002 - 2009	annually
Airports. Movement of areoplanes, passengers and goods	Movement of the catalan ports (Barcelona, Girona-Costa Brava and Reus). Comparison with Spain	<a href="http://www.idescat.cat/pub/?id=aec&amp;n=612&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=aec&amp;n=612&amp;m=m&amp;lang=en</a>	NUTS 2 / Airports	current official definitions	2002 - 2009	annually
Use of computer and use of Internet. Frequency and place of use. By age groups	The main aim is to analyse equipment and the use of information and communication technologies at home. For the first time, results are given for people aged 16 to 74 years and for households with a member in this age bracket. This operation follows the Eurostat's methodological recommendations and serves as the basis for establishing comparisons with other countries and satisfying international requirements.	<a href="http://www.idescat.cat/pub/?id=aec&amp;n=617&amp;m=m&amp;lang=en">http://www.idescat.cat/pub/?id=aec&amp;n=617&amp;m=m&amp;lang=en</a>	NUTS 2	current official definitions	2001 - 2009	annually
Use of computer and use of Internet at households and firms	Use of ICT equipments by households and firms at county level. Includes also information on the Metropolitan Area of Barcelona		NUTS 2 and counties	Counties are a territorial division smaller than provinces and that group several municipalities. The Metropolitan area of Barcelona includes 167 municipalities in 7 different counties	2009	2009

## ***II. Synthetic annexes***

### **II.1 Review of monitoring tools**

#### **• *Monitoring Systems within the Greater Dublin Area***

Following a discussion with planners at the Dublin Regional Authority (DRA) it seems that there is no proper monitoring system in place within the region. The DRA have developed a series of monitoring indicators as a means of monitoring the Regional Planning Guidelines. Dublin City Council have also developed a set of monitoring indicators aimed at tracking Dublin's performance and progress and to allow national and international comparisons. An initiative at the National University of Ireland, Maynooth called the All-Island Research Observatory has also been set up and provides planners and policy makers with a series of monitoring tools to allow better evidence informed planning at a variety of spatial scales from local to regional level. Also see the Environmental Protection Agency's Environment in Focus website for a dashboard style general monitoring of indicators at a national level.

In the following monitoring systems review, the choice to focus the analysis on 2 of the mentioned monitoring systems:

the "Environment in Focus" –system, since it is the only dashboard system and an example of a compact and user friendly monitoring tool;

The All-Island Research Observatory because it also provides a spatial approach and had a broader thematic focus.

Regional Planning Guidelines will not be dealt with since it is not a monitoring system (but the proposed indicators can be consulted to give inspiration for the quantitative section of the project (WP2.1.2). Some of the indicators of the Dublin City indicators are reported in Dublin City Indicators

A commentary on "Dublin's Performance" (Cudden & O'Leary, 2010). It is not clear, however, whether it is planned to repeat this reporting in time, and whether there are plans to unlock the data in other ways, eg. Via web browsers. The conclusion seems to be the same: it is interesting to study the report for the substantial aspect of the indicators proposed, but is not a monitoring system in our definition: no spatial nor a technical interface for reporting.

#### **Environmental Protection Agency**

The Environmental Protection Agency (EPA) has responsibilities for a wide range of licensing, enforcement, monitoring and assessment activities associated with environmental protection. The provide information through on how their duties in these areas are performed, as well as the rules and procedures in administering the applicable environmental laws and regulations. The make a distinction between "Environmental Monitoring" and "Environmental assessment".

In the section "Environmental Monitoring", EPA sets out the methodology of their environmental monitoring system. The themes are: water and air quality, climate change, chemicals and waste. These monitoring programmes must specify:

- What should be monitored and where it should be carried out
- Who should do it
- The resources required
- How the monitoring results will be disseminated

The EPA prepares draft programmes and circulates them for comment to interested parties. Following consideration of comments received, the programmes are finalised and published.



The second objective is the environmental assessment. The Environmental Protection Agency (EPA) assesses and informs the public and policy makers of the general state of the environment. State of the Environment Reports are published every four years and periodic Indicator reports on water quality, air quality and our compliance with environmental targets. Next to the reporting the website consists of two “monitoring systems” (or as they call it systems for environmental assessment).

Overall, the website consists of a combination of quantitative and qualitative information, in the sense that a lot of statistical material is present, but also explanation on what is happening, and how policy can respond to it.

**Environment in Focus**

“Environment in Focus” is a dashboard system with a quick overview of a selection of indicators, and the status/trends that can be observed (cf. Figure 1). This is an overall monitoring system, since there is no spatial variance in the data.

The temporal component is present in the status/trend, but it is also possible to download a graph, in which the evolution can be studied (cf. Figure 2).

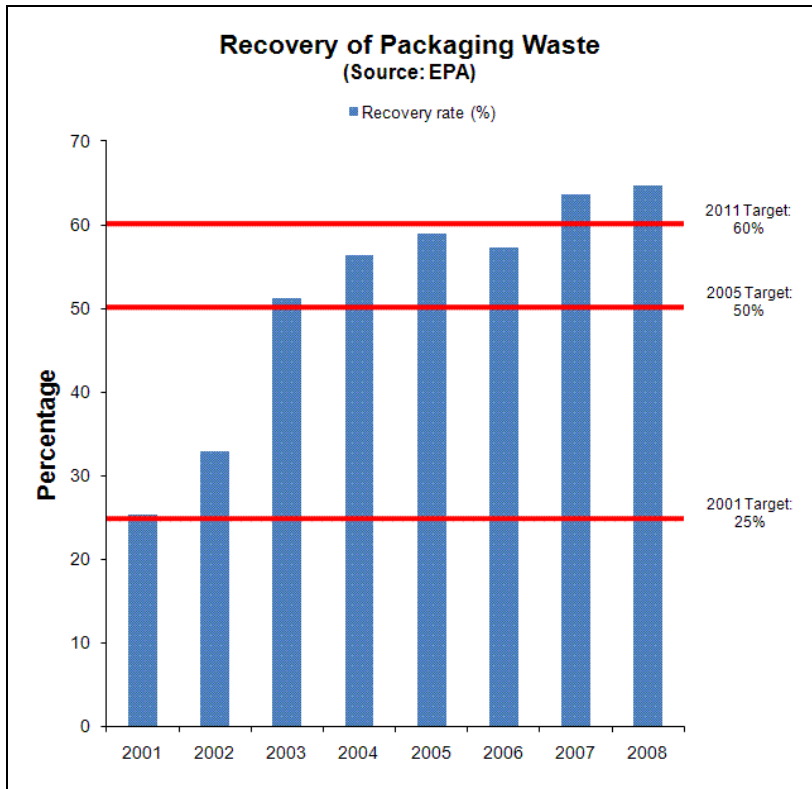
The graph is also “benchmarked” against the policy targets of different years. The time perspective depends upon the indicator.

Environment in Focus uses the DPSIR-methodology, in which a distinction is made between indicators for states and impacts, drivers and pressures, and responses.

**Figure 1 – Environment in Focus: dashboard system**

Waste Indicators		
	Status/Trend	Downloads
Recovery and Disposal of Municipal Waste		<a href="#">View data graph/table</a>
Recovery of Packaging Waste		<a href="#">View data graph/table</a>
Biodegradable Waste Diversion from Landfill		<a href="#">View data graph/table</a>
Predicted Growth in Municipal Waste		<a href="#">View data graph/table</a>
Climate Change Indicators		
	Status/Trend	Downloads
Greenhouse Gas Emissions - Kyoto Protocol Limit		<a href="#">View data graph/table</a>
Greenhouse Gas Projections to 2020		<a href="#">View data graph/table</a>
Greenhouse Gas Emissions by Sector		<a href="#">View data graph/table</a>
Atmospheric Carbon Dioxide Levels		<a href="#">View data graph/table</a>

Figure 2

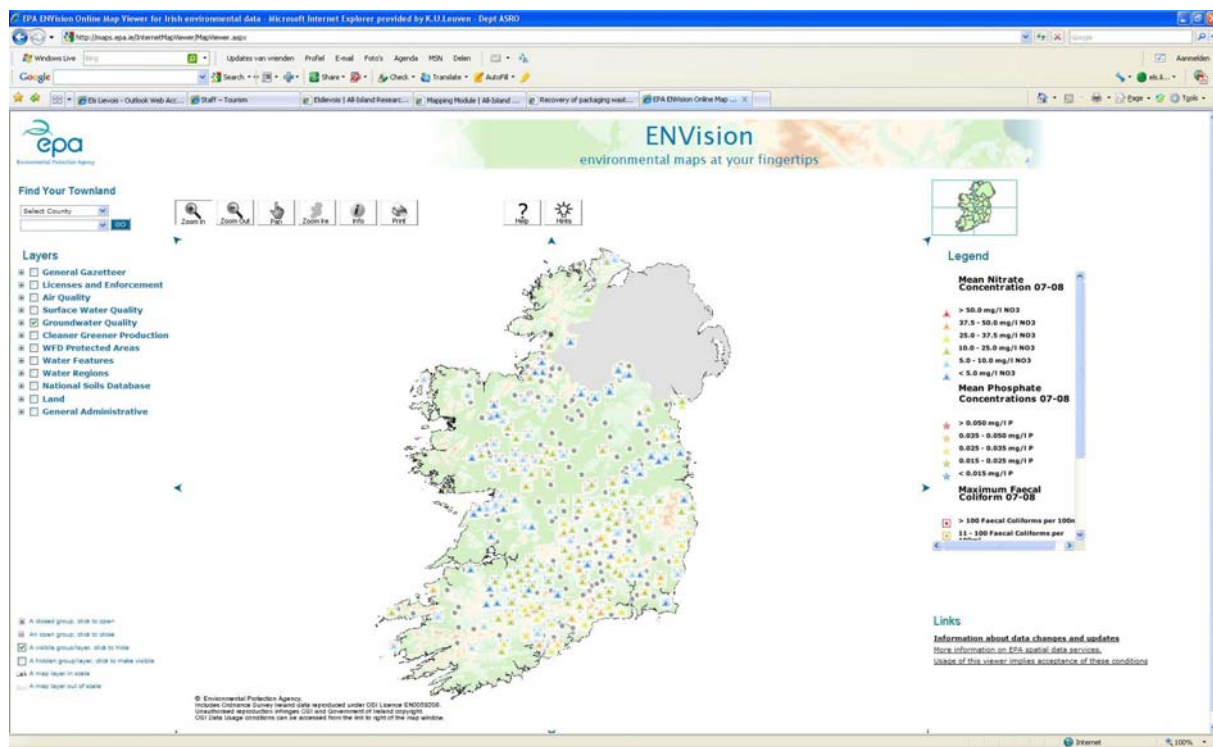


### Envision Map Viewer

“Envision Map Viewer”: a web browser based GIS system which makes it possible to make a spatial analysis of the different environmental themes. It gives the possibility to select an indicator by choosing between different available “layers” in a GIS setting. The tool also provides some basic GIS functions (zoom in/out, pan,...) , but it is also possible to select a county and townland (cf. **Erreur ! Source du renvoi introuvable.**).

The map viewer does not consist of a temporal aspect, but it is possible to study geographic variation in quality of water, air,....

Figure 3 – ENVISION Map Viewer



Next to the Map Viewer, EPA is also involved in other GIS initiatives.

Eg:

“Change in land use and land cover is the most noticeable and far-reaching of all environmental changes. Unsustainable land use change can impact human health, have a harmful effect on water, air, soil and biodiversity and conflict with land use planning. The EPA is the national focal point for European Land Use Land Cover activities. We continue to monitor changes in land cover and to assess the effects of these changes on the environment through our participation in a number of projects, eg. In Corine Land Cover” (EPA 2010, consulted 21th Jan, 2011).

The organisation also acknowledges that all aspects of the Environmental Protection Agency’s work relate to a location, whether it is an overall environmental assessment of the whole country for national reports or a smaller scale study of the local environment to help assess a new IPPC licensing application. Digital maps play a very important role in helping the EPA to assess the environment and track changes that occur over time.

Next to the development of the Map Viewer (which is done by EPA GIS experts), EPA staff can view digital maps using web mapping technology deployed over the EPA intranet. This ensures that our scientists and licensing inspectors have access to GIS data they need to support their work.

The EPA also has a policy of making available the GIS data that are developed, free of charge, to all groups and organisations in GIS format.

The also perform more advanced spatial analysis on their data to learn more about the status of the environment now and analyse how it has changed and secondly, to try and predict the effects of pollution on the local environment. (this is similar to the techniques developed in the Polci Center Of Spatial Planning and Housing, Flanders) . The techniques are also used for policy preparation, eg. in the implementation of the Water Framework Directive in Ireland. This required a national study of the current status of all surface water and groundwater in the state, to give a score to each water body of the likelihood that it will achieve good water status by the year 2015.

In the elaboration above information has already been given about the temporal component of the monitoring system; and about the combination of qualitative and quantitative

information on the website. The indicators in the monitoring system, however, are mainly quantitative. Based upon the information on the website, the monitoring tools seem to be a permanent evaluation system, which started up in 1992 and will go on in the future. For more information on the political aspect of the monitoring system, the developers will have to be consulted, although the methodology of the monitoring programmes seems to be effectuated in a stakeholders consulting process.

### **The All-Island Research Observatory**

The All-Island Research Observatory is commissioned by the Higher Education Authority and the Department of Environment, Housing and Local Development. There is a wide consortium of partners involved, mainly universities and centers that are specialized in regional and spatial analysis regional development.

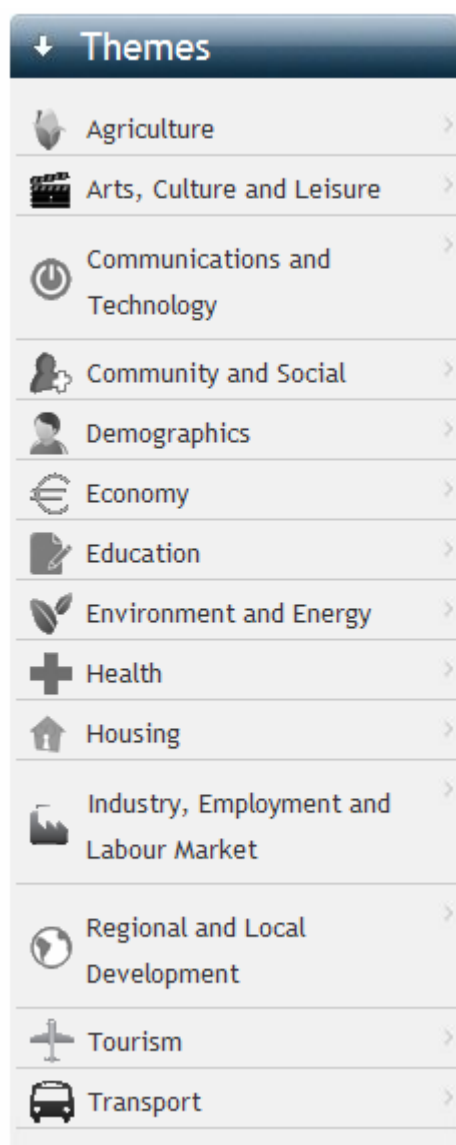
At first glance the system is wide in thematic diversity (cf. Figure 4), but it is a more classic sectoral approach and seems to lack broader themes such as globalization, climate change, and energy.

The organisation also provides for a variety of “monitoring toolkits”, but they cannot be consulted through the website. The themes are:

- RoI Housing Monitoring Toolkit
- Dublin City Deprivation Module
- Live Register Monitoring Toolkit (Office Level)
- Regional Monitoring Toolkit
- DEHLG Unfinished Estates

Those initiatives are worth studying in more detail in the next stages of the project.

**Figure 4 - Themes in the All Island Observation Network**



• ***The spatial monitoring system of Flanders***

**Ruimtemonitor Vlaanderen**

The spatial monitoring system of Flanders is a new one (2007) and has not been made widely available yet. Consequently the users and impact are, until now, rather limited. However, out of the experiences of the monitoring systems, some lessons can be drawn concerning the implementation of monitoring systems in general.

**Concept and scope of the monitoring system**

The monitoring system is developed within the Policy Center of Spatial Planning and Housing, commissioned by the Administration of Spatial Planning (who is also the owner of the system).

The original idea was to do a feasibility study of the monitoring system the year before the Policy Center of Spatial Planning and Housing was installed (2007). This study could have given an overview of possible techniques and organisational issues, but also of the thematic scope and task division in the development of the system:

- Who suggests the indicators?
- Who delivers the data?
- Which data does exist?
- By which agreements can we use them?

The same goes for the concept of the monitoring system, should it be:

- a datawarehousing?
- A very focused monitoring of a selection of spatial phenomena?
- A system meant for evaluation of the effectiveness of spatial planning directives?

Eventually RWO decided to skip this preparatory feasibility study and integrate it in the planning of the Policy Center. This resulted in a initial confusion regarding issues of task division and responsibilities.

The monitoring system is developed in one “workpackage” of the Policy Center, by Spatial Applications Division Leuven (a division of the university, specialized in the development of GI applications). There are 5 thematic workpackages in the Policy Center for analysis of spatial transformation and change within a specific thematic area. Between both groups there was a shift of responsibilities: although the Monitor was perceived by the researchers as a GIS system that would support their analyses and provide the necessary data for it, it positioned itself as an integrative tool for their results. The researchers suggest important themes of spatial transformation, construct indicators for it (if data are available) and deliver to the monitoring system.

Besides, the lack of a clear formulated scope, resulted in a lasting confusion about relevance for policy. Should it be purely explorative to spatial phenomena and changes that are highlighted by scientific research and could be of policy relevance, and how? Should it be clearly evaluative concerning the operational targets of the spatial planning system?

The only specification in the project proposal about this was that it should be a tool for the visualization of spatial transformations.

During the first years of development and starting up of the Policy Center, the commissioner has laid much emphasis on immediate visible results and the need of a complete overview of data that could be implemented within the monitoring system. They also had a preference for spatial data with the highest possible spatial detail. This resulted in an explorative and data driven approach, in which the relevant themes were dependent on data availability while the reverse should have been preferable: at first, a discussion about

the specific thematic content and scope of the monitoring system and secondly looking for relevant indicators and data.

This explorative approach has some direct consequences:

1. the content of the Space Monitor is determined by scientific research, and based on the analysis of important spatial patterns;
2. It does not guarantee thematic completeness of all relevant spatial changes in Flanders, since the work of 5 thematic workpackages is effectuated by 4 junior researchers in total, some of them also working on a PhD with a specific thematic focus;
3. It has consequences for data availability: some of them construct indicators and do analysis on data they obtained for the purposes of scientific research, but are not allowed to transfer those data to a system used for policy support.

In the last years of the Policy Center (2010-2011), the administration started to acknowledge the need for conceptualization and a scope for the monitoring system. The transversal workpackage “Spatial Synthesis” is setting out the marks for it, meanwhile, SADL continues to develop the technical and organizational framework for the monitoring system. SADL is also developing some interactive tools to calculate generic morphological patterns.

### **Temporal component**

Within the spatial monitoring system a temporal component is being implemented, however, this is strongly constricted because of the availability of data. This can be explained by the main focus of the spatial monitoring system and the specific type of data required:

Less based on censusdata for which time sequences are available, but more on GISdata, that have been developed in other studies (and not necessarily being repeated), or on sets of data that have not yet been georeferenced (and for which the methodology still has to be completed). As a result, the monitor can mostly be considered as a benchmark for a great amount of indicators.

The temporal component is implemented in two ways: by means of charts and animated difference maps.

The spatial scale is very intricate (from municipal level to parcel level)

### **Technical implementation and accessibility of the spatial monitoring system**

The spatial monitoring system is being developed via 2 “tracks”:

An analytic GIS (ARCGIS extension), that has been installed for the client (RWO); a GIS that can be watched via a web browser ([www.ruimtemonitor.be](http://www.ruimtemonitor.be)), which currently is only accessible for the administration RWO and the researchers.

The developers of the spatial monitoring system are very insistent on making decisions that are related to the further spread of the spatial monitoring system to:

1. another planning and policy level (such as provinces, municipalities);
2. a larger audience

Doing this, experience could be shared and the discussion about indicators could be widened. However, such a decision has not yet been made by the commissioner.

As a consequence, it is not yet possible, and too early, to evaluate the use of the spatial monitoring system. The only users at the moment are:

The web-GIS:

The researchers: they deliver the input themselves for the spatial monitoring system; they could use the instrument to examine which mapping material could be developed in other workpackages, but for this matter they prefer making contact directly with the other researchers. The forum of the spatial monitoring system could also be used to discuss substantially about the indicators, but they prefer to do this face to face as well or not at all. The administration: the basis for the spatial monitoring system does not seem to exist yet, but only the amount of activity on the forum is used as a criterion to evaluate this.

The analytical GIS:

The researchers: the analytical GIS is not installed for the researchers. However, this could stimulate the interaction between the different spatial themes and the creativity. The main reason is that there is no uniformity in the researchers group in the version of ArcGIS.

The administration: the basis for the spatial monitoring system has not yet been created. The reason for this is that not every employee of the RWO has the technical expertise to work with the analytical tools of ArcGIS. Nevertheless, this can be considered a missed opportunity, since the members of the administration are also urged to deliver input for the spatial monitoring system: the indicators they use frequently on a daily basis can be integrated into the system, and SADL had provided time for this within the development. The employees of the administration have not pursued the matter. It doesn't seem that the spatial monitoring system is actually being used for a preparation of policy yet.

In 2011, SADL will plan an array of initiatives to increase the basis of the spatial monitoring system (training, discussion,...).

### **Quantitative and Qualitative**

Does the instrument integrate qualitative and quantitative elements? This, of course, depends on what is considered qualitative or quantitative. In some cases, the qualitative aspect is being integrated since researchers determine the spatial indicators on the basis of spatial themes which are considered relevant by concerning experts in the field.

Sometimes, the distinction between both is also acknowledged as mapping material that is based on pure quantitative material (thematical mapping of spatial georeferenced data) and maps that are based on designs or structure maps. This one has not yet been integrated because:

1. The researchers mostly work with quantitative maps;
2. The "research by Design" research team, involved in the Policy Center, has not delivered input yet..

A qualitative aspect is also the interpretation of the mapping view: this has been included in the draft atlas on which the spatial monitoring system is based; the description is not stored in the spatial monitor itself (although this could be added).

The quality of the spatial indicator: this however is stored in the spatial monitoring system, and is based on the input of the researchers.

### **Influence of the policy on the content of the spatial monitoring system**

Currently, we are having a situation in which the policy does not interfere in the substantial development of the spatial monitoring system, but also does not provide concrete guidelines with regard to the concerning priorities and objectives. The previous legislature also demanded explicitly that the monitoring system was not developed to evaluate the spatial policy, but only to be able to visualize the spatial developments that were relevant for the spatial policy (and as thematically diverse as possible).



When the legislature changed at the end of 2009, the commissioner expressed their interest to include the element of policy evaluation in the monitoring system as an evaluation of spatial policy, but it was too late to fundamentally change the way in which the Policy Center established a model of collaboration and a research methodology for the scope and choices for indicator development (analysis on certain new developments in Flanders).

### **The future of the spatial monitoring system**

Eventually the spatial monitoring system is in the starting phase and a lot has been learned since the kick-off of the Policy Center. More in particular, a lot of technical and organizational aspects have been clarified in the spatial monitoring system, but probably more time is required to think thoroughly about the conceptual framework of the monitoring system and to figure out whether this framework is rather of scientific nature than policy orientated, or both.

The main problem is, however, the continuation of the spatial monitoring system. This is being technically developed by SADL within the Policy Center and substantially charged by other partners working on thematic workpackages, but the Policy Center will come to an end at the end of 2011, and it is not yet clear how or whether it will be prolonged, and in which kind of configuration.

### **Conclusion and recommendations**

It is beneficial that within the scope of this assignment (TPM) the concerning focus of the monitoring system is strongly defined and clarified. However, since the local effects of the global challenges on the local area are not yet known, and the global challenges can have much different spatial impacts, there still is a danger of a very broad thematic diversity (and long list of indicators). This problem can be counterbalanced in our methodology by qualitative monitoring, this means it will be based on an inquiry of experts about the local effects of the global challenges. In this way, one can clearly start from a conceptual frame and the indicators (and datasets) can be collected in a very targeted way.

## • *Monitoring in Catalonia*

### **Spatial planning**

The main instruments of spatial planning are the seven Regional plans. The regulation defining these plans foresees the establishment of monitoring systems. In its first proposed form, this monitoring would have been fairly limited in terms of information coverage, without any references to strategic issues. Therefore, the coordinators of the regional spatial plans are currently working on a proposal for a revised monitoring system. As the Catalan government has just come to power and the administration is still being put into place, no more can be said about this instrument at this time. However, this situation obviously highlights the importance of the TPM project in terms of sharing of best practices in order to support the establishment of a new monitoring system.

### **Strategic planning**

Several strategic plans exist at different territorial levels. These plans have to be understood as roadmaps for strategic regional development action, but with little territorialisation, and definitely no spatial planning. The strategic plan of the Barcelona metropolitan area from 2010 is one such document. It does contain some territorialised (or localised) actions, but does not cover spatial planning as such. It is, rather, a visioning / coalition-building exercise gathering the municipalities of the metropolitan region, but also other public and private actors, in order to define the main strategic actions to respond to the following main challenges:

- Sustainability and climate change. The AMB can become a sustainability benchmark for warm-climate cities and a world model for urban policies which prioritise energy efficiency and reduction of pollution.
- To make the AMB a benchmark in the new global framework: greater presence before leading global countries and capital of the Mediterranean.
- Global leader in selected knowledge sectors. The AMB must promote existing and emerging sectors where they can lead the world: the creative industries, design and art, health and sport.
- Beyond 'bio' companies. The traditional sectors have considerable specific weight in the AMB's economy and employment figures, but a new approach to competitiveness is needed to guarantee their viability and survival.
- To become one of the most attractive European regions for innovative talent.
- An interesting and socially balanced society: a social response to the crisis. Calling for actions in the fields of education, culture, public space, social housing, mobility, etc.

It is accompanied by a monitoring system which offers an interesting approach. It uses a limited number of indicators (+/- 35) divided into 6 blocks:

- knowledge
- innovation and creativity
- connectivity and mobility
- sustainability
- quality of life and social cohesion
- macro-economic indicators

Figure 1 shows these blocks and the challenges and indicators linked to each. The presentation of the results is a classical dashboard system. First, the current (and past) trend of each indicator is presented in the form of traffic lights accompanied by brief observations (fig 2). The information is then detailed in one-page indicator sheets (fig 3).

This exercise is clearly quantitative with no room for qualitative analyses, although the form of presentation would allow the inclusion of qualitative information. The state of indicators is published every 2 years and thus allows some follow up over time (although some indicators are not available at all times).

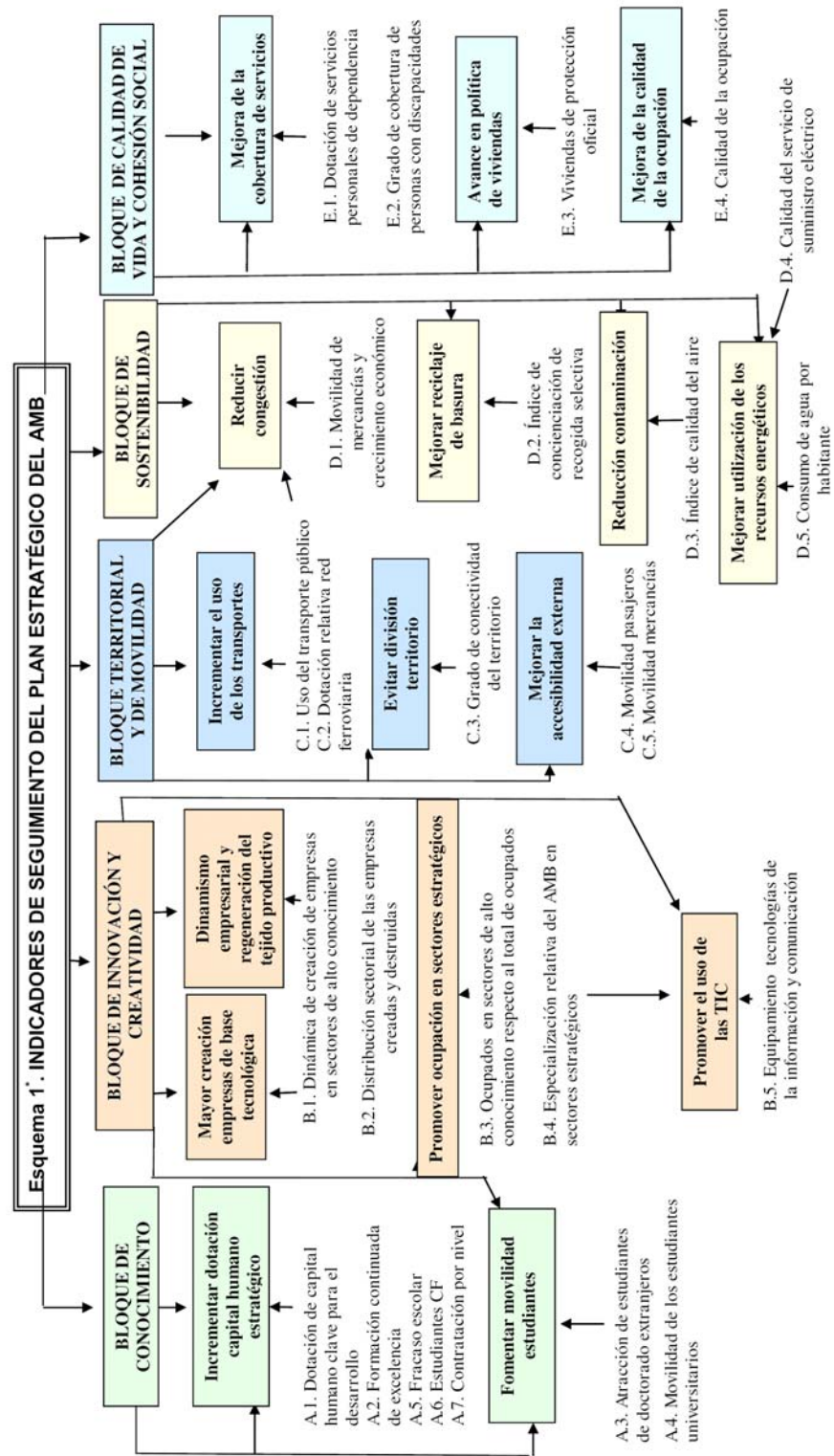
The system is a very pragmatical one, not linked to any specific theoretic models, but trying to identify key indicators linked to the challenges identified in the plan. Spatial scale is generally the province of Barcelona, but can vary according to data availability with some indicators presented at the level of Catalonia. No internal spatial differentiation is provided. Data is, thus, only presented in form of tables and figures, but no maps. Sources are diverse, but most data comes from administrative sources (ministries and regional administrations). The data collection and analysis is done by teams from the University of Barcelona for the Strategic plan organisation. Results are freely downloadable on the website of the plan.

## **Environmental monitoring**

All spatial plans also have to foresee a monitoring system following the environmental . For the Barcelona territorial plan approved in 2010, an system exists focussing on the following objectives

- Objective 1. To preserve natural and cultural values
- Objective 2. To rationalize the land consumption pattern
- Objective 3. To ensure high accessibility and sustainable mobility
- Objective 4. To improve the efficiency of environmental and energy flows

For each objective a series of indicators (5-7 per objective) are presented, this time only in the form of indicator sheets, but with territorialisation and mapping of results whenever possible. Fig 4 shows an example of such an indicator sheet. In its currently available form there is little information about temporal dynamics, with the exception of a summary prospective evaluation of probable future trends. This will probably change as the system progresses over time and indicator can then be followed-up.



\*Nota: Los cuadros en color muestran diversos objetivos generales estratégicos relacionados con los cinco bloques, mientras que los indicadores escogidos para el seguimiento del Plan aparecen en cursiva.

Figure 1 Monitoring indicators for the Strategic Plan of the Barcelona Metropolitan region (source: Pla Estratègic Metropolità de Barcelona, "Indicadores de seguiment del Plan Estratègic Metropolità de Barcelona 2009", p. 13

Cuadro 1.B. Valoración de la tendencia\* de los indicadores de seguimiento 2000-2008\*\*. BLOQUE DE INNOVACIÓN Y CREATIVIDAD

Indicador	Semáforo 2005	Semáforo 2007	Semáforo 2009	Observaciones	Pág.
B.1. Dinámica de creación de empresas en sectores de alto conocimiento				Entre los años 2000 y 2007, el peso relativo de las empresas en sectores de alto conocimiento respecto al total de empresas activas se fue incrementando de forma continua en la provincia de Barcelona, pasando de un 32,8% a un 41%. Sin embargo, en el 2008 este peso disminuyó hasta el 40%. Este decrecimiento es fruto de una disminución en el número de empresas en sectores de alto conocimiento (frente al aumento registrado en el número total de empresas).	24
B.2. Distribución sectorial de las empresas creadas y destruidas			-	Entre los años 2006 y 2008, se produjo un descenso muy importante del número de empresas en los sectores de la construcción y de actividades inmobiliarias por cuenta ajena (sectores que habían sido el motor del crecimiento en años anteriores). Al mismo tiempo, disminuyó el número de empresas en los sectores textil y de comercio al detalle. En cambio, los mayores incrementos del número de empresas se dieron en los sectores de alquiler de bienes inmobiliarios por cuenta propia, de actividades empresariales diversas y de actividades sanitarias y de servicios sociales.	25
B.3. Ocupados en sectores de alto conocimiento respecto al total de ocupados				Entre los años 2005 y 2008, el peso de los ocupados en sectores de alto conocimiento respecto al total de ocupados del AMB aumentó de forma continua, pasando de un 40% a un 43,8%. Este porcentaje es superior al registrado en la UE27 (39,7% en el año 2007 frente al 43,1% del AMB).	26
B.4. Especialización relativa del AMB en sectores estratégicos <sup>1</sup>	-			El AMB comparativamente está más especializada que Cataluña en sectores TIC y de alto conocimiento y menos especializada en sectores altamente expuestos a la competencia internacional. El peso de los sectores TIC y de los sectores de alto conocimiento aumentó en el AMB entre los años 2006 y 2008.	27
B.5. Equipamiento y uso de las tecnologías de la información y comunicación				En el 2008, el ámbito territorial metropolitano presenta un porcentaje de hogares con ordenador, conexión a Internet y banda ancha superior al de Cataluña. El porcentaje de conexión con banda ancha también es superior al de la UE15.	28

\*En la mayoría de los casos, se valora únicamente la tendencia seguida por el indicador durante el periodo analizado, y no el valor del indicador en sí mismo. El signo más (menos), junto con el semáforo ámbar, indica cierta tendencia del indicador a mejorar (empeorar) con el paso del tiempo.

\*\*Este periodo es general y varía según la disponibilidad de datos de cada indicador. Nota: <sup>1</sup>Indicador nuevo del informe 2007.

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**Figure 2 Example of traffic light symbology and brief observations for each indicator (source: Pla Estratègic Metropolità de Barcelona, "Indicadores de seguimiento del Plan Estratégico Metropolitano de Barcelona 2009", p. 6**

**Indicador B.1. Dinámica de creación de empresas en sectores de alto conocimiento**

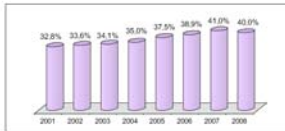


**Porcentaje de empresas en sectores de alto conocimiento**

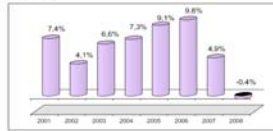
Con este indicador se pretende medir el peso que tienen los sectores de alto conocimiento (sectores industriales de tecnología media-alta y alta y servicios intensivos en conocimiento) en el total de empresas activas existentes, así como analizar su evolución en los últimos años. El indicador se ha calculado para el total de la provincia de Barcelona porque no se suministran los datos a nivel municipal.<sup>1</sup>

- El peso relativo de las empresas en sectores de alto conocimiento respecto al total de empresas activas se ha incrementado de manera continuada. Así, mientras que en el año 2001 el 32,8% del total de empresas activas en Barcelona desarrollaban su actividad dentro de alguno de los sectores definidos como de alto conocimiento, esta cifra ha aumentado hasta el 40% en el año 2008 (cifra inferior al 41% observado en el 2007).
- El número de empresas activas en sectores de alto conocimiento en la provincia de Barcelona ha crecido de manera continuada entre los años 2001-2007, con un crecimiento total del 49,5%. Este incremento ha sido superior al registrado en el número total de empresas activas a lo largo del periodo (19,4%).
- Sin embargo, cabe mencionar que en el 2007 el crecimiento se ralentizó hasta producirse en el 2008 un decrecimiento del 0,4% del número de empresas activas en sectores de alto conocimiento (descenso que contrasta con el aumento del 2,2% registrado en el número total de empresas). Este descenso se explica por una disminución en el número de empresas activas en los siguientes sectores: actividades informáticas (con 226 empresas menos en el 2008 y una reducción del 3%); investigación y desarrollo (106 empresas menos, hecho que supone un decrecimiento del 2,8%); educación (474 empresas menos y 4,9% de decrecimiento); actividades sanitarias y veterinarias y asistencia social (621 empresas menos y 2,7% de decrecimiento), y actividades recreativas, culturales y deportivas (532 empresas menos y 4,5% de decrecimiento).

**Peso de los sectores de alto conocimiento en el total de empresas. Provincia de Barcelona**



**Crecimiento anual de las empresas activas en sectores de alto conocimiento. Provincia de Barcelona**

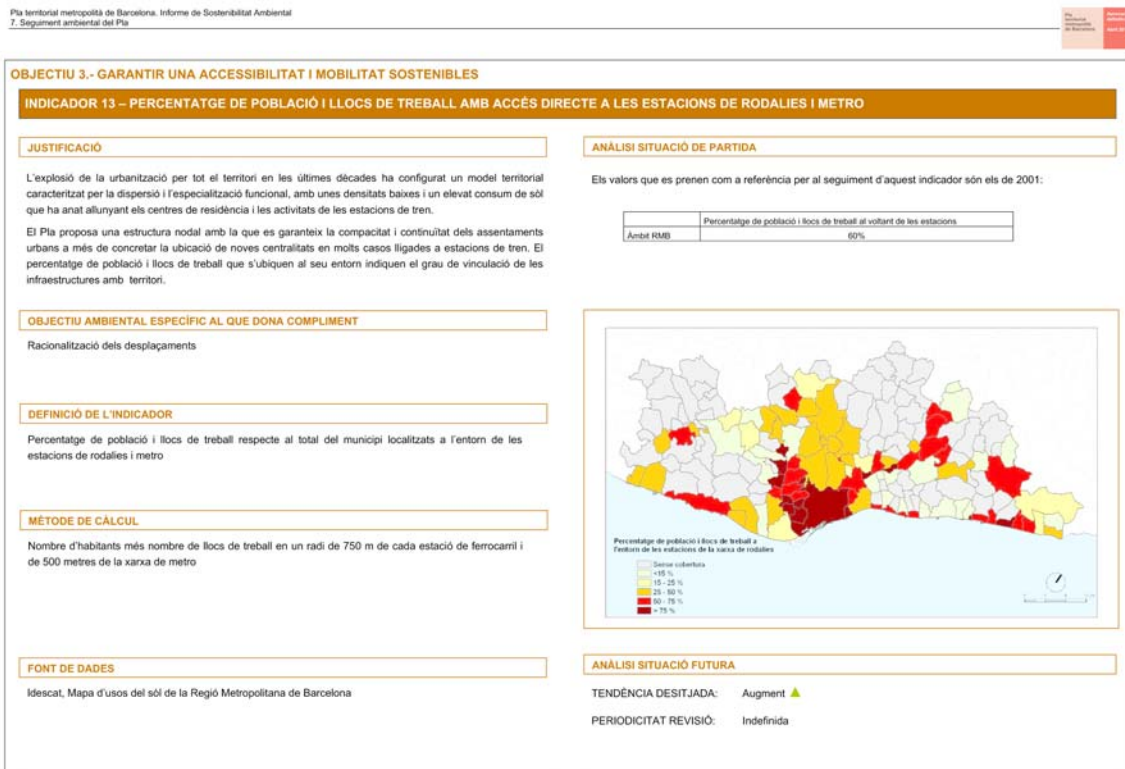


**Evolución del número de empresas activas en sectores de alto conocimiento. Provincia de Barcelona**

	2001	2002	2003	2004	2005	2006	2007	2008
Empresas activas en sectores de alto conocimiento	128.236	133.471	142.332	152.671	166.490	182.738	191.693	191.006
Empresas activas totales	391.558	397.650	417.425	435.722	443.507	469.432	467.385	477.624
Crecimiento anual empresas activas en sectores de alto conocimiento	7,4%	4,1%	6,6%	7,3%	9,1%	9,8%	4,9%	-0,4%
Crecimiento anual empresas activas totales	4,7%	1,6%	5,0%	4,4%	1,8%	5,8%	-0,4%	2,2%

<sup>1</sup>La fuente utilizada ha sido el Directorio Central de Empresas (DIRCE).

**Figure 3 Example of an indicator sheet giving more detailed information**



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**Figure 4 Example of an indicator sheet for the environmental assessment of the spatial plan of Barcelona**

• **Monitoring in Navarra**

In Navarra the monitoring system of the 2005 Territorial Strategy of Navarra is currently undergoing a complete revision. A monitoring system was initially defined to evaluate the evolution of the proposed guidelines every two years. This system was composed of 6 synthetic indicators (competitiveness, social cohesion, sustainability, polycentricity, accessibility and natural and cultural heritage). However, during its evaluation, it became apparent that the calculation and interpretation of the synthetic indicators was too difficult and it was decided to stop using the system.

The new system is still in construction, but in its current proposed form, over 100 indicators are proposed, under the general headings of

- Natural and cultural heritage
- The urban system
- Communication, transport and infrastructures
- Coordination

Contrary to the first system, these indicators are left as such without trying to synthesise them. The proposed presentation of the information has similarities to dashboard systems, but with an interesting focus on changing frames of reference, as can be seen in figure 5.

All the indicators are quantitative although, as with the Barcelona case, it should be quite easily possible to integrate qualitative evaluations into the system.

**Patrimonio natural y cultural**

				Comparación Navarra-UE (2008)	Comparación Navarra-España (2008)	Evolución Navarra (2000-2008)	Equilibrio interior Navarra (2008)	Evolución equilibrio interior Navarra (2000-2008)
Conservación de la naturaleza	Biodiversidad	1	Aves comunes en áreas cultivadas					
	Gestión y protección	3	Cambios de uso en áreas protegidas					
Contaminación	Agua	5	Demanda bioquímica de oxígeno					
	Aire	6	Emisión de partículas					
		7	Emisión de gases de efecto invernadero					
	Ruido	8	Población expuesta a ruido					
Riesgos naturales	Suelos	9	Carga crítica de nutrientes					
	Inundaciones	10	Número de viviendas en zonas inundables					
	Incendios forestales	11	Superficie quemada en incendios forestales					
Productividad	Producción agrícola y ganadera	13	Superficie cultivada					
		14	Valor Añadido Bruto del sector agrícola					
		15	Densidad ganadera					
	Gestión de suelo agrícola	16	Superficie de edificaciones construidas en suelo de alto valor agrícola					
		17	Superficie de agricultura ecológica					
Paisaje	Calidad	18	Superficie de suelo en riesgo de desertificación					
		21	Grado de alteración de paisajes					

3

**Figure 5 Example of indicator presentation in the currently proposed monitoring system of the Regional plan in Navarra**



## II.2 Quantitative and qualitative research methods

Steven Engler and Jost Wilker  
with support from Loris Servillo, ASRO - KULeuven

The two concepts of quantitative and qualitative research methods are often described as they are opposed to each other.

Quantitative research comprises more or less an analysis of numerical data.

In general you could say that qualitative research involves “soft” data, like pictures, objects or words. In-depth interviews, expert interviews or participating observation are common in the social sciences and are the most promising to get a good qualitative data set.

### Features of Qualitative & Quantitative Research (NEILL, 2007)

Qualitative	Quantitative
"All research ultimately has a qualitative grounding" (Donald Campbell) <sup>1</sup>	"There's no such thing as qualitative data. Everything is either 1 or 0" (Fred Kerlinger) <sup>1</sup>
The aim is a complete, detailed description.	The aim is to classify features, count them, and construct statistical models in an attempt to explain what is observed.
Researcher may only know roughly in advance what he/she is looking for.	Researcher knows clearly in advance what he/she is looking for.
Recommended during earlier phases of research projects.	Recommended during latter phases of research projects.
The design emerges as the study unfolds.	All aspects of the study are carefully designed before data is collected.
Researcher is the data gathering instrument.	Researcher uses tools, such as questionnaires or equipment to collect numerical data.
Data is in the form of words, pictures or objects.	Data is in the form of numbers and statistics.
Subjective – individuals - interpretation of events is important, e.g., uses participant observation, in-depth interviews etc.	Objective seeks precise measurement & analysis of target concepts, e.g., uses surveys, questionnaires etc.
Qualitative data is more 'rich', time consuming, and less able to be generalized.	Quantitative data is more efficient, able to test hypotheses, but may miss contextual detail.
Researcher tends to become subjectively immersed in the subject matter.	Researcher tends to remain objectively separated from the subject matter.

<sup>1</sup> In: Miles; Huberman 1994: p. 40

**Quantitative Methods**

- descriptive statistics (observation statistics, median, variance analysis)
- stochastic (likelihoods)
- multivariate statistics (factor analysis, cluster analysis, etc.)

<b>Strength</b>	<b>Weaknesses</b>
Provides hard, measureable, comparative data	not open for new, alternative perceptions
high standardization, fixed structure	Inflexible, researcher´s categories and theories might not reflect local constituencies´ understandings
Explanation of comprehensive relations by testing and validating already constructed theories	Concrete understand of object of investigation needed, not explorative →researcher´s focus on theory might miss out a phenomena occurring
Objective (independent of the researcher)	
Research findings can be generalized (under specific conditions)	Results produced might be too abstract and general for direct application to specific situations, contexts, and individuals
Basis for quantitative predictions	
Isolation of one variable possible to establish cause-and-effect relationships	
Relatively easy data collection and analysis	
Relatively high credibility	
Useful for studying large numbers of people	

**Qualitative Methods**

- Interpretative and hermeneutical methods (participating observations, in-depth interviews, expert interviews, delphi method, etc.)

<b>Strength</b>	<b>Weaknesses</b>
Open (for alternative perceptions) reflexive	High susceptibility for misunderstandings Danger of not being taken seriously (no tables, column of figures, etc.)
helps to differentiate	Comprehensive data collection and analysis
Strong orientation to everyday life/ reality	Subjective through impact of researcher
Understanding of comprehensive relations in a limited number of cases	Possible lower credibility
flexible, reaction of individual cases possible	Data difficult to compare
Explorative, suitable to explore unexplored fields	Difficult to test hypotheses and theories
Provides individual case information	Results may be easily influenced by the researcher´s personal biases and idiosyncrasies

Provides understanding and description of people´s personal experiences of phenomena	
provides a deep understanding/ picture as embedded in local contexts	
Dynamic process can be studied	
Responsive to local situations, conditions and stakeholders needs	Knowledge produced difficult to generalize to other people or settings (unique findings)
Possibility to shift the focus of study	Difficult to make quantitative predictions
Qualitative data in the words and categories of participants lend themselves to exploring how and why phenomena occur	

### **Research methods for TPM**

Following research methods would be possible. The red marked research methods seem to be most likely and are conceivable for TPM:

<b>Quantitative (via statistical data)</b>	<b>Qualitative</b>
variance analysis	Document analysis
regression analysis	In-Depth Interviews
factor analysis	Delphi method
cluster analysis	Focus Group Discussion
shift-share analysis	Participating Observation
path analysis	
time series analysis	

#### Factor analysis

The factor analysis is a quantitative research method belonging to the multivariate statistics.

Factor analysis therefore describes the variability among observed variables in terms of a potentially lower number of unobserved variables called factors. The search of unknown factors via statistical data could be very useful for TPM.

<b>Strength</b>	<b>Weaknesses</b>
Get new factors via known variables	Information loss due to the merging of variables to factors
Includes regression and correlation analysis	Influenced by researchers bias (choice of included variables)
New factors explain most of the variance of the variables	Regression coefficients could be biased
Useful for complex statistical data	

#### Cluster analysis

The cluster analysis also belongs to the multivariate statistics. It groups data objects based on information about their relationships. "The goal is that the objects within a group be similar (or related) to one another and different from (or unrelated to) the objects in other groups. The greater the similarity (or homogeneity) within a group and the greater the difference between groups, the better or more distinct the clustering" (TAN ET AL. 2006: 490). For TPM this method could be very useful to compensate lacks in the data of the different regions while a comparability is given.

<b>Strengths</b>	<b>Weaknesses</b>
Quick review of data	One object may be only one cluster
Provides a simple profile of research projects	Clustering could have detrimental effects (e.g. Ruhr Area only known as a coal mining area)
Clusters show typical characters of a group	A lot of other statistical methods have to be integrated
Other statistical methods are integrated	
Visualisation of data (maps, etc.) is possible	

### Document analysis

In a document analysis, researchers analyse a set of essential and theme relevant documents. The documents analysed are text-based and follow a predefined framework. It can lead to a series of open-ended comments or a more structured way of assessment.

In TPM a document analysis could be used as a starting point and baseline for all research approaches.

### In-Depth Interviews

In-depth interviews are a special type of qualitative research methods that allow a direct interviewer to interviewee discussion. The main advantage of an in-depth interview is the inside into experts' belief, behaviour, and motivation and thereby into the research topic.

Normally the interviewer poses questions in a simple and neutral manner to start the interview. After the answers of the interviewee the "discussion" starts with follow-up or new questions.

A trustful atmosphere provides the best condition to collecting reliable data during the interview phase.

<b>Strength</b>	<b>Weaknesses</b>
Face-to-face discussion	No statistical evidence
Visuals may be used	High cost per interview
Complex questions are possible	Highly influenced by the interviewer
Insight into experts' minds	
Lots of data (via length of the interview)	
Flexible Process	

### Delphi method

The Delphi method is a structured communication and interaction method that relies on a panel of experts, who should answer questionnaires in two or more rounds. Delphi is based upon the principle that decisions by a collective and structured group of experts are more precise than those decisions made by individuals or unstructured groups (collective intelligence).

The Delphi method is mainly used for forecasting exercises, in which after each round, a facilitator provides an anonymous summary of the experts' forecasts from the previous round as well as the reasons they provided for their judgments. Thus, the experts are encouraged to revise their earlier answers in light of the replies of other members of their panel. In this way, the range of the answers will decrease round by round, and the group should converge towards the "correct" answer. Finally, the process ends after a pre-defined stop criterion (e.g. number of rounds, achievement of consensus, or stability of results) and the mean or median scores of the final rounds determine the results.

The methodological aspect that appears interesting for TPM is the articulation in two or more rounds of the interaction process with stakeholders. The first contributions from the stakeholders can be collected in the form of answers to questionnaires and their comments to these answers. In specific cases, some pre-structured interviews could also be used.

Later, the coordinator controls the interactions among the participants by processing the information and filtering out irrelevant content.

This procedure avoids the negative effects of face-to-face panel discussions and solves the usual problems of group dynamics. Participants can comment on their own forecasts, the responses of others and on the progress of the panel as a whole, revising their earlier statements, while in regular group meetings participants tend to stick to previously stated opinions and often conform too much to group leaders.

<b>Strength</b>	<b>Weaknesses</b>
Combines qualitative and quantitative elements	Expert panel is vulnerable (e.g. composition of the panel,)
Judgement by a panel of experts´ (collective intelligence)	The whole process takes a lot of time
Iterative Process (i.e. rounds)	High costs
Individual statements mediated by the panel (Feedback)	Tendency to a median judgement
Gets beneath the surface of issues	
More structured than in-depth interviews	
Flexible Process	
Anonymity of the Process	

Focus group discussion

A focus group is a form of qualitative research in which a group of people are asked about their perceptions, opinions, beliefs and attitudes towards a study agenda. Questions are asked in an interactive group setting where participants are free to talk with other group members. It should bring together a small homogeneous group (usually six to twelve persons) with the purpose of reveal underlying opinions, attitudes, and reasons for their behaviour, using the social dynamics of the group, in which a moderator/ facilitator stimulates the participants to focus on specific items.

The discussion should be led by a moderator/facilitator (preferably experienced), assisted by an observer who takes notes and arranges any tape recording. The moderator uses a prepared guide to ask general questions to the group. Usually more than one group session is needed to assure good coverage of responses to a set of topics.

In TPM, this technique could be used in the second round, when stakeholders are gathered in order to discuss some issues that rise from the analysis of the first round of questionnaires or interviews.

<b>Strength</b>	<b>Weaknesses</b>
Information about experts´ attitudes	Resource intensive
Small Group (therefore: ensure involvement for testing ideas and gaining opinions)	Information (Data) collected based on a small group (small sample versus best evidence principle)
Focus group follows the nature of group interaction	Leans heavily on moderating skills of the researcher
Flexible process	

**Conclusions and proposal for integration in TPM**

As quantitative and qualitative research methods both have their advantages and disadvantages it must be sought carefully when to use them. A good solution would be to combine both methods by a mixed research approach. With this mixed approach your research project loses the formative – and not wanted – impact of one research method (vgl. KROMREY 2006). Mixed research can be understood as the third paradigm, providing an

attractive alternative (in some cases) to quantitative and qualitative research. By this means, the project could benefit from the advantages of quantitative and qualitative methods and outweigh their disadvantages (Schnell et al. 1999 und Allerbeck 1981). To support this effect the researcher has to consider that by the use of a combination or a mixture of methods, the strengths should be complementary while the weaknesses should not be intersecting.

The integration of this approach within TPM could be done integrative. A suitable proposal would be to start with qualitative methods, which are more open and therefore suitable to define the research issues within TPM (main points/ indicators of the global challenges; the regional challenges of each region), to get an accurate understanding of the dimensions of the object of investigation. This would provide a deeper understanding of the complex relations within the research fields of TPM. Based on the results of the qualitative approach a qualitative might follow focussing on the project´s main aspects to get measureable data explaining specific relations.

The second possible research approach would be to try it the other way around. Then you could start the TPM research project with a general collection of data regarding the 4 main themes. After that you have to statistically analyse the previously mentioned data to get the first results. Subsequently you should contact possible experts for in-depth interviews to gain a deeper insight into the main problems and questions.

To help us finding the adequate mixed research design we should bear in mind the following questions:

1. Do we want to operate largely within one dominant paradigm or not (i.e., do we want to use a dominant status design or an equal status design?), and
2. Do we want to conduct the phases concurrently (i.e., at roughly the same time) or sequentially (i.e., one before the other)?

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## II.3 Framework for qualitative analysis

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### Scope of the framework

This document presents a framework for the qualitative analysis of EU regions and their relationships with macro spatial challenges. It is part of the territorial monitor tool and it should be considered complementary to the quantitative-analysis part and its data analysis.

A first evaluation of existing monitoring tools has shown that they all might be too exclusively quantitative in nature. In this sense, not only should quantitative data gaps be filled in by qualitative research, but also qualitative research in itself is intended to give a better insight in how the regions are dealing with global challenges.

The process is not only involving researchers. The way this qualitative data is collected should be subject to a peer review by the other stakeholders. They provide insights and knowledge from the policy-maker side and can contribute to fine-tuning the evaluation of strategies and policies.

Moreover, many aspects of the four global challenges are future challenges, or at least the trends will probably be more pronounced in the future than they are today. This means that the monitoring tool should find a way also to include existing future projections. It is recognised, however, that the TPG does not have the capacity to develop its own projections.

In order to ensure coherence to the approach adopted by each regional partner, the document frames some guidelines for monitoring the capacity of the Regions in dealing with the four macro-challenges through:

- Planning systems and governance structures
- Strategies and planning documents

In order to do that, the framework draws on the methodology of previously developed qualitative-analysis frameworks, some other Espon projects, and on a literature overview.

Moreover, the document defines a methodological structure combining:

- Researchers' activities in a desktop analysis;
- Stakeholders' involvement for complementary analyses.

The guideline presented in the following pages gives reference to a variety of different methods - Delphi method, questionnaire, semi-structured interview, focus group, ranking exercise, and document analysis -, the combination of which will be specified by each research group.

It is taken heed of that formalized criteria should avoid being rigid procedural or over-prescriptive. Therefore, the guidelines have been devised to be flexible, and to give the opportunity to each partner to tailor the qualitative analysis to the specificity of the Region.

The outcome of the analysis will be a report on each region, including some form of evaluation of which type of qualitative methods and which aspects of qualitative evaluation would be the most important for monitoring the respective region.

Moreover, it should include some recommendations about measures that are necessary at regional level in the planning domain to improve the capacity to tackle aspects of the global challenges.

## Aims of the analysis

The framework is built on a set of five *aims* from which to derive and structure *appraisal questions* that should be explored in the analysis, according to different methodologies. Further questions might be also added depending on the case study to be analysed and on the adopted methodology.

In line with the general perspective of the TPM research project, the *aims* of the qualitative analysis are to:

1. Evaluate the **awareness** of the (spatial) policy domain about the macro-challenges;
2. Assess the **resilience** of the planning system and its capacity to react/take in account these challenges;
3. Estimate the **effectiveness** of the actual measures in the policy documents/strategies and tools in addressing eventual answers to the challenges;
4. Give indication about possible **future threats/opportunities** that the macro-challenges can represent in the following decades.

Each 'aim' is considered as a session, and it can be articulated in a group of appraisal questions, with several degrees of flexibility. The structure should be use as a reference for developing the framework for the qualitative analysis for each region.

The scheme that will be used as reference; which breaks down the items and sub-items in appraisal questions, is at the end of the document.

## Sessions

### 1. Awareness of the macro challenges

The macro challenges might be explicitly addressed or implicitly considered in the policy strategies of the Regions or can also have been ignored until now. There are different degrees of awareness of these challenges, and it is worth having a perspective in terms of discourses, forecasting capacity and or place-in-action policies. The focus is on the perception of them in policy documents and planning instruments and in specialized debates.

### 2. Resilience of the planning system

Each planning system, either if it is regionalized or structured at national level, has different way of reacting to macro challenges and trends that have important territorial implications. It is determined by its capacity to understand those spatial implications and to strategically address territorial processes; to coordinate and integrate policies among different sectors and public bodies; to coordinate policies in a multi-scalar way, without following in contradiction with other levels; to share its aims involving public and private stakeholders, with participatory processes.

It is worth here assessing these aspects in order to understand the resilience of the planning system in relation with macro challenges and their spatial implications.

### 3. Effectiveness of policy documents/strategies, programmes and tools;

Each document, strategy, programme or tool that influences spatial development processes and dynamics might have a specific approach to the macro challenges. It might have an explicit or an implicit approach to them, and it might provide more or less detailed measures to tackle their spatial connotations. The appraisal exercise, thus, should focus on different aspects: the awareness of the macro challenges and how they influence the way the bundle of policies (either directly or indirectly related to them) copes with the spatial dynamics; the effectiveness and the strategic capacities of this policy bundle, determined by the congruence of the spatial vision(s) with the development of the spatial characterization



of the challenges; the articulation of the vision in feasible objectives, providing a more or less coherent development of it; the coordination of different tools and policies necessary for synergic processes.

This session provides an overall assessment of the presence of each challenge in different instruments, and the capacity of their strategies to tackle its spatial dynamics.

#### 4. Future threats/opportunities of the macro challenges

The macro challenges concern aspects that will be deployed in the future, or at least that their trends will be more pronounced in the future than today. Thus, the qualitative analysis of the regional answers has to be conducted at the same time with the reporting of the perception of the threats and the opportunities represented by these challenges. It implies an exercise of future forecasting, combining if possible what has been reported in the documents (if existing), other forecasting exercises, and the sensibilities of some key experts.

## Methods and techniques

The proposed methodology for the qualitative analysis combines several methods. The overview here below gives a brief description of them. The way the different methods can be utilised in the framework is conjured up in scheme 1 of the following session.

### *Delphi method*

The Delphi method is an interactive method that relies on a panel of experts, who should answer questionnaires in two or more rounds. It is mainly used for forecasting exercises, in which after each round, a facilitator provides an anonymous summary of the experts' forecasts from the previous round as well as the reasons they provided for their judgments. Thus, the experts are encouraged to revise their earlier answers in light of the replies of other members of their panel. In this way, the range of the answers will decrease round by round, and the group should converge towards the "correct" answer. Finally, the process ends after a pre-defined stop criterion (e.g. number of rounds, achievement of consensus, or stability of results) and the mean or median scores of the final rounds determine the results.

The methodological aspect that appears interesting for TPM is the articulation in two or more rounds of the interaction process with stakeholders. The first contributions from the stakeholders can be collected in the form of answers to questionnaires and their comments to these answers. In specific cases, some pre-structured interviews could also be used. Later, the coordinator can control the interactions among the participants by processing the information and filtering out irrelevant content.

This procedure avoids the negative effects of face-to-face panel discussions and solves the usual problems of group dynamics. Participants can comment on their own forecasts, the responses of others and on the progress of the panel as a whole, revising their earlier statements, while in regular group meetings participants tend to stick to previously stated opinions and often conform too much to group leader.

After the first round, responses are collected and analyzed, and common and conflicting viewpoints are identified. At this point, the process could continue through thesis and antithesis via questionnaires, to work gradually towards synthesis and building consensus. In the present framework, it is worth giving the possibility as well to break the process and to gather the panel of stakeholder in a meeting in which the agenda is defined by the results of the analysis of the answers.

### *Questionnaire*

A questionnaire is a research instrument consisting of a series of questions and other prompts for the purpose of gathering information from respondents. Although they are often designed for statistical analysis of the responses, this is not always the case. Usually, a questionnaire consists of a number of questions that the respondent has to answer in a set format. However, a distinction can be made between open-ended and closed-ended questions. An open-ended question asks the respondent to formulate his own answer, whereas a closed-ended question has the respondent pick an answer from a given number of options. The response options for a closed-ended question should be exhaustive and mutually exclusive. Four types of response scales for closed-ended questions are distinguished:

- Dichotomous, where the respondent has two options
- Nominal-polytomous, where the respondent has more than two unordered options
- Ordinal-polytomous, where the respondent has more than two ordered options
- (Bounded)Continuous, where the respondent is presented with a continuous scale

On the opposite, a respondent's answer to an open-ended question is coded into a response scale afterwards.

This technique can be used for the first and the second round of interactions with stakeholders.

### *Semi-structured interview*

A semi-structured interview is a method of research that in social sciences is used for its higher degree of flexibility compare to structured ones. While a structured interview has a formalized, limited set questions, a semi-structured interview is flexible, allowing new questions to be brought up during the interview as a result of what the interviewee says. The interviewer in a semi-structured interview generally has a framework of themes to be explored.

However, the specific topic or topics that the interviewer wants to explore during the interview should usually be thought about well in advance, with a sort of interview guide prepared, which can have the shape of an informal grouping of topics and questions that the interviewer can ask in different ways for different participants. In this way, a structured framework helps to focus on the topics at hand without constraining them to a particular format.

In TPM these technique can be used both in the first and in the second round. In the former, the framework of appraisal questions can be used as an interview guide, framing the topics but leaving the freedom to tailor their questions to the interview context/situation, and to the people they are interviewing. In the latter, the analysis of the first round of questionnaires / interviews provides the topics of the interview guides.

### *Focus group discussion*

A focus group is a form of qualitative research in which a group of people are asked about their perceptions, opinions, beliefs and attitudes towards a study agenda. Questions are asked in an interactive group setting where participants are free to talk with other group members. It should bring together a small homogeneous group (usually six to twelve persons) with the purpose of reveal underlying opinions, attitudes, and reasons for their behaviour, using the social dynamics of the group, in which a moderator/ facilitator stimulates the participants to focus on specific items.

The discussion should be led by a moderator/facilitator (preferably experienced), assisted by an observer who takes notes and arranges any tape recording. The moderator uses a prepared guide to ask very general questions of the group, and usually more than one group session is needed to assure good coverage of responses to a set of topics.

In TPM, this technique could be used in the second round, when stakeholders are gathered in order to discuss some issues that rise from the analysis of the first round of questionnaires or interviews.

### *Ranking exercise*

A ranking exercise is a simple, participatory and rapid method for establishing what the affected community considers its primary problems and needs. In contrast to simple voting procedures, ranking can help you identify different priorities and the associated facilities and activities needed within a camp of an affected community. In order to do that, ranking exercise is defined on the base of a relationship between a set of items such that, for any two items, the first is either 'ranked higher than', 'ranked lower than' or 'ranked equal to' the second.

By reducing detailed measures to a sequence of ordinal numbers, rankings make it possible to evaluate complex information according to certain criteria. Thus, for example, the rank of priorities can be based on the estimation of their relevance.

Despite its approximation, it can become useful in the translation of qualitative aspects in ranking lists that might appear in the monitoring tool.

#### *Document analysis*

In a document analysis activity, researchers are given a single document or group of documents to thoroughly analyze. The activity can take several forms. The document analyzed is text-based and follows a predefined framework. It can lead to a series of open-ended comments or a more structured way of assessment.

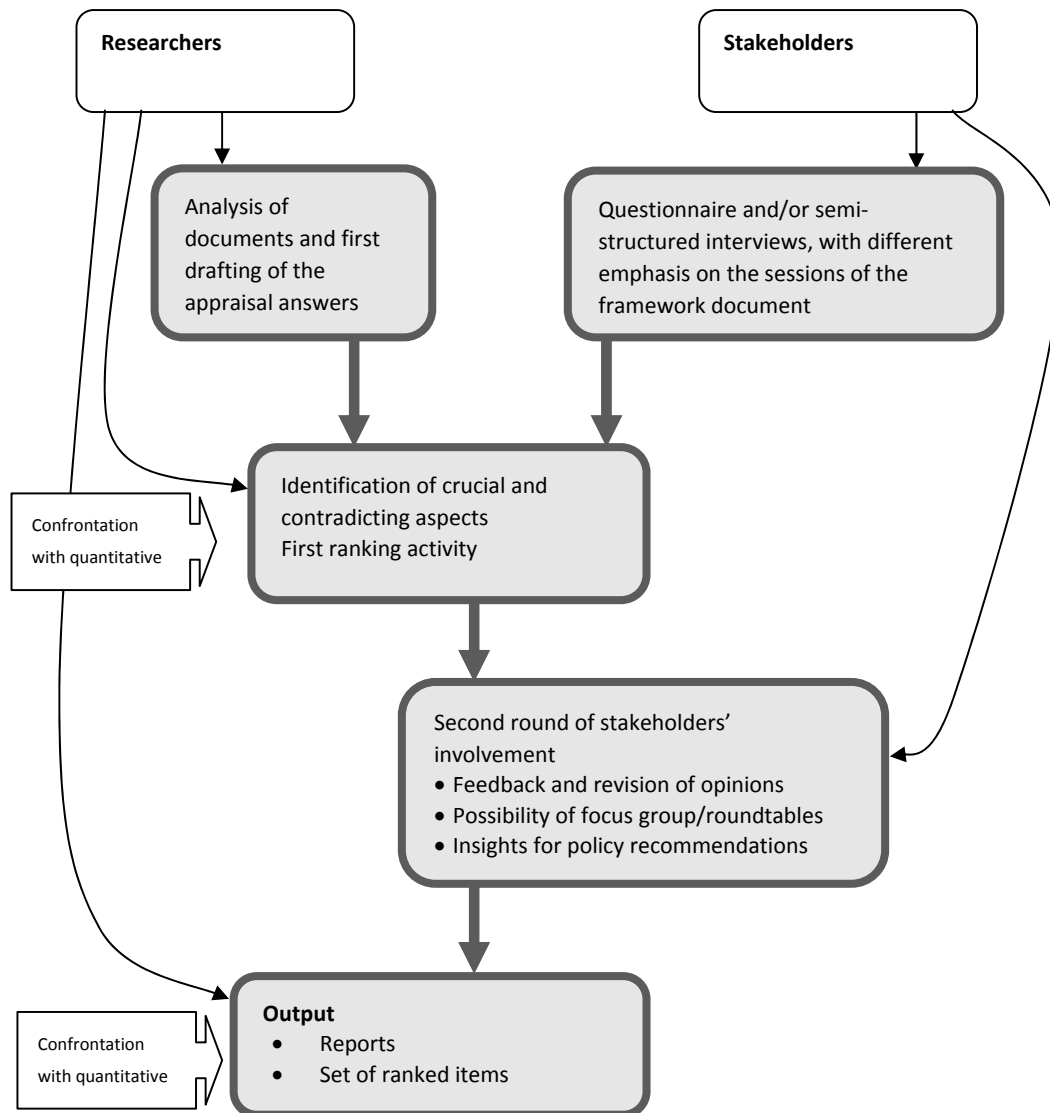
In TPM the set of appraisal questions is used as framework for the document analyses.

### Structure of the qualitative analysis

In scheme 1 the structure of the analysis is represented, including the role of both researchers and stakeholders.

The proposed method has a hybrid structure, combining different techniques:

- Desktop analysis done by the different project partners;
- Two-step procedure of involvement of stakeholders:
  - first, a questionnaire or a semi-structured interviews;
  - second, a procedure of feedback on the first outcomes, in which different techniques can be adopted (focus group, or simple singular feedback from the stakeholders, ranking technique, etc)
- Supports from and confrontation with the quantitative-analysis process.



Scheme 1

The proposed structure takes inspiration from the Delphi method, in which two or more rounds of confrontation with stakeholders can be used to fine tuning the assessment.

In the first round, the stakeholders can be involved using questionnaires or semi-structured interview technique, using the framework of appraisal questions as basis of the collection of opinions. The specification of the questions and the emphasis on some of the sessions of the

framework is up to the teams in agreement with the TPM coordinator. At the same time, researchers of each team can focus mainly on the analysis of documents, tools and regional strategies, as well as the assessment of the planning system.

The first round of analysis can be pre-informed with some quantitative analysis of early set of data.

In the following phase, the researchers gather the output of the stakeholders' interaction and their draft analysis. The aim is to highlight crucial aspects of the analysis per each challenge, both concerning the planning system and the bundle of related policies related to each of them. At the same time, some contradictions among opinions and among documents can be the base of further discussion and in-deep investigations.

This phase should show elements of strength (e.g. resilience capacity of the planning system, the existence of a specific environmental strategy embedded in a broader vision, etc.) and of weakness (e.g. an incapacity of providing an integrated strategic vision, the predominance of sectorial policies, the rigidity of a set of policies in relation with updated trends, etc).

Moreover, the researchers should also try to consider some implications of the macro challenges for the future, both in terms of threats (from a governance perspective, e.g. the increasing of reactive and/or sectoral measures, and from a spatial perspective, e.g. the increment of energy consumption due to urban-sprawl phenomena, etc) and opportunities (stronger coordination with EU directives, necessity to implement a monitoring system connected with the strategy-making processes, but also the role of immigration in contrasting the aging trend of population, etc).

The entire activity should be translated in a sort of easy rating system evaluating the relevance and the state of and the presence/absence of policy response to the challenges and the resilience of the planning system to the raise of the macro challenges. At the same stage feedback from the quantitative-analysis process can be expected, which will give additional information to the general picture.

The second round of stakeholders' involvement has as objective the fine-tuning of the opinions and a further investigation of some aspects/contradictions. Here different techniques could be adopted, as for instance focus group discussions, or a second round of questionnaires, together with ranking exercises.

Finally, the interaction with stakeholders could address the issue of defining some recommendations in terms of policies and governance processes, based also on evidences coming from the quantitative analysis.

The last step of the qualitative analysis should end in a wrapping-up activity done by the research group, in which the different items are coherently organized in a report.

### **Stakeholders**

The involved stakeholders could be selected on the base of the potential contribution that can come from their specific knowledge.

We can distinguish three types of knowledge (not mutually elusive).

- Technical knowledge
- Process Knowledge
- Explanatory knowledge

The first refers to a very specific knowledge in the field, concerning details on operations, strategies, laws, etc. The second refers to knowledge on routines, specific interactions, processes and relationships between institutions. Usually experts are directly involved as actors of the processes themselves. The third refers to actors who have subjective interpretations of relevance, rules, beliefs. They can focus on ideas, ideologies and their inconsistencies.

Their combination should guarantee a balanced group for the developing of the different appraisal aims.

### Framework of the analysis:

The following tables draft the items and sub-items for the appraisal questions.

<b>1. Awareness of the macro challenges</b> [to be compiled per each macro-challenge]	
Items	Appraisal questions
1 Local articulation of the macro- challenge	a. How do the challenges manifest themselves locally? b. What are the spatial consequences / impacts? c. Is there any specific characterization of the Region compared to the EU context concerning the macro challenge? d. Is there any specific challenge , not under the heading of the four global challenges, that is characterizing the region and that has been explicitly present in the policy strategies in the last years?
2 Way of addressing the challenge	a. Is the region aware from a general policy perspective of the macro-challenges? b. Does it address them in explicit or implicit way? Or does it ignore it?
3 Forecasting activity	a. Does the region use forecasting methods/results? b. What time horizon do these forecasts cover ? c. Is it shared with stakeholders and experts? d. What is the use of supra-regional (e.g. European) forecasting analyses concerning the macro-challenge?
4 Relationship between the forecasts and the declared measures	a. Are the forecast results used to shape accordingly some policy measures? Please, provide examples. b. Is the forecast activity embedded in a cyclic monitoring activity on the base of which changes in spatial dynamics become feedback for the forecasting activities?

<b>2. Resilience of the planning system</b>	
Items	Appraisal questions
1. Strategic capacity of the planning system	<u>1. Vision</u> a. Does the planning system make use of visions of regional territory? b. Is it an explicit vision or it is a combination of different contributions, mainly sectorial? c. Is there a predominance of a specific sector / discipline / field or is it comprehensive and inter-sectorial? d. Are the contents of the vision regularly updated? e. Are the contents of the vision shared (among stakeholders, different bodies of

	<p>the administration, NGOs citizens)?</p> <p>f. In general terms, would the vision-making process(es) be able to react to and address macro –challenges? From a spatial or from a sectorial perspective?</p> <p><u>2. Shared objectives</u></p> <p>a. Is the planning system able to articulated a vision in specific objectives?</p> <p>b. Is the planning system able to formulate direct/indirect measures in relation with the vision (in particular in the case of a macro-challenge has to be dealt with)?</p> <p>c. Are measures usually content-wise coherent with the general vision?</p> <p>d. Is the planning system able to set a flexible but appropriate time-plan for the objectives?</p> <p>e. Is there any form of prioritization in the time plan and in the organization of the objectives?</p> <p>f. Have the objectives a budget and a feasible capacity?</p> <p>g. Are stakeholders involved in the definition and the actuation of the objectives? Which (typologies of) stakeholders?</p> <p><u>3. Monitoring</u></p> <p>a. Does the planning system have any monitoring tools for the assessment of on-going policies?</p> <p>b. Does any assessment process have the capacity to influence policy makers through feedbacks?</p> <p><u>4. Communication</u></p> <p>a. Are the contents of the planning system widely debated?</p> <p>b. Is the participative and communicative processes efficient and inclusive?</p> <p>c. Are strategic challenges widely debated?</p> <p><u>5. Others</u></p> <p>a. Are there other specific issues, or aspects characterizing the region in relation with this item?</p>
<p>2; Horizontal coordination / integration of policies and instruments (and stakeholders)</p>	<p>a. What is the capacity of the planning system to provide horizontal integration in order to address a spatial challenge (among different sectors and stakeholders, e.g. in the field of transport, environment, energy, research &amp; development, service of general interest, housing, etc)?</p> <p>b. In case of specific challenges is the planning system able to provide answers combining different sectorial measures and coordinating the activities of different stakeholders?</p> <p>c. In terms of planning dynamics and is there a predominance of any the following fields?</p> <ul style="list-style-type: none"> <li>o spatial planning</li> <li>o sectorial competences/directives</li> <li>o developing strategies</li> </ul> <p>d. Are there other specific issues, or aspects characterizing the region in relation with this item?</p>



<p>3 Vertical coordination / integration of policies and instruments (and stakeholders)</p>	<p>a. What is the capacity of the planning system to provide vertical integration (among different levels) in order to answer to spatial challenges?</p> <p>b. What is the relationships and the integration capacity of the planning systems with the upper levels (national, EU)?</p> <p>c. What is the relationships and the integration capacity of the planning systems with the lower levels (provinces, municipalities)?</p> <p>d. Are there other specific issues, or aspects characterizing the region in relation with this item?</p>
<p>4 Cooperation and participation</p>	<p><u>1. Public-Private partnerships and cooperation</u></p> <p>a. Is the planning system enabling the cooperation and the partnerships between public and private partnerships in case of specific aspects of spatial challenges?</p> <p>b. Is there the capacity to shareholding with public and/or private stakeholders the general vision and the specific objectives? Are there privileged interlocutors?</p> <p><u>2. NGO's cooperation and citizens participation</u></p> <p>a. Is the planning system supporting the cooperation with NGOs and other stakeholders in case of specific aspects of spatial challenges?</p> <p>b. Are there any form of participation and involvement of citizens in relation with spatial challenges? Are there privileged interlocutors?</p> <p><u>3. Others</u></p> <p>a. Are there other specific issues, or aspects characterizing the region in relation with this item?</p>

3. Effectiveness of policy bundles [to be compiled per each macro-challenge]	
Items	Appraisal questions
1. Direct / indirect relationship with the macro-scale challenges	<p>a. Is there any document/strategy/programme/tool with a direct or indirect intention to address the aspects related to the macro-challenge (or the specific regional challenge – point 1.1.a-d) ?</p> <p>b. In general terms, is there a coherent approach? Please, explain</p>
2. Strategic capacity the policy bundles	<p><u>1. Visioning</u></p> <p>a. Is the vision of the policy bundle (in its comprehensive view) updated in relation with the way of interpreting the challenge?</p> <p>b. Is it knowledge/based?</p> <p>c. Is it correctly framing regional dynamics in the wider territorial (macro regional / European) perspective?</p> <p>d. Is there coherency among different documents / strategies / instruments / programmes?</p> <p>e. Has it been shared with stakeholders/citizens?</p> <p><u>2. Articulation in objectives</u></p> <p>a. Are there direct/indirect measures, which should implement the general territorial vision, that are tackling aspects of the macro-challenge?</p> <p>b. Are they content-wise coherent?</p> <p>c. Is there a prioritization of acts/measures, embedded in a shared and coherent time-plan framework?</p> <p>d. Is there a financial budget for the measures, with the specification of targets?</p> <p>e. Is it present a monitoring capacity in order to keep the targets and the objectives updated?</p> <p>f. Is there any form of involvement of stakeholders (private actors, NGOs, etc), either in the definition of the measures or in their implementation?</p> <p><u>3. Others</u></p> <p>a. Are there other specific issues, or aspects characterizing the region in relation with this item?</p>
3. Efficiency of the strategic capacity of the policy bundles	<p><u>1. Feasibility</u></p> <p>a. Are there any forms of horizontal integration/synergic cooperation among traditional sectors (transport, environment, energy, development, education, services, health, price strategy, etc) for the implementation of the strategy?</p> <p>b. Is there a predominance of any the following fields?</p> <ul style="list-style-type: none"> <li>- spatial planning</li> <li>- sectorial competences/directives</li> <li>- developing strategies</li> </ul> <p>c. Are there any specific innovative governance episodes? Please, list them.</p> <p><u>2. Vertical integration (different stakeholders)</u></p> <p>a. Are there any forms of vertical integration/synergic cooperation with other</p>

	<p>upper levels (State, EU) or lower level (provinces, municipalities) for the implementation of the strategy?</p> <p>b. Who has the main competence in dealing with the issues characterizing the challenge?</p> <p><u>3. Cooperation and awareness of the topic</u></p> <p>a. Are there any forms of involvement of private partners / stakeholders, NGOs, citizens? Please describe it?</p> <p>b. Is there awareness of the topic in specialized and public debates?</p> <p><u>4. Etc.</u></p> <p>a. Are there other specific issues, or aspects characterizing the region in relation with this item?</p>
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4. Future threats/opportunities of the macro challenges [to be compiled per each macro-challenge]	
Items	Appraisal questions
1. Threat in spatial terms for the region	<p>b. What are the main risks from a spatial perspective that are forecasted in the policy bundle (documents, programmes, instruments, strategies)?</p> <p>c. What are the main risks from a spatial perspective according to the involved stakeholders / experts?</p>
2. Threat in governance terms for the region	<p>a. What are the main risks from a governance perspective that are forecasted in the policy bundle (documents, programmes, instruments, strategies)?</p> <p>b. What are the main risks from a governance perspective according to the involved stakeholders / experts?</p>
3. Opportunities in spatial terms for the region	<p>a. What are the main risks from a spatial perspective that are forecasted in the policy bundle (documents, programmes, instruments, strategies)?</p> <p>b. What are the main risks from a spatial perspective according to the involved stakeholders / experts?</p>
4. Opportunities in governance terms for the region	<p>a. What are the main risks from a governance perspective that are forecasted in the policy bundle (documents, programmes, instruments, strategies)?</p> <p>b. What are the main risks from a governance perspective according to the involved stakeholders / experts?</p>

## II.4 Potential indicators for regional challenges

Sub-challenge level 1	Sub-challenge level 2	Sub-challenge level 3	Sub-challenge level 4	Indicator 1			
				Name	Formula	Most relevant scale	Comment
Competition on global sales markets							
	Specialisation in high-level segments of production			Share of high-level professions	Number of active persons in high-level professions at work place / Total number of active population at work place	Region or Commuting areas around employment centers	Definition of high-level professions tbd
	Qualification of labour force			Share persons with tertiary-level diplomas in active population	Number of active persons with tertiary-level diploma / Total active population	Region or Commuting areas around employment centers	This indicator only takes into account the active population, not the potentially active
	Costs of production						
		Cost of labour		Relative average salary	Average regional salary / Average European salary	Region	Possible also relevant compared to national level
		Cost of land / office space		Average office rent	Average office rent per m2	Local	
		Other costs		Cost of energy			
	Importance of agglomeration economies						
		Building of sectoral clusters		Specialisation index	Level of specialisation in specific economic sectors	Local	Needs very high-resolution sectoral data
		Metropolitanisation		GDP growth of main metropolitan area compared to regional / national growth	GDP growth (metro) / GDP growth region	NUTS-proxy of FUA / Region	Possibly metropolitan area close, but not inside region
		Pressure on land use in specific areas		Soil sealing			
		Urban sprawl		Evolution of built-up area	(Total built-up area in t+1 – Total built-up area in t) / Total built-up area in t	Local	Ideally should use very high-resolution image

							source (e.g. Urban Atlas is better than CLC)
	Accessibility to markets, suppliers, resources			Total amount of GDP reachable in 10h by road	cf ESPON accessibility indicators	Grid	Or use GDP potential: Total GDP weighted by square of distance
	Productivity			Productivity of active population	Total GDP / Total number of active persons	Region	
	Innovation			Number of patents	Total number of patents filed	Region	
Insertion into multinational firm networks							
	Knowledge spillover			Participation networks	Degree centrality (number of firm networks)	Functional Urban area	cf FOCI / BvD Amadeus database
	Power and control / Dependency on decisions taken elsewhere			Control of firms in networks	Balance between external firms controlled by internal firms and internal firms controlled by external firms	Functional Urban area	cf FOCI / BvD Amadeus database
Increased mobility and traffic				Amount of road traffic – number of vehicles	Number of vehicles passing a given point	Region	
	Increased migrations						
		Evolution of total population		Mean annual total population		Local	
		New types of population		Population by nationality		Local	
	Increase of tourism						
		Availability of accommodation		Number of beds for tourist accommodation	Total number of beds available	Region	
		Change in types of tourism / tourists		Average length of tourist visit	Total length of visits (in days) / Total number of visits	Region	
	Increase of international traffic (notably air)			Number of passenger at main airport catering to the region	Total number of passengers going through the airport per year	Region	Possibly look at data per month
Less stability on labour market				Share of contracts started recently	Number of contracts started less than 3 months ago / Total number of contracts	Region or Commuting areas around employment centers	Currently only available on NUTS 0 level in public access

							Eurostat database
	Unemployment			Unemployment rate	Total persons unemployed / Total active population	Region	possibly scale=local, but active population needs to be approximated
	Unstable employment						
Regulation decisions made at higher scales (from WTO to national)							
	Cost competitiveness			Relative average salary	cf above		
	Access to markets			Number of countries that relevant products can be sold to without tariffs	Regional	Needs clear notion of what products the region exports	Or expert opinions
	Labour market regulation						Expert opinions
Competition on global markets for labour force							
	Quality of local education			Share of early school leavers	Number of 18-24 year olds without higher secondary diploma and not following any education / Total population of 18-24 year olds	Region	Currently only available on NUTS 0 level in public access Eurostat database
	Quality of life			See below			
Growth							
	GDP			Total GDP		Region	
	Employment			Total employment		Local	
Entrepreneurship							
Poverty				Population at risk of poverty after social transfers	Cf 5th Cohesion report	Region or local	
Quality of life to retain/attract population				Synthetic quality of life indicator ?			
	Environmental quality			Satisfaction with environment (perception)	Share of population satisfied with environment	Local	Based on enquiries / census
		Air quality		NOx, SO2, Particulate matter levels	Number of days where levels exceed threshold	Region or FUA	EU thresholds for

							benchmarking, local thresholds if applicable
		Noise levels	Noise levels in cities	Number of days where levels exceed threshold	Region or FUA		EU thresholds for benchmarking, local thresholds if applicable
		Green spaces	Amount of green space in cities	Square meters per inhabitant of publicly accessible green space	Local		
	Cultural amenities		Number of theatres / theatre seats				
	Service and infrastructure provision		Access to primary schools	Number of students in primary schools within a 15 min walking radius / Number of children in primary school age within a 15 min walking radius	grid		Requires very fine grid + geolocalised schools with student numbers
	Accessibility		EU-wide accessibility, multi-modal and by mode	Cf ESPON accessibility indicators	grid		ESPON publishes indicators by NUTS aggregation, but needed by more detailed grid
	General cost of living						
		Affordable quality housing	Average rent per m2				
Increase of number of households			cf above (Evolution of total population)				
	Pressue on land use						
		Urban sprawl	see above				
		Densification	Share of densifying land take-up	Share of land take-up in already built-up areas / Total land take-up for build areas	Local		Very high-resolution data needed, i.e. Urban Atlas
		New types of urban architectures	Openness to new architectural solutions	Expert opinion			
New compositions of population							
	Ethnic composition		See above				
		New usage of public spaces	Adequacy of public spaces for needs	Expert opinion	Local		
		Socio-	Social and inter-ethnic cohesion	Expert opinion	Region or local		

		economic conflict along ethnical lines					
	Ageing			Share of 65+	Number of persons over 65 years old / Total population	Local	Idem for 80+ or 100+
		New housing needs		Age-adapted housing	Expert opinion		
		New infrastructure needs		Age-adapted infrastructure	Expert opinion		
		New service provision needs					
Population decrease							
	Access to services			Access to public transport	Mean distance to closes train station		
	Access to infrastructures			Access to an internet connection	Number of households with potential access to internet / Total number of households	Local	
Consumption							
	Saving						
		Transport					
			Less use of transport	Mean travel to work/school/etc distances	Mean distance of travel (km / time) to from place of residence to place of activity	Region or local	Generally based on enquiries, but can be approached by commuting data
			Energy-efficient transport	Modal split	Number of trips (or distance travelled) by different transport modes / total number of trips (or total distance travelled)	Region or local	
			Collective transport	Share of public transport	Number of trips (or distance travelled) by collective means of transport / total number of trips (or total distance travelled)	Region or local	
		Housing					
			Energy-saving construction	Share of new low-energy or passive buildings	Number of low-energy or passive buildings built / Total of buildings built	Region	
			Energy-saving appliances				
			Energy-saving	Share of households reducing heating during the night	Number of households reducing heating temperature during the night /	Region	



			behaviour		Total number of households		
		Recycling		Share of recycled waste			
	Use of renewable energy			Share of renewables in households energy consumption			
Production							
	Potential and existing renewables						
		Wind		Total energy produced by wind power	MW produced by wind power	Region	
		Hydro		Total energy produced by hydro power	MW produced by hydro power	Region	
		Solar		Total energy produced by solar power	MW produced by solar power	Region	
		Biomass		Total energy produced by biomass	MW produced by biomass	Region	
		Geothermal		Total energy produced by geothermal power	MW produced by geothermal power	Region	
	Existing non-renewables						
		Coal		Total energy produced by coal	MW produced by coal power	Region	
		Nuclear		Total energy produced by nuclear power	MW produced by nuclear power	Region	
		Gas		Total energy produced by gas	MW produced by gas power	Region	
		Oil		Total energy produced by oil	MW produced by oil	Region	
	Smart grids						
Dependency							
	Energy-intensive production			Total energy intensity	Total energy consumption / GDP	Region	
	Mobility						
		Commuting		Share of persons working outside their municipality of residence	Number of persons working outside their municipality of residence / Total number of working persons with residence in the municipality	Local	cf SIRE database and ESPON Database project
		Accessibility (remoteness)		Mean travel time to city of over 50000 inhabitants	Mean time of travel by car to closest city of 50 000 inhabitants	Local	either based on enquiries or on network models
CO2 Emissions				Total CO2 emissions		Region	
Increase in extreme, but uncertain weather events							
		Storms		Number of storms	Number of storms per year	Region	
		Floods		Number of floods	Number of floods per year	Region	
		Wildfires		Number of wildfires	Number of wildfires per year	Region	
Increase of temperature				Average annual temperature		Region	
	Health hazard			Number of deaths due to heat waves			
	Change in ecosystems			Ecosystem indicators	ex for Germany: date of apple tree blossom	Region	has to be adapted to local

				Amount of precipitation	mm of rainfall per year	Region	ecosystem
Change in precipitation patterns							
	Water scarcity			Soil moisture	pF values (soil suction)	Grid ?	cf JRC

Sub-challenge level 1	Sub-challenge level 2	Sub-challenge level 3	Sub-challenge level 4	Indicator 2			
				Name	Formula	Most relevant scale	Comment
Competition on global sales markets							
	Specialisation in high-level segments of production			Share of employed in high-level sectors	Number of employees in high-level sector firms / Total number of employees	Region or Commuting areas around employment centers	Sectors are only proxies for segments of production and this indicator only works if sector data is at high resolution (NACE 4-digit)
	Qualification of labour force			Share persons with tertiary-level diplomas in population in working age	Number of active persons with tertiary-level diploma ./ Total active population	Region or Commuting areas around employment centers	This indicator only takes into account the potentially active population
	Costs of production						
		Cost of labour					
		Cost of land / office space		Average office selling price	Average office selling price per m2	local	Average industrial land selling price
		Other costs					
	Importance of agglomeration economies						
		Building of sectoral clusters		Presence and success of cluster-supporting science / business parks	Expert opinion		
		Metropolitanisation		Population growth of main metropolitan area compared to regional / national growth	Pop growth (metro) / Pop growth region	NUTS-proxy of FUA / Region	Possibly metropolitan area close, but not inside region
		Pressure on land use in specific areas		Evolution in area taken by specific land uses			
		Urban sprawl					
	Accessibility to markets, suppliers,			Total population reachable in 10h by road	cf ESPON accessibility indicators	Grid	Or use population potential: Total population weighted by

	resources						square of distance
	Productivity			Productivity per hour worked	Total GDP / Total number of hours worked	Region	
	Innovation			Relative number of patents	Total number of patents filed / active population	Region	
Insertion into multinational firm networks							
	Knowledge spillover						
	Power and control / Dependency on decisions taken elsewhere						
Increased mobility and traffic				Amount of air traffic	Average number of flights leaving daily from airport	Airport	
	Increased migrations						
		Evolution of total population		Components of population change	Total number of births, death, immigration, emigration	Local	If migration data not available, estimate by subtracting natural balance from total change
		New types of population		Population by age		Local	
	Increase of tourism						
		Availability of accommodation		Mean occupancy rate of beds		Region	
		Change in types of tourism / tourists		Origin of tourists	Share of tourists by country / region of origin	Region	
	Increase of international traffic (notably air)			International air and rail connections	Total number of destinations reachable by air or rail	Region	
Less stability on labour market				Share of temporary work	Number of employed in temporary work / Total number of employed	Currently only available on NUTS 0 level in public access Eurostat database	
	Unemployment						
	Unstable employment						
Regulation							

decisions made at higher scales (from WTO to national)							
	Cost competitiveness						
	Access to markets						
	Labour market regulation						
Competition on global markets for labour force							
	Quality of local education			Share school-leavers with a diploma giving access to tertiary education			
	Quality of life						
Growth							
	GDP			GDP by economic (NACE) sector		Region	Regional-level scetoral GDP figures are sometimes calculated based on employment
	Employment			Employment by economic (NACE) sector		Region or local	
Entrepreneurship							
Poverty				Population suffering from severe material deprivation	Cf 5th Cohesion report	Region	
Quality of life to retain/attract population							
	Environmental quality						
		Air quality		Mean air pollutant levels	Annual mean level of each pollutant in the air		
		Noise levels		Mean noise levels	Annual mean level of noise		
		Green spaces		Accessibility of green spaces	Total surface of green space accessible from each grid point within 15 minutes by foot	grid	Requires very fine grid
	Cultural amenities			Number of movie theatres / movie theatre seats			
	Service and infrastructure provision			Access to hospitals	Number of hospital beds within 60 min by car	grid	Requires geolocalised hospitals + numbers of beds
	Accessibility			Regional accessibility	Travel time to main regional city (by different modes)	grid	Needs to be modeled
	General cost of						

	living						
		Affordable quality housing		Average sales price of houses per			
Increase of number of households				Share of one-person households	Number of one-person households / total number of households	Local	
	Pressue on land use						
		Urban sprawl					
		Densification					
		New types of urban architectures					
New compositions of population							
	Ethnic composition						
		New usage of public spaces		Perception of quality of public spaces	Number of respondents satisfied with public spaces/ Total number of respondents	Local	Census or enquiry
		Socio-economic conflict along ethnical lines					
	Ageing			Dependency ratio	Number of 0-14 +65+ / Total population	Scale of social transfers	
		New housing needs		Availability of places in old peoples homes	Number of places in old peoples homes / Total population 65+		Region
		New infrastructure needs					
		New service provision needs					
Population decrease							
	Access to services			Mean distance to closest bus stop			
	Access to infrastructures						
Consumption							
	Saving						
		Transport					
			Less use of transport				

			Energy-efficient transport				
			Collective transport				
		Housing					
			Energy-saving construction	Share of thermally insulated housing	Number of buildings insulated thermally / Total number of buildings	Region	Could be subdivided into different areas of isolation (roof, walls, etc); could be objectified to a specific K-value threshold if data available
			Energy-saving appliances				
			Energy-saving behaviour				
		Recycling					
	Use of renewable energy			Share of renewables in industrial energy consumption			
Production							
	Potential and existing renewables						
		Wind		Share of energy produced by wind power	MWh produced by wind power / Total MW produced in the area	Region	
		Hydro		Share of energy produced by hydro power	MWh produced by hydro power / Total MW produced in the area	Region	
		Solar		Share of energy produced by solar power	MWh produced by solar power / Total MW produced in the area	Region	
		Biomass		Share of energy produced by biomass	MWh produced by biomass / Total MW produced in the area	Region	
		Geothermal		Share of energy produced by geothermal power	MWh produced by geothermal power / Total MW produced in the area	Region	
	Existing non-renewables						
		Coal		Share of energy produced by coal power	MWh produced by coal power / Total MW produced in the area	Region	
		Nuclear		Share of energy produced by hydro power	MWh produced by hydro power / Total MW produced in the area	Region	
		Gas		Share of energy produced by gas power	MWh produced by gas power / Total MW produced in the area	Region	
		Oil		Share of energy produced by oil	MWh produced by oil / Total MW produced in the area	Region	

	Smart grids						
Dependency							
	Energy-intensive production			Energy intensity of the economy sector	(Total energy consumption – Total energy consumption by households) / GDP		
	Mobility						
		Commuting		Share of workers coming from outside the municipality	Number of workers coming from outside the municipality / Total of workplaces in the municipality		
		Accessibility (remoteness)		Mean travel time to regional capital	Mean travel time by car to regional capital	Local	either based on enquiries or on network models
CO2 Emissions							
Increase in extreme, but uncertain weather events							
	Storms			Maximum wind speeds		Region	
	Floods			Maximum differences to normal water levels during floods		Region	
	Wildfires						
Increase of temperature				Number of nights above 25°C		Region	
	Health hazard						
	Change in ecosystems						
Change in precipitation patterns							
	Water scarcity			Number of days on which hydropower plants cannot function due to lack of water		Region	

Subchallenge level 1	Subchallenge level 2	Subchallenge level 3	Subchallenge level 4	Indicator 3			
				Name	Formula	Most relevant scale	Comment
Competition on global sales markets							
	Specialisation in high-level segments of production						
	Qualification of labour force						
	Costs of production						
		Cost of labour					
		Cost of land / office space					
		Other costs					
	Importance of agglomeration economies						
		Building of sectoral clusters					
		Metropolitanisation					
		Pressure on land use in specific areas					
		Urban sprawl					
	Accessibility to markets, suppliers, resources			Contactability	cf ESPON FOCI	Region or FUA	data based on FUA can be aggregated to regional level
	Productivity						
	Innovation			Employment and spending in R&D			
Insertion into multinational firm networks							
	Knowledge spillover						
	Power and control / Dependency on decisions taken elsewhere						
Increased mobility and traffic							
	Increased migrations						
		Evolution of total population					
		New types of population					
	Increase of tourism						
		Availability of					



		accommodation					
		Change in types of tourism / tourists					
	Increase of international traffic (notably air)						
Less stability on labour market							
	Unemployment						
	Unstable employment						
Regulation decisions made at higher scales (from WTO to national)							
	Cost competitiveness						
	Access to markets						
	Labour market regulation						
Competition on global markets for labour force							
	Quality of local education						
	Quality of life						
Growth							
	GDP						
	Employment						
Entrepreneurship							
Poverty							
Quality of life to retain/attract population							
	Environmental quality						
		Air quality					
		Noise levels					
		Green spaces					
	Cultural amenities						
	Service and infrastructure provision						
	Accessibility						
	General cost of living						
		Affordable quality housing					
Increase of number of households				Share of single-parent households	Number of single-parent households / Total number of households	Local	
	Pressue on land use						
		Urban sprawl					

		Densification					
		New types of urban architectures					
New compositions of population							
	Ethnic composition						
		New usage of public spaces					
		Socio-economic conflict along ethnical lines					
	Ageing						
		New housing needs					
		New infrastructure needs					
		New service provision needs					
Population decrease							
	Access to services			Existence of mobile services	Expert opinion		
	Access to infrastructures						
Consumption							
	Saving						
		Transport					
			Less use of transport				
			Energy-efficient transport				
			Collective transport				
		Housing					
			Energy-saving construction				
			Energy-saving appliances				
			Energy-saving behaviour				
		Recycling					
	Use of renewable energy						
Production							
	Potential and existing renewables						
		Wind					
		Hydro					
		Solar					
		Biomass					
		Geothermal					
	Existing non-renewables						
		Coal					

		Nuclear					
		Gas					
		Oil					
	Smart grids						
Dependency							
	Energy-intensive production			Share of energy intensive sectors of activity	Employment in energy-intensive sectors / Total employment	Region	cf ReRisk
	Mobility						
		Commuting					
		Accessibility (remoteness)		Mean travel time by collective transport to city of 50 000 / regional capital	cf previous		either based on enquiries or on network models
CO2 Emissions							
Increase in extreme, but uncertain weather events							
	Storms						
	Floods						
	Wildfires						
Increase of temperature							
	Health hazard						
	Change in ecosystems						
Change in precipitation patterns							
	Water scarcity						

## II.5 Indicators used in regional monitoring tools

				Dublin	Navarra	Flanders	Catalonia
				Potential indicators for Future Monitoring and Reports on RPGs Implementation	Territorial Monitoring System of the Estrategia Territorial de Navarra 2005 (NUT2 and NUT5)	Ruimtemonitor	Indicadores de seguimiento del Plan Estratégico Metropolitano de Barcelona 2009
Globalisation							
	Competition on global sales markets						
		Specialisation in specific segments of production				Sectorheterogeniteit (verweving) op bedrijventerrein	<ul style="list-style-type: none"> <li>- Porcentaje de empresas en sectores de alto conocimiento;</li> <li>- Número de afiliados (seguridad social) en sectores de alto conocimiento / Número total de afiliados;</li> <li>- Peso relativo ocupados en sectores estratégicos en el AMB respecto del peso relativo ocupados en sectores estratégicos en Cataluña;</li> <li>- Distribución sectorial de las empresas creadas y destruidas</li> </ul>
		Qualification of labour force		education attainment; numbers of university students			<ul style="list-style-type: none"> <li>- (Nuevos graduados en CFGS + Nuevos diplomados/titulados universitarios) en estudios estratégicos / (Nuevos graduados en CFGS + Nuevos diplomados/titulados universitarios) totales;</li> <li>- Distribución de la contratación por nivel formativo;</li> <li>- Nivel de equipamiento (ordenador, Internet, banda ancha) y uso (compras por Internet, chat, correo Electrónico, Ordenador, Internet) de las tecnologías de la información y comunicación en los hogares</li> </ul>
		Costs of production					
			Cost of labour	International benchmarking of labour costs;			

			Cost of land / office space	International benchmarking of lease rates; land costs	Satisfacción de demanda de suelo	Netto realiseerbare oppervlakte op bedrijventerreinen; Oppervlakte in gebruik ten opzichte van totale oppervlakte bedrijventerrein; Niet realiseerbare oppervlakte op bedrijventerreinen wegens niet ontsloten; Oppervlakte publieke ruimte tegenover totale oppervlakte van bedrijventerrein	
			Other costs	International benchmarking of oil prices; electricity costs			
		Importance of agglomeration economies					
			Building of sectoral clusters	Numbers of business clusters; industrial parks; SDZs; IE zones		Aantal vestigingen in een bepaalde sector per ruimtelijke eenheid ten overstaan van zelfde verhouding voor Vlaanderen (specialisatiecoëfficiënt); Loontrekkende werkgelegenheid in een bepaalde sector per gemeente ten overstaan van zelfde verhouding voor Vlaanderen (specialisatiecoëfficiënt)	
			Metropolitanisation	% population living in metropolitan area;	Posición del área Metropolitana de Pamplona en la región; Distribución de población según tamaño del núcleo; Distribución de población según grado de vertebración del núcleo		
			Pressure on land use in specific areas				
			Urban sprawl				
		Accessibility to markets, suppliers,				Potentieel per auto bereikbare bevolking (methode Vandenbulcke)	

		resources					
		Productivity			Producto Interior Bruto per Cápita		Tasa de crecimiento de la productividad laboral
		Innovation		Numbers of patents; Planning permissions which have specific focus on green sustainable businesses	Gasto I+D; Empleo en I+D		
		Poverty		Deprivation Index	Tasa de pobreza		
	Insertion into multinational firm networks						
		FDI					
		Knowledge spillover					
		Power and control / Dependency on decisions taken elsewhere					
	Increased mobility						
		Increased migrations					
			Evolution of total population				
			New types of population				
		Increase of tourism					
			Availability of accommodat ion		Índice de pernoctaciones turísticas	capaciteit gastenkamersper postcode; capaciteit huurvakantiewoningen per postcode	
			Change in types of tourism / tourists		Longitud de itinerarios de interés; Índice de plazas turísticas; Porcentaje de vivienda no principal	aanbod toeristisch- recreatieve en culturele attracties per postcode	
		Increase of international traffic		air passengers; Dublin airport passenger numbers/annum (relative to GDP)		Intensiteit van de goederenvervoerproductie	- Pasajeros del puerto y aeropuerto de Barcelona - Movimiento de mercancías en el puerto y el aeropuerto de Barcelona
	Less stability on labour market						

		Unemployment		International benchmarking of unemployment rates;	Tasa de paro; Tasa de paro femenina		Tasa de paro respecte a la UE15
		Unstable employment			Tasa de actividad; Tasa de actividad femenina		
	Regulation decisions made at higher scales (from WTO to national)						
		Cost competitiveness					
		Access to markets					
		Labour market regulation					
	Competition on global markets for labour force						
		Quality of local education			Tasa de abandono escolar temprano; Alumnos por profesor		<ul style="list-style-type: none"> <li>- Estudiantes de doctorado extranjeros respecto al total de estudiantes de doctorado</li> <li>- Estudiantes de cursos de postgrado, masters, doctorado y cursos de especialización oficiales / Población con edades comprendidas entre 22 y 45 años</li> <li>- (Nuevos graduados en CFGS + Nuevos diplomados/titulados universitarios) en estudios estratégicos / (Nuevos graduados en CFGS + Nuevos diplomados/titulados universitarios) totales</li> <li>- Estudiantes de 4º de ESO que no han obtenido el graduado en educación secundaria / Estudiantes de 4º de ESO evaluados</li> <li>- Distribución de los alumnos matriculados en CFGM y CFGS por familias profesionales</li> </ul>
		Quality of life					
	Growth						
		GDP		GVA/person at basic price			Tasa de crecimiento del VAB no agrario
		Employment		employment levels Regional;			
	Entrepreneursh						

	ip						
Demography							
	Quality of life to retain/attract population						
		Environmental quality					
			Air quality		Emisión de partículas		- Índice catalán de calidad del aire (ICCA)
			Noise levels		Población expuesta a ruido	Indicatoren voor concentraties van geluidshinder/geurhinder (verwijzing naar LNE)	
			Green spaces	Natura 2000/Amenity Area/Coastal Parks within 5km radius of designated growth Town; Forest within 10km of designated settlement	Grado de alteración de paisajes; Grado de alteración de bordes urbanos	Indicatoren voor visuele kwaliteiten van het open ruimte landschap; (Ruimtelijke evolutie van het) groenaanbod in stedelijke gebieden; (Ruimtelijke evolutie van de) afstand tot groen vanuit verstedelijkt gebied (verwijzing naar het Ruimtemodel)	
		Cultural and recreational amenities		Number of children's playgrounds directly provided/1000 Persons; Average opening hours libraries; Number of visitors to local authority facilitated swimming pools per 1000 Population	Disponibilidad de casa de cultura en núcleos vertebradores; Disponibilidad de infraestructura deportiva en núcleos vertebradores	Dichtheid van publiek-recreatieve infrastructuur	
		Service and infrastructure provision		distance buffers to health and education services; Services index; Broadband penetration; mapping of schools based on population growth projections; Primary Schools per 10,000 population; Secondary Schools per 10,000 population; Existing child care facilities per capita within moderate growth town	Disponibilidad de camas hospitalarias; Médicos de cabecera por habitante; Servicios especializados de salud en núcleos vertebradores; Población con tiempo de acceso menor de 5 minutos a salud primaria; Población con tiempo de acceso menor de 20 minutos a hospitales; Disponibilidad de guarderías en núcleos vertebradores; Tiendas con productos alimentarios por cada 1.000	Gemiddelde bereikbaarheid detailhandel per SS	- Número plazas guarderías y escuelas infantiles / Población menor de 6 años; - Nivel de equipamiento (ordenador, Internet, banda ancha) y uso (compras por Internet, chat, correo Electrónico, Ordenador, Internet) de las tecnologías de la información y comunicación en los hogares



				to metropolitan consolidation growth towns and within the gateway core.	habitantes; Tiendas con otros productos no alimentarios por cada 1.000 habitantes; Población con acceso a internet a través de banda ancha o fibra óptica		
		Accessibility			Población a menos de 5 minutos de una entrada de autovía o autopista;Población a menos de 30 minutos de un aeropuerto;Población a menos de 30 minutos de un núcleo suprarregional;Población a menos de 15 minutos de un núcleo regional;Población a menos de 5 minutos de un núcleo subregional	Reistijd per auto naar de Belgische grote en regionale steden;Verschil in reistijd per auto tussen pieken daluren naar de Belgische grote en regionale steden;Ruimtelijke nabijheid van dagelijks gebruikte diensten	- Importancia relativa de los viajes sin origen o destino a la ciudad de Barcelona
		General cost of living		Consumer price analysis			
			Affordable quality housing	House permissions & completions per county; International benchmarking of cost of housing;	Número de viviendas por habitante; Tipología de viviendas; Número de viviendas protegidas por cada 1.000 habitantes; Número de viviendas en alquiler	Verhouding toename huizen en appartementen	- Porcentaje de viviendas iniciadas de protección oficial respecto al total de viviendas iniciadas
	Increase of number of households			Population growth	Evolución de la población en relación con las prospectivas POT	Huishoudensevolutie 1998-2007; Bevolkingsevolutie 1998-2007	
		Pressue on land use					
			Urban sprawl		Área artificial por habitante; Índice de compacidad corregida; Índice de contigüidad; Índice de complejidad		
			Densification	total build onbrownfield(units/area);Po pulation density inurban areas	Densidad de viviendas en áreas residenciales;Superficie urbana por habitante	Dichtheid bebouwing (t.o.v. oppervlakte/aantal inwoners);Dichtheid huishoudens;Dichtheid bevolking;Geschiktheidsindex van brownfieldterreinen voor nieuwe economische activiteiten;Totale oppervlakte economische activiteiten in en buiten	

						woonkernen	
			New types of urban architectures				
	New compositions of population						
		Ethnic composition		Ethnic background per county	Porcentaje de residentes extranjeros		
			New usage of public spaces				
			Socio-economic conflict along ethnical lines				
		Ageing			Tasa de dependencia senil; Índice de fecundidad		
			New housing needs				
			New infrastructure needs				- Número plazas residencias gente mayor y centros de día / Población mayor de 69 años - Número de plazas en centros de atención especial, hogares y centros para personas con discapacidades / Número de personas con discapacidades
			New service provision needs		Servicios administrativos ofrecidos online		
	Population decrease						
		Access to services					
		Access to infrastructures					
Energy							
	Consumption			National per capita demand for energy; % energy use by Sector	Consumo energético por sector;		
		Saving					
			Transport				
			Less use of transport	Mean travel times toWork, school, college;•% 3rd level educationworking within 24kmof residence;•% new carregistrations of	Puestos de trabajo por cada 100 habitantes;Intensidad Media Diaria de circulación	Oppervlakte detailhandel binnen/buiten stedelijke economische knooppunten;Woon-werkafstand per rit op basis	

				hybridcars or all cars under 1.1 litre; % work in same settlement as resident		van vertrek (werkdag 4-11u)	
			Energy-efficient transport	transport modal split and rail use numbers; Extent of walking/cycling routes (km)	Tasa de motorización; Distribución modal de transporte personal; Distribución modal de transporte de mercancías	Dichtheid fietsnetwerken; Dichtheid bevaarbaar waternetwerk Wagenbezit (# personenwagens per gezin) en gemiddelde leeftijd ingeschreven personenwagens; Dichtheid personenwagens (#/km <sup>2</sup> ); Dagelijks energieverbruik per capita voor woon-werkverkeer (kWh)	- Longitud (km) red ferroviaria por 1.000 habitantes
			Collective transport	Public busConnectivity; Extent of buscorridors (Km)	Población a menos de 15 minutos de una estación de tren; Población a menos de 1.000 metros de una parada de autobús interurbano; Accesibilidad acumulada al transporte público diario	Percentage arbeidsplaatsen binnen het bereik van station of frequent stad en streekvervoer; Bus- en tramaanbod De Lijn (werkdag); Treinaanbod (werkdag)	- Desplazamientos en transporte público respecto al total de desplazamientos (transporte público + privado)
			Housing				
			Energy-saving construction				
			Energy-saving appliances				
			Energy-saving behaviour		Consumo eléctrico de hogares		
		Use of renewable energy		% renewable energy provision nationally and regionally	Electricidad proveniente de energías renovables		
		Recycling		Numbers of recycling centres; Recycling rates; Energy generation from waste reuse	Porcentaje de residuo urbano reciclado		- Toneladas métricas de basura recogida selectivamente / Toneladas métricas totales de basura
	Production				Dependencia energética;		
		Potential and existing renewables		% renewable energy Generation	Producción de energía renovable según fuente energética		
			Wind			Indicatoren van locatie/evolutie van aantallen windmolens	

			Hydro				
			Solar			Indicatoren voor locatie/evolutie van zonne-energie productie	
			Biomass			Indicatoren voor locatie/evolutie van aantallen Biogasinstallaties/mestverwerkingsinstallaties	
			Geothermal				
		Existing non-renewables					
			Coal				
			Nuclear				
			Gas				
			Oil				
		Smart grids		Grid 25 target Completion			
	Dependency						
		Energy-intensive production		Energy consumption/GDP	Intensidad energética primaria		- Toneladas métricas de mercancías / Valor añadido bruto - Energetic intensity (Consumption of energy / GDP)
		Mobility					
			Commuting				
			Accessibility (remoteness )				
	CO2 Emissions						- CO2 emissions per inhabitant produced by energetic consume
Climate change							
	Increase in extreme, but uncertain weather events						
		Storms					
		Floods		Flood Risk Assessment Models	Número de viviendas en zonas inundables	(Ruimtelijke evolutie van de) oppervlakte overstroombaar gebied; Locatie van signaalgebieden ("harde functies" in overstroombaar gebied)	
		Wildfires			Superficie quemada en incendios forestales		
	Increase of temperature						

		Health hazard					
		Change in ecosystems					
	Change in precipitation patterns						
		Less precipitation					
			Water scarcity	ground water should be steady state	Consumo de agua de abastecimiento público;Consumo de agua del sector agrícola		- Consumo total diario de agua para usos domésticos / Población total

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