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The Eurocity in the context of the Basque Country Region Case Study Report

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1. INTRODUCTION TO THE REGION

The main focus of the case study is the Basque Bayonne- Donostia-San Sebastián Eurocity in the wider context of the Basque Country Region¹ in northern Spain.

This cross-border conurbation extends from Bayonne (France) to Donostia-San Sebastián (Spain) along 50 km of the Atlantic front of the Pyrenees, on both banks of the River Bidassoa, the mouth of which marks the border between France and Spain. The main towns in this coastal cross-border conurbation of 600,000 inhabitants are those of the Bayonne-Anglet-Biarritz Conurbation community on the French side and Donostia- San Sebastián on the Spanish side.

It is the natural access route between the Iberian Peninsula and Western and Central Europe. It forms a true urban corridor and is located on one of the main road axes existing between the Iberian Peninsula and the rest of Europe. This situation as an obligatory point of passage for road traffic naturally results in a high flow of traffic at different levels (local as well as trans-European) and of different natures: people (cross-border workers, tourists, patients, students, etc.) vehicles.

Both territories share a common Basque cultural heritage and throughout history have lived together through periods governed by mutual goodwill and the desire to promote reciprocal needs and interests, and, as has occurred in other border areas, also through periods of confrontation and estrangement. In effect, the special circumstances of the twentieth century made the Franco-Spanish border very strong.

The process of European construction allowed the emergence of new interpretations of the territory and the appearance of new responses to the needs and challenges involved in a growing interdependence and in global competitiveness. One of the most significant aspects of this is the disappearance of internal borders within the European Union.

Cross-border cooperation operates within a very clear context of voluntary action and is based on a melting pot with a common culture. These premises date back to Spain's accession to the European Community in 1986 but it only really took off as from 1993, the date when a "Eurocity" project was launched, associating the Diputación Foral de Guipuzcoa and the communes of Fontarabie and Irun on the Spanish side, the District of Bayonne-Anglet-Biarritz (which has since then become a conurbation community), and Saint-Jean-de-Luz and Hendaye on the French side. (<http://www.espaces-transfrontaliers.org>).

This coastal conurbation includes not only these main towns (Biarritz, Anglet, Bayonne, Saint Jean de Luz, Hendaye, Irun, San Sebastian), but also a number of medium-sized and small towns (urban villages) that have a very important role as residential areas and as working places too. This is why this

¹ In some documents and maps the Basque Country Region is also called Euskadi in the Basque official language.

international region is seen as a "system of human settlements", a poly-nuclear area (Dubois-Taine, 2004).

Several issues have been clearly identified during this time, mainly related to transport (motorways, tram-train, ports, airports), health (emergency medicine) and culture (identity and the Basque language).

In terms of the structure of this cooperation, a Bayonne- Donostia-San Sebastián cross-border observatory was formed in 1997 under the form of a European economic interest grouping (EEIG), consisting exclusively of the Diputación Foral de Guipuzcoa and the BAB District. It was transformed into the "Cross-border Agency for the development of the Basque Bayonne-San Sebastián Eurocity" in 2000. This structure is both a technical and political tool aimed at revitalising cross-border cooperation through four missions: to conduct or commission studies, seek funding, coordinate public or private initiatives and develop joint initiatives with national authorities and at the European level. Since then, significant projects have been developed: a prospective document (White Paper in 2000), a cross-border convention on waste treatment, the creation of the Consorcio Bidassoa-Txingudi (legal structure including Hendaye, Irun and Fontarabie), and the project which is currently under preparation: the Atlantic-Pyrenees Euro-Institute.

Since 2008, there have been a new impetus to the cooperation and the project has been relaunched on two themes: the broadening of the Eurocity and a review of the white paper according to two priorities, mobility and sustainable development. A study on mobility and travel patterns in the Eurocity is currently under way: the report on an initial inventory phase has recently been submitted, and the next two phases are intended to give rise to practical projects. The topic-based priorities for sustainable development are being validated.

Summarizing the general characterization of the analysed region, we can point out some of the elements, which will influence the land use and land use functions changes:

- coastal region with a dynamic development of the touristic functions;
- intensive suburbanization processes and migration from interior of Spain and France to coastal parts of the countries;
- important transport road;
- big heterogeneity of the landscape (Pyrenees mountains and coastal);
- transnational co-operation within a strong cultural and historical interlinks;
- well developed spatial planning structure.

In order to better understand the land use dynamics occurring in this area it is important to have a wider territorial perspective. That is why we have analysed the area in the context of the Basque Country Region (NUTS2) in northern Spain and also the French Department of Atlantiques Pyrénées (Department 64) in the Region of Aquitania.

The Basque Country Region, also called Euskadi, is a NUTS2 Autonomous Community located in northern Spain (7,234 km² and 2,169,038² inhabitants) consists of three provinces, specifically designated as "historical territories":

² 1st of January 2010. www.ine.es

- Álaba (capital: Vitoria-Gasteiz)
- Biscay (capital: Bilbao)
- Gipuzkoa (capital: Donostia-San Sebastián).

It occupies 1.4% of Spain surface. Álaba is the biggest province, it encompasses 42% of the Basque territory (3037.3 km²), second Bizkaia with 31% (2217.2km²) and the smallest Guipuzcoa with 27% participation in the surface area (1980.3km²).

The population density, at about 327.37/km² just below the EU average, but the distribution of the population is fairly unequal, concentrating primarily around the main cities.

Almost half of the population is concentrated in the Greater Bilbao metropolitan area.

The French department of Pyrénées-Atlantiques, covers the arrondissement of Bayonne and the cantons of Mauléon-Licharre and Tardets-Sorholus. Within these conventions, the total area is 2,869 km², shared by three provinces such as: Lower Navarre (1,284 km²), Labourd (800 km²) and Soule (785 km²). It had 647,420 inhabitants, as of 2008. Population density is 84.68 /km².

The analysis in the report is based mostly on the statistical and literature review.

In the report there will be three spatial levels of the detailed investigation.

- Some of the analysis will be made for area covering the Basque Country Region, statistical NUTS3 units such as: ES211 (Álaba), ES212 (Guipuzcoa) and ES213 (Bizkaia) – see figure 1, and the Department of Atlantiques- Pyrénées (FR615). For this broader analysis we have also included the neighbouring province of Navarre, NUTS3 ES220.
- Some of the research will focus on the context of the Basque Country Region (Spain) and analysis will be made on a very detailed location of some elements of spatial organization (settlements, industrial districts, arable lands, forests, roads and other elements).
- Also the special attention will be focused on Bayonne- Donostia-San Sebastián Eurocity (costal part of the units Gipuzkoa and Lapurdi).

Also, very important data and pieces of information were collected by the authors during the field study in the Basque Country Region and the Atlantique Pyrénées in the period 8-14 January 2012.

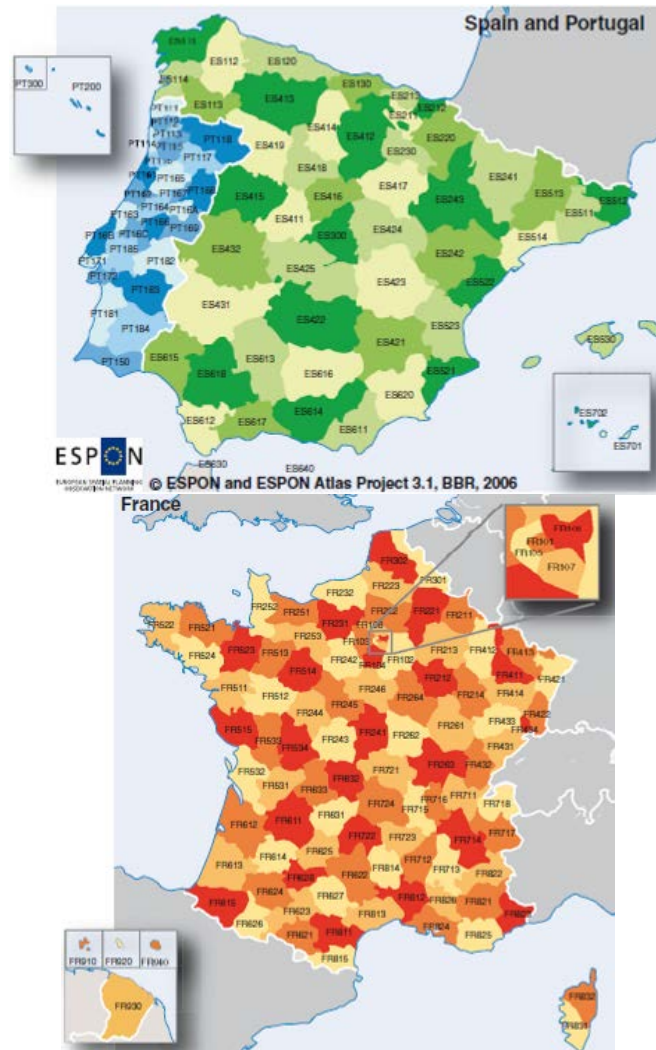


Fig. 1. Division of the Spain and France into the NUTS3 units
 Source: ESPON Atlas (2006).

The study was organized in cooperation with Tecnalia Research and Innovation and personally by Gemma Garcia Blanco. During the study four interviews were conducted with:

- Prof. Eugenio Ruiz de Urrestarazu - Vice-Rector of the University of the Basque Country, geographer.
- Montserrat Garcia Merillas - Representative of Association of Basque municipalities – EUDEL.
- Alfonso Sanz Araujo – Director of Spatial Planning at Department of Environment, Spatial Planning, Agriculture and Fishery in the Regional Government of Basque Country.
- Javier Franco – Senior Researcher specialized in Integrated Coastal Zone Management at AZTI Tecnalia, technological research centre.

At this point, the authors would like to express to them their sincere thanks for the interesting interviews.

2. CHARACTERIZATION OF LAND USE AND LAND COVER

2.1. Definitions of land use

In our report we will use two important terms: land cover and land use.

The first one corresponds to a physical description of space, the observed (bio)physical cover of the earth's surface (Di Gregorio, Jansen, 1997). It is that which overlays or currently covers the ground. This description enables various biophysical categories to be distinguished - basically, areas of vegetation (trees, bushes, fields, lawns), bare soil (even if this is a lack of cover), hard surfaces (rocks, buildings) and wet areas and bodies of water (sheets of water and watercourses, wetlands). This definition has impacts on development of classification systems, data collection and information systems in general. It is said that Land Cover is "observed". This means that observation can be made from various "sources of observation" at different distances between the source and the earth's surface: the human eye, aerial photographs, satellite sensors.

For the second one, various approaches are proposed into the literature. Two main "schools" may be distinguished. Land use in terms of functional dimension corresponds to the description of areas in terms of their socio-economic purpose: areas used for residential, industrial or commercial purposes, for farming or forestry, for recreational or conservation purposes, etc. Links with land cover are possible; it may be possible to infer land use from land cover and conversely. But situations are often complicated and the link is not so evident. Another approach, termed sequential, has been particularly developed for agricultural purposes. The definition is a series of operations on land, carried out by humans, with the intention to obtain products and/or benefits through using land resources. Contrary to land cover, land use is difficult to "observe". For example, it is often difficult to decide if grasslands are used or not for agricultural purposes. The information coming from the source of observation may not be sufficient and may require additional information. In the case of agricultural use, farmers may bring information, for example if cattle are present or not, if they are grazing. It is also possible to use characteristics on the spot indicating the presence or absence of cattle.

2.2. Surface and structure of land use

Surface and structure of land use is strictly connected with a topography of the region (Figure 2). The physical structure of land in this region is highly diverse. From north the region is limited by the Bay of Biscay – the coastline has 225 km, including 104 km of beaches. Coast in each of three region has a different characteristic. In Vizcaya in general big beaches are located. In Guipuzcoa there are bigger fluctuations in altitude, rocky coast is common. There are a lot of estuaries. The coast in Lapurdi is plainer, beaches are

longer and the fluctuation in height is smaller. The coastal area in whole region is formed by many valleys with small rivers.

South part of region is occupied mainly by a high plateau called teh Araba plains. Rivers flow in southern direction from mountains to the Ebro river.

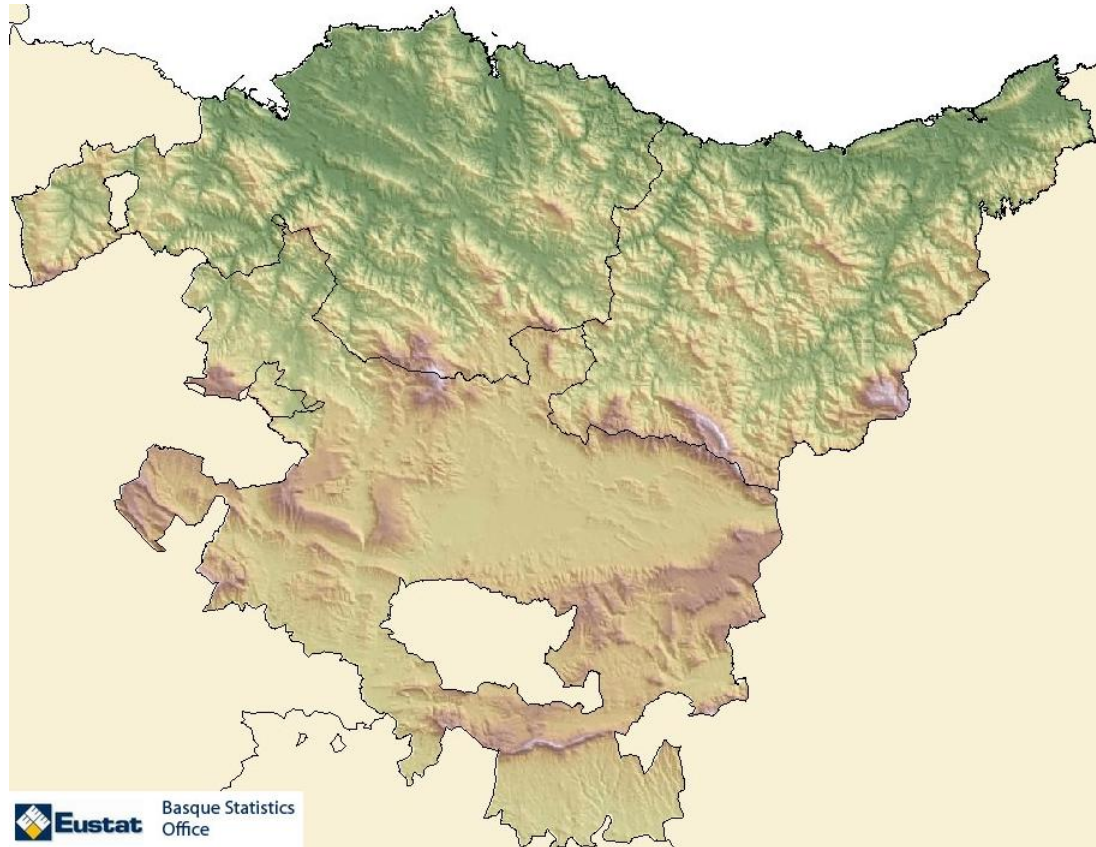


Fig. 2. Topography of the Basque Country (autonomous community)

Source: <http://www.eustat.euskadi.net>

We can divide the Basque Country into a few functional parts. Over 90% of Basque Autonomous Community could be considered as rural area. The remaining areas are urbanized.

A high proportion of hill and mountain areas, large denivelations (height differences) of area or location on a rocky coast determine the type of vegetation and activity, which can be seen in this region. 92% of land in the Basque Country is covered by undeveloped land like forest, agriculture areas and special protection areas. The highest percentage of this type of land we can observe in Araba, which is a mountainous area. But differences in relative numbers are not very strong. On the whole, the Basque Country is dominated by agriculture and forest areas; other types of lands constitute just 8% (Figure 4).

Three types of land use dominate in the Basque Country: forests, special protection area and agriculture with farmland. Forest dominates in Araba: this form of land use covers 31.5% of region's surface and 34% of green areas in the region.

We should notice that the quality of forest is not the same in each region of the Basque Country. Nowadays, there is just 5% of good quality natural oak forest in the whole region, as compared to originally 80%. Most of the areas, which in statistics are classified as forest, in reality is occupied by plantations of trees.

The quality of forest in Araba is very high as compared to others region. We can see on Figure 3 that mostly in Araba there are forests and in Guipuzcoa and Bizkaia there are mostly plantation of forests. These are usually eucalyptuses and pines.



Photo 1. Plantations of forests on the hills.

Source: own materials.

In relation to protected natural areas, a situation, in which only 5% of the country had some kind of protection in 1994, has gone. Currently in the Basque region, 22,7% of the territory included one or more kinds of protection, to mention: *Red Natura2000*, *Ramsar List*, *Red Basque ENP* (National Park, Protected Biotope, Tree Singular), *Biosphere Reserve Urdaibai network of ecological corridors* and *Areas of Natural Interest of the DOT*. These figures along with the protection of resources and species established on the basis of the law 16/1994 of the Basque Parliament of 30 June on the *Conservation of Country Basque*.³ To this we must add the subsequent Law 3/98: the *Environmental Protection of the Country Basque* and the many programs under way to restore biodiversity throughout the whole territory. In recent years a lot of plans have been developed; such as the *Sectorial Territorial Management Channels of Wetlands* (already approved) and *Agro-Forestry* (on-going project) that extend and materialize the provisions of the DOT, which include management and protection strategies concerning specific environmental systems and natural most sensitive territory. It has, in short, a large number of instruments to achieve

³ EuskalHiria_Net.Nueva Estrategia Territorial. Diagnostico. Re-estudio de las DOT.

sustainable land management and ensure the preservation and improvement of space and natural resources.⁴

Agriculture land, which represents 10-11% of all lands in the Basque Country (Eurostat 2012), is located mainly on the bottoms of valleys and in plain areas.

The kind of agriculture depends on the terrain. The arable land dominates in Araba, where although the altitude is high, but denivelations of the terrain are relatively small. In the other two provinces, scrub grassland and pastures areas dominate.

The hierarchy of the Basque Country is organized around central cities. Industrial centers and rural villages play the defined roles. It has evolved into a City-Region in which boundaries of the centers, functions and activities spread over territory ever wider and more diverse. The corridor San Sebastian – Bayonne, is a highly urbanized coastline. There live more than 600,000 inhabitants in main cities on both side of the border. This conurbation is located on the Atlantic front of the Pyrenees, where the river Bidassoa determines the border between Spain and France. One of the main factor, which determined development of the conurbation was a location of the main road that connected the Iberian Peninsula with the rest of the Europe. Every day 9,000 trucks pass through, here.

Developed land in the Basque Country occupies 8% of the whole area, but in Bizkaia it's 10% and in Araba 6% of the entire territory. The urbanized land can be classified as residential land, land for public uses (infrastructure, parks) and land for business. These three kinds of land use are equally represented in the Basque territories.

⁴ Ibidem

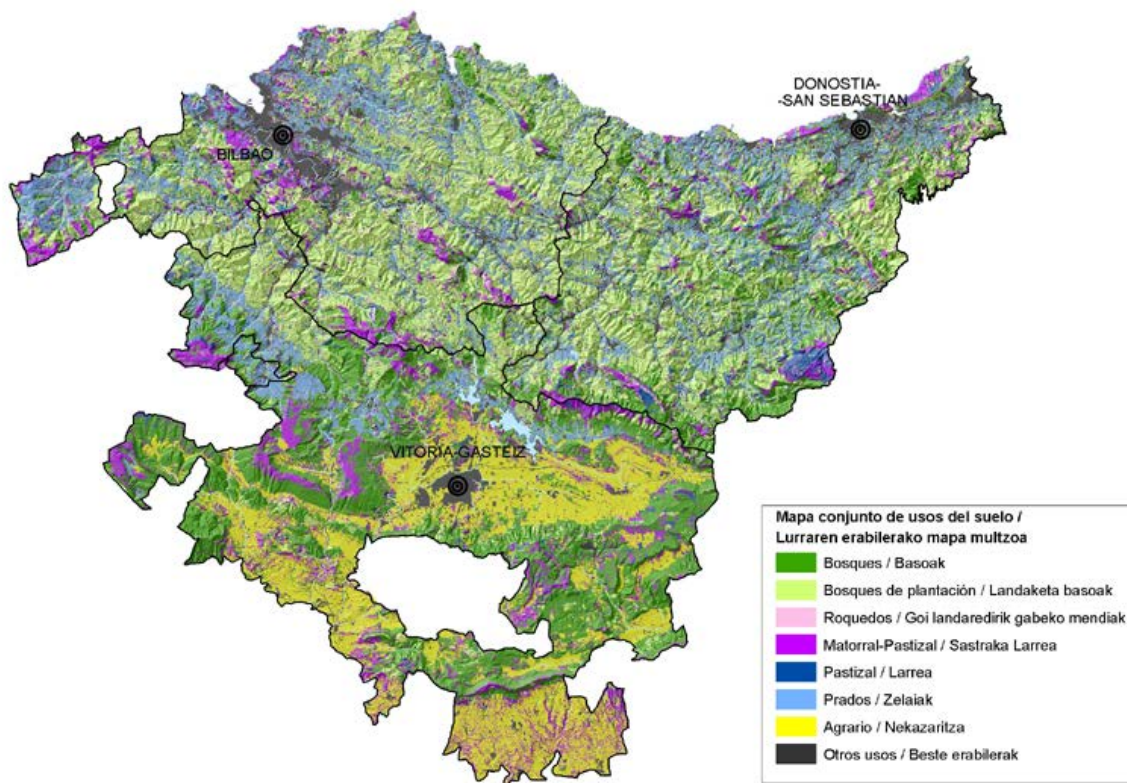


Fig. 3. Map of land use in the Basque Country

Source: <http://www.eustat.euskadi.net>

Translation: Bosques – Forests, Bosques de plantacion – Plantation of forests, Roquedos – Rocks, Matorral-Pastizal – Scrub-Grassland, Pastizal – Pastureland, Prados – Grasslands, Agrario – Agriculture, Otros usos - Other Uses

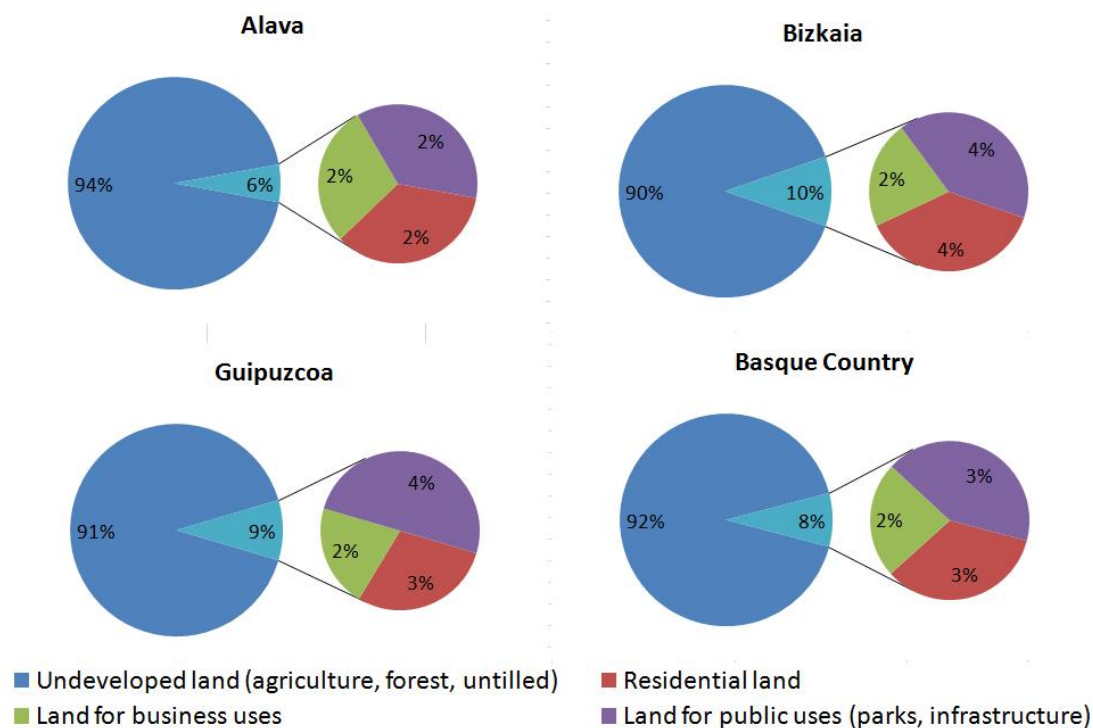


Fig. 4. Land use in the Basque Country in 2011

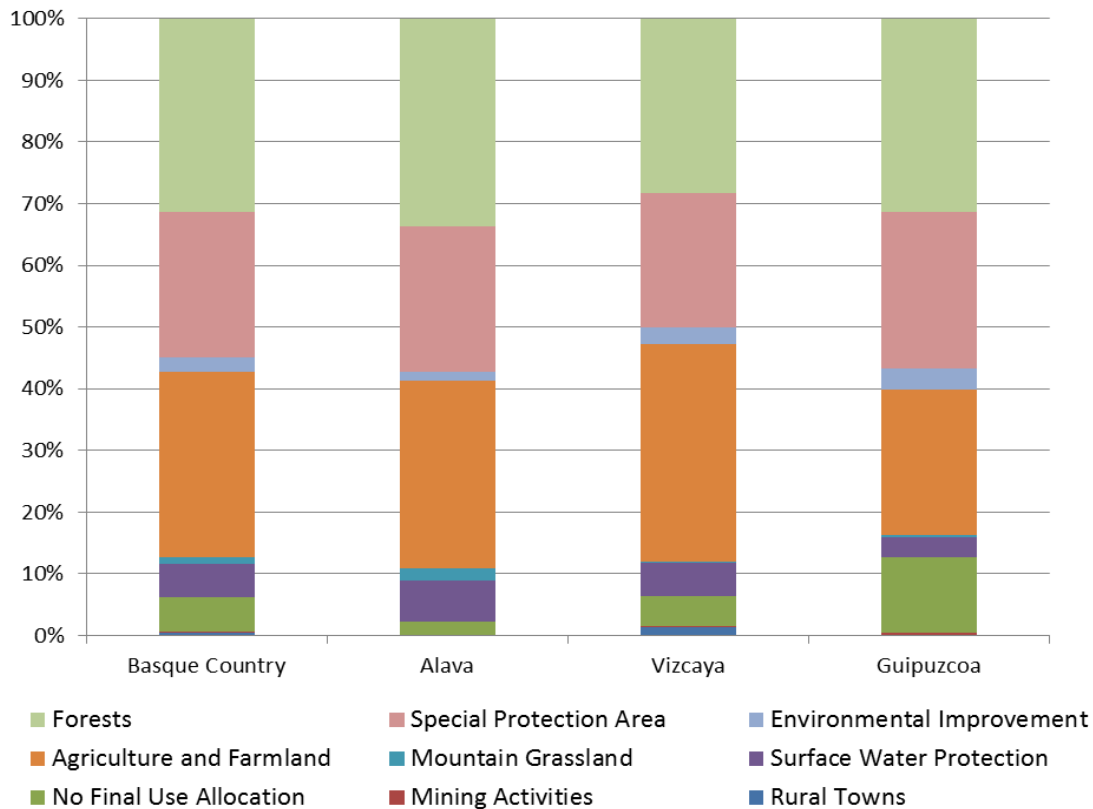


Fig. 5. Undeveloped land by type in Basque Country in 2011

Source: <http://www.eustat.euskadi.net>

2.3. Land cover specific

Based on the Corine Land Cover, the picture of the region under study is not unequivocal. On the basis of the map (Figure 6) in the region of the Basque Autonomous Country and Navarra, forest areas dominate. During the interviews it was underlined that these are mostly plantings and plantations of eucalyptus and pine.

In the Atlantique Pyrénées, majority of the area is classified as pastures with annual or permanent crops. In this part of the region, topography favours allocation of grass land.

Most of the areas of Navarra and Araba are occupied by arable land. Main factor that determines the situation is a topography of the region: denivelations (height differences) are low. The climate is of high significance: subtropical sea, south of the region passing into the continental, dry. Relatively - especially in the northern part - harsh. Southern areas require irrigation. Agriculture developed primarily in the river valleys and in irrigated areas. On the gentle slopes and valleys are grown wheat, corn, grapes, sunflowers, olive and vegetable and fruit orchards. In the north of the region there are large areas of forest, which is related to the harsh climate and terrain.

Urban areas are found along the coast and in valleys. Together with the development of urbanization the region was connected to a communication/transportation network. Thus, the areas located along the transport lines have become attractive to investors.

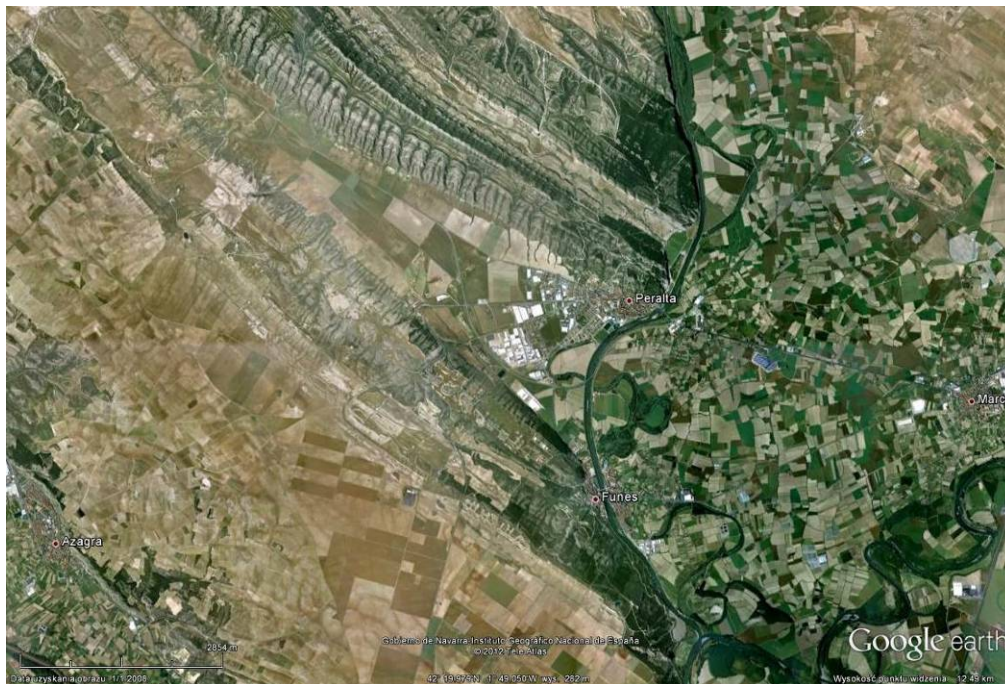
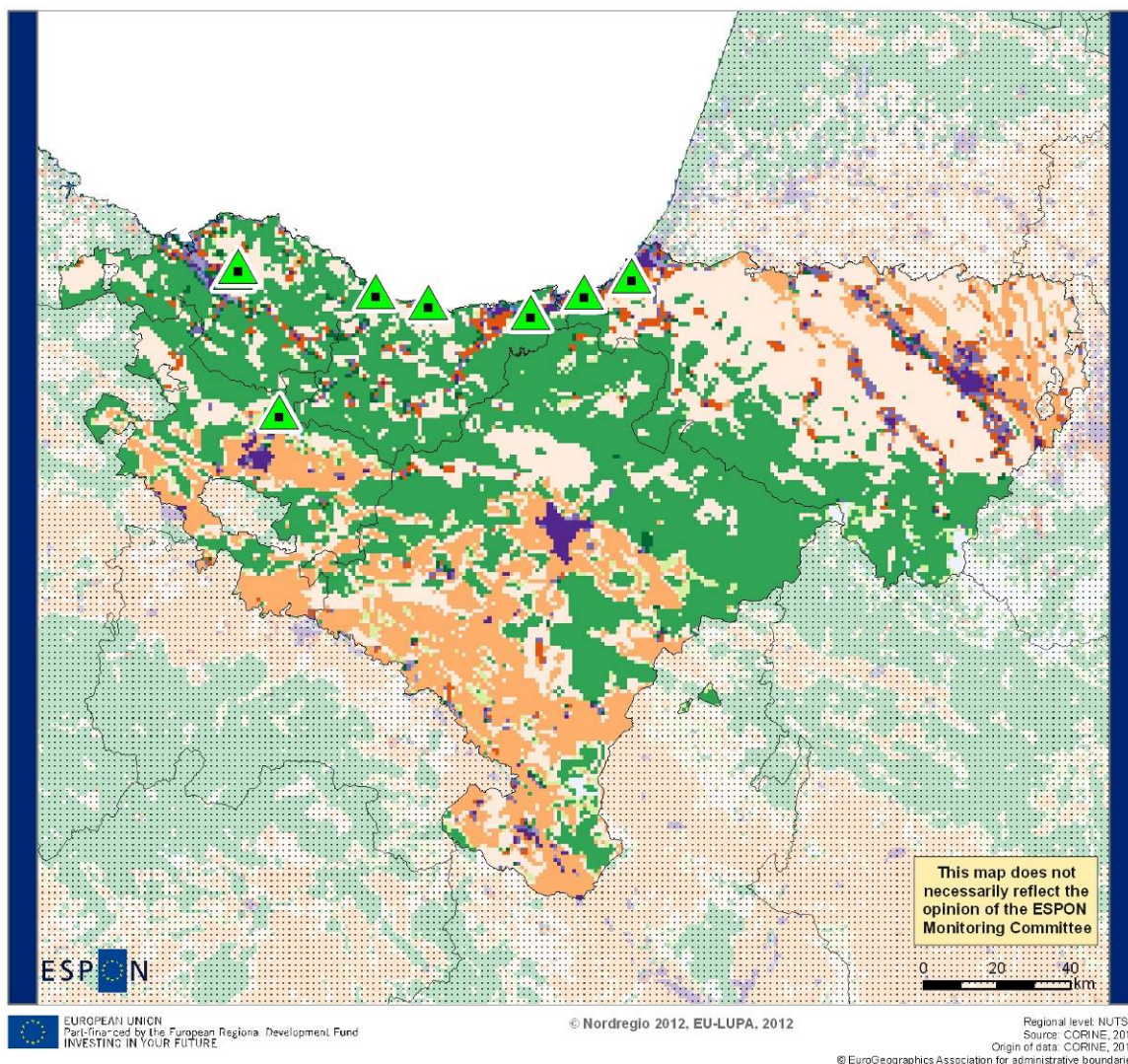


Photo. 2. Arable land in the valley of Rio Agra and (Navarra). Impact of topography on land cover

Source: Google Earth

Stable Elements of Land Cover 1990 - 2006

Eurocity Basque Bayonne - San Sebastian



Stable Land Types

- Urban cores and metropolitan areas
 - Suburban residential and economic areas
 - Special urban areas with relation relationships to the marine environment
 - Arable land in predominantly rural areas
 - Pastures and agricultural mosaics in peri-urban or rural community areas
 - Forested areas and agricultural mosaics in peri-urban areas
 - Rural forest
 - Pastures, agricultural mosaics and mixed forest in predominantly rural areas
 - Transitional woodland or sparsely vegetated areas
 - Lands primarily associated with water courses
 - Sparse vegetation, wetlands, water bodies and snow or arctic conditions
- Points of investigation
 - Areas outside the case study region

Fig. 6. Stable Elements of Land Cover (1990-2006)

Source: Nordregio, based on Corine Land Cover

2.4. Technical management of the land use

Infrastructure plays the important role in the Basque Country. Since the adoption of DOT (territorial master plan in the Basque Country) in 1991, the connection from Lisbon to Paris through Basque Country was marked out. The different plans are oriented toward this connection: for example highways and harbours. The high-speed train follows these plans.

Technical infrastructure in the whole of Spain was changed after II World War, thanks considerable revenues obtained from foreign tourists. According to professor Urrestrazu, in the last 20 years, there has been an extraordinary urban expansion. The compact urbanization disappeared and now urban sprawl is more common. The government tries to cope with this by applying the legal restrictions. The problem with urban sprawl is complicated in the Basque country, because of topographical features of the land. The only place where the infrastructure, settlements and industry can expand are the bottoms of the valleys. It poses problem also for social life, because, in the Basque Country, cities are places for maintaining and building social relations. With linear urbanization in the bottoms of the valleys these relations will be disappearing, because of the problem with mobility.

The Basque Country economic situation is one of the better ones in the whole EU. GDP of the Basque Country per capita was 18% higher than in the European Union in 2010 (Eurostat 2012). Traditional industry in this region is steel and shipbuilding. Bilbao was the centre of industrial revolution during the 19th and in the first half of the 20th century, owing to iron deposits located near the city. During the economic crisis in 70s and 80s of 20th century these activities provided a background for development of other sectors (new technologies and services). Being in possession of highly developed industry, Spain had to take care of development of its technical infrastructure.

In Spain, the infrastructure development programme began to be implemented in the late 1960s. The Government regards the development of road and railways infrastructure as a priority with the key objective of national development and tourism. Spain chosen the way of construction of roads by granting concessions to private companies. Nowadays, we can see results of that choice: Spain starts to export knowledge to other countries. 6 out of the 10 best building or roads' management firms come from Spain.

The beginnings of the construction of the motorway network were not too impressive because of a lack of capital and fuel crisis. Real progress in this area began after the accession of Spain into the European Union. In the years 1986-1993, 13.5 billion ECU were invested in infrastructure from EU funds. In 2009, only in the Basque Country, there was approximately 4,209km of roads, 6.5% of which were highways (273km)⁵. Assumptions made in the late 1960s have proved themselves, thanks to extensive infrastructure, tourists began to arrive massively, and that's why tourism and services are one of the main engines of economic development. A poor network of roads and railways may also discourage foreign investments, hence its rapid development is one of the most important preconditions for investment in a particular place.

⁵ Eurostat 2012

As can be seen on the Figure 7 the most developed network of infrastructure is located in big cities and in municipalities located around them. There are also situated, in the aforementioned places, the main transport corridors of the region

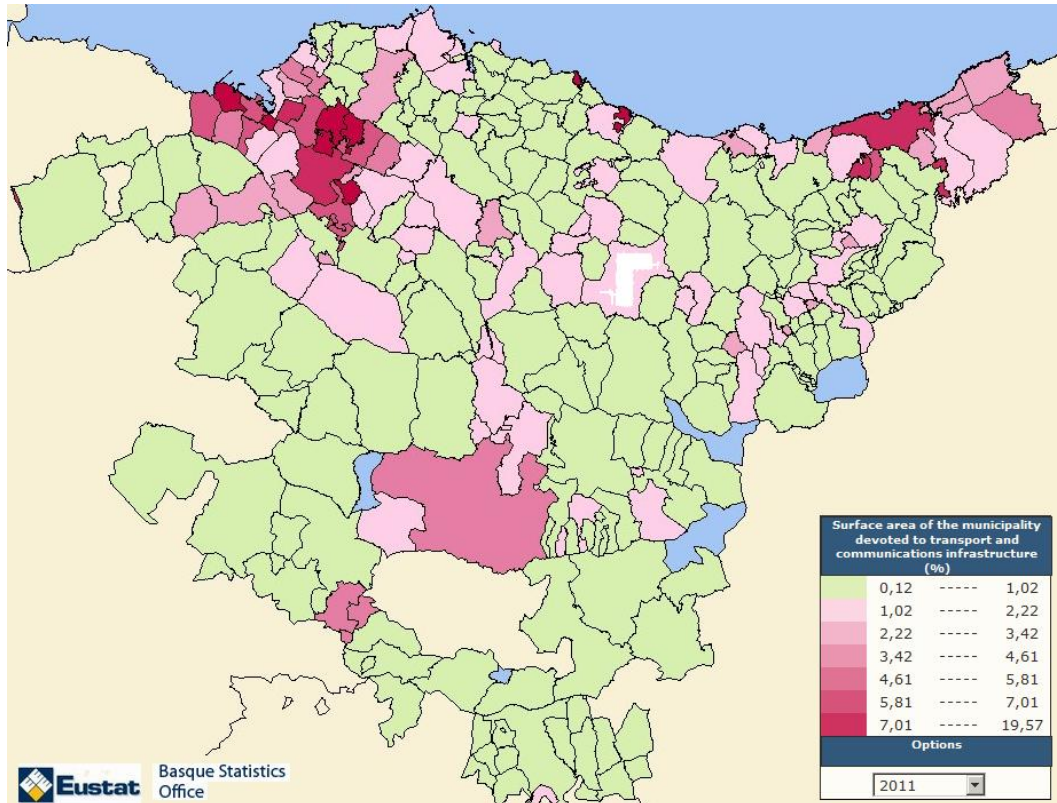


Fig. 7. Surface area of the municipality devoted to transport and communication infrastructure (%) in 2011

Source: <http://www.eustat.euskadi.net>

2.5. Major trends in historical context

The Basque Country's coastal location in the North is of great importance (it's an asset). After the Civil War (1939), there were observed a big migration from Spain towards the harbour and metal industries. In the last 50 years Spain has undergone more profound social transformation than any other country of Western Europe. In the 1950s most part of it was a poor, agricultural country, where only 37% of the population lived in cities with more than 10,000 inhabitants. Currently, this percentage is 70%. As a result of migration to cities, many agricultural areas were depopulated. The 1960s saw initially a spectacular economic growth, largely associated with the development of tourism.

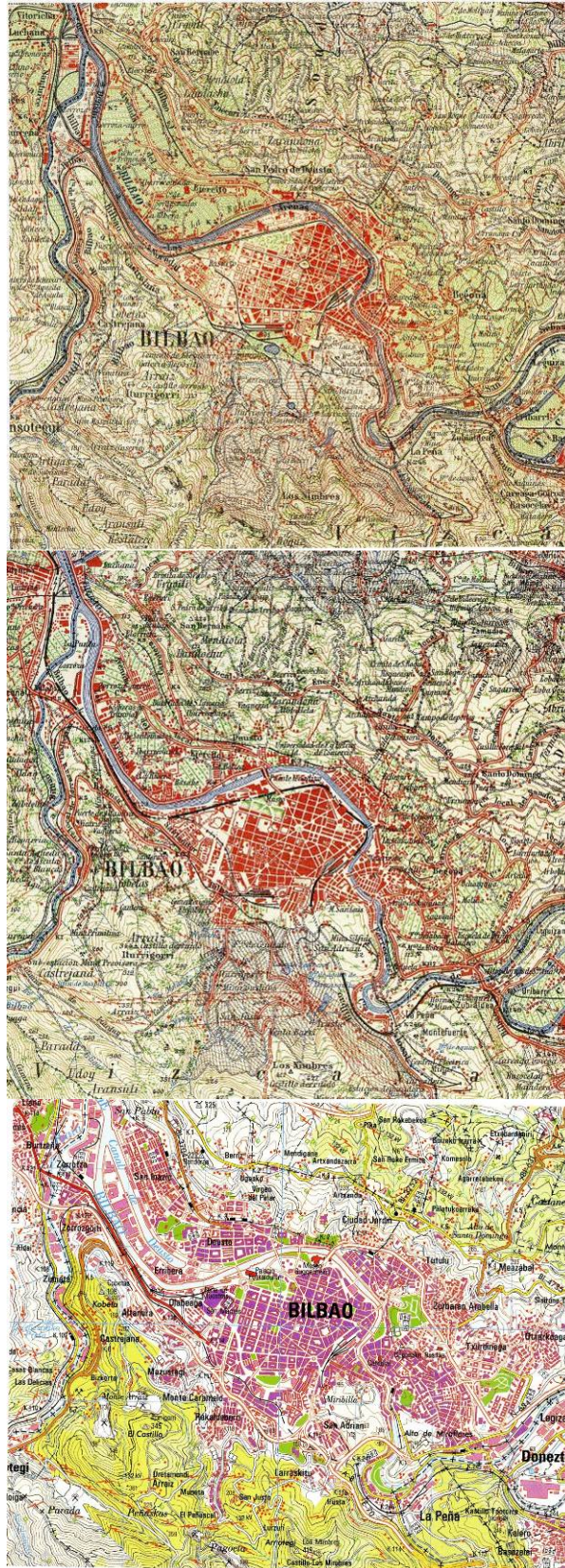


Fig. 8. Growth of Bilbao agglomeration – maps from 1942, 1958 and 2003

Source: Imagen y Paisaje (2002, p.194-195).



Photo 3. Bilbao and its surroundings.

Source: own materials.

After the death of General Franco in 1975, Spain became a constitutional monarchy; until the mid-1990s, it was ruled by socialists, who conducted a series of reforms: educational, infrastructure, health, and also strengthened the country's position in the international arena (in 1986 Spain joined the EU). After this, with democratization process (1980), Spanish industries were maintained and also its infrastructure was improved to support industrial activities. The Basque Country is a small territory with large population density and big industry that employs a large number of workers. With the coming of 1980's crisis (industrial), all industrial areas were reconverted to keep workers. They were restructured to develop a high-quality industry. In the last years, territorial balance has grown with well-developed infrastructure, industrial parks, research parks and, above all, better services. The small towns (<2500 inhab.) have gained in population at the cost of bigger cities. This has been achieved because urban planners have managed to change people's preferences.

Although the DOT (general land plan for the Basque Country) was definitively approved by the Governing Council in 1997, in actual fact, it had been already implemented in the late 1980's. Its development coincided with a critical period in the history of the Basque Autonomous Country. It was the time when the end of the model based on the traditional industry became evident. This was a crisis situation where a system was no longer valid but still no other has emerged to replace it. The crisis manifested itself in a demographic decline and lack of economic dynamism, with rising unemployment, business closures and reduced investments. In this context, DOT was developed as an instrument that should respond to specific management objectives and territorial coordination but also to a configuration and proper territorial initiatives to boost the process of change towards a new stage of development.

Increasing number of population is not equal in all municipalities. There are some municipalities where the population growth has been significant (such as Vitoria-Gasteiz, for example) others, with no changes at all, and even the ones that witnessed a decline in population (Sestao municipality for instance). Important movements from big cities to the small municipalities were prompted by a popular tendency to look for an alternative style of life. This

trend has forced the revision of the urban planning that should secure new land for residential uses in those small municipalities which are experiencing influx of newcomers.

3. NARRATIVE OF CHANGE IN RELATION TO LAND USE

3.1. Socio-economic

In 2010 the total population of Basque Country was 2 169 038 inhabitants. In the last 110 years the total population of that region increased by 3.6 times. The highest increase was observed in the years 1950-1980 and was associated with the intensive industrialization processes – the rapid growth of population in that period was especially observed in Biscay subregion (Bilbao Agglomeration). Since 1980, the stabilization in population in the Basque Country has been observed.

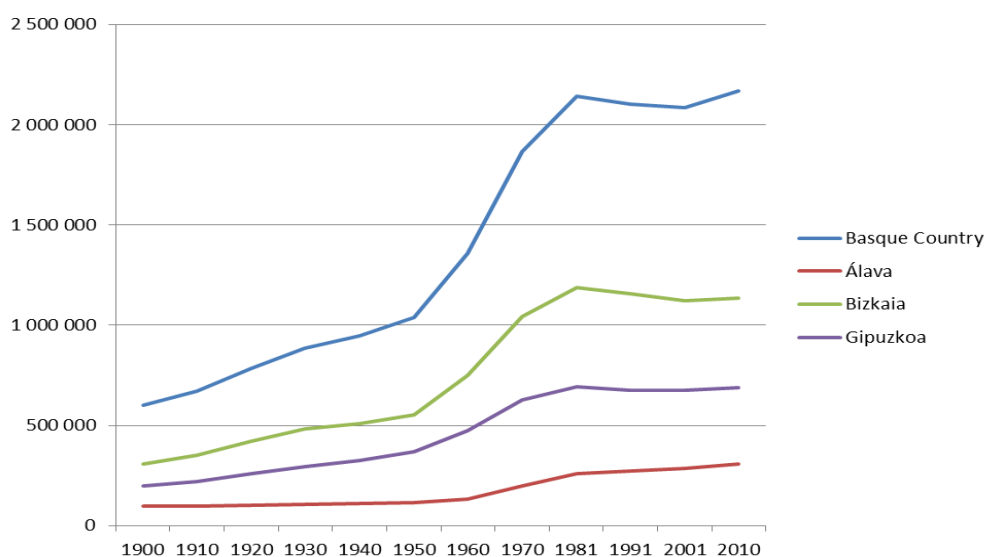


Fig. 9. Population in the Basque Country in the years 1900-2010.

Source: Own calculations based on <http://en.eustat.es>.

Such pattern of demographic development is also visible on the maps presenting the population in other regions since the late 1990s. In 1920, it can be observed that there was a relatively equal distribution of population in the whole of Spain, but after II WW the concentration of population in six areas started to take place – Catalonia, Valencia, Andalusia, Galicia, Madrid and the Basque Country, and depopulation of the inland of Spain. Concluding, what is the most important for land use changes in the last 20 years is the fact that the Basque Country is one of the regions in Spain with the biggest concentration of population, but for the last 30 years the number of inhabitants has been rather stable there.

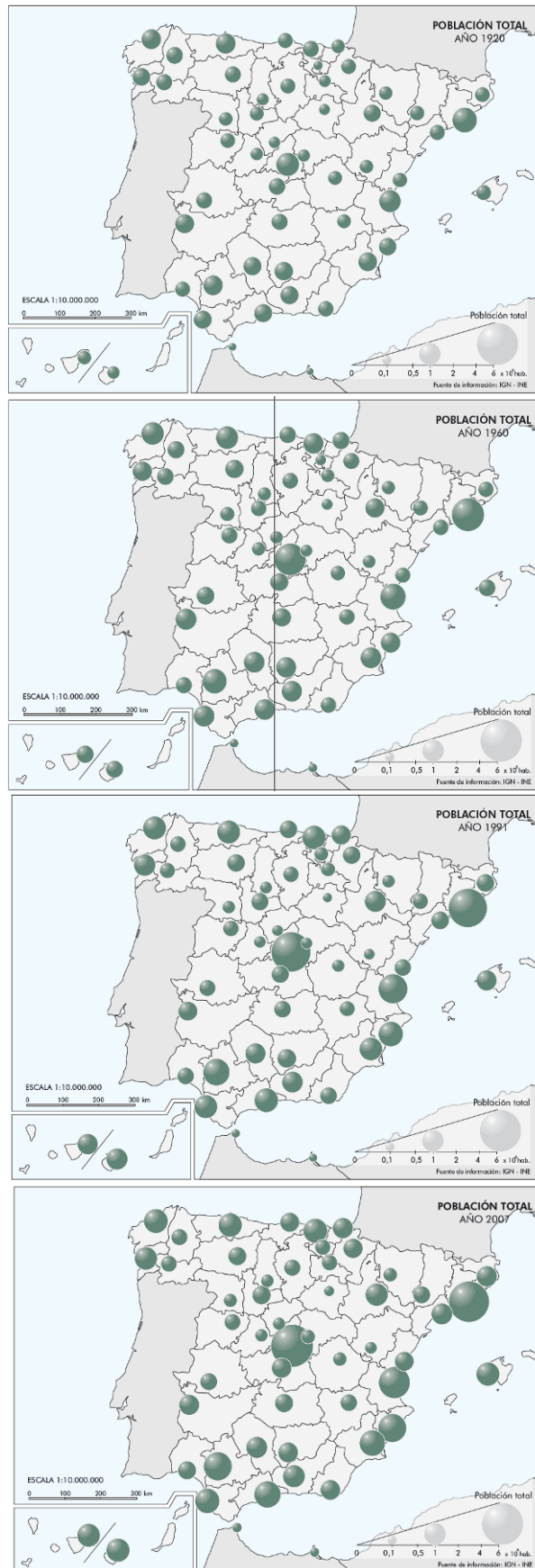


Fig. 10. Population in Spanish regions as of 1920, 1960, 1991 and 2007
 Source: Atlas Nacional de España – Demografía (2008).

The best and most classical way to illustrate the first mentioned situation is the map of density of population. It is clearly visible, that the highest concentration of population is observed on the coastal areas (including the Basque Country) and in Madrid Metropolitan Area.

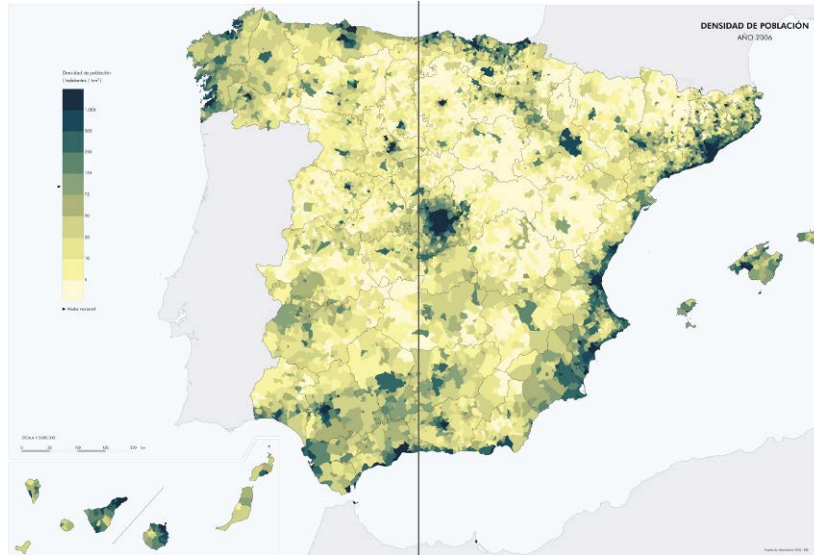


Fig. 11. Density of population in Spain in 2006
Source: Atlas Nacional de España – Demografía (2008).

On the other hand, the best way to illustrate the second important feature of the Basque Country region – the stable number of population in the recent years, is the map with the absolute changes of the population in Spain in the years 2001-2006. It is clearly visible that two core regions on the Atlantic Coast (Galicia and Basque Country) did not increase its population as fast as it happened on the Mediterranean Coast and in the Madrid Region.

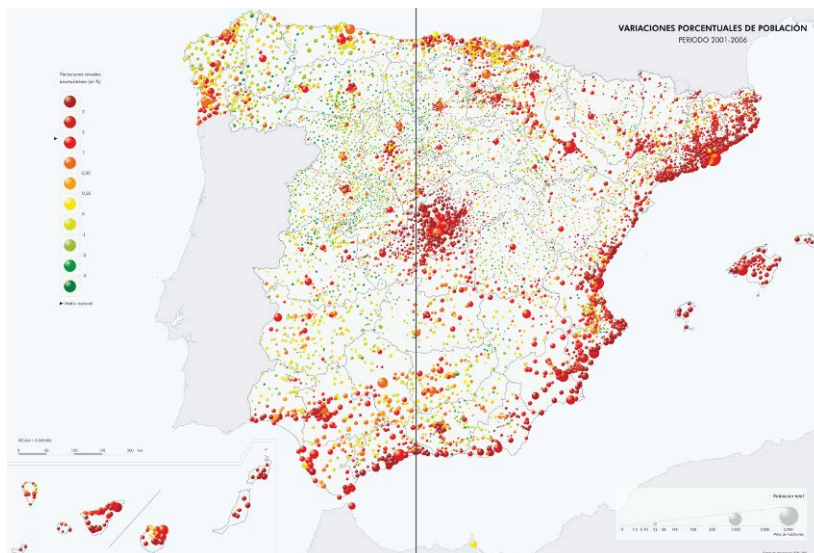


Fig. 12. Changes in population in Spanish municipalities in the period 2001-2006.

Source: Atlas Nacional de España – Demografía (2008).

Stable number of population is connected both with stable value of natural increase, as well with much smaller migrations in the recent years in comparison with that observed in the 1960s and 1970s.

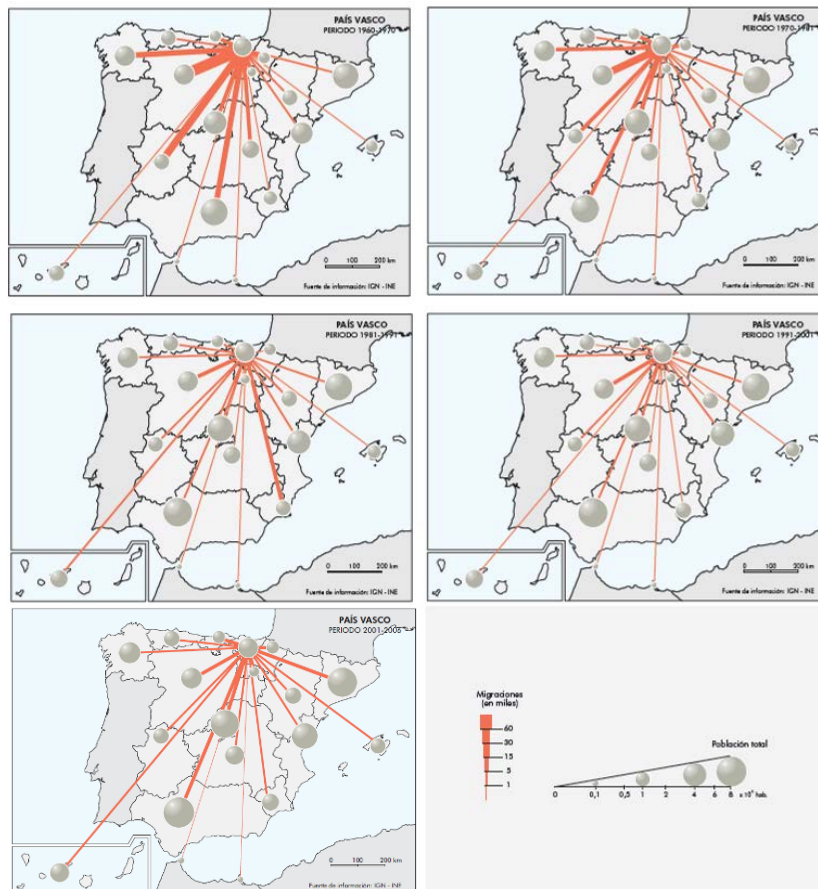


Fig. 13. Directions and number of inhabitants migrating to Basque Country in the decades of 1960-2006.

Source: Atlas Nacional de España – Demografía (2008).

Important and characteristic thing of the Basque Country is that the concentration of population is observed in Bilbao Agglomeration and Donostia-San Sebastian Agglomeration, along the coastal and main transport corridors. The inland of the Basque Country (i.e., mostly the Araba subregion) is very sparsely populated and except for Vitoria-Gasteiz there are no any bigger settlements.

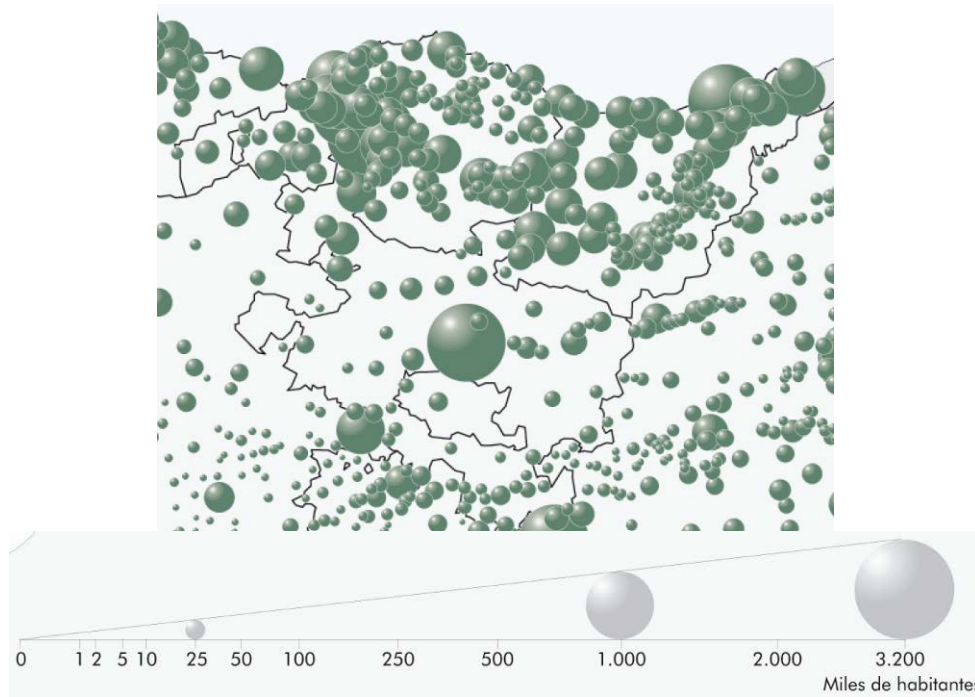


Fig. 14. Population in municipalities of the Basque Country in 2006
 Source: Atlas Nacional de España – Demografía (2008).

There is rather adverse age structure in the Basque Country, from economic point of view. Around 17% of inhabitants are below 20 years of age and 60% are aged between 20 and 59.

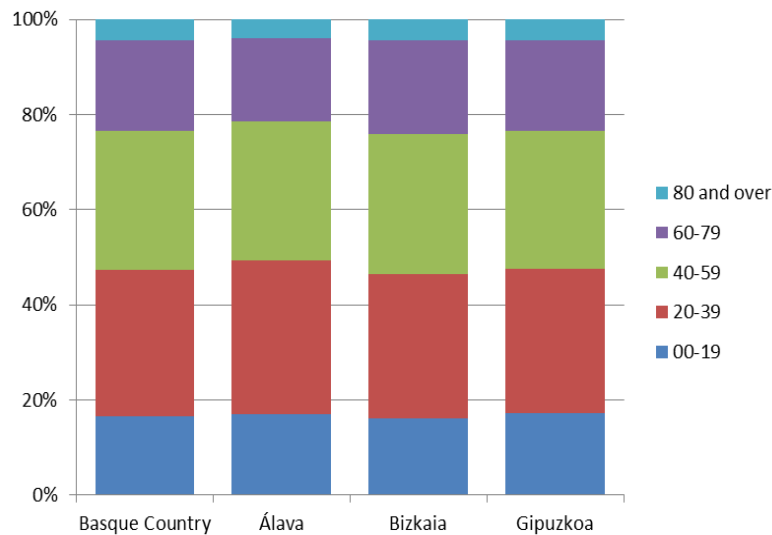


Fig. 15. Share of population according to age groups in the Basque Country and its districts in 2005

Source: Own calculations based on <http://en.eustat.es>.

Summarizing the demographic processes, it can be mentioned that big industrialization processes in the 50s, 60s and 70s of the 20th century accelerated the growth of population – both by migration and natural increase. The growth was compact – which means that together with an increase in population also the infrastructure (transport, technical and social) was developed. Nowadays, we can observe negative or weak positive natural

increase and also small emigration from Eastern Europe, North Africa and Latin America. But, importantly, over the last 20 years, a huge urban expansion has been observed. Intensive development of the biggest towns (especially Donostia-San Sebastian, Bilbao and Vitoria) takes place. Those big cities attract people to move there. However, these processes can be highly problematic for sustainable development of the region. Since there are a lot of medium-sized cities that can experience a decline in inhabitants as well in working places. Thus we can observe the concentration of population, services and decision makers' in few places. According to the opinion of one of the respondents (prof. Eugenio Ruiz de Urrestarazu) such process can be dangerous because it could lead to disturbance in the territorial balance that has been maintained up till now.

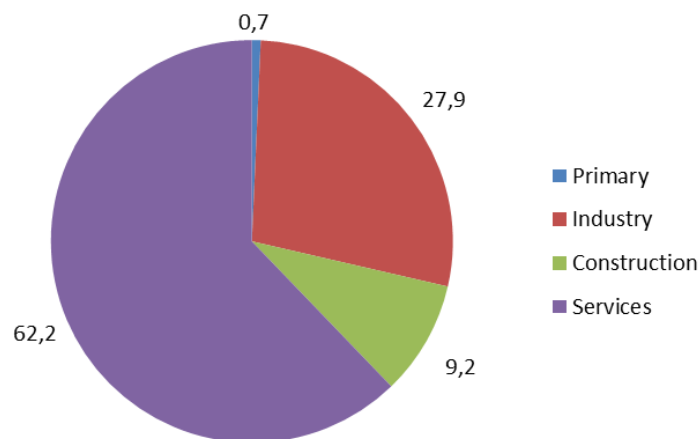


Fig. 16. Gross added value by sectors in the Basque Country in 2008

Source: Own calculations based on <http://en.eustat.es>.

The Basque Country is characterised by a high level of employment in industry and services. In the main cities (Bilbao, Donostia-San Sebastian), the highest share of people is employed in services. In other parts employment in industry and construction is of high importance.



Fig.17. Share of workers employed in the third sector in 2001

Source: Atlas Nacional de España – Demografía (2008).

General socio-economic situation in the Basque Country is essentially positive, when compared with national average. When taking into account such measures like number of active population, wages, unemployment, etc. it follows from these that almost all the Basque municipalities have a better position than the average noted in the country.

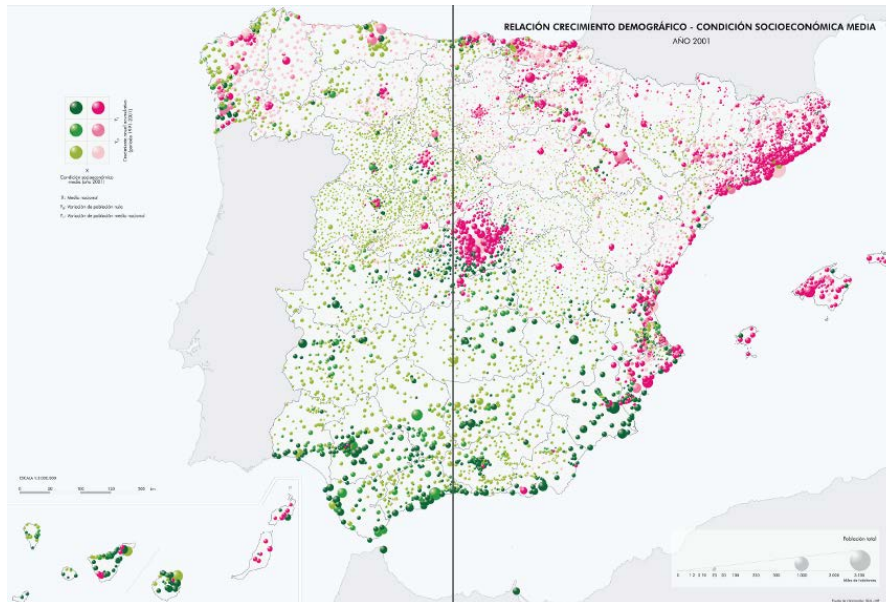


Fig. 18. General socio-economic situation in Spanish municipalities – pink colour means better situation than the national average

Source: Atlas Nacional de España – Demografía (2008).

3.2. Environment

On the whole, the climate in the Basque Country is much wetter than that of the other parts of Spain – it is largely due to the direct influence of the Atlantic Ocean. The precipitation in the Basque Country (as well as on all the Northern coast) are twofold or even threefold higher than the Spanish average. The influence of the ocean is also visible in terms of average temperatures – winters are a little bit warmer as compared to the interior and colder in summer. The span of annual amplitude is not so big.

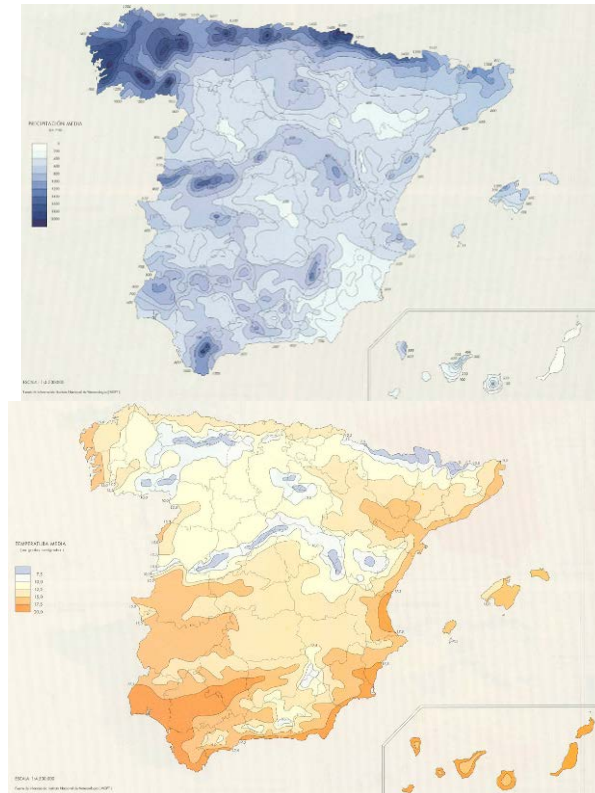


Fig. 19. Average precipitation and temperature in Spain.

Source: Atlas nacional de España – Climatología (1992).

In general, the relief features of the Basque Country are highly diversified. The highest point of the region (Aitxuri 1 551 m a.s.l.) is maybe not much impressive, but the relative differences of the altitude are important. Such relief influences all kinds of human activity – roads construction, housing, infrastructure, etc. It has also influenced the land use – more about that will be mentioned in the next chapters.



Photo 4. Diversified landscape of the Basque Country.

Source: own materials.

The quality of soils is rather poor, which is why only about one fourth of the land is utilised as an agricultural and farm land.

Air quality has been improving year by year. In 2005, the average percentage of days with good and acceptable air quality in cities was 93.6%, while in 2010 it was 99.6%. Still the fast development of the region influences the CO₂ emission, but the general trend noticeable in the last few years reinforces the reduction of the emission.

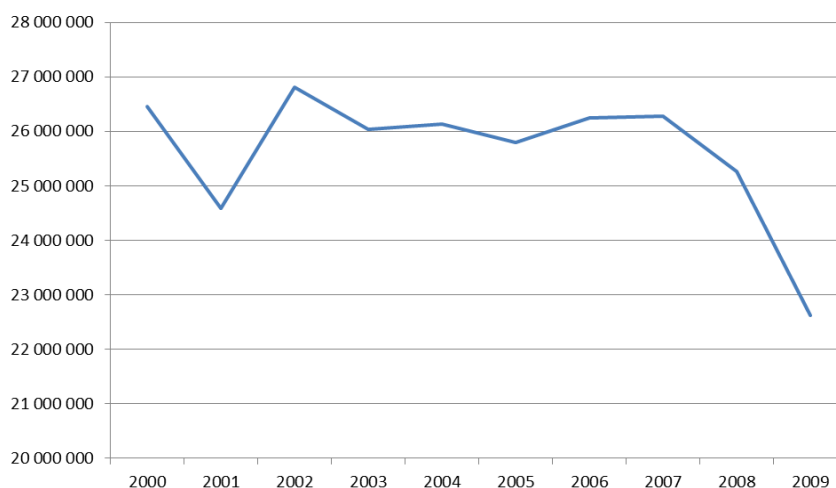


Fig. 20. Total greenhouse gas emissions (in CO₂ equivalent tons) in the Basque Country in the years 2000-2009

Source: Own calculations based on <http://en.eustat.es>.

At present, the two strategic documents can be mentioned that are focused on improving the quality of environment

The *Basque Environmental Strategy for Sustainable Development 2002-2020* approved on June 2002, in the context of a long-term strategic view in line with the undertaking made at the Earth Summit in Rio de Janeiro in 1992 to draw up strategies for sustainable development in each territory.

The five environment goals of the Basque Environmental Strategy for Sustainable Development are the following:

1. To ensure clean and healthy air, water and soil.
2. Responsible management of natural resources and waste.
3. Protection of nature and biodiversity: a unique asset to be fostered.
4. Balance between territories and mobility: a common approach.
5. Limiting effects on climate change.

The necessary conditions for the successful implementation of the strategy are:

1. Integrating environmental variables into other policies.
2. Improvements in current legislation and its application.
3. Encourage the market to develop in an environmentally-friendly way.
4. Enable the public, the authorities and businesses, making them jointly responsible, and modifying their behaviour in favour of sustainability.

5. Research, technological development and innovation that takes care of environmental matters.

The *Basque Country's plan to tackle climate change (2008-2012)* has strategic goals such as:

1. Reduction in greenhouse gas emissions to +14% in relation to 1990's levels.
2. Increase CO₂ absorption to 1% of 1990's emissions by forest and agricultural management.
3. Minimize the risk to natural resources, above all to biodiversity, hydrology and soil resources.
4. Minimize the risk to human health, urban and socioeconomic systems.

The way to reach these goals is by 4 thematic strategies that include 120 actions:

1. Less carbon intensive energies – reduce its share in the energy, industry, transport, residential, services, agriculture, forestry and waste management.
2. Adaptation – anticipate climate change and preserve natural ecosystems, protect human health and adequate infrastructure and socio-economic systems.
3. Knowledge – develop scientific-technical and social knowledge in order to observe the environment, knowing the problems and creating solutions. It has to involve the Basque Science, Technology and Innovation Network, businesses and the Basque Government.
4. Governance – coordinate the Basque Government, regional government and municipalities to be an example and raise public awareness of climate change.

3.3. Government and policy

In Spain, the regions enjoy a relatively big autonomy. Especially such regions as: Galicia, Catalonia and the Basque Country have even bigger independence in their policy than others. In the Basque Country there is the Basque Parliament and also the Government. For example, in Spain, each region is carrying out its own Rural Development Programme (similarly to Germany or Italy). Each region has its own strategy of development and planning systems. There is the Basque regional department that is responsible for spatial planning, but also each municipality according to the existing law has some possibilities to stimulate its socio-economic and spatial development. So the general hierarchy of government in the Basque country is as follows: (1) there is the Basque general government, then (2) three provincial councils, and, finally, (3) municipalities and cities. Those different levels have different competencies or powers, but, on the other hand, these are very complex,

The planning system of spatial development is very well developed in the Basque Country. According to opinions of Alfonso Sanz Araujo (Director of spatial planning at Department of Environment, Spatial Planning, Agriculture and Fishery in the Regional Government of Basque Country) the planning system works perfectly and the responsibilities for each level are suitable enough. Generally, the land planning in the Basque country (LOT) have been in existence since the 1990s. There are different tools for implementing this law:

- DOT – guidelines for the whole of the Basque Country,
- PTP – territorial planning in functional areas. The Basque country is divided into 15 functional areas. The one area has 12-15 municipalities;
- PTS – sector land planning (houses, flooding, energy and rail infrastructure, etc.).

Below is a brief summary of the mentioned documents⁶.

The DOT (*Directrices de Ordenación Territorial/Territorial Master Plan*) were approved in 1997 and since that time have constituted the reference for a harmonious and coordinated development in the Basque Country, based on a criteria of interconnection and integration, so that the regional and sectorial plans and municipal planning could not be processed independently. All these should pursue coherent objectives that are consistent with a global vision, not being particularistic or contradictory to the environment or to the rest of the Basque Country.

The main objectives are to:

1. Protect and improve natural resources.
2. Reinforce and rebalance urban system.
3. Improve Basque Country integration with Europe.
4. Improve urban areas.
5. Potentiate medium cities network.

In recent years (2006-2011), the DOT has been reviewed and the most important innovation is the concept of “Euskal Hiria” (Basque City – Bilbao, San Sebastian and Vitoria) which tries to create a Euro-region capable to compete in the European context.

Drawing on the example of PTP of Donostialdea (*Planning of the Functional Area of Donostialdea*), the role and main aims of PTP documents can be described.

The functional area of Donostialdea has an extension of 376 km² with a population of 400,000, which gathers 13 municipalities.

This plan was ended in 2008, being useful for 16 years. The main objective of this plan is to give a concrete form to the general advices of the DOT and to go beyond the limitations of the municipal planning.

The main considerations of the plan are the following:

⁶ The overview of the strategic documents was prepared by Tecnalía Institute.

1. The territory as a support system for natural resources and the primary sector.
2. The territory as a residence and work area for a population of 400,000 people.
3. The territory as a strategic location in the transport and communications corridor in Europe.
4. The territory as a social, cultural and urban reference because of the status of the capital of Gipuzkoa province - an important city in the urban system of the Basque Country and an essential part of the eurocity Bayona-San Sebastián.

As was mentioned earlier, there are many sectoral plans (PTS). Here some which are connected with land use changes will be listed.

PTS de Suelo para Actividades Económicas y Equipamientos Comerciales (Sectorial Planning of Land for Economic Activities and Trade Equipment) was ended in 2004, being useful for 16 years. It was proposed by the DOT with the following determinations:

1. Identify the location of the public promotion of land to economic activities and trade equipment.
2. Quantify the necessary surface and characteristics of each actuation in the territory.
3. Asses about the economic viability of the proposed public inversions.

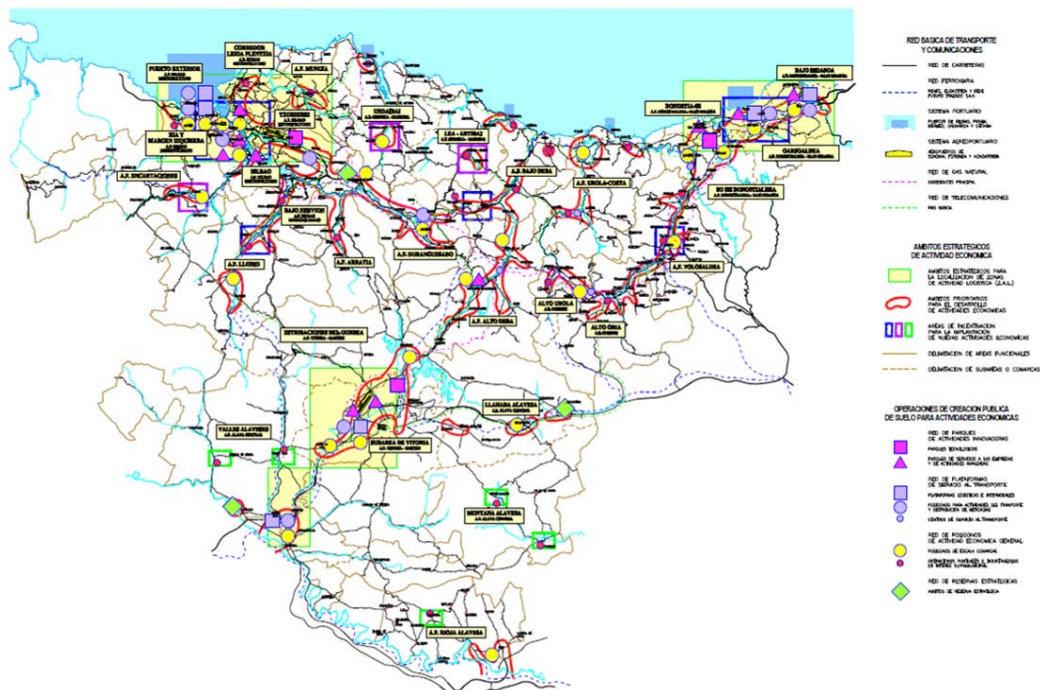


Fig. 21. The map from the sectoral plan – identification of economic zones in the Basque Country

Source: *PTS de Suelo para Actividades Económicas y Equipamientos Comerciales* (2004).

PTS de Protección y Ordenación Litoral (Sectorial Planning for Coastal Protection) was ended in 2004 and assumes the following objectives:

- Define coastal zones to be planned.
- Inventory coastal heritage to be protected.
- Create a useful division of coastal zones for integration of different uses.
- Protect and conserve natural resources of coastal zones.
- Safeguard public access to coastal zones.
- Define and specify planning for rias (a long, narrow inlet formed by the partial submergence of a river valley)
- Define guidelines to give authorizations for uses in coastal zones.
- Establish a programme of actions on the coast.

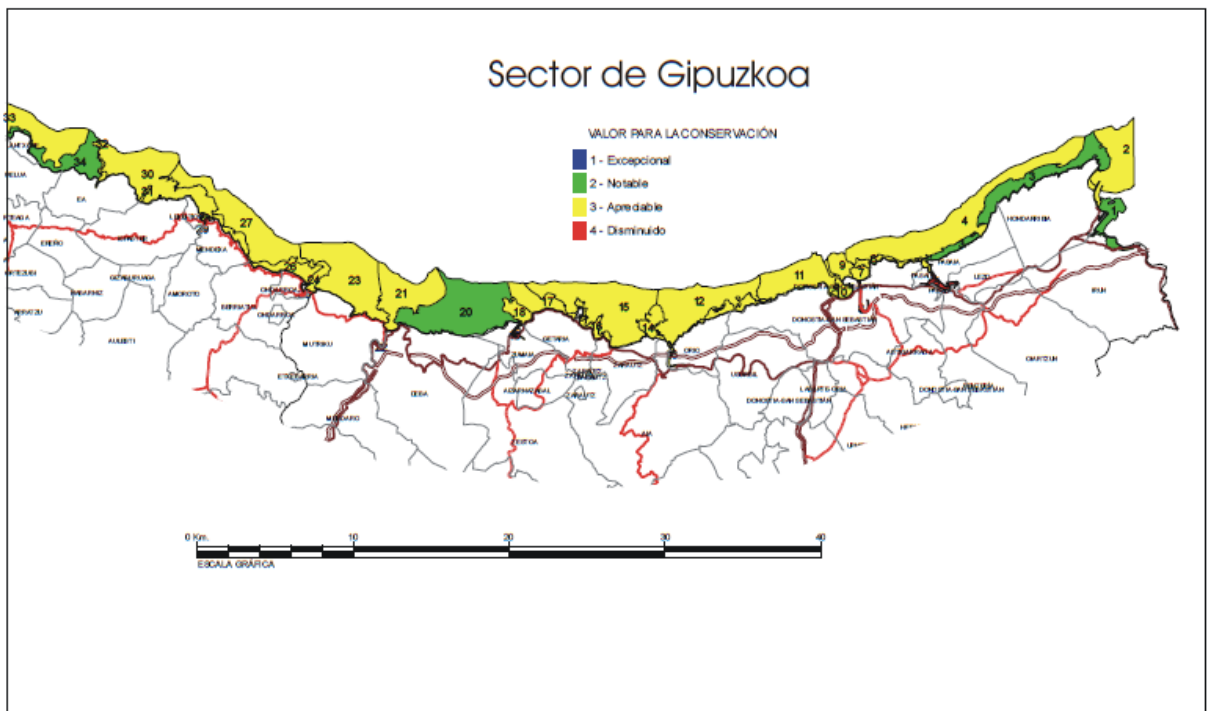


Fig. 22. Conservation value of coastal zones in Gipuzkoa

Source: *PTS de Protección y Ordenación Litoral* (2004).

PTS Agroforestal (Sectorial Planning for Agricultural and Forestry) – plan started in 2001 but has not been yet ultimately approved, because some individuals and lots of public administrations (regional departments, municipalities...) still have not managed to reach consensus. The main objectives are the following:

- Define and protect agricultural land.
- Fix the rural scene in order to know the situation and the characteristics of the exploitations.
- Define a territorial planning with a rural perspective.
- Define a legal system and actuation instruments to defend the sector from non-forestry or agricultural uses.
- Gather the planning criteria of other plans and programmess like DOT or rural strategic plans.
- Unify concepts and criteria about non-building land.
- Make compatible rural and environment protection.
- Coordinate sectorial rules and policies to make easier the application.
- Assure the diffusion of the document in order to integrate the agricultural and forestry policy with other sectorial policies.

Each year there is a monitoring of a current land use stage. The results are published in a book titled "*Udalplan – Sistema de Informacion Geographica y Banco de Datos Territoriales de la CAPV*". Example of an interactive tool to search for spatial coverage of one municipality (Legutio) can be seem below. This is a very good tool for on-going monitoring and evaluation of the changes in spatial planning.

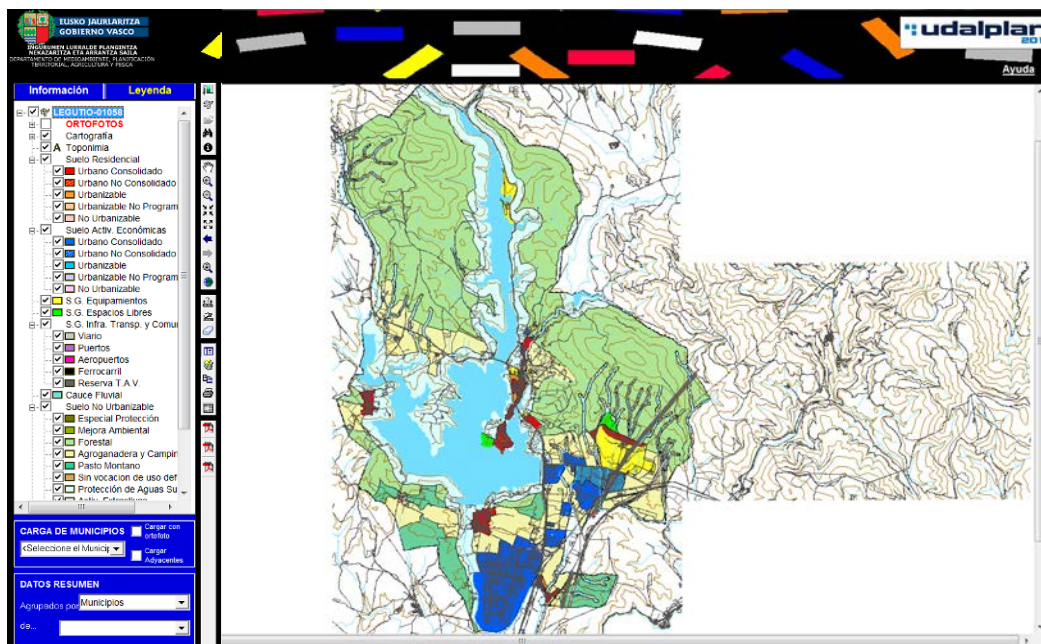


Fig. 23. Spatial coverage of Legutio municipality (in the north from Vitoria-Gasteiz)

Source: Udalplan 2011 (2011).

It has to be underlined that important element of the contemporary changes of spatial planning are the territorial and horizontal strategies of development mentioned above. They provide a set of important and useful tools in rational planning.

Because an important element of the case study is a Eurocity Bayonne-San Sebastián, this structure needs also to be mentioned about shortly.

In January 1993, the primarily responsible institutions – i.e., the Provincial Council of Gipuzkoa and the Biarritz-Anglet-Bayonne Urban Community (then the District Community) - signed an agreement committing the signatories to foster cooperation between the institutions on both sides of the border. The cooperation project aims to deal adequately with the challenges posed by the Single Market and seeks to position the Bayonne-San Sebastián conurbation in a competitive situation within the European urban system. Then, the cross-border observatory was formed in 1997 under the form of a EEIG, consisting exclusively of the Diputación Foral de Guipuzcoa and the BAB (Biarritz – Anglet – Bayonne) District. It was transformed into the “Cross-border Agency for the development of the Basque Bayonne-San Sebastián Eurocity” in 2000. This structure is both a technical and political tool aimed at revitalising cross-border cooperation through four missions: to conduct or commission studies, seek funding, coordinate public or private initiatives and develop joint initiatives with national authorities and at European level. Since then, significant projects have been developed: a prospective document (White Paper in 2000), a cross-border convention on waste treatment, the creation of the Consorcio Bidassoa-Txingudi (legal structure including Hendaye, Irun and Fontarabie), and the project which is currently under preparation: the Atlantic-Pyrenees Euro-Institute (<http://www.espaces-transfrontaliers.org>). On the

general level the sectorial policies and common interests in the Eurocity can be listed as below:

- environment - the air, the coast and the mountains;
- culture - joint proposals;
- tourism - synergy and complementarity of Biarritz and San Sebastián;
- social services - mutual acquaintance especially in the sphere of child-care
- sport - concentration on legal issues;
- public health - the harmonisation of public health policy in the field of epidemiological and financial information (*The Basque Eurocity...*, 2004).

3.4. Location

The location of the Basque Country is one of the main advantages in its development. At a first look its location can be treated as a peripheral one – far from capital city and on the border of the state. But, taking into account that Spain is rather federal state and not a centralized one and that the Basque Country has a relative high independence, the distance to Madrid is inferior in importance. Through the Basque Country runs one of the two main road axes linking the Iberian Peninsula and the rest of Europe. This situation whereby it as an obligatory point of passage for road traffic, naturally results in a high flow of traffic at different levels (local as well as trans-European) and of different natures: people (cross-border workers, tourists, patients, students, etc.) vehicles (24,000/day). Such amount of vehicles – is above average values on the European scale. A third of the vehicles are trucks and, in summer, the flow of cars increases threefold.

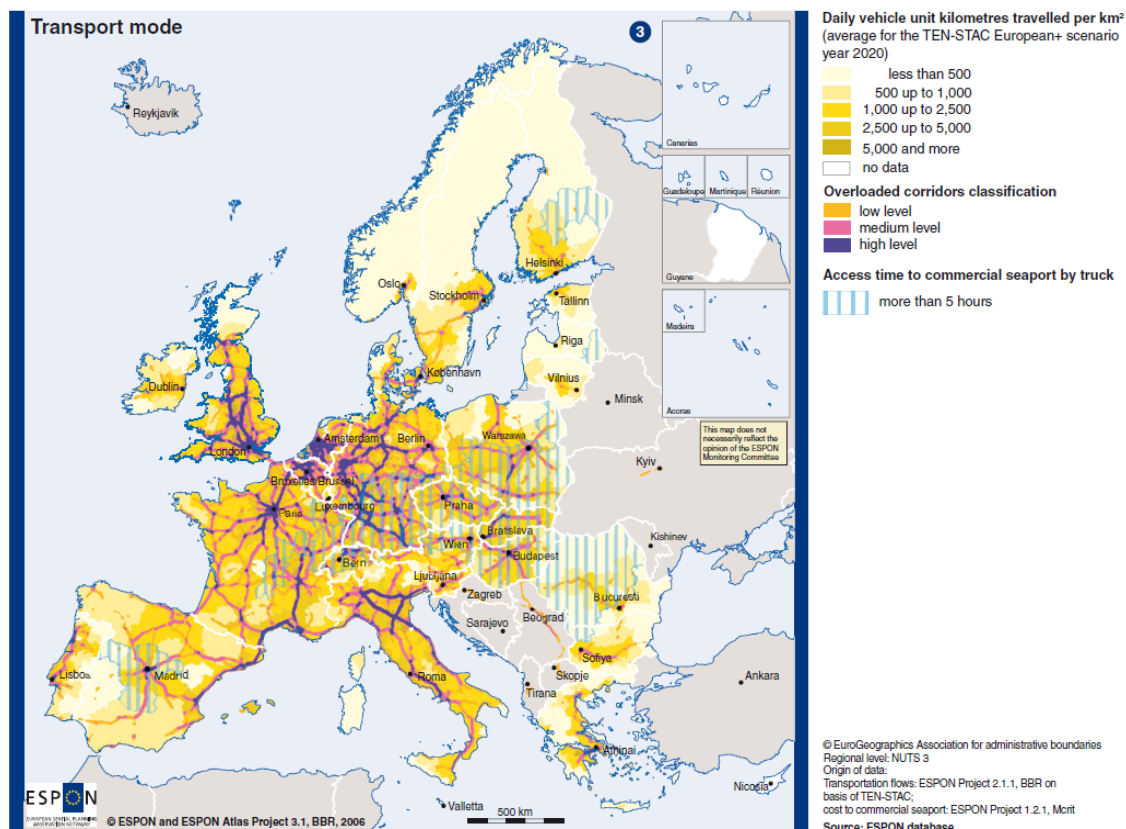


Fig. 24. Transport mode in Europe

Source: ESPON Atlas (2006).

Also, connections by other means of transport are very well developed in the Basque Country. There are direct ferry connections to the United Kingdom. In addition, train connections are of key importance – the same transport corridors as motorways. In the Basque Country, there are two important sea ports – in Bilbao and near to San Sebastian (Harbour of Pasaia). The Basque Country has got three airports. First, Bilbao Airport, is located 9 km north of Bilbao – with over 4 million passengers per year being one of the biggest ports in Spain. There are direct flights to many European capitals and other cities. A fast development of that airport is observed – for example, in 2000 there were 2.5 million passengers. The second one, San Sebastián Airport, is located in the municipality of Hondarribia. The airport serves a few domestic flights only. The last one, Vitoria Airport, is situated near Vitoria-Gasteiz and is a commercial airport⁷.

The railway network is connecting the Basque country with France and the rest of Spain. In parallel to accession to the EU, Spain has started the construction of fast speed railway lines. Nowadays, in the Basque Country the high speed rail network between Bilbao, Vitoria-Gasteiz and San Sebastian is under construction. “The Basque Y” will transport cargo and passengers. In plans, there are short segments between main station in major cities and their industrial zones (Figure 25).

⁷ Airports' homepages.



Fig. 25. The Basque Y – high-speed rail network

Source: <http://www.euskalyvasca.com/en/home.html>

The project aims to elevate the Basque Autonomous Country to the status of a future core region. The project envisages to bond together the European space by facilitating the North-South connection, from Madrid to Paris, or the West-East link, from the Atlantic Ocean to the Mediterranean Sea. It has a huge potential for revitalization and transformation of the territory lying far beyond its administrative boundaries.



Photo 5. Construction of the new transport infrastructure – near Bilbao.

Source: own materials.

Processes such as the transformation of Bilbao have helped this city to recover its role as a centre of advanced services, commerce and entertainment for a wide territory north of the peninsula and South of France. Trade, the number of visitors and tourists, traffic flows and attraction of foreign investments are some indicators of the growing consolidation of the core concept and the new prominence of territory.

Thanks to such location, there is a fast development of road infrastructure and also logistic centres as well as other industrial and services infrastructure. Concluding, the location of Basque Country in relation to European

circumstances is highly favourable. The development of transport connections and surrounding infrastructure is an important factor in land use changes and land use functions' changes, which will be taken into account more deeply in other chapters.

What is also important to general overview of this region are good internal connections. Between all three main cities (Bilbao, San Sebastian and Vitoria-Gasteiz) are motorways and national roads. Also, other smaller and bigger towns can be easily reached via high-quality transport roads. The challenge for the future development of the region is to increase the number of people using the public transportation instead of private cars.



Fig. 26. Road infrastructure in Basque Country

Source: Atlas National de España – Demografía (2008).

3.5. Conclusions in the context of land use

Concluding the general description of the narratives, some of the elements which have very important impact on the current changes of the land use should be underlined.

- (1) Big density of population. The Basque Country is one of the most densely populated areas in Spain, but for the last 20-30 years stagnation has been noted in the total number of population. It is an effect of a stable population natural growth and a small migration from other areas of Spain and other countries.
- (2) Diversified settlement system between coastal area and interior. Concentration of population in three capital cities (Bilbao, San Sebastian and Vitoria), some development of the towns in the coastal and transport corridors and relatively uninhabited inland areas of the region.
- (3) Relatively sustainable development of a coastal zone. Because of the relief (rocky areas with some bays and estuaries) the settlement cannot be so intensive as on the Mediterranean Coast. That is why

the changes are not so rapid and so intensive. Development of tourism in the Basque country has never been as intensive and massive as on the Mediterranean Coast and on islands. It was much more selective, restricted to some well situated and well educated visitors (examples are visible till now – the Film Festival in San Sebastian or San Sebastian as a Cultural Capital of Europe in 2016).

- (4) Relatively highly favourable socio-economic condition of this region – the level of unemployment is lower than national average, the wages are higher and general level of development is above national average too.
- (5) Rapid industrialization processes in the 50s, 60s and 70s of the 20th century. Industrial activity is still an important element in the regional economy. However, nowadays, a revitalization of some industrial areas can be observed, adapting these areas to the services, residential or public developments, as well as establishing open spaces. Highly intensive development of transport infrastructure – railway, motorways, harbours and airport in Bilbao.
- (6) Development of the main cities – projects that facilitate the development of social infrastructure, creation of towns with special regard to aesthetic considerations (destruction of some roads, industrial buildings, etc.), promoting public transport, creating big towns much more compact and complex.
- (7) Diversified relief determines, to some extent, the development of certain socio-economic and infrastructural elements – i.e., settlements, linear elements of infrastructure, land use.
- (8) Attention paid to improvement of the environment quality – by way of social programmes and strategies – e.g. promoting the public transport, improving the quality of air.
- (9) Highly important element in the rational planning of land use and land use functions is the law regulations in the Basque Country. The set of legislative documents – such as strategies, plans, GIS tools – and hierarchical planning system provide superior and effective instruments for complex and rational spatial planning. The spatial and sectorial strategies, and the ways of implementing and monitoring these, are an important tool that is useful in harmonious and planned development of the region.

4. ANALYSIS OF LAND USE CHANGES

4.1. Dynamics and directions of land use and land cover changes

The Basque Country is strongly diverse in the land use structure respect. We can separate some specific regions with different land use and land cover: the urbanized cities (Bilbao, Vitoria-Gasteiz, and Eurocity Bayonne – Donostia - San Sebastian); agriculture land in Araba, mountains region in Guipuzcoa. All these regions are well connected by transport infrastructure: express roads and highways.

In this report, we focused primarily on the Basque Country which covers only a part of Spain. In some paragraphs we focused on Eurocity Basque Bayonne- Donostia- San Sebastian, which is located on the both sides of the Spanish-French border. The analysis varies its point of view in accordance with the needs and statistic base.

Dynamics and directions of land use as well as land cover changes are analysed on the NUTS 2 and NUTS 3 level.

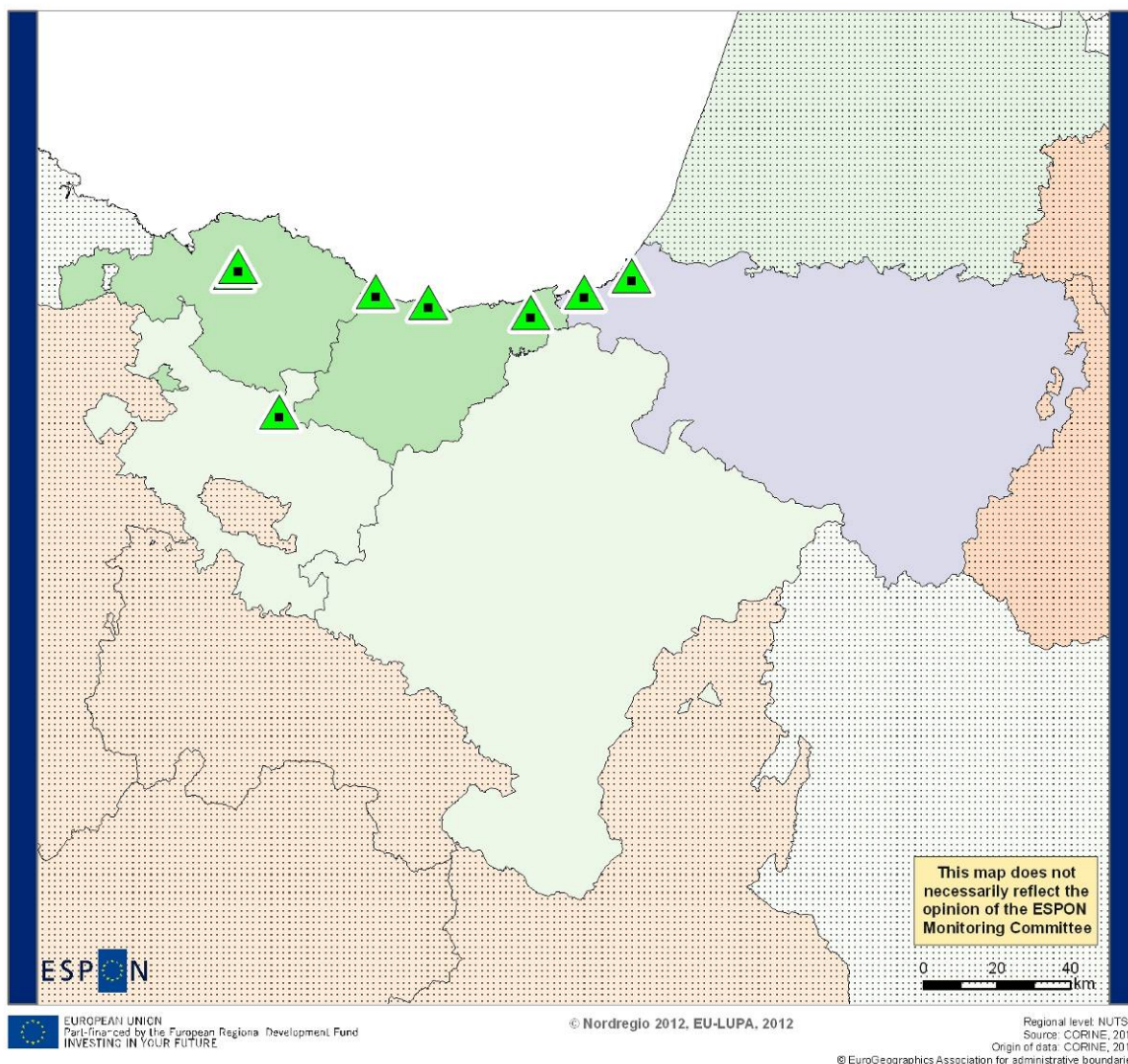
Figure 28 presents also land cover flows noted in the period 2000-2006. Land Cover Accounts summarize and interpret the $44 \times 43 = 1892$ possible one-to-one changes between the 44 Corine land cover classes. These changes are grouped to so-called flows of land cover and are classified according to major land use processes:

- lcf1 Urban land management
- lcf2 Urban residential sprawl
- lcf3 Sprawl of economic sites and infrastructures
- lcf4 Agriculture internal conversions
- lcf5 Conversion from forested & natural land to agriculture
- lcf6 Withdrawal of farming
- lcf7 Forests creation and management
- lcf8 Water bodies creation and management
- lcf9 Changes of Land Cover due to natural and multiple causes

Basically, the classification of land cover flows distinguishes change between broad land cover classes and changes that are internal to these classes.

As can be seen on the figures, changes in each part of the analysed region are different. On the French side, extensive or complex agricultural intensification took place. There was low intensity of changes. When analysing the land cover flows in this area, we can notice some urban sprawl or urban land management. The Navarra region was classified as agriculture extensification area, where the intensity of changes was low or with a leaning toward extensification. Araba was classified as region with agricultural internal changes or intensification. Regions of Bizkaia and Guipuzcoa were classified as the ones with internal changes of forest, when we descend to a lower level of regionalization.

1990 – 2006 Land Change Typology Eurocity Basque Bayonne - San Sebastian



Land Change Typology

- Very high intensification with artificial surfaces replacing mainly natural areas
- Very high intensification due to specific areas of residential and economic sprawl
- High intensification due to residential and economic sprawl surrounding urban conversion
- Medium-high intensification due to diverse urban processes
- Medium-high intensification due to diverse urban processes
- Medium intensification due to some urban sprawl combined mainly with forest conversions
- Medium intensification - dynamic mix between agricultural/forest changes and urban sprawl
- Low intensification, dynamic mix between agricultural/forest changes and limited urban sprawl
- Low intensification mainly due to agriculture and forest changes
- High extensification due to forest and agricultural changes but specifically the withdrawal of farming

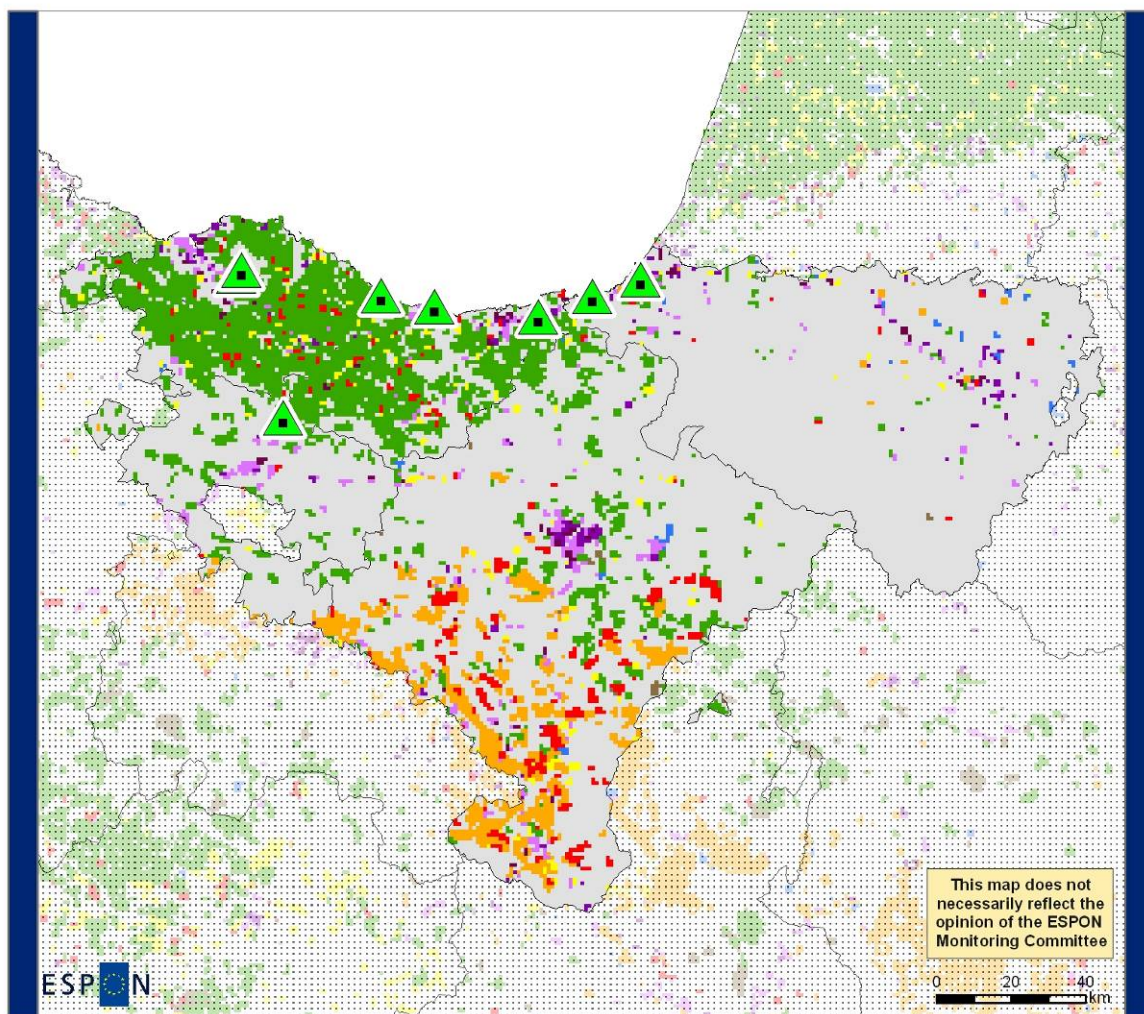
- Points of investigation
- Areas outside the case study region

Fig. 27. Land Change Typology (1990-2006)

Source: Nordregio, based on Corine Land Cover

Land Cover Flows 1990-2006

Eurocity Basque Bayonne - San Sebastian



EUROPEAN UNION
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Regional level: NUTS 3
 Source: CORINE, 2012
 Origin of data: CORINE, 2012
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Areas Subject to Land-Use Change

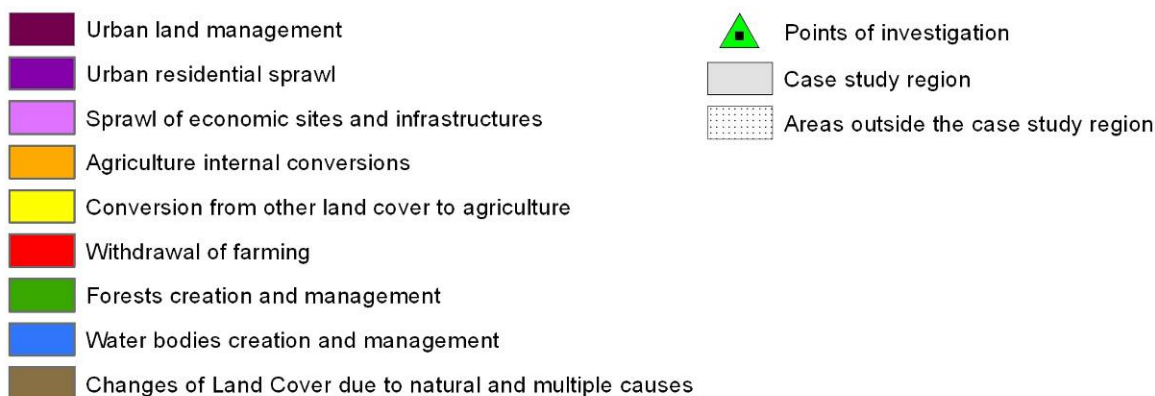


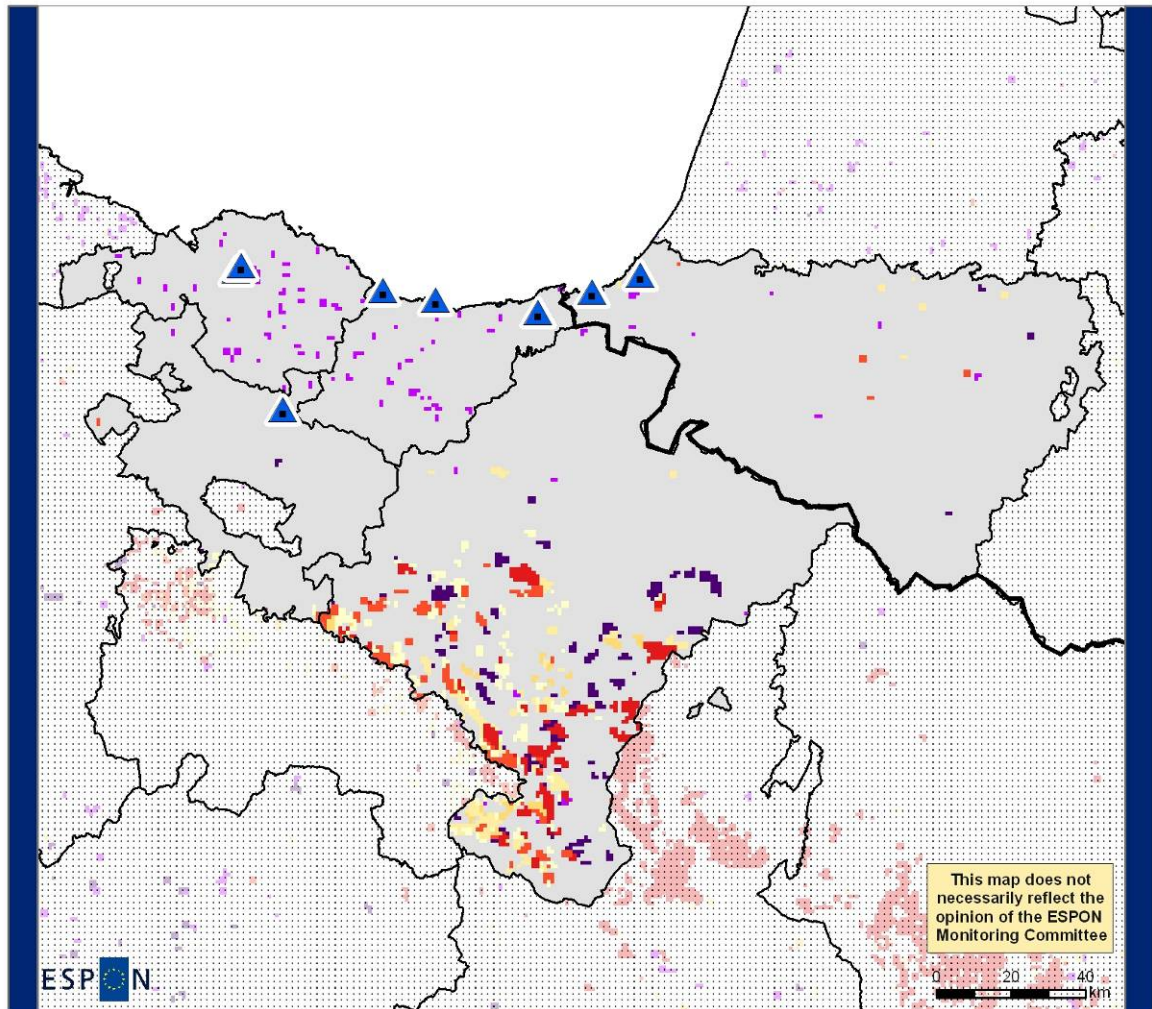
Fig. 28. Land Cover Flows (1990-2006)

Source: Nordregio, based on Corine Land Cover

Second Level Land Cover Flows 1990-2006

Eurocity Basque Bayonne - San Sebastian

Agriculture Internal Conversions and Withdrawal of Farming



ESPON
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 © Nordregio 2012, EU-LUPA, 2012
 Regional level: NUTS X
 Source: CORINE, 2012
 Origin of data: CORINE, 2012
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Land Cover Flow Types















- | | | | |
|---|---|---|--------------------------|
|  | Conversion from arable land to permanent crops |  | Points of investigation |
|  | Conversion from pasture to arable and permanent crops |  | National boundary |
|  | Conversion from permanent crops to arable land |  | Regional boundary |
|  | Extension of agro-forestry |  | Case study region |
|  | Extension of set aside fallow land and pasture |  | Areas outside the region |
|  | Internal conversions between annual crops | | |
|  | Internal conversions between permanent crops | | |
|  | Withdrawal of farming with woodland creation | | |
|  | Withdrawal of farming without significant woodland creation | | |

Fig. 28a – Second level land cover flows

Source - Nordregio

Looking closer at the broader area that includes the Basque Country Region, Atlántiques Pyrénées and Navarre, it turns out that the land cover and land use is closely related to the terrain. A high proportion of hill and mountainous areas, large denivelations (height differences) of area or location on a rocky coast determine the type of vegetation and activity that can be seen in this region. More than 90% of land is covered by undeveloped land like forests, agriculture areas, special protection areas. The highest percentage of this type of land is common in the mountainous area of Araba. But differences in relative numbers are not markedly striking. On the whole, agriculture and forest areas are dominant; other types of lands constitute just barely 8%.

Three types of land use dominate in the analyzed area: forests, special protection area and agriculture with farmland. Forest dominates in Araba: this form of land use covers 31.5% of the region's surface and, at the same time, constitutes 34% of green areas in the region.

We should notice that the quality of forest is not the same in each region of the Basque Country. Nowadays, there is barely 5% of good quality natural oak forest in the whole region, as compared to originally 80%. Most of the areas which in statistics are classified as forests in actual reality are plantations of trees. The quality of forest in Araba is very high as compared to other regions.

The highest percentage of agriculture area is in south part of the studied territory – in the Araba region. In the analysed period, the surface of agricultural area decreased from 255 290 ha in 2000 to 242 780 in 2007. The critical factors that influence this situation are urbanization processes and other ways of land use intensification.

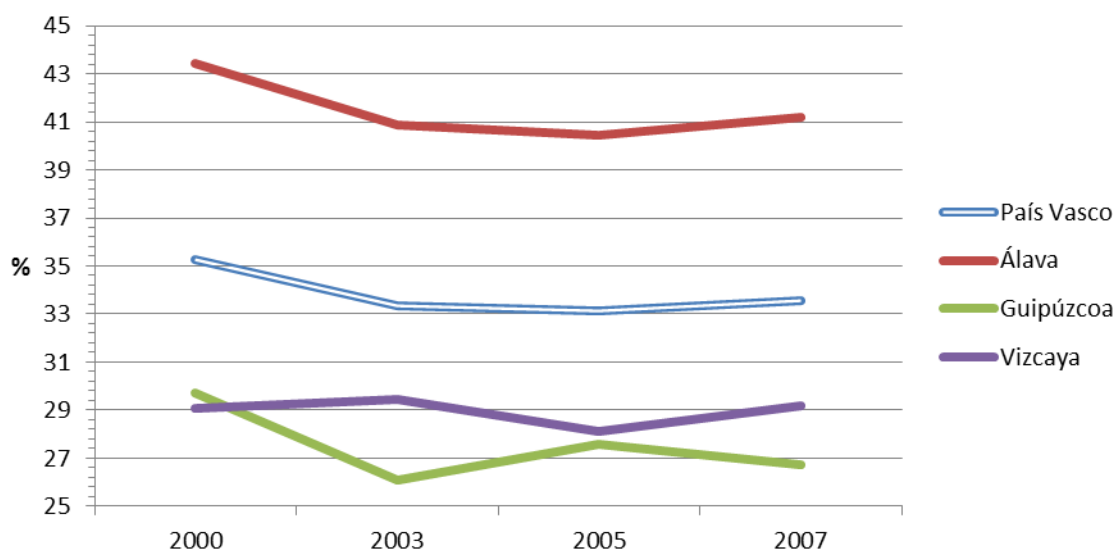


Fig. 29. Total agricultural area

Source: Eurostat 2012

Total area of arable land also decreased – in the 7-year period this area was reduced by about 8% (Figure 29). Most part of the arable land was occupied by cereal crops (primarily wheat, spelt and barley). Area of root crops, potatoes, sugar beets decreased in the period 2000-2007. Only area of fresh

vegetables and industrial plants experienced an increase. Surface area of permanent pasture and meadows decreased in all the regions (Figure 30). The most significant drop was observed in Araba.

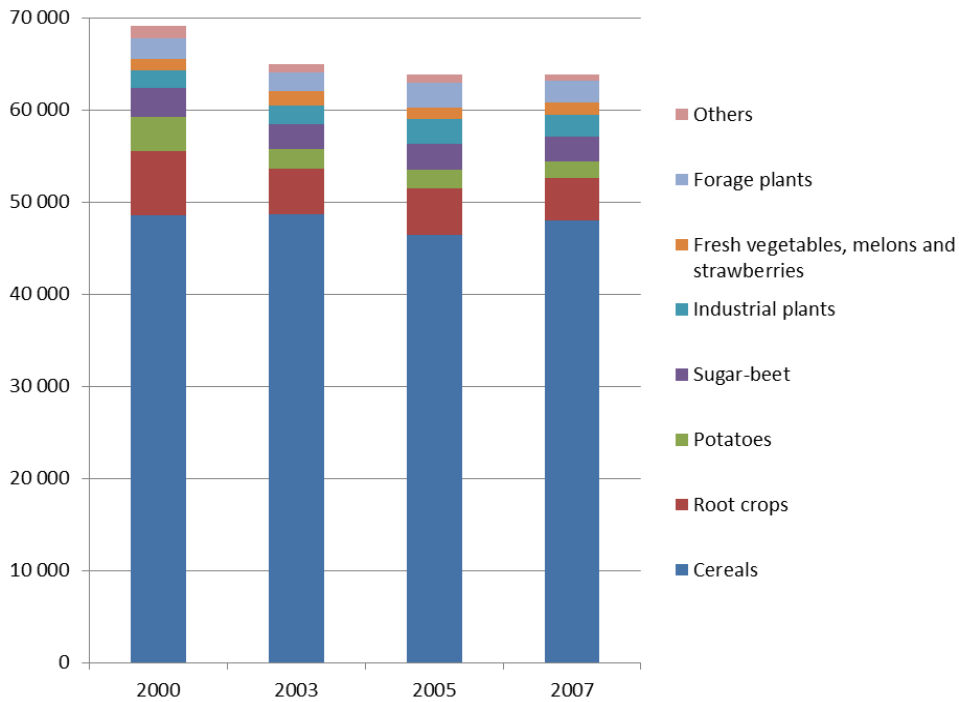


Fig. 30. Structure of arable land in Autonomous Basque Country (in ha)

Source: Eurostat 2012

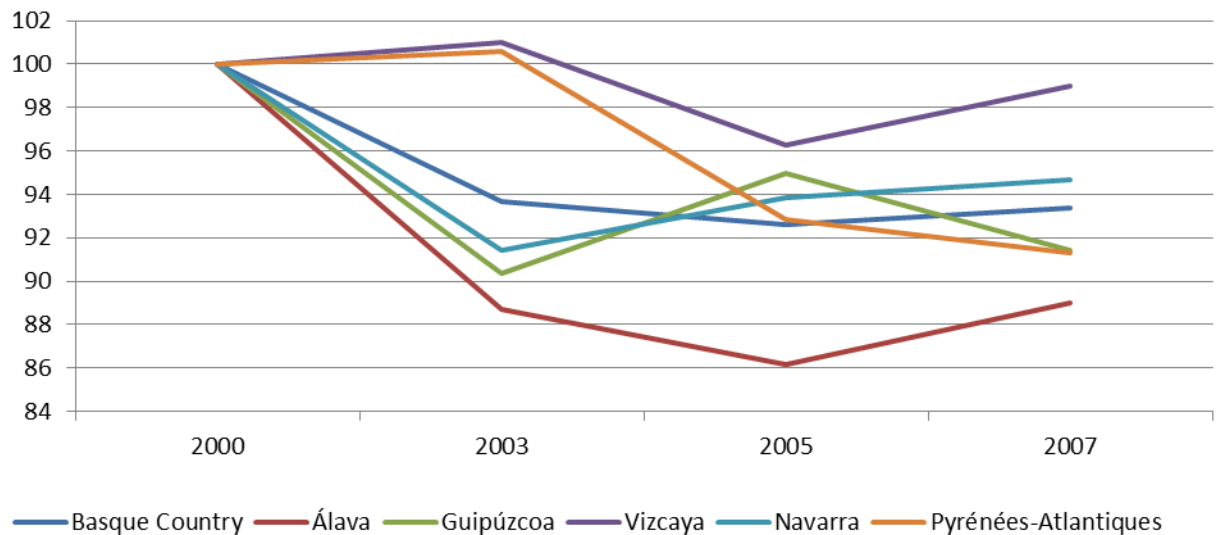


Fig. 31. Dynamic of changes permanent pasture and meadows (in %, date for 2000 - 100%)

Source: Eurostat 2012

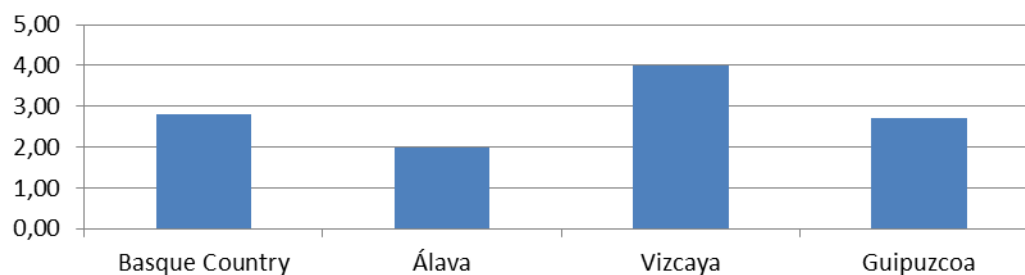


Fig. 32. Share of residential land in Basque Country and its districts in 2000

Source: Eurostat 2012

Coastal area in Eurocity Basque Bayonne- Donosti- San Sebastian Region is highly urbanized – it belongs to Spain’s industrial north. In this area, there exists a lot of forms of industry, tourism logistics and services centres. Towns (Bayonne-Anglet-Biarritz Conurbation community on the French side and San Sebastián on the Spanish side) in this coastal cross-border conurbation have 600,000 inhabitants. Also, other two big cities – Bilbao and Vitoria – Gasteiz, which are the capitals of provinces, have a highly urbanized area. Bilbao have 354,145 inhabitants, but the Greater Bilbao – the one of the biggest Spanish metropolitan areas has almost 1 million inhabitants. The agglomeration of Bilbao includes city and surrounding municipalities of Derio, Etxebarri, Galdakao, Loiu, Sondika, and Zamudio to the north; Arrigorriaga and Basauri to the west; Alonsotegi to the south; and Barakaldo and Erandio to the east.

The second biggest town – Vitoria-Gasteiz is the capital of the autonomous community of the Basque Country. City has a population of 235,661 people.

The Basque Country in its structure is similar to other urban complexes in the world: it has a similar size and population. Many residents live in San Sebastian and works in Vitoria, companies from the region use the port of Bilbao. Daily operations makes cities closer together, creating a consistent market. There are some characteristic features which characterize a city region, like the Basque country. First, urban sprawl and new forms of land occupation have a huge impact. In the Basque country, we can notice the transformation of villages’ residential centres, the rise of new communities, the rise of new centres in areas that before have been of peripheral character, which are now being linked to the major shopping and leisure centres. Second, the new transportation systems link distant spaces, channelling growing demands for mobility. We can also mention global connection elements associated with ports and airports, high-speed trains, new logistics platforms, public transport systems, like metro, tram, improved intermodal connectivity between different systems, high-level telecommunications infrastructure. The last one is sophisticated and increasingly complex system of high level services and facilities. In the new economy, operating globally requires an extraordinary level of complexity. For businesses in order to operate globally, it is needed a support of a wide range of highly complex and specialized services (intellectual capital, consulting, legal, marketing, new technologies, transportation, financial, etc.), that can only be located in urban nodes of a certain size, that is, e.g., in cities and territories of a certain critical mass. Availability of specialized support services to companies is for cities a

key precondition to attract competitive and innovative businesses that operate globally.

4.2. Trends, actors and drivers of the changes (micro and macro scale)

Population of the Basque Country have been increasing during the last 20 years by about 20,000 people. There is a high internal migration: people living in the peripheral, forested and mountain areas are moving to cities and to the coastal area. This phenomenon is caused by labour market in the north of the region. San Sebastian was previously a health resort with mild climate. As time went by, the aristocracy began to build houses and city became popular and expensive. Bilbao in 1960s was an industrial city, but after outbreak of the oil crisis in the beginning of the 1970s local authorities had to change strategy of development. They opted for a high-tech industry and tourism, with a particular focus on modern art. There were some changes in the landscape of the region: heavy industry was replaced by modern technology, based on the rapid development of transport accessibility.

In the Basque Country, the urbanization process is highly visible. Urban municipalities between 40,000 and 100,000 inhabitants have been losing their population by about 0.4% per year. On the other hand, in rural municipalities that are located close to the big city, the number of population has been on the increase (by about 15% in the last decade). A lot of new houses in the rural areas are holiday cottage houses (second homes for people from cities) (*EuskalHiria_Net...*, 2007). A number of functions are concentrated in the capitals of provinces, where there are infrastructure growth and better job opportunities - as a result, the brain drain occurs. Parallel to the development of the cities' centres, an expansion of metropolitan areas took place. There was a significant change in performance space: old industrial and port buildings disappeared – instead high-tech companies turned up. In Vitoria-Gasteiz, local community has addressed urgent problems and actively started works to restore the historical centre. In San Sebastian, various initiative have been launched, such as; the network of museums, concentration on the proposed widening of tourism, knowledge-intensive activities, or the renewal of the Pasaia Bay.

Coastal areas are becoming increasingly popular. However, the trend is different than in the south and west of Spain, which is dominated by sandy beaches. In other coastal regions in Spain, tourism approach plays a dominant role. Hotel complexes, restaurants are being built and services for tourists are being developed. In the area of the Basque Country, coastal tourism is focused mainly on the domestic tourists, who in this area are building their second, cottage houses. Most of them are people from the same region. In rural areas of the Basque Country rural tourism is rapidly developing (largely due to the fact that it is a more profitable form of tourism), which is geared toward foreign tourists from Scandinavia, Britain or Germany. With the development of rural tourism, agrotourism farms and organic farms proliferate. Also, they are equipped with sports infrastructure: golf courses, horse stables. In the farms orchards and gardens are cultivated, which use

only environmentally-friendly methods. The quality of agricultural products is increasingly improving.

Nowadays, lack of biodiversity presents the most severe problem for environment. Forest areas cover 54% of the Basque Country, which is of a high value, but one should bear in mind that these forests are mainly composed of two species of trees: eucalyptus and pine. In the area of the Basque Country there are virtually no natural forests; most of these are plantings and plantations of trees. In recent years, organic farms are growingly gaining in popularity. Traditional agriculture is becoming less and less important, because of ageing of people working in agriculture.. There is a fashion for healthy foods, thus organic and ecological farming is highly popular.

In Spain, the responsibilities of housing policy rest on three different governmental levels: central, autonomous and local ones. As regards central level of government, it has to coordinate housing as an economic sector, together with general planning of economic activity. It is responsible for planning and distribution of credits, applying housing taxation through income tax. The central government has to prepare and approve the financial framework for housing policies. The autonomous government exercise control over regional planning, as well as pursues housing policy. In addition, this kind of government is obliged to provide a set of rules and regulations at the regional level, and to control accomplishment of basic regulations on the central and regional level. The autonomous government is responsible for management of housing policy programmes. That level of authority has to facilitate development of public housing, as well as acquisition and management of public land. Representatives of autonomous government have powers to sign agreements with local corporations in order to develop public housing.

Third level of government has responsibilities concerning land planning, issuing building permissions, managing and controlling of municipal inheritance taxes with regards to housing and land. The local government is obliged to develop local housing (Eastaway et. al, 2004).

One of important driving forces of change in land use are prices of land and houses. In recent years prices have increased enormously. This is important problem for affordability of households. Cheaper land and houses are located in the greater distance from a city or in less friendly landscapes. Second significant driving force is changes in property of houses: on the Spanish housing market there are a lot of private investors and almost no whatsoever public owners.

Despite the fact that since the 1980s, the central policy concerned with housing is trying to improve the availability of private flats, still the housing market has not yet been provide with significant stimulus. In the same period, other policies and laws were implemented, introducing, for example, rented laws or fiscal benefits for owners. Additional factor that facilitate the development of housing estates is a state subsidy for developers and households for the construction or purchase of freehold flats (Eastaway et. al, 2004).

4.3. Contemporary and potential conflicts

In the Basque Country, fortunately, barely a small number of contemporary conflicts can be noticed. It is largely due to superior spatial planning.

There are some conflicts caused by lack of continuity in the positions of power. Various political parties want to pursue policies in different directions. A common nuisance is different interests of individuals and communities. The most common problem is the construction of shopping centers or a new infrastructure. In addition to a confluence of interests, there are also the coordinating mechanisms that enforce compliance with existing regulations. EU regulations state, that spatial planning is of great importance and cannot respect the rules of an open market. This is a new problem, since the government imposes more limits in the guidelines, regarding, for example, that reconstruction of old buildings in cities is rather more important than a new housing development in these.

The most important task is to maintain the environmental balance. Recently, most widely known issue is the building of the Port of Pasaia. It raises problems, owing to its hugely negative impact on the environment, as well as for economic reasons. One might also ask whether the construction of the port will be profitable when operating in close proximity to the port of Bilbao. The construction of ports and harbours has always involved a conflict with the environment, protection of biodiversity and tourism. Also, the urbanization and depopulation of peripheral areas with low accessibility are also matters of great concern.

4.4. Scenarios

First, the Basque polycentric system is a key factor to the consolidation of the City-Region. The availability of three major urban areas is an important advantage. These are characterized by an exemplary territorial arrangement, and little distances between them. Bilbao, San Sebastian and Vitoria-Gasteiz are three cities that are full of attractive, increasing complementarities between them, and also they all experience, according to their own idiosyncrasies, exciting development processes and urban improvement. The future challenge is to continue betterment of quality and consistency of internal nodes for each of these cities, fostering a development of close relationship between them and agreeing on strategic complementarities of urban profiles between each of them.

The Basque Country has an attractive network of medium-sized cities that are key areas for integration of urban and rural landscapes, in which built-up and natural areas may coexist, preserving a characteristic landscape of their territory. These medium-sized cities are urban centres of great importance to the overall balance of the territorial structure, and to maintaining the social balance by developing the strong sense of belonging of its citizens, as well as to maintaining the balance between places of residence, work and leisure that should determine the future model. Here, the challenge is to improve an urban quality and integration with the environment, factors being of key significance to widening its appeal and potential development, which may halt its

deterioration and strengthen the economy and diversification of production in this model of the Basque system of cities.

In the Basque Country, three principal objectives of “The cross-border cooperation project (II)” are realized: rooting the Basque culture in common identity, opening to and preparing to contributing to construction of Europe and creating new metropolises in the European urban system.

It is too early to say whether the review of planning, which is now taking place in the context of the current housing and construction crisis, will see the land occupation as envisaged in the current urban development plans, i.e. as a point phenomenon triggered under the new technical, social and economic circumstances, so the question remains open whether the current approach will be continued in the future.

According to Alfonso Sanz Araujo, the future of the Basque Country lies in an idea of Euskal city – i.e., the link between three biggest cities in the Basque Country. If you think about the Basque Country in terms of a big city, the cohesion in spatial planning will be very easy. The Basque government should think about airports, universities and university campuses. Also, an important problem that is going to be faced in the following years is the necessity of development of another big seaport in Pasaia.

5. MULTIFUNCTIONALITY OF LAND USE

5.1. Functional differentiations

The Basque Country is characterized by a relatively big differentiation of the relief. That differentiation affects the possibilities of development of specific functions in particular areas. The most characteristic feature of functional differentiation is the fact, that due to traditional division into three provinces, there are three equal (in the administrative understanding) cities – Bilbao, San Sebastian and Vitoria-Gasteiz. Each of these cities has a relatively different economic specialization, but all of them attempt to be a compact urban settlement – with all possible services of general interests, development of R&D centres, development of tourism and modern transport infrastructure. From the economic point of view the most important town in the region is Bilbao and its agglomeration. It can be noticed that inside of these towns there is an ongoing process of revitalization – the old industrial districts are transformed into the public spaces (parks, museums, etc.) and housing or industry functions take the place of the old functions. Thus the functional differentiations of the cities are decreasing, and, nowadays, the domination of the housing and service functions can be noticed.

Around the three major cities (especially Bilbao and San Sebastian) we can observe the fast development of the neighbourhood towns. It is all possible, because there is a very well developed transport infrastructure, with huge possibilities of travel offered by public transport. The very good connections (via motorways or fast double lines roads and railway system) provide the possibility for efficient travel time to the main cores of development in the region from many locations. The development of the settlements is especially evident on the west-east axis via motorway E5. In that area, there are not only settlements with developed housing functions, but there is also a fast development of logistics, industry, manufacturing, transport, shipping, technological parks, harbours (in Bilbao and Pasaia) as well as other functions (it is well exemplified by Irun town close to the French border). Due to a privilege of having a very good spatial location (motorway, airport and two important harbours), a belt of over 150 km around motorway E5 is not only the most densely populated but also the fast developing zone in the Basque Country, being one of the most developed areas in Spain as well as in Europe.

Next, there is the belt of towns that are located mostly in the estuaries of the rivers by the ocean. These towns are relatively small – the largest one is (except for San Sebastian agglomeration) Bermeo with around 17 thousand inhabitants (and what can be of interest, it has had a stable population since the 1970s). The development of these settlements is limited by the relief – In most cases, they are located in the bays which are surrounded by the rocky cliffs. That is why they cannot develop and spread its size in an unlimited way and all directions. Also, an important factor in the development of these towns is the way and philosophy behind development of tourism. These settlements have not developed the massive tourism functions as is observed in the Mediterranean coast. Due to colder summers, the development of tourism functions is less intensive and rather more selective and exclusive. The best

example provides San Sebastian – the Cultural Capital of Europe in 2016 (together with Polish city Wrocław) and also the host of the famous film festival – has the highest flat prices in the whole Spain. Apart from that, the development of tourism is much more selective, depending, to a larger degree, on the domestic market than international. Some of these towns are carrying out not only services functions (settlements, tourism, commercial activities) but also industrial ones – being largely dependent on fishery (best examples are Bermeo and Getaria).



Photo 6. Example of one of the Spanish towns located in the bays and estuaries – Bakio.

Source: own materials.

The rest of the region is sparsely populated – especially, in the southern part of the region (mainly Araba district). The biggest land surfaces of the regions are covered by forest (pine and eucalyptus). There are also rocky hills in the central part of the region (especially, Sierra de Gorbea). Also, some parts of the region (in particular, southern part of Araba) are utilized as agricultural land. Detailed description of the agricultural areas was given in the previous parts of the report.

5.2. Current multiple uses of land

Multifunctionality can be analysed at least on two different spatial levels – i.e., local and regional. When analysing that topic on the regional level, it can be noticed that the Basque Country as a whole can be called a multifunctional territory. As was described detailedly in the previous chapters, there are functions of great importance such as: housing, services, industry, transport, research, educational, tourism, forest, agriculture, marine, ecological, settlement and others. Intensification of each of these functions varies in accordance with each given area. Similarly, the importance of each function is varied, when looked at from different perspectives – economical or land use. While taking into account economical perspective, functions of major importance are transport and services, and conversely, from the land use perspective, forestry and agriculture are of greater importance. Also, we can notice general differences in the importance attached to these functions by comparing the Spanish and French side of Eurocity. As was already

mentioned, the French conurbation is a low-density area (with 200 inh./ha) devoted mostly to tourism (leisure activities on the coast, health tourism, green tourism and cultural tourism), while the Spanish part (with 400 inh./ha) belongs to Spain's industrial north (food processing – mostly fish, construction and the manufacture of electric equipment). There is also a big contrast in the land usage – the French area has small houses set in large, green gardens, the Spanish part is made up of high-rise housing blocks, industrial buildings and high-density old towns (Dubois-Taine, 2004).



Photo 7. Differences in the land use in Spanish (Bermeo – above) and French (Bidart – below) coastal area.

Source: own materials.

Analysing multifunctionality from the local perspective it can be stressed that there are a lot of changes in land use – especially in the cities and their surroundings. Many sites that were previously industrial nowadays are residential. According to the opinion of prof. Urrestarazu, nowadays there is a trend to create towns a little bit multifunctional. Previously urban development has been very sectorial, in one aspect, residential, in another one commercial (malls), in other industrial and so on. Nowadays, there are some ideas about multifunctional use of the urban space to reduce environmental impact. Certainly, some of the functions have to be located outside the cities,

however, the development of big cities is, nowadays, and should be, in the future, much more compact and complex. The urban growth must take place within the cities' limits, with the existing areas having to undergo restructuring, for example, old industrial areas.

It has to be also mentioned that in the cities and their suburbs, the process of intensification of functions can be observed – it means that less intensive functions are being replaced by more intensive ones even if that means that one monofunctionality is replaced by another monofunctionality. Intensification of functions can be measured again from the economic and land use perspective. The most common changes are as follows: transformation of arable land into the industrial, transport, technological, logistic or services functions. One of the best examples are the technological parks located outside of San Sebastian, Bilbao and especially Vitoria.

At the end it has to be underlined, that due to a very good spatial planning system in the Basque Country, the development of the area takes place under generally favourable legislative circumstances. That is way there are only rare cases of unplanned, rapid and chaotic development of certain areas, which can lead to conflict of some functions. That is why, rather a complementarity and co-existence of functions is prevailing.

5.3. Potentiality of multiple uses of land

In the future, we can observe further concentration of population in the major cities of the region and depopulation of the small towns or peripherally located settlements. Owing to this, the stronger development of the main cities should be noticed – accompanied with more intensive usage of the land around them and further revitalisation processes of the ex-industrial districts. According to prof. Urrestarazu, in the peripheral settlements one monofunctionality connected with agriculture will be replaced by another connected with a specific development of tourism (summer residences, selective tourism). General future trend will be then associated with intensive development of many co-existing functions in the centres and transport corridors, and extensification of human activity in the less populated areas. Again, in the future, spatial and sectorial planning will be rapidly gaining in importance, in the Basque Country. Due to natural conditions, the planning should be carried out in a proper way, because of lack of alternatives to location of some activities.

Also, in the future, the closer cooperation between three main Basque cities (Bilbao, San Sebastian and Vitoria) can be predicted – under the Euskal city concept (the Basque Y transport system) and also cooperation with Bayonne agglomeration in France – under the Eurocity concept. These stronger ties will also influence, to a certain extent, the multifunctionality of the particular areas. Thanks to a cooperation, some higher functions will be distributed to particular places (some cities), and others, instead of building and developing the same institutions and functions on their territories, will be using them in the neighbourhood cities. Thanks to such cooperation and increased specialization of the towns, the process of development of many functions will be somehow a little bit reduced.

6. POLICY CONTEXT OF LAND MANAGEMENT

6.1. Land use in the regional/local documents

In late 1970s Spain moved from a highly centralised system, where there were two levels of government (central and local), to a three-tier system. Nowadays, there are local, regional and central governments. In 1978, the regional government was established in the Constitutional Chart. The regional government consists of 17 self-governing Autonomous Communities or regions. The local level of management in Spain is sub-divided into two levels: provinces (52) and municipalities (about 1000).

The central government exercises very wide powers. In the context of land management, this level of government has powers in areas such as: setting the basic framework for and coordination of the general planning of economic activity, merchant shipping, ports and airports of general interest, air traffic control, air transportation, railways and inland transportation - when it takes place in the territory of more than one region, basic legislation on environmental protection and on woodlands and forestry. The regional government has different responsibilities primarily in the areas such as: regional and spatial planning, land use planning and housing, also railways and roads that are entirely within a given region's boundaries. Its other tasks are connected with ports of refuge, recreational ports, airports and also agriculture, forestry and woodlands. In addition, regions admit liability for implementation of environmental protection in matters relating to building and operating hydraulic infrastructures and resources of regional interest (e.g. channels and irrigation projects). On the lowest level of administration, local responsibilities are concerned with urbanism and housing, roads, ports and airports, hydraulic exploitation, channels and environmental pollutions.

Besides three levels of government (regional, provincial and local), since 1986, the European Union policy has played an important role in spatial planning. Spain have taken part in several projects that have been financed by the Cohesion Fund or European Fund of Regional Development.

The major document for land management is Land Planning Law (LOT) of 1990. Number of broader policies was being reduced in favour of sectoral decisions concerning land management. The next level of land use management is general land plan (in the Basque Country, it was in existence for 16 years). The second level is territorial planning. In this case you have, e.g. a defined number of houses, which can be built in this area. The last one is sector land planning. More about local and regional document was in chapter 3.3.

7. CONCLUSION

The Basque Country is characterized by a polycentric urban system: there are three cities (Bilbao, San-Sebastian and Vitoria-Gasteiz), which play the major role in this structure. When we analyze this region in a broader context, we should add also the Bayonne-Anglet-Biarritz Conurbation as one of the major system's cell. Those major cities with villages of subsequent rows are connected by transport system but also crisscrossed by social, functional networks. Land use is highly dependent on terrain and location relative to major urban units.

Urbanization is highly concentrated: the cities are surrounded by suburbs, housing expansion in settlements is concentrated along major transportation routes.

Urbanization in the Basque Country is closely related to a lifestyle. Young people in the first place are looking for a job and usually stay at parents' houses because they cannot afford their own apartment. When at the age of about 30, they start their own families and want to buy own houses or apartments. But then they rarely decide to change jobs and for a drastic change of place of living. Therefore, the city is overgrown with housing estates. Only a thoughtful planning process can effectively control and restrict the chaotic urban sprawl. Another limiting factor for moving to other cities and therefore causing pressure on the development of suburban areas is the specific modus operandi of the Spanish, whose working day exceeds 12 hours, with long, about 2 hour break for lunch in the afternoon. This operation mode is an impediment to people who live in a considerable distance from the workplace. To facilitate commuting, the Spaniards planned their network infrastructure in a very careful way.

Major changes that have occurred in land use and land cover are associated with urban sprawl and new forms of occupation of territory such as: transformation of villages residential centers, development of new communities (especially located near transportation corridors and big cities), shopping and leisure centers. In particular, the new and modernized network infrastructure was of key significance. One of the most considerable changes in land use are related to the migration from peripheral areas to the coastal and urban areas. People living in rural areas resign from cultivation of land, moving to towns and changing the way of production to organic. In this region of Spain rural tourism is more popular (to foreign visitors) than classical coastal tourism.

The highest pressure on land can be noticed in the coastal and urban areas. It is so because a lot of functions are concentrated there: settlement, industry, harbors, wind energy plants, logistic centers, touristic zone. Idea of multifunctionality is connected with mobility of people to reduce an environmental impact.

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Appendix 1

Verification of land use changes typology in practice

Land use changes discovered by Corine Land Cover pictures analysis were verified in practice by a field study of eight cases in the Basque Country. Verification was carried out by the sample of 8 squares 1 km x 1 km, in which the changes were of different intensity and were processing in different directions. Process of verification consisted of several elements: analysis of the typology maps and satellite imagery, observation of points, carrying out photographic documentation and talking to local people about factors of changes.

Point No.	Intensity	CORINE Land Cover Flow	Coordinates
1	2	3 - Sprawl of Economic Sites and Infrastructures	N 43° 19.148' W 1° 51.180'
2	3	2 - Urban Residential Sprawl	N 43° 23.206' W 1° 41.664'
3	-1	3 - Sprawl of Economic Sites and Infrastructures	N 43° 26.770' W 1° 32.759'
4	N/A,0	No Visible CORINE Change	N 43° 18.541' W 2° 23.108'
5	N/A,0	4 - Agricultural Internal Conversions	N 43° 18.161' W 2° 12.372'
6	N/A,0	3 - Sprawl of Economic Sites and Infrastructures	N 43° 17.797' W 2° 52.234'
7	N/A,0	No Visible CORINE Change	N 43° 18.753' W 2° 51.426'
8	N/A,0	No Visible CORINE Change	N 42° 58.740' W 2° 38.623'



Figure A – Points of investigation

Source: Nordregio

Square 1

The geographical coordinates

N 43° 19.148'

W 1° 51.180'

Square 1 is situated between San Sebastian and Irun (about 10 km to the east of San Sebastian and 6 km to the west of Irun) in the town of Oiartzun. This is the Lanbarren Industrial Zone. The square distinguishes a sprawl of economic sites and infrastructure; the intensity level is 2.

As we can see on figure 1a, changes were very rapid in this area. In 2001 there was a forest and just a year later first works were made. Logistic park was made by Construcciones Amenabar SA. The opening took place in 2005. It is the largest industrial area in Guipuzcoa, the estate covers an area of approximately 450.000 m² divided into 15 plots of 30.000 m² each, and for enterprises engaged in the transport and logistics.⁸ The main factor, which determined the localization of this industrial

⁸ <http://www.grundfos.es/web/homees.nsf/webPrintView/8C06DEA24B3AAB4FC12570B4003D4374>
(access 22.02.2012)

area was a good transport accessibility. The Lanbarren Zone is located near motorway E5, which connected the Iberian Peninsula with the rest of Europe and between two big cities – Irun and San Sebastian.

During the building of industrial zone more than three million cubic meters of land has been transported, strengthened the slope of the highway and was buried along over 300 meters electric line. Also, construction and driving of a tunnel under artificial Euskotren and RENFE lines to form a roundabout in two levels of access to the polygon.⁹

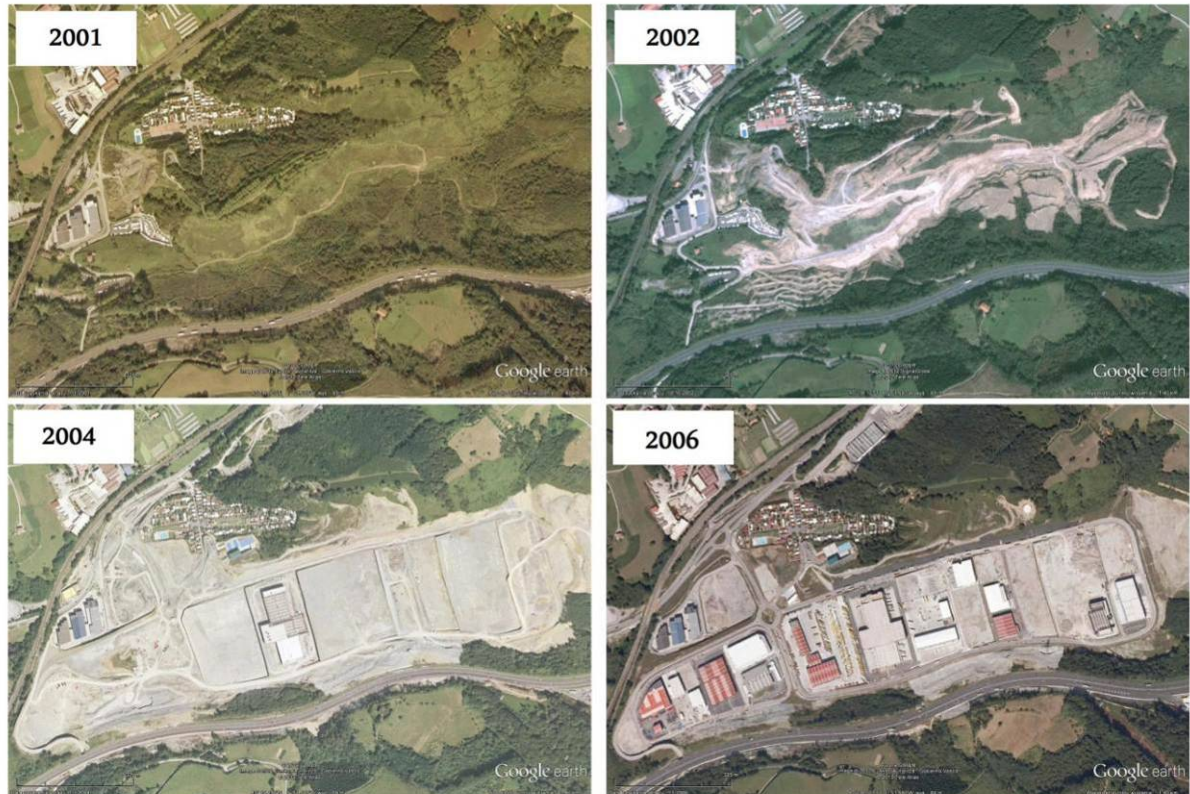


Figure 1a – Square 1 – Lanbarren Industrial Zone

Source: Google Earth (2012)

⁹ http://www.camaragipuzkoa.com/publicaciones/economia_guipuzcoana/12/pdf/boletin122005.pdf
(access 22.02.2012)



Photo 1a – Square 1 – Lanbarren Industrial Zone
Source: own materials.

Square 2

The geographical coordinates

N 43° 19.148'

W 1° 51.180'

Square 2 is located in the French part of region, about 2 km to the east of Saint-Jean-de-Luz in town Kalitxo. In the land cover typology it's an urban residential sprawl in the highest (3) level of intensity. The Estate is located in the suburbs of Saint-Juan-de-Luz, less than 1km from ocean coast. Former agricultural land was transformed into estate of houses. Towards the south of estate, service zone is located with supermarket, bakery and car services.

The estate consists of a series of detached houses, which vary in size, but they are in a similar style, referring to the local architecture.

Localization of Kalitxo is a very important factor. Good accessibility to town and services, attractive landscape all contribute to the fact that living here is at a high level.



Figure 2a – Square 2 – Urban sprawl In Kalitxo.

Source: Google Earth (2012)



Photo 2a – Square 2 – Urban sprawl In Kalitxo.

Source: own materials.

Square 3

The geographical coordinates

N 43° 26.770'

W 1° 32.759'

Square 3 is located in commune Bidart, between Biarritz the Negress and the small village of Arbonne. It's situated just to the south of A63/E5/E80 road, and to the east of D255. To the east the Izarbel's Technopolis is located. The land cover flow distinguishes sprawl of economic sites and infrastructure. The level of intensity is -1. In our opinion the typology is incorrect. In this area urban residential sprawl has taken place. There are some block of flats and detached houses.

The most important factor is good accessibility to town and other parts of region (by motorway). The estate is located near the highway, but it is not a nuisance because of trees area separating houses from noise. Estate has also public transport connection with Bayonne and other cities.



Figure 3a – Square 3 – Bidart

Source: Google Earth (2012)



Photo 3a – Square 3 – Bidart.

Source: own materials.

Square 4

The geographical coordinates

N 43° 18.541'

W 2° 23.108'

Square 4 is located in Mutriku, a town located in the province of Guipuzcoa. The town was located in first half of the 12th century on the rocky coast of Atlantic Ocean. Nowadays there live 5 thousand inhabitants. Distant localization from main routes of communication makes it relatively isolated.

The main factor of development was fishing, but nowadays there is a crisis time for fishers. Industry also had a great impact (canning, medical devices). Service sector focuses mainly on tourism.

As a result of a low accessibility and rocky location, spatial development of Mutriku is not intensive in the last years. At the beginning of town formation, areas in the valley and near to the bay were settled. With time more inaccessible areas have been built up (at the slope of the hills). In the recent times we can see just a few new buildings which were constructed on slopes (Figure 4a) and in place of old buildings.

According to Corin Land Cover typology there are no visible changes. The team agrees with this, because the final spatial structure of the city was formed in the medieval times and after that the buildings were mostly reconstructed. The changes on the slope, which we can see on figure 4a are on a very small area, they are not therefore included in the typology.

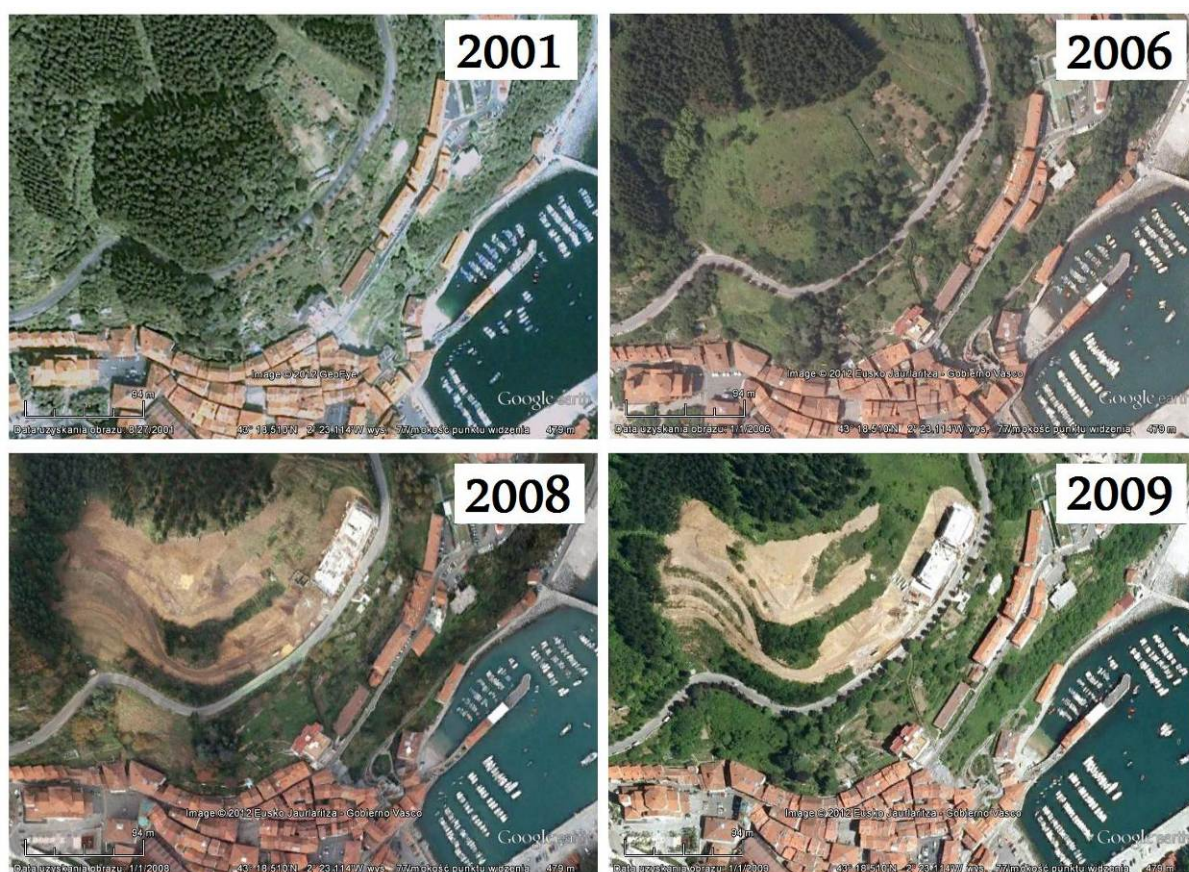


Figure 4a – Mutriku
Source: Google Earth (2012)



Photo 4a – Square 4 – Mutriku.

Source: own materials.

Square 5

The geographical coordinates

N 43° 18.161'

W 2° 12.372'

The fifth point of investigation is located in Getaria, a small coastal town with 2666 inhabitants. It was founded in the 13th century as a fishing port. Originally the city and the island were not connected. The harbour which was built later linked the two banks. In the recent years the town has not changed its spatial structure a lot. Old buildings and space between them was replaced or filled with new buildings.

In the rural areas of Getaria municipality the furniture manufactory was located, in space between land and island the fishery company was set. The main factor of insignificant changes is a weak accessibility to town.

Corine Land Cover Flows shows Agricultural Internal Conversions on this area.



Figure 5a – Getaria

Source: Google Earth (2012)



Photo 5a – Square 5 – Getaria – harbour and fishery company.

Source: own materials.

Square 6

The geographical coordinates

N 43° 17.797'

W 2° 52.234'

The sixth square is situated in Derio, the municipality located in the province of Bizkaia. This area is located on the north-west to Bilbao and on the west to the Bilbao Airport. There is a good route and train connection with Bilbao and other parts of the region. Derio is situated in a pleasant landscape, between hills and forest.

As we can see on figure 6a there is an intensive expansion of economic sites and infrastructure. A complex of buildings for research and development as well as technology parks was constructed there. On the picture from 2009 we can see (in left top corner) a new golf club and touristic area. According to CLC Flows the square distinguishes Sprawl of Economic Sites and Infrastructure, which proved to be correct.

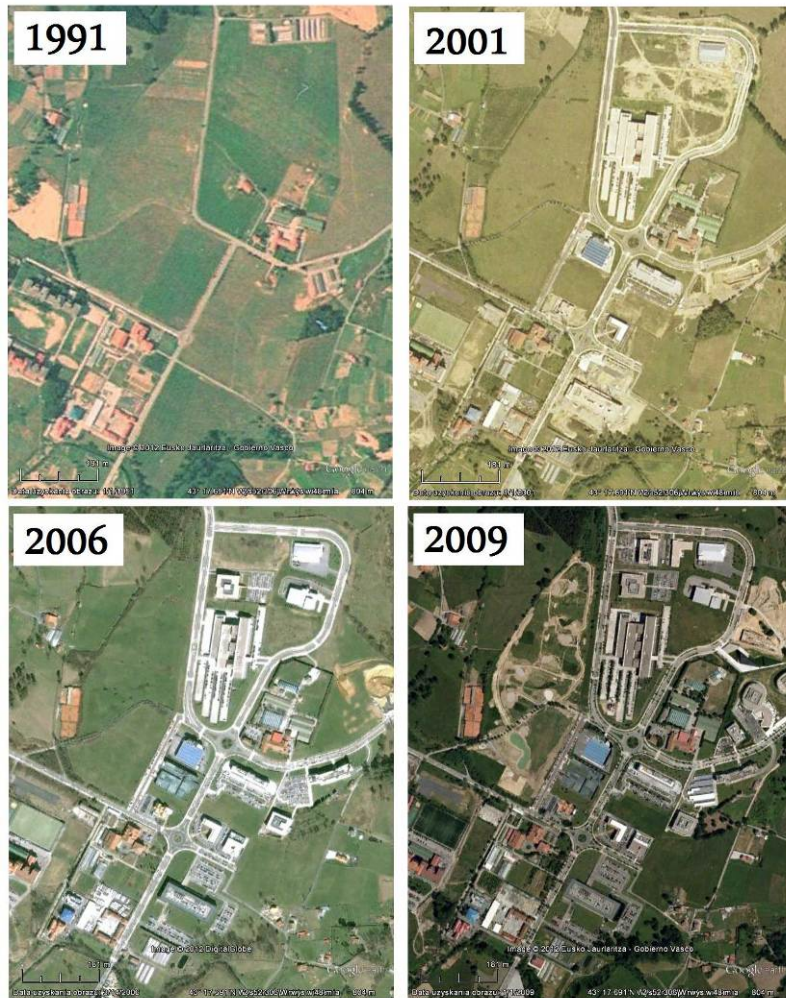


Figure 6a – Derio – technology park
 Source: Google Earth (2012)



Photo 6a – Square 6 – Derio – technology park.
 Source: own materials.

Square 7

The geographical coordinates

N 43° 18.753'

W 2° 51.426'

Corine Land Cover shows forests and tree plantations as one of the types of land use. One would think that in the Basque country there are a lot forests and government takes care of their biodiversity. But after talking to experts, it turned out that most of the forests in the Basque country are eucalyptus and pine plantations. To the north of Bilbao, near the town of Geldo there are large tracts of trees. As we can see on Figure 7a there are changes in the agriculture type of land use and in wooded area. Arable land was changed into pastures area. In particular years different areas of woodland were cut down. Private owners cut their own property, creating a network of roads in their area. The cleared areas in subsequent years were intended for another plantation.

Corine Land Cover Typology does not show any visible changes on this area. Changes in forest plantations are not visible to tools such as CLC. It should also be noted that the intensity change is greater in the recent years, after shooting images.

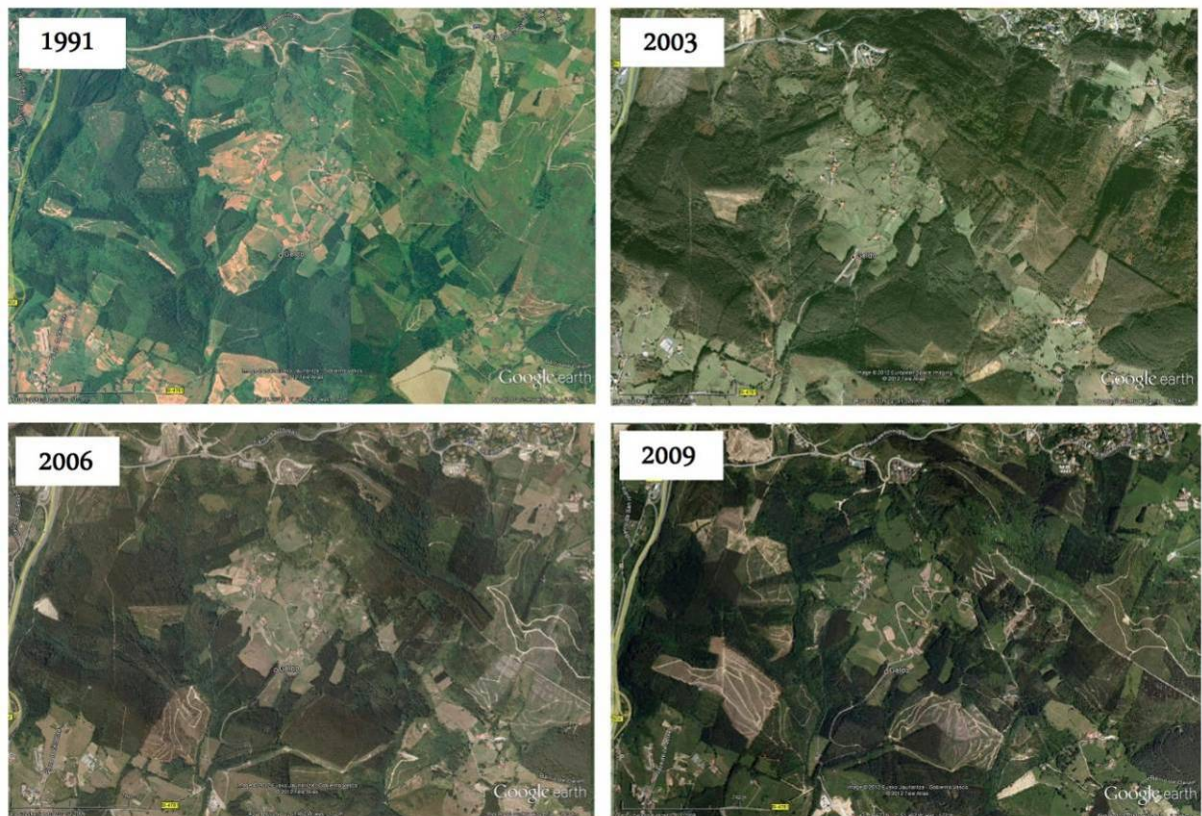


Figure 7a – Square 7 – Geldo – forest changes

Source: Google Earth (2012)



Photo 7a – Square 7 – Geldo – forest changes.

Source: own materials.

Square 8

The geographical coordinates

N 42° 58.740'

W 2° 38.623'

Legutio is a town and municipality located in the province of Araba. Town has 1.698 habitants (2011). In this area we can notice urban residential sprawl. Statistics shows that the population of Legutio has risen in the last two decades from 1214 in 1990 to 1644 in 2010¹⁰. But on the Corine Land Cover Flows Maps there are no visible changes in this area. There are two most important factors, which have impact on that significant increase of population. The first one is good localization: there is less than 15 km to the centre of Vitoria-Gasteiz, the capital of the Basque country and a few kilometres to technology park. The second one is an attractive landscape: Legutio is situated on the peninsula of Urrúnaga Reservoir. West side of town is the old part. There is a well developed social infrastructure: schools, health care, kindergarten, shops.

On the basis of investigation with the local entrepreneur it can be deduced, that in the new flats in Legutio mostly young couples live, without children or with a small child. They usually work in Vitoria or in technology park near the city. What is interesting is that the new residents do not integrate with the old inhabitants of the settlement. The new residents are generally young people who work out of home. They spend free time outside Legutio. Probably only when they have children they can use social infrastructure within the city.

¹⁰ Instituto Nacional de Estadística de España (2012)

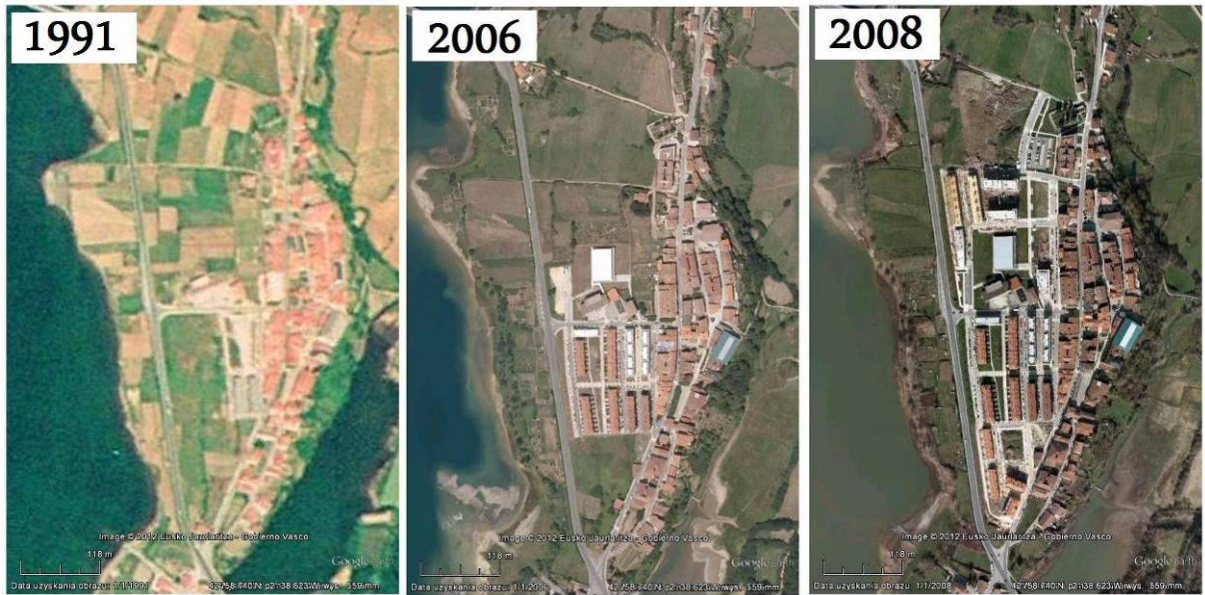


Figure 8a – Square 8 – Legutio
 Source: Google Earth (2012)



Photo 8a – Square 8 – Legutio – old and new parts of the town.
 Source: own materials.

Points of Investigation in Case Studies Eurocity Basque Bayonne - San Sebastian

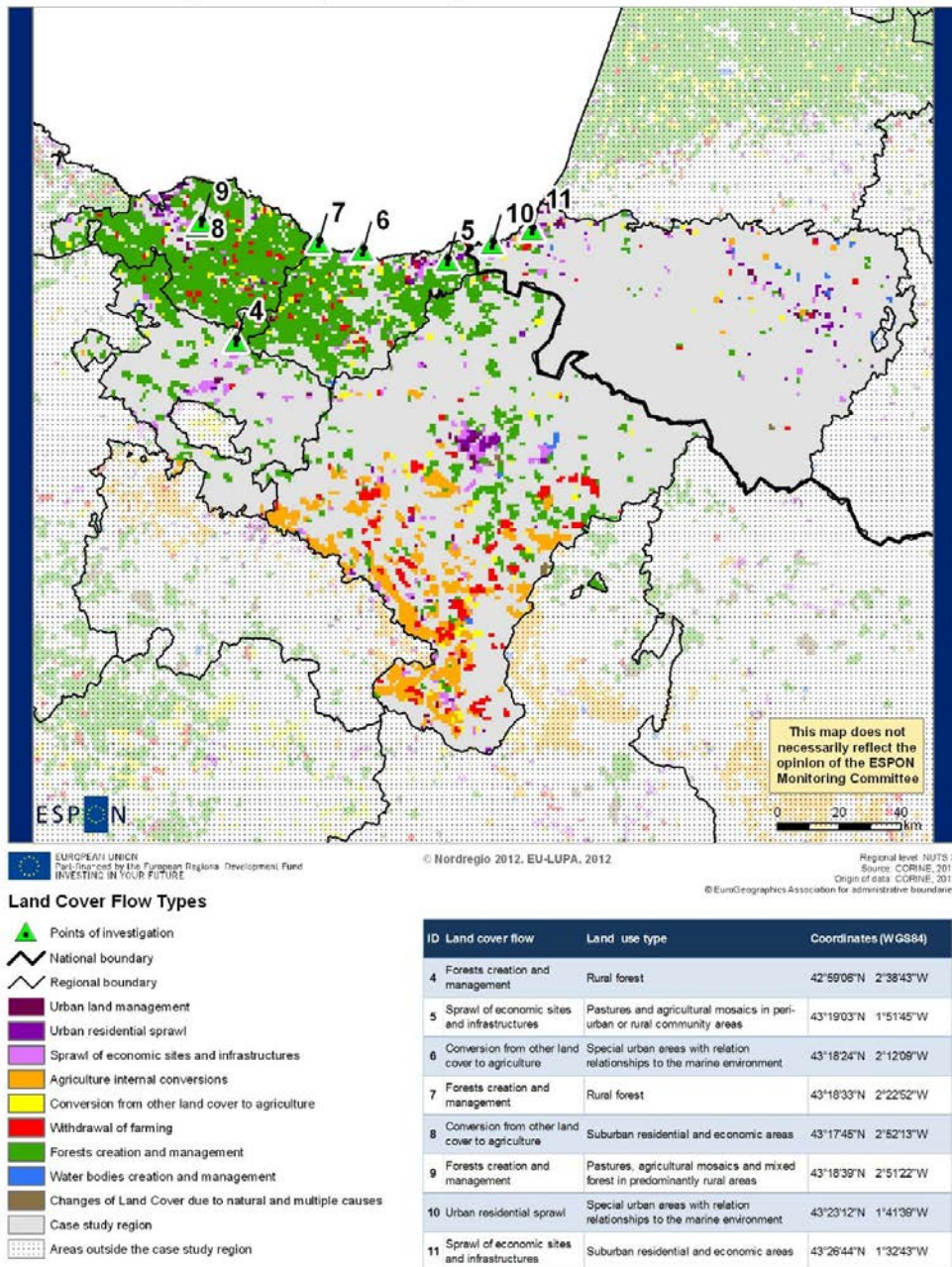


Figure B – Points of investigation
Source: Nordregio

Conclusions

Detected points of detailed analysis, showed an intensive changes in the analyzed region. All of the processes are connected with intensification of land use (build-up areas, infrastructural sites, forest plantations). The directions of changes identified due to CLC data were generally confirmed in detailed observation in the region. But some mistakes may occurred due to different resolutions and different types of GPS systems used for identify the geographical coordinates.

Appendix 2

Field study – interviews questionnaires

Region: BASQUE COUNTRY

Place: BILBAO

Person interviewed: MARÍA MONTSERRAT GARCÍA MERILLAS.

Representative of Association of Basque municipalities – EUDEL

Interviewers: Gemma Garcia Blanco, Konrad Ł. Czapiewski, Mariola Ferenc

Date: 09/01/2012

I. Socio-economic factors of land use change

1. Could you describe the main demographic processes in the region: migrations, birth rate etc.? What is their impact on land use?

The total population of the Basque country has increased slightly from 2003 up to now, only by 2.8% according to the National Institute of Statistics (www.ine.es). From 2003 to 2010 the population grew in 60.000 inhabitants.

In the province of Araba, the increase was 6.4%, while in Bizkaia only 1.6% and Guipuzcoa 3%.

This moderate population increase results from the phenomena of immigration. In the last 10 years until 2009 about 100.000 foreigners arrived to the Basque country. However, the economic crisis has slowed down the immigration.

In any case, the reality behind the increase in population from 1996 until 2009 is very different if we look at local scale, at municipality level. There are some municipalities where the population increase has been significant (such as Vitoria-Gasteiz for example) others with no changes at all, and even some that have lost population (Sestao municipality for instance)

With respect to the natural growth of population there has been a process of deceleration which started in the 1990s. There have been negative rates from 1981 until 2008, showing nowadays positive values close to 0% due to the profile of the immigration (young people and families)

The impact of these statistics automatically corresponds to changes in the land use of the Basque country. Firstly, because there have been important movements of population within the Basque country. There have been significant movements from big cities to small municipalities, looking for an alternative life style. This trend has forced the revision of the urban planning in those small target municipalities that should offer new land for residential use.

The last decades are not relevant in terms of Spanish migration. The immigrants have come from other countries (but at a lower rate than elsewhere in Spain). In recent years, foreign immigration is decreasing.

I think that Spanish migration is not relevant in urban planning, unlike the immigration from other countries.

2. What are the main processes and trends of settlement? What is the impact of new settlements on land use and spatial organization? Is there a lot of new built-up areas? What are the forms: contiguous development, linear patterns, scattered development?

Spain is different than the Basque country in terms of land use. Urban planning is different. Basque country has its peculiarities. It is highly industrialized and this "pollutes" border regions such as Cantabria or Burgos. The town planning answers to the Basque country peculiarities. The explanation is that we have own legislation that permits differences in urban planning, so we have focused on industrializing the land. For example, we have more similarities with Navarra than Cantabria or Burgos.

The more urbanized municipalities between 40.000 and 100.000 inhabitants are losing an average of 4.4 per thousand inhabitants a year. The Basque municipalities with less than 2.500 inhabitants show the most significant population growth rates, reaching an annual rate of 3.5 per thousand inhabitants.

On the other hand, the rural municipalities are the ones which show the most dynamic processes in terms of population change. They have increased their population around 15% in the last decade. This is especially the case of rural municipalities in the vicinity of bigger agglomerations, well connected and accessible to service.

3. What are the main processes, directions of changes in the field of agriculture (extensification or intensification, changes of fields spatial structure and crops structure)?

Organic farming, rural tourism, and growth of small towns have to develop. The last years' urbanization has been above rural and agriculture land. The fertile soils are lost. In the recent years we have started with the promotion of organic agricultural values, economic-oriented agriculture. The problem is that agriculture has never been planned. Also, people working in farming are relatively few and old. The law should support agriculture development because it is critical to us, simply because we want to eat good quality food. Forestry is not as bad, but we must do better on agriculture.

4. Are there such processes like: changing agricultural function of areas into other functions? Building-up areas of fertile soils? Increasing/decreasing the share of untilled land? Please describe briefly the processes concerning changes of agricultural land use.

Generally speaking, the agriculture sector has been reduced considerably in the Basque country, considering its weight in the region's GDP.

The primary sector is systematically losing its weight in relation to other productive sectors. To the extent that even in the legal framework it reflects the need to protect the rural space and food production in the region in order to strengthen the adaptation capacity of the sector and also its response to new challenges with regard to globalization and market liberalization.

Besides, at local level, society has lost interest in the productive sector, which currently relies on small farms and very aged population.

Nevertheless, the food sector in the Basque country is trying to recover and evolve towards competitiveness, is still in need of support.

The reality in the three provinces is completely different. The primary sector is still important in Araba while in Bizkaia is no longer relevant. Guipuzcoa still maintains quite significant forestry activity.

5. What are the main processes in the field of industry and technical infrastructure (new plants, industry centers, roads, railways etc.)? How would you assess its influence on land use?

Infrastructure is important to the Basque country. Since DOT (territorial master plan in the Basque country) in 1991, the connection from Lisbon to Paris through the Basque country was marked. Different plans are oriented to this connection, so are highways and harbours. The high-speed train follows these plans. We must take advantage of the border.

Urban processes associated to industrial land use have been very important especially in the last decade as well as transport infrastructure, communication and energy.

It has not been an arbitrary process, since there are instruments of Spatial Planning at regional level, devoted to the planning of such uses in order to coordinate the development in the Basque country.

The effect of such plans is also different at local level. The incidence of those plans is more relevant in the municipalities located in the communication axes and where the productive and economic activity of the Basque country concentrates.

However, almost all municipalities in the Basque country take somehow advantage of such infrastructures, due to reduced dimensions of this territory. The accessibility is to some extent a guarantee to most of the municipalities.

The development of the infrastructure, at the same time, is influencing the land use changes and the intensity in the use of the land: creation of industrial park malls in peri-urban areas, etc. In many cases they even provoke displacement of residence and work places, which frequently has negative effects because there is not a well-developed mobility model associated to this displacement.

6. What are the main processes in the field of tourism and services? Is there any development of tourism infrastructure (new hotels, holiday centers, swimming pools, tourist roads)? How intensive is the development in the spatial context (spatial extent of new areas used for tourism purposes etc.)?

With respect to tourism and services, there is no such negative effect in the intensity of land use. To date, tourism has not required a specific or complementary territorial infrastructure. The tourism in the Basque country combines the strength of urban tourism with the natural environment attractiveness, in a well-connected territory, with adequate infrastructure of transport and communication so tourism has not generated major land use changes.

7. How would you describe and summarize the general conditions of economy in your region and its impact on land use? Please refer also to employment issues.

Coastal location of the Basque country in the north of Spain is relevant (it's an asset). After the Civil War (1936-1939), we had a big migration from Spain due to shipbuilding and metal industries development. This positioned us very well. After gaining the autonomy (1979), industries were maintained and we improved the infrastructure to support industrial purposes. So we have a small territory with a high population density and developed industry with a large number of workers. During the 1980s crisis, all industrial areas were reconverted to keep workers employed. The process of restructurisation took place, creating a well qualified, highly specialized industry. In the last years, territorial balance has grown with good infrastructure, industrial parks, research parks and above all better services. The small towns (<2500 inhabitants) have also gained population. This has been achieved because urban planners have changed people's preferences.

Looking into the future, in terms of land use changes, it seems that industrial and residential use will not be as intense as in the last two decades. It is expected that the greatest role of the tertiary sector shall originate from the services provided by the land itself. In this relation the regeneration process of the urban zone is important, in opposition to the consumption of new land.

In the report CONFEBASK "*Demografía, disponibilidad de trabajadores y crecimiento vasco 2008-2020*" (*Demography, labour force and development 2008-2020*) it is shown that, in terms of employment, the main problem of the industry in the Basque country is the lack of qualified workers.

It is expected that in the next years more than two third of the employment generated by replacement will be of low qualification, whereas almost 85% of the new demand of employment will be concentrated in media and high qualification. The estimations say that between 2009 and 2015 the Basque country will need around 6800 of well qualified workers in its labour market and around 91.000 workers of lower qualification.

II. Environmental issues

1. Could you describe the main changes of natural areas in the last five decades (changes of forested areas, biodiversity, water conditions)? Has the spatial extent and condition of areas of high nature value changed for the last five decades?

In general there is a need to say that during the last 50 years there has been a strong anthropopressure process in the Basque country. The increase of urbanized areas has had an impact on natural biodiversity. However, it is also important to point out that this process has been in line with a protection, research and management of natural areas particularly those areas with a high ecological value.

The management of natural areas has been characterized by a passive rather than active conservation so this has allowed a coexistence of strongly transformed areas with the protected ones. From a total number of 251 municipalities in the Basque country, 148 are affected by Red Natura 2000 programme.

- 2. Please assess the main contemporary and future threats for natural areas (especially protected areas) in the region. How are they related to land use changes?**

Currently, the natural areas and especially the protected ones are well preserved in the classification of land use through environmental legislation. This protection is shown in instruments of Spatial Planning, in the assessment of plans and programmes (Strategic Environmental Assessment).

- 3. Were there any natural disasters in the region in the last two decades which influenced the land use and land cover (floods, fires)?**

At a local level, especially flooding, water quality decline, and heat island effect in the urban agglomerations.

III. Multi-functionality

- 1. Please name socio-economic and environmental functions of land use in the region.**
- 2. Multifunctional land use - which of the functions in your region co-exist?**
- 3. Which of the functions are the most important in the context of land use?**
- 4. Is the number of functions of land use increasing or decreasing?**
- 5. To which extent is the land in your region used in multifunctional way?**
- 6. What kind of functions co-existence is:
 - a) the most effective?**
 - b) the most desirable?**
 - c) the most common?**
 - d) the most difficult?****
- 7. Which of the functions of land use are the most important for the future regional development?**

Answer to all questions:

The multifunctionality of use is understood as a guarantee that all possible land uses are ensured through land management, that is an inherent principle in planning. In general, urban monopolies experienced that they are impoverishing comparing to all the cities and towns. For example, they are large areas of towns and cities that have opted for a monoculture urban "residential", which have been impoverishing because they became too specialized and used exclusively and especially for residential purposes. It was not easy to implement the service and trade sector: small industry and services promoted by individuals and local authorities have cost them much effort once implemented to encourage the predominantly used to perform a required minimum of diversification.

On another level of work and land management instruments, the multifunctionality is a working premise. Thus, management of the sector, which could tend to be a monopoly in land use by sectoral policies, should be integrated into the reflections that come from the supra-territorial and functional areas. Perhaps at this level of work it is necessary to ensure that this multifunctionality makes it very difficult to re-use the land.

IV. Spatial conflicts

- 1. Are there any conflicts related to land use? (As space is limited different actors compete to obtain the possibly largest area or their needs. For example: inhabitants strive to build houses, a businessman wants to put a plant or warehouse, there is a need to build somewhere sewage plant, administration of protected area tries to enlarge the area and so on).**

There are many needs that want to be satisfied at the same time. Most of them seem to be reasonable. However, the ultimate power to meet the social needs lies within public service and administration. The municipal administration should respond to all the needs at the urban scale of work, primarily to serve the population living in cities and towns. With a higher-level and supra-serving interests are the instruments of planning, linking the planning, which must weigh the interests that come together to give priority to infrastructure (socio-economic or environmental). That is the confluence of interests arising but also the mechanisms to coordinate and establish and seek the compliance.

- 2. What are the “competing” actors and functions (environmental, agricultural, industrial, settlement etc.)?**

They have always been the same. Currently, after the times of profound transformation, when the crisis has come, some actors might be left behind such as residential and industrial interests. On the other hand, environmental protection, agriculture and infrastructure (roads and energy) are of principal competing interests today.

- 3. Which of the actors are the most dynamic and successful in obtaining new land?**

The most dynamic and successful were probably road infrastructure and industry. The actor which has set up this collection of soil has been at regional and provincial decision-making level.

- 4. What are the most likely conflicts related to land use in future and what could be its impact on land use?**

All kinds of land use are determined by a major impact of noise pollution and recovery of watersheds under existing threats. You might think that the future is not as extensive use of new land and commitment should be made to direct the urban intensity process in already changed areas.

V. Government and policy

1. Please assess the state and regional law concerning spatial management and planning in your region. Are legal rules effective in sustainable and rational management of land?

Our urban culture is very important to us because our territory is limited. Land uses are controlled by urban planning, but land uses may change due to agents' interactions. But this is controlled by urban planning. Talking about spatial planning, the culture is less, but we have consolidated the procedures. Spatial planning determines the town planning. Some procedures are good, some not, some are obeyed, some not. What controls the land use is town planning, orientated by spatial planning. They are different and we are on track to coordinate them.

Urban planning and spatial planning, we have to develop the fields corresponding to each one. There is a lack of coordination. The sectorial plans are not coordinated with the regional plans. For example in the metropolis of San Sebastian, there must be coordination between the various spatial plans and urban planning as well... I am a town planner, so I am subjective about spatial planning. We have to improve in the discussion about who has a higher rank and the work with urban planning, but we are on the good way.

It's a question of scale. The one who implements the final plans is the municipality. Spatial planning orientates the whole region and makes the municipalities implement some plans or not.

2. Is the local and regional administration effective in land management and in preventing and solving conflicts related to land use? (Please describe and assess the issue and give some examples. Summarize the role of local and regional administration in management of land use).

The valuation is not negative. However, the model changed essentially the territorial and spatial planning culture that has developed since the 1990s and required a cultural change and urban development operation that will be gradually adapting. The legal provisions are becoming increasingly effective.

However, there are several activities that should ensure the effectiveness of the rules and roles. Local authorities manage the urban development (local interests) and the regional authorities manage the supra-scale zoning, to accommodate the interests beyond the scope of purely local management.

An example of this confluence of interests and how to manage them is for example the Territorial Plan for Rivers and Streams. The level of autonomous decision, which approves protection of the margins of the hydrological channels in the Basque country. This requires prioritizing of environmental concerns over other such as the different uses that could occur on the banks of rivers and streams (leisure, entertainment, sports, etc). This protection extends to all the channels that run entirely in the territory of the Basque country. However, in each municipality, the General Urban Plan also addresses the management of the river that runs through the municipality and the minimum protection is established by this Territorial Plan, but the city may enlarge the scale of protection.

3. Is there any monitoring of land cover changes in the region? (Please describe briefly).

There is no proper monitoring system but there is relevant information in databases and integrated information brought by UDALMAP which provides relevant territorial scale data.

VI. Localization (depending on the region)

- 1. How land use changes are resulting from vicinity of state border (how the state border influence land use in your region)?**

Not asked – no response.

- 2. How land use changes are resulting from vicinity of sea coast (how the coastal location influence land use in your region)?**

Not asked – no response.

VII. Land use in general

- 1. Please describe and summarize the major processes and trends of land use changes in the region over a last 50 years.**

Not asked – no response.

- 2. In a typology elaborated on the basis of statistic data, your region represent multifunctionality area, which is characterized by urban-rural areas, leisure areas, forests, agriculture, energy power plants areas. Is it a proper type for your region? Please explain.**

Although the Basque country has not been left out of the intensive process of urbanization that we have known from other postindustrial societies, in this case the process is broadly characterized by a low influence of local authority and its high population density, an area divided geography and in terms of land use as well. Despite the intense industrial stage, in most of the country the traditional landscape is preserved and the environment is still of high value.

The spaces have been occupied by new residential areas located primarily in rural areas with high accessibility to the major urban centers of the Basque country: in Araba, the eastern municipalities of the Plains of Araba, Gorbea foothills and municipalities located in the axis of the N-1 road between Vitoria and Miranda de Ebro in Biscay have been polarized on the right bank of the Nervion, in general Plentzia-Mungia region extending to the western municipalities of Gernika -Bermeo and secondarily in the towns of Encartaciones, Arratia-Nervi3n or Durango. In Gipuzkoa, in the light of statistical data the phenomenon has a lower intensity, but is evident in municipalities Donostialdea Goierri Tolosaldea and located on the margins of the N-1 road.

Thus, well-connected rural municipalities with densely urbanized areas have become more attractive for the establishment of new settlement. Many of these families, among which highlighted those which involve children and adults engaged in highly

skilled professions-abandoned urban centers in search of privileged environments and less standardized forms of habitat. Consequently, the employment in the Basque country has been territorially and socially selective, affecting primarily the rural settings and well linked to the nearby urban areas and is played by social class socio-economic well defined.

However, it is too early to say whether the review of planning, which is taking place in the context of the current housing crisis and constructive, will be taken into account as envisaged in the current urban development plans as a phenomenon triggered under the new technical, social and economic circumstances or otherwise, will continue in the future.

Region: BASQUE COUNTRY

Place: VITORIA- GASTEIZ

Person interviewed: PROF. EUGENIO RUIZ DE URRESTARAZU

Vice-Rector of the University of the Basque Country, geographer.

Interviewers: Gemma Garcia Blanco, Konrad Ł. Czapiewski, Mariola Ferenc

Date: 11/01/2012

I. Socio-economic factors of land use change

1. Could you describe the main demographic processes in the region: migrations, birth rate etc.? What is their impact on land use?

In the last 20 years, the main demographic process has been a stagnation of the population growth. Before, in the 1950s, 1960s and 1970s, there was a big Spanish migration and the industrialization process accelerated the growth, and the birth rate was really significant. So an important urban transformation took place in residential and industrial areas. The growth was compact, including the development of infrastructure as well. In the 1990s, the birth rate fell resulting in a negative natural growth and almost no exterior migration. But recently, after the year 2000 migration from the Eastern Europe, Northern Africa and Latin America has significantly increased.

2. What are the main processes and trends of settlement? What is the impact of new settlements on land use and spatial organization? Is there a lot of new built-up areas? What are the forms: contiguous development, linear patterns, scattered development?

There is a weak population growth observed, but a great urban expansion at the same time. It seemed that with no population increase, urban growth will not be remarkable, but nothing of that has taken place. There has been an extraordinary urban expansion in the last 20 years it has been done with low capacity urbanization in metropolitan areas. The compact urbanization was typical in the past and now urban sprawl is more common. Economically well-off citizens prefer less densely populated areas. Furthermore, there is a lot of new infrastructure of significant capacity that has changed the mobility of people, so that is very important.

Another demographic issue is the importance of big cities as an attracting factor for population (San Sebastian, Bilbao and Vitoria). This is dangerous because there are a lot of medium-sized cities that make an interesting urban system balance. But with this big attraction, urban system is not as efficient as it used to be because there is a population, services and decision maker concentration. So there is a growth of the coastal zones in detriment of the interior areas. This is dangerous because this territorial balance that exists now in dense urban area with medium cities could be lost.

In the relation between the cities of San Sebastian and Bayonne there are a lot of differences because of the border. You could think that there are mainly physical factors that separate people (rivers or mountains), but this case is an evident proof that what separates is the mentality. This is a border between two big countries (France and Spain) which have been fighting several times in their history. The border separates different legal systems, languages and cultures. Both sides have experienced different ways of evolution. The Spanish side, developed mainly because of industrialization. The French side represents a more traditional society. On the Spanish side, the principal demographic process is immigration, whereas on the French side, emigration to Paris or big French cities. There are different cities on each side. The Spanish side is densely urbanized and more compact. On the French side, there is a sprawl of urbanization.

3. What are the main processes, directions of changes in the field of agriculture (extensification or intensification, changes of fields spatial structure and crops structure)?

In the Atlantic part, the best soils for agriculture are at the bottom of the valleys, but this land is in competition with other uses because it is the most valuable, not only for agriculture but for all kinds of land use (infrastructure, urbanization, industry).

The best agricultural soils have been lost and they will be lost in the following years. In the last 10 years, 40% of exploitations have been lost. There are no people to work in the land. But the Atlantic countryside landscape still exists. Why? I think there are different reasons. 1) Economic reason, farmers think that they have a potential treasure waiting for urbanization. They don't want to rent the land to other people. They are keeping the property of their land without impediments. They are making illegal treatments to keep the land in good state with other farmers (without weeds). They don't want reforestation. Others are keeping the land for a spare time activity. 2) Another factor to keep this landscape is that some areas have been restructured to a luxury residence, good communicated, with attractive views. They do not want trees in their surroundings because they want good views... Forests could conquer all this Atlantic countryside landscape without this intervention. Territorial planning doesn't do anything to avoid this situation.

One important factor which has to be mentioned at the end and is influencing the agricultural changes is the Common Agricultural Policy and the payments to farmers. Also some certificates and programs can help with good quality oriented exploitations. For example, *Guarantee of Origin Queso Idiazabal*, brings some benefits but some are disappearing because the sons don't want to continue with the exploitations. The Txakoli or Rioja Alavesa have good results. Rioja Alavesa is the richest rural area in the Basque country and Txakoli also has benefits but in a little number of exploitations. There are also Quality Labels which help to sell the Basque meat at the market, but the last years, exploitations are disappearing, the help is not enough to keep them. The future of agriculture is not very promising except for Rioja Alavesa (wine production) and some economically oriented exploitation related with ranching. The others will be disappearing except for hobby and landscape keeping purposes.

4. Are there such processes like: changing agricultural function of areas into other functions? Building-up areas of fertile soils? Increasing/decreasing the share of untilled land? Please describe briefly the processes concerning changes of agricultural land use.

Is territorial planning effective in the non-desirable changes of land use? I want to think that partly yes, but the reality is that partly not. Territorial dynamics is much faster than territorial planning instruments. When the first plans were approved, lots of things were already done in the territory. And there is a competition between different administrations. Municipalities are very jealous and everyone has economic objectives. Generally, the plans are supported by the population of the municipality. People don't want to hear that they cannot develop; they want to grow above everything, by the mountains, rivers with new industrial areas, services areas. In the future, this will not be easy. Urbanization is not easy to stop. The new revision of the DOT (territorial master plan in the Basque country) is talking about new urbanized areas named "innovation core". Nowadays, we are in crisis, but when the storm is over the economic agents will act. They are not thinking about system change, they are not thinking about changing economic paradigm. On the other hand, rural areas in terms of economy meet many difficulties.

5. What are the main processes in the field of industry and technical infrastructure (new plants, industry centers, roads, railways etc.)? How would you assess its influence on land use?

The roads are sufficiently developed. The Basque country has enough roads and other elements of technical infrastructure. But of course there will be significant pressure on more intensive functions than on the less intensive ones – so as it was described above agricultural land will lose the competition with the housing and construction.

6. What are the main processes in the field of tourism and services? Is there any development of tourism infrastructure (new hotels, holiday centers, swimming pools, tourist roads)? How intensive is the development in the spatial context (spatial extent of new areas used for tourism purposes etc.)?

About the tourism – see below – point III.2.

7. How would you describe and summarize the general conditions of economy in your region and its impact on land use? Please refer also to employment issues.

General assessment was already made above.

II. Environmental issues

1. Could you describe the main changes of natural areas in the last five decades (changes of forested areas, biodiversity, water conditions)? Has the spatial extent and condition of areas of high nature value changed for the last five decades?

Environmental issues were not discussed separately – answer on that question can be found partly in other sections of the interview.

2. Please assess the main contemporary and future threats for natural areas (especially protected areas) in the region. How are they related to land use changes?

Environmental issues were not discussed separately – answer on that question can be found partly in other sections of the interview.

3. Were there any natural disasters in the region in the last two decades which influenced the land use and land cover (floods, fires)?

Environmental issues were not discussed separately – answer on that question can be found partly in other sections of the interview.

III. Multi-functionality

1. Please name socio-economic and environmental functions of land use in the region.

Multi-functionality is possible but does not really occur. All urban development has been very sectorial, on one side, residential, on the other commercial (malls) on another industrial and so on. Nowadays there are some ideas about the multifunctional use of the urban space, because of mobility, and to reduce the environmental impact. Some industrial areas must be in the peripheries (pollutant ones), but others, like technological centers, could be in the city; but in the Basque country they are in the outskirts. In Bilbao and San Sebastian this is actually happening. Especially in Vitoria Gasteiz, the technological center is surrounded by crops. Acting with intelligence, the urban growth must be in the interior of the cities, existing areas must be restructured, for example, old industrial areas. Planning must actuate here.

2. Multifunctional land use - which of the functions in your region co-exist?

In the rural world, rural tourism has been successful. In the Basque country and the Atlantic area in general, rural and urban land use are very close together. The tourism in the Basque country is regulated by some rules, first there must be an agricultural exploitation and if it is to be restructured for tourism purposes, it must be kept for several years. This is going really well in the coastal zones and in the vicinity of urban zones, several times is used by businessmen because it is near big cities. But at the end, this change is between two mono - functionalities, from rural to tourist. A lot of rural villages have a big number of students because they use them as a place to sleep, but this is not really multifunctionality. There is a lot to do in the field of multifunctionality, principally in urban areas, also in the rural ones. In general urban planning is more complex than rural.

3. Which of the functions are the most important in the context of land use?

Development of tourism in the Basque country was very selective. It did not take place on such a large scale as the Mediterranean coast. The weather conditions are not that well for mass tourism, so the development is much more selective. That is why settlements have developed only in the coastal bay. Much more important are settlement functions and intensive development of the three big agglomerations (Bilbao, San Sebastian and Vitoria); development of industrial areas and technology parks; as well as transport infrastructure.

4. Is the number of functions of land use increasing or decreasing?

It is rather stable – as it was mentioned before, one mono-functionality is transferred into another mono-functionality.

5. To which extent is the land in your region used in multifunctional way?

Not asked.

6. What kind of functions co-existence is:

Not asked.

- a) the most effective?**
- b) the most desirable?**
- c) the most common?**
- d) the most difficult?**

7. Which of the functions of land use are the most important for the future regional development?

Not asked.

IV. Spatial conflicts

1. Are there any conflicts related to land use? (As space is limited different actors compete to obtain the possibly largest area or their needs. For example: inhabitants strive to build houses, a businessman wants to put a plant or warehouse, there is a need to build somewhere sewage plant, administration of protected area tries to enlarge the area and so on).

There are examples of conflicts in the rural areas and little villages, related to governance. New people coming from cities want more services and better infrastructure in the village. They want to be in the government bodies too. This is a conflict that should be resolved with the time passing, it is not really serious. Other problem is that the new people who live in these villages don't want more people there; there are important conflicts about this.

Related to environment and territorial planning, for example, out of the Basque country, in the Pyrenees, all the valleys want to have a ski station. Economic agents build residences to the ski station and win a lot of money, when they win the money; the money only comes from the skiing station but is not rentable so they need the help the public administration to keep it. Here, in the Basque country, we don't have ski station but there are projects related with golf courses, economic agents want to build residences to earn money. Now, because of the crisis, it is not a good moment, but the agents are waiting for a better time.

2. What are the “competing” actors and functions (environmental, agricultural, industrial, settlement etc.)?

There are problems related to environmental protection. This enters in conflict with the population living there; they don't have the power to build other type of development. With new natural parks, there are always people who live there and don't want the natural park because the rules don't allow them to do anything. The problem appears when the land is private (Bizkaia, Gipuzkoa), but it is easier in Araba, where the land is mainly public.

3. Which of the actors are the most dynamic and successful in obtaining new land?

Not asked directly – the indirect answer can be found in other sections.

4. What are the most likely conflicts related to land use in future and what could be its impact on land use?

There used to be only few problems resulting from a conflict between rural and industrial land use because everybody generally wants these areas. There can be a conflict between big malls that compete with traditional markets, which face the risk to be closed. Changes in people's mobility favor the malls.

V. Government and policy

1. Please assess the state and regional law concerning spatial management and planning in your region. Are legal rules effective in sustainable and rational management of land?

Territorial planning is much more important here than in other places because it meets numerous difficulties and the alternatives are only few, one worse than the other. An intelligent policy is that urban growth must be inside the city and not in the outskirts with the processes of restructuring areas and changing uses in the cities.

2. Is the local and regional administration effective in land management and in preventing and solving conflicts related to land use? (Please describe and assess the issue and give some examples. Summarize the role of local and regional administration in management of land use).

The experts and leaders have problems with the comprehension of the territory it is improving but still not satisfying. For example, typical experts in this field are architects, who sometimes have expressions to describe the rural place as "a lack of opportunity", but this is not true, that space has its function in the ecosystem. A simple affectation in one place, can affect other places, but the experts don't tend to think about this. This is related to flooding because here the major natural risks are floods. We have to think about politics related to a good planning of all the territory. As an example, in the *Zaragoza Expo* about the water, they built-up the space in a river meander, and after the rains the people say that the river has invaded the Expo, but that is not true, the expo invaded the river, the location of the Expo was not well planned.

Here we have damages and loss of biodiversity because urbanization is at the bottom of the valley this is an example of how important the planning is here. There is not enough formation of experts and politic leaders. A development of a new approach concerning the managing of this territory is necessary. The territory is not a

scenario of activities. It has values above this. These values don't belong to the people who live there. Everybody has to say something about an affectation to the territory, what is made in one location affects everything. A good example is the Harbor of Pasaia, which affects all Basque society.

It is important that decisions have to be made with the local people all society should contribute to decision making. For example, in France, the issue of skiing stations development was discussed with the people.

3. Is there any monitoring of land cover changes in the region? (Please describe briefly).

Not asked.

VI. Localization (depending on the region)

1. How land use changes are resulting from vicinity of state border (how the state border influence land use in your region)

I am not an expert in the Euro City Bayonne – San Sebastian, but in my impression there are certain characteristics that could say there is a transnational city. For example, the trade, the tourism... but much more is needed.

One of the most difficult things is to take out the mental border. For example, the lunch hour is different. There are certain things that are really different on each side. To reach the Euro city, more cooperation is needed between administrations. Some things have been done, above all in the Txingudi Bay (Irun, Hondarribia, Hendaya), but there is no cooperation between Bayona and San Sebastian. A territorial planning cooperation must exist. For example, the high-speed train will be constructed in the Basque country to the border, but we still don't know if it is going to be constructed on the French side. This example is good in other aspects, like infrastructure, land law... There is no real feeling about Euro city, people don't have the feeling of living in a transnational city.

There is an obvious change of function in the place where the infrastructure is constructed, but there are also changes in the mobility of the people. One can be working in San Sebastian and living in San Juan de Luz. There are lots of changes in residential functions, more urbanization has been caused by the increase in mobility.

The Euro city must be well connected, infrastructure is already developed, more infrastructure is not necessary, we don't want more because we don't want more cars, we need more effective public transport, effective to connect different cities. People must be convinced that public transport is better than private. If you can go from Bayonne to San Sebastian to watch a football match by public transport, like moving between different neighborhoods, this is becoming the Euro city.

2. How land use changes are resulting from vicinity of sea coast (how the coastal location influence land use in your region)?

Answer on that question can be found in the whole interview.

VII. Land use in general

1. Please describe and summarize the major processes and trends of land use changes in the region over the last 50 years.

Here, it is different than in other parts of Europe that there is a feeling about the historical territory (Bizkaia, Araba, Guipuzcoa). They are almost federal countries. Each territory is jealous about the other. The two want what the other has, but the true is that if something is good for a territory it is also good to the other. This is a problem in terms of cooperation between administrations.

I think that the identification with the preservation of landscape and environment is very different between different people; it is different between people from cities and farmers.

A farmer appreciates the crops, but people from cities prefer mountain landscapes. There is a general appreciation of natural environment, people usually go to the mountains, but in general it doesn't relate to a common sense that influences the political decisions, because people don't make pressure on the politics. There is no common sense in the field of protecting the environment.

For example the with wind energy production, some people don't mind the wind turbines being on the top of the mountains, but others are really concerned about it.

There is also a significant ethnic aspect, as the feeling that *caserio* (farmhouse) is the essence of the Basque country. But nowadays it doesn't really exist because the majority of them are not *caserios*, they are just residence.

Nowadays there is a feeling that maintaining an attractive environmental landscape with traditional activities is an economic treasure related essentially to tourism, but at the same time with industrial zones or residences as well.

In the future, the Basque country is going to continue with a growing urbanization. Now the urbanization is "sleeping" because of the crisis, but the bottom of the valleys will be urbanized. This is inevitable but there are no factors against it. If this happens, the urbanization will be lineal at the bottom of the valleys. This will bring problems with the urban life, because here, in the Basque country, the cities are places of social relation. It is the Mediterranean urban relation, but with the lineal urbanization this relation will be disappearing and furthermore there will be more problems of mobility.

The time of infrastructure development is over. With the accomplishment of the high-speed train there is no necessity for more infrastructures. A rail connection between the medium and small cities is needed. We have to recover small trains to communicate with the bottom of the valley. We have to reduce the highway traffic and develop public transport, including railway.

It is difficult to fight against emigration of population to coastal zones. I think that it would be difficult to maintain the attraction of medium sized cities because of the large cities dominance. The balance in the urban system will disappear.

The three capital cities will be connected but not the medium cities, so the system equilibrium will be lost. The concentration of population, services, and powers of governance will be all in the capitals.

I think there is going to be more forestation because of the loss of people working in the farms. No one wants to work there except the immigrants, but the land owners don't want them working on their lands, so these open spaces will be forested.

The territory will be more urbanized at the valleys' bottoms, more forested in the rest of the territory and with a better connection between capital cities. The people in the medium sized cities are now going to the capital ones to do shopping and this process will be increasing. The improvements in the public transport will increase the dependence to the big cities too. The balance of the urban system will be upset.

2. In a typology elaborated on the basis of statistic data, your region represent the type X, characterized by..... Is it a proper type for your region? Please explain.

Not asked.

Region: BASQUE COUNTRY

Place: BILBAO

Person interviewed: JAVIER FRANCO

AZTI Tecnalia researcher in Coastal Zone Management

Interviewers: Gemma Garcia Blanco, Konrad Ł. Czapiewski, Mariola Ferenc

Date: 11/01/2012

I. Socio-economic factors of land use change

1. Could you describe the main demographic processes in the region: migrations, birth rate etc.? What is their impact on land use?

The population in small villages along the coast is decreasing in the last years. Immigrants are the only reason for the overall growth, what stabilized the number of population in this region. The internal migrations are based on the movement from small villages to bigger cities. The small villages along the coast are very traditional, which means that people live mostly from fishing. If you compare the number of boats and changes in population working in fishery in the last 40 or 50 years, the fishing activity is going down very quickly. Nowadays in Bermeo there is only ¼ of boats, which were in use a few years ago.

2. What are the main processes and trends of settlement? What is the impact of new settlements on land use and spatial organization? Is there a lot of new built-up areas? What are the forms: contiguous development, linear patterns, scattered development?

You can notice, that the core of coastal cities is near the bay, and in the higher parts of the slopes there are more new settlements. The newest settlements are located in places, which are not very friendly for building.

Most of villages are located in the mouth of rivers - estuaries. We have 12 estuaries in the Basque country and in each of them you can find a settlement in the mouth. The rest of the coastal territory has very dispersed settlement. There is a kind of harmony between settlement and the environment in the Basque country.

The typology of the Spanish and French coast is completely different. In Spain there is mostly rocky coast and sandy in Aquitaine. So there are some important towns: Biarritz, Bayonne and Saint Jean de Luz and other parts have very long sandy beaches, desired for holidays and tourism. There are not a lot of small villages. Each available part of the coast was settled in previous centuries. The sandy bay and the settlement were established and the village was expanding, also on the slopes and there are no places, where the new settlements can appear, because there are only rocks, and each possible bay is already settled.

3. What are the main processes, directions of changes in the field of agriculture (extensification or intensification, changes of fields spatial structure and crops structure)?

The main process is changing the agricultural and forest areas into trees plantations, especially two kinds of species: eucalyptus and pines. The quality of forest in Vizcaya and Araba is completely different. On the Comprehensive Land Cover Typology (2000-2006) map you can see that all Vizcaya and Guipuzcoa had a lot of forest areas and in Araba there are just a few places, where Corine identified forest. In fact the quality of forests in all northern regions is poor, because there are mostly forest plantations with just one or two species. And in the south there are some natural forests. In the Basque country there are almost no oak forests. This is not a desired situation that almost 80% of forested areas are occupied by only two species of trees. Initially, oak forest covered 90% of the area of Vizcaya province; nowadays it covers less than 5%. Some of the areas are covered by shrubs. Every five years the government publishes a document, which analyzes of the forest condition in community. They put in the same category the broad leaved trees: eucalyptus and oak which are completely different. So in the statistics the share of broad leaved forests is increasing.

4. Are there such processes like: changing agricultural function of areas into other functions? Building-up areas of fertile soils? Increasing/decreasing the share of untilled land? Please describe briefly the processes concerning changes of agricultural land use.

In Corine Land Cover you can identify some grid cells telling you that certain piece of land is used for agriculture. In reality this land will be occupied by a house, which is only used by a family for residential purposes. You are not making any economic profit of that. Corine identified this area as a farming land and from economic point of view it isn't true. The cover is good, but the land use functions are different. Also with the forest area it can be the same, on the map it can be a rest, but in reality the functions of this land can be different.

The ecological and economic functions are different when you compare a plantation and a natural forest. People living on forestry or agriculture will perceive the landscape from a different point of view than tourists. Perhaps for the farmers a tree plantation is not a disadvantage because they gain the profits of this land. The sensibility is also different. People living in the northern coast of Spain get used to tree plantations. Close to Vitoria, there is however a natural forest with indigenous species.

The management has responsibility analyzed all the goods and services, which the land can provide. And these can be put into balance. The land administration has to promote the best practices and give some money for promoting programs of good land management.

The concept of ecosystem services is relatively new, it's important for the management of land. Not just as a way of thinking how to get the founding but also in order to manage and develop the land.

The Non-government organizations try to manage some parts of land; especially they promote natural forest formation on private lands. Some land owners cut all eucalyptus and pines and plant oak and other natural species. The non-government

organizations try to make these areas open for public. We are trying to retrieve the original landscape, as a part of our heritage.

5. What are the main processes in the field of industry and technical infrastructure (new plants, industry centers, roads, railways etc.)? How would you assess its influence on land use?

In the coastal area are no important roads between Bilbao and San Sebastian. The most expensive and important are the highways. Also, an expensive project is "The Basque Y" railway between three main cities in the Basque country.

The Eurocity San Sebastian- Bayonne is similar to Bilbao; the only difference is that San Sebastian is not a commercial port. There is just one fishing port, but very close to the city. 5-6 km to the east of San Sebastian there is an industrial area located – port of Pasaia. The Basque country has a very strong industrial tradition, especially with iron, steel. Port of Pasaia is a place to exchange materials, dealing with industries. The Bilbao area is one of the most industrialized areas in Spain.

Now in Pasaia there is considered a project of constructing a new harbour. Nowadays the harbour is inside the mouth of the river, the plan is to place the port outside, in the coastal area. This is a very important project with a lot of controversy, from the environmental and economic point of view it's not a good project. This harbour will have a big impact on the environment. They want to build this, because they want to increase transport and trade.

Bermeo has a strong character, because of a marine, so the local government wants to create there some commercial in connection with marine transport. They are thinking about a new road going from Bilbao to Bermeo with a big tunnel, which should reduce the travelling time. This is an unusual road project for a coastal area.

In the Basque country there is a place of experiments with wave energy. But there are some projects for wind energy development.

6. What are the main processes in the field of tourism and services? Is there any development of tourism infrastructure (new hotels, holiday centers, swimming pools, tourist roads)? How intensive is the development in the spatial context (spatial extent of new areas used for tourism purposes etc.)?

Normally, the Basque model is different than the Mediterranean coastal area. In the Atlantic coast (Galicia, Asturias, Cantabria) and in Andalusia it is different because new buildings are built for hotels and services. To some extent in the Basque coast you can see some of this type of buildings, but at absolutely different dimension. In the Basque coast there are a lot of second homes. For instance many people live in Bilbao and go for holiday to their second house, about 40 km away. Also blocks of flats are summer apartments. The reason is because of a specific relief. Some of the areas are naturally protected, because of a long distance to sandy beach and rocky typologies.

There not many hotels in the Basque coastal area, and also not so many high buildings in the coastal villages and towns, which distort the landscape.

7. How would you describe and summarize the general conditions of economy in your region and its impact on land use? Please refer also to employment issues.

No response

II. Environmental issues

1. Could you describe the main changes of natural areas in the last five decades (changes of forested areas, biodiversity, water conditions)? Has the spatial extent and condition of areas of high nature value changed for the last five decades?

During the last 20 years the local government has been conducting a monitoring of water quality. Fortunately, many important factors connected with water quality have changed for better. Security skills have developed during that time. In the last five years ship movements in coastal area were increased, but fortunately the water quality also.

The problem is also the tree plantations: people are thinking that the Basque country has a good land use structure, because of a large land covered with trees. But in reality "forests" haven't got a high natural value, because mostly these are tree plantations, which consist of eucalyptus and pines.

It's also a problem for Corine Land Cover, because the satellite view couldn't recognize the difference between forest and plantation of trees. In one area in 1990 it could be forest, but 10 or 16 years later it could be a plantation. It is deforestation and changing the land use to agricultural area.

With the lack of species variation in the plantations, the biodiversity is decreasing. People from Vizcaya need to go to other provinces to see birds, flowers or animals in the natural environment.

2. Please assess the main contemporary and future threats for natural areas (especially protected areas) in the region. How are they related to land use changes?

Scenarios say that the risk of flooding has increased. Tree plantations increase the risk of flooding. The land is significantly threatened by the expansion of extraneous species.

3. Were there any natural disasters in the region in the last two decades which influenced the land use and land cover (floods, fires)?

Generally speaking, most land is covered by forest, by we should notice, that there are almost no natural forests but plantations of mostly pines and eucalyptus.

The most important are changes in the landscape and land use, when the investors after a few years decide to cut down the plantation. For eucalyptus it is about 12-15 years, for pines 25-30 years. The problem for them now is that the prices are very low because of two reasons. First of all, there are a lot of opportunities for taking

wood from many parts of the world: it is possible to take a big boat with wood from every place in the world, which you can imagine. It's because the prices can be much more attractive somewhere else. And the second reason is that three years ago there was a very important storm in the Basque country, something like a tornado. In the French part of region there was a lot of plantation of pines and the storm overthrew many of these trees and the French people had a lot of wood, which was directed to the market and the prices fell down. The planters are waiting for the better price.

This is more important than natural disasters because of lack of biodiversity. From natural point of view this is problem, but most people don't realize that most of green areas aren't forest but plantations.

Most of the fires are not natural, they are caused by people.

III. Multi-functionality

1. Please name socio-economic and environmental functions of land use in the region.

We must separate environment and rural areas with industrial areas. Energy producers, industry, logistic centres mainly concentrate in the urbanized areas. In the Basque country tourists are concentrated in the three major cities and in the coastal zone. In internal land there are some tourist attractions, but they are not visited frequently.

The coastal area is more multifunctional. A good example is Mundaka, where there are several coexisting functions. These are natural reserves, but also tourist places, settlement, people come for fishing activities and some small businesses are located there.

2. Multifunctional land use - which of the functions in your region co-exist?

Settlement, second houses, tourist resorts, also fishing activities, recreation areas and small business.

3. Which of the functions are the most important in the context of land use?

4. Is the number of functions of land use increasing or decreasing?

5. To which extent is the land in your region used in multifunctional way?

6. What kind of functions co-existence is:

- a) the most effective?**
- b) the most desirable?**
- c) the most common?**
- d) the most difficult?**

Not asked – no response.

7. Which of the functions of land use are the most important for the future regional development?

Not asked – no response.

IV. Spatial conflicts

1. Are there any conflicts related to land use? (As space is limited different actors compete to obtain the possibly largest area or their needs. For example: inhabitants strive to build houses, a businessman wants to put a plant or warehouse, there is a need to build somewhere sewage plant, administration of protected area tries to enlarge the area and so on).

In the coastal areas there are some spatial conflicts such as using the previously forested land for agricultural purposes. Also there are conflicts between fishers and energy, gas production companies.

Because of industry investment at this moment, marine areas are not very well developed; the conflict is not very intense. In the next years the conflicts are likely to exacerbate if we do not develop any tools or rules to manage it.

Another conflict concerns natural protection and fishing. Fishing brings a potential conflict everywhere in the marine environment, because it's the most traditional activity in the coastal area. Any other activities, which are located there are in conflict with fisheries.

2. What are the “competing” actors and functions (environmental, agricultural, industrial, settlement etc.)?

Fishers, energy producers, investors.

3. Which of the actors are the most dynamic and successful in obtaining new land?

The most important players, who change the land, are mostly tree plantation owners.

4. What are the most likely conflicts related to land use in future and what could be its impact on land use?

Not asked – no response.

V. Government and policy

1. Please assess the state and regional law concerning spatial management and planning in your region. Are legal rules effective in sustainable and rational management of land?

The closer to the coast the land is located the higher the probability that it is private. When you go to the south, to Araba, there are much more public areas than in Vizcaya and Guipuzcoa. This is the reason why most of the land in these two regions

is occupied by plantations, because owners want to take as much economic benefit from land as possible.

The owners of land decide on what they want to do with their territory. The 'Sector plan for forestry' exists, which gives some general guidelines, descriptions and rules.

The model of exploiting the forest area is not satisfactory, because of the management of forest land. When trees grow for 25-30 years, the investors cut all of them down, so a huge area is deforested. The area is in one moment without trees, herbs, it is just land. When it's raining there is large-scale erosion, so a lot of soil is simply lost. The natural capital of this land is lost. There is a very significant problem with a loss of land quality. This is the most important impact of this kind of management.

The greatest problem is land management performed by the investors, which is often very aggressive. Such management is much cheaper than recreating the biodiversity. Another question is that in order to explore the land you must construct a lot of small roads, which will be used by trucks.

The government should make rules for land management, because investments have a big impact on soils, rivers and biodiversity. It's not just the problem with the small land, where owner cuts all trees, but it has an impact on the other parts of the region.

2. Is the local and regional administration effective in land management and in preventing and solving conflicts related to land use? (Please describe and assess the issue and give some examples. Summarize the role of local and regional administration in management of land use).

Not asked – not respond.

3. Is there any monitoring of land cover changes in the region? (Please describe briefly).

There is a SIGPAC program, which includes GIS for agricultural land.

VI. Localization (depending on the region)

1. How land use changes are resulting from vicinity of state border (how the state border influence land use in your region)?

Not asked – not respond.

2. How land use changes are resulting from vicinity of sea coast (how the coastal location influence land use in your region)?

Like I said before, lands located near to the coast are probably in private hands. The owners usually want to have benefits from land, so they transform agriculture or forest area to tree plantation. Also on the coast, population density is higher, because of labour market, better climate and attractive landscape.

VII. Land use in general

1. Please describe and summarize the major processes and trends of land use changes in the region over a last 50 years.

The future is very difficult to predict. Everything is changing very quickly, so it's more difficult for me to predict the next years than to somebody who lived 30 years ago. The matter of land use (especially forested area) can change because of changes to global market (the increasing significance of China). I can imagine a higher occupation of coastal area by marine projects.

I hope in the next years we will have better knowledge and better instruments and tools for a proper coastal area management. Marine coastal planning will be an important issue for management. The evaluation of coastal activities will be an important issue also, as an instrument of managing.

Fishery will be going down, but other activities in the coastal area will be increasing (tourism, marine energy).

2. In a typology elaborated on the basis of statistic data, your region represent multifunctionality area, which is characterized by urban-rural areas, leisure areas, forests, agriculture, energy power plants areas. Is it a proper type for your region? Please explain.

In Corine Land Cover we can see that whole of the Basque country is very well forested. But in fact just the south of the country has a good quality forest. 80% of forested area in the northern part of region is tree plantations.

Region: BASQUE COUNTRY

Place: VITORIA-GASTEIZ

Person interviewed: ALFONSO SANZ ARAUJO

Director of Spatial Planning - Department of Environment, Spatial Planning, Agriculture and Fisheries. Basque Government.

Interviewers: Gemma Garcia Blanco, Konrad Ł. Czapiewski, Mariola Ferenc

Date: 12/01/2012

I. Socio-economic factors of land use change

1. Could you describe the main demographic processes in the region: migrations, birth rate etc.? What is their impact on land use?

The Basque country has got 2 million inhabitants. The density is about 300 people / km² so it's about three times the Spanish average. The planning of land use and the governance is very important for such a densely populated area. Most of the population is going to main cities: Vitoria, San Sebastian, and Bilbao.

Cities located on the coast have also increased the population. Cities located in internal, 20-30 years ago had on average 40 000 people, nowadays they are about 25 000 e.g. Éibar. This is caused by the movement from these cities to big towns and to the coastal zone (Deba, Mutriko).

The Basque country has a different dynamics and patterns of settlement in comparison to other Mediterranean areas. The demographic processes are also very specific.

2. What are the main processes and trends of settlement? What is the impact of new settlements on land use and spatial organization? Are there a lot of new built-up areas? What are the forms: contiguous development, linear patterns, scattered development?

In the Basque country there is a trend to concentrate settlement and revitalize old buildings for apartments or business centers.

In framework we have a territorial planning (PTP) for each functional area. In PTP for each town we have a number of houses, which can be constructed.

The majority of cities have some statistics about population, settlement and economic situation. We can say that city could have some number of houses. The majority knows that the city has services, good infrastructure and can have more inhabitants, because then the economic situation of a town improves.

Sometimes the government could change the number of houses included in the plan. When the mayor needs to increase the number of houses he can go to a commission

of spatial planning in regional government. But there is only a small flexibility – the number of houses can be increased by approximately 10%.

The private investors and constructors never speak with regional government. Investors are contacting with the local government before changing the spatial plan for municipality or city. At first, it is checked with all frameworks if the new investment is compatible with law.

Mostly, the cities want a high level of new houses in a territorial plan, because they want to have more flexibility. But in Guipuzcoa there are a lot of municipalities, cities, which didn't want a high number of possible houses; it's because the local government thinks that the actual number of houses is enough.

3. What are the main processes, directions of changes in the field of agriculture (extensification or intensification, changes of fields spatial structure and crops structure)?

In the Basque country people take into consideration the quality of agriculture. They also preserve the tradition. They have a number of the plantation of forest – especially in Guipuzcoa and Vizcaya. In the south of Araba there are processes of concentrating the land into larger parcels.

4. Are there such processes like: changing agricultural function of areas into other functions? Building-up areas of fertile soils? Increasing/decreasing the share of untilled land? Please describe briefly the processes concerning changes of agricultural land use.

Not asked – no response.

5. What are the main processes in the field of industry and technical infrastructure (new plants, industry centers, roads, railways etc.)? How would you assess its influence on land use?

Not asked – no response.

6. What are the main processes in the field of tourism and services? Is there any development of tourism infrastructure (new hotels, holiday centers, swimming pools, tourist roads)? How intensive is the development in the spatial context (spatial extent of new areas used for tourism purposes etc.)?

Not asked – no response.

7. How would you describe and summarize the general conditions of economy in your region and its impact on land use? Please refer also to employment issues.

Not asked – no response.

II. Environmental issues

1. Could you describe the main changes of natural areas in the last five decades (changes of forested areas, biodiversity, water conditions)? Has the spatial extent and condition of areas of high nature value changed for the last five decades?

Not asked – no response.

2. Please assess the main contemporary and future threats for natural areas (especially protected areas) in the region. How are they related to land use changes?

Not asked – no response.

3. Were there any natural disasters in the region in the last two decades which influenced the land use and land cover (floods, fires)?

Not asked – not response.

III. Multi-functionality

1. Please name socio-economic and environmental functions of land use in the region.

The Basque country is an industrial area. There are a lot of changes in land use, because many sites, that were industrial, are nowadays residential. Also, some places like Éibar have become depopulated.

2. Multifunctional land use - which of the functions in your region co-exist?

Not asked – no response.

3. Which of the functions are the most important in the context of land use?

Not asked – no response.

4. Is the number of functions of land use increasing or decreasing?

Not asked – no response.

5. To which extent is the land in your region used in multifunctional way?

Not asked – no response.

6. What kind of functions co-existence is:

a) the most effective?

Not asked – no response.

b) the most desirable?

Not asked – no response.

c) the most common?

Not asked – no response.

d) the most difficult?

They put in balance a rise of large shopping centers and small shops. The PTS of activities tries to put this issue in balance.

7. Which of the functions of land use are the most important for the future regional development?

Not asked – no response.

IV. Spatial conflicts

1. Are there any conflicts related to land use? (As space is limited different actors compete to obtain the possibly largest area or their needs. For example: inhabitants strive to build houses, a businessman wants to put a plant or warehouse, there is a need to build somewhere sewage plant, administration of protected area tries to enlarge the area and so on).

There are conflicts between public interest and private investors, for example shopping centers. In the Basque country there is a trend to concentrate settlement and revitalize old buildings for apartments, business centers. But investors want to build new centers at the suburbs.

2. What are the “competing” actors and functions (environmental, agricultural, industrial, settlement etc.)?

Not asked – no response.

3. Which of the actors are the most dynamic and successful in obtaining new land?

Not asked – no response.

4. What are the most likely conflicts related to land use in future and what could be its impact on land use?

Not asked – no response.

V. Government and policy

1. Please assess the state and regional law concerning spatial management and planning in your region. Are legal rules effective in sustainable and rational management of land?

Land planning in the Basque country.

We have land planning law (LOT) from 1990. We have different tools for respecting this law:

- DOT – guidelines for the whole Basque Country,
- PTP – territorial planning in functional areas. The Basque country is divided into 15 functional areas. One area consists of about 12 to 15 municipalities.
- PTS – sector land planning (houses, flooding, energy and rail infrastructure, etc).

The general land planning law can be changed, also major tools, e.g. classification of land use. Nowadays the government is working for a law of landscape. It's a new interesting tool. In this month it will be discussed in a government council and after that in a parliament. It's a new legislation. Not many regions have their own law of landscape: only Catalonia, Galicia and Valencia. It will regulate the impact of the landscape and every activities; it will preserve and manage the landscape in terms of perception and identity. All interference in landscape will have to be reported and assessed. Different departments have responsibilities and knowledge of landscape, so they want to cope with that issue together.

Landscape reflects the land use; it's another tool for work, e.g. in processes of degradation of certain areas.

In the next three months the government wants to approve the sector plan for agro-forest activities for the whole Basque country. This is very important, because only 1% of GDP in the Basque country came from the first sector. It's probably because the Basque country doesn't have very strong tools connected with the agro-forestall issue.

Nowadays we are changing the guidelines for the Basque country to put limits concerning the development the cities, the urban plan land limits. The limitation for urban growth is also to be established. The guidelines will regulate the market processes. The law sometimes has some flexibility. The mayor of the city has the possibility to interpret what to do.

We have LOT and tools. We have to respect the law and guidelines. We are changing just one section of the tools available, but the model still works.

In the last 10 years a lot of things appeared in the framework, e.g. environment, which is a very young discipline. We don't have many tools to govern this. Also with the climate change – we have an idea to put some indicators that we should respect.

The hierarchy of government in the Basque country is as follows:

- The Basque general government,
- Three provincial councils,

- Municipalities and cities.

Those different levels have different competencies and possibilities. They are very complex, but at the same time the results of this is grid. In all PTP's we have consensus with all provincial councils. When you want the consensus sometimes you are obligated to complain about this.

The land use planning is going well.

We have a very big commission, about 25 people from local councils, provincial councils and the Basque government. This commission has all rules to prepare public administration. In commission of spatial planning there are representatives of a national government.

The framework is good. The responsibilities for each level are suitable. It's a good balance of responsibilities.

In the Spanish framework the spatial planning is located on a regional level. All country works as a federal state. But some of the competencies are responsibilities are in the hands of a national government, such as the energy sector, for instance. This model has worked very well in the last 12 years. We are changing the rules, because the external factors are different nowadays.

For example the city of Bilbao wants to build 25 000 houses, and the commission of land planning makes the limit of 20 000. The city has to change its own documents. The Basque country has a limit for new settlements, so we don't have problems like the Mediterranean regions.

The stronger problem with settlement has only the Vitoria-Gasteiz region. There is a massive development of residential areas.

The framework changes are to reduce housing problems in different municipalities in the next 20 years. Other limit is the parameter of the cities. In the beginning of this process we put the limits. We think that all the construction in the Basque country has to be made in the cities: reconstruction, renovation etc.

It's not easy because municipalities have autonomy, competencies and own plans. But with the law we have possibilities to limit them. Land planning is very special, also because of a Consumer Law (Open Market) the European Union Directive, which is talking about an open commune, liberty of competency.

The spatial conflict is because of limits in land planning in the European directive and big shopping centers. The directive said that everybody has to respect the freedom of economy, but estate land planning, because it's in public interest. Companies like IKEA make pressure on the regional governance because they want build wherever they want. They went to the court, but the government won – spatial planning couldn't be changed for market purposes.

The EU assumes that land planning has its own responsibility it does not respect the open market. This is a new problem; there was also dilemma in San Sebastian, in some small cities in all country.

The guidelines are changing to put more limits because the government thinks that there should be a process of reconstructing the old buildings in cities rather than a new settlement in cities.

Some of the issues, like transport are regulated by a national law guidelines. For example speed train, which is under construction in the Basque country, and nowadays there are some agreements with France. In large-scale constructions the papers from national governments are very important: for speed trains and seaports. We have two big, important ports: in Bilbao and in Pasaia Bay. The Spanish government has strong competencies in this sector.

We have the knowledge of what happened in neighboring regions and they know very well what we are doing. We are doing now the PTP for Donostia-San Sebastian and we send them this document for comments, opinion from their side.

The bigger problem is that Navarre wants the high speed train to connect Navarre with the Basque country and France.

The Urdaibai estuary is a natural region and a Biosphere Reserve of Biscay, where the double framework exists.

2. Is the local and regional administration effective in land management and in preventing and solving conflicts related to land use? (Please describe and assess the issue and give some examples. Summarize the role of local and regional administration in management of land use).

Generally, the regional administration is effective. The most important element is a good and sufficient system of tools in planning described above.

3. Is there any monitoring of land cover changes in the region? (Please describe briefly).

Yes – each year the regional authorities of the Basque country publish the “Udalplan – Sistema de Informacion Geographica y Banco de Datos Territoriales de la CAPV” which is a very good and detailed tool for monitoring the changes of land use. In that document, it is described in a detailed way the actual coverage but also the plans for possible changes.

VI. Localization (depending on the region)

1. How land use changes are resulting from vicinity of state border (how the state border influence land uses in your region)?

Cooperation with France is taking place especially during the projects implementation.

There is an agreement between Aquitaine and the Basque country to collaborate with main matters. It's not a long border, but it is very important for transport to Europe.

There are different regions, but also different countries. The result is that there is also a different language, legal and administrative system. France is much more

centralized than Spain, but regions, also Aquitaine have the figure to manage space. They don't have as much responsibility as the Basque country does, but they still have the figure.

There are people, who live in France and go to work or school to the Basque country or conversely. They often are going to bilingual schools.

2. How land use changes are resulting from vicinity of sea coast (how the coastal location influence land use in your region)?

Not asked – not response.

VII. Land use in general

1. Please describe and summarize the major processes and trends of land use changes in the region over a last 50 years.

There are four points of view in the Basque government: Vizcaya, Guipuzcoa, Araba and the Basque point of view. The parties are also different in each region.

For land planning it is a big challenge. Nowadays problems will be actually in the future also. Maybe it will be with the stronger view on landscape and climate changes. We have small a function in climate changes, but we do our best to improve the situation.

I take into account the idea of Euskal city – the link between three biggest cities in the Basque country. If you think about the Basque country like a big city the cohesion in spatial planning will be very easy. We should think about airports, universities and campuses.

Connection and cooperation between these three main cities is important, because problematic is that each town wants to have its own facilities – universities, congress centers, airports, seaports and other things. Such investments are expensive, and if there is cooperation within the network of these towns, it would be easier to create the development of the region.

2. In a typology elaborated on the basis of statistic data, your region represent the type X, characterized by..... Is it a proper type for your region? Please explain.

Not asked – no response.

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