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1 Introduction

This report could be considered as an assessment of the value of the Land Use Functions (LUFs) as a valuable tool to indicate the functioning of the region and the dynamics in time. This report compares the conclusions made in the case studies, based on surveys (personal in-depth interviews) made by Jerzy Bański and his colleagues (Bański et al, 2012), with the LUF and basic indicator analysis at the associated NUTS level. The reports *Case_studies_report_Oresund* (Mariola Ferenc & Marcin Mazur, 2012), *Case studies report Basque* (Konrad Ł. Czapiewski & Mariola Ferenc, 2012), *Case studies Chelmsko-Zamojski* (Marcin Mazur, 2012), *Case studies report Jeleniogorski* (Konrad Ł. Czapiewski, 2012), were made independently from our analysis. Although for their desktop studies partly the same statistical data sources might have been used.

The following case studies were implemented by Bański et al. (2012), and were used by us for further analysis:

1) Öresund – as cross-border region with highly differentiated land use structure (from urban core, semi-urban to arable), high multifunctionality and several clusters of land cover changes in the period 2000-2006;

2) Eurocity Basque Bayonne- San Sebastián - as cross-border region, with high share of urban areas and relatively high number of changed clusters in the period 2000-2006 (mainly agricultural), multifunctional;

3) Chelmsko-Zamojski – located on periphery (EU border), mostly agricultural, monofunctional, with low number of changed clusters;

4) Jeleniogórski – located on the Poland-Germany-Czech Republic borderland, multifunctional, in economic transition.

Conclusions from these reports were extracted and compared with our LUF and related indicator analysis at the associated NUTS administrative region .

2 Case study PL515 Jeleniogorski

2.1 Spider diagrams (LUF analysis)

This analysis has been implemented for NUTS region PL515. According to the spider diagrams (see also Annex I) the Jeleniogorski region reflects the European average (value of 5). What can be noticed is that concerning LUF3 Food & Energy there is an improvement in the situation (score from 4 in 2000 to 5 in 2006).

Concerning LUF5 Abiotic conditions the situation has deteriorated (score from 5 in 2000 to 4 on 2006).

Concerning the basic indicators, there is an increase for the indicators: Multimod00, and Gross_Do06 in the period 2000 – 2006. However, there is a decrease for the indicators: NH3_emis12, Net_migr14, P_surplu19, Urban_fa23, NO3_conc24, in the period 2000 – 2006 (for explanation indicators, see Annex II)

Which means urban growth and more use of fertilizers in Agriculture. Positive is that salaries have improved.

Table 1 LUF analysis for NUTS region PL515 Jeleniogorski

LUF	2000	2006	Difference
LUF1 work	4	4	-
LUF2 Leisure and Recreation	5	5	-
LUF3 Food & Energy	4	5	Improvement
LUF4 Housing & Infrastructure	4	4	-
LuF5 Abiotic conditions	5	4	Deterioration
LUF6 Biotic conditions	5	5	-

Table 2 Indicator analysis fot NUTS region PL515 Jeleniogorski. Only for selected indicators.

Indicators	2000	2006	Diff	
Multimod00	3	4	1	Increase
Gross_Do06	1	2	1	Increase
NH3_emis12	2	4	2	Decrease
Net_migr14	5	6	1	Decrease
Natural_18	5	7	2	Increase
P_surplu19	4	7	3	Strong Decrease
Urban_fa23	4	5	1	Decrease
NO3_conc24	8	9	1	Decrease

2.2 Comparison with Case study

Table 3 Overall comparison LUF analysis with conclusions for case study PL515 J Jeleniogorski

Nr	(Case Studies)	LUF	Comparison
1	Overall socio-economic situation in this subregion is very much below the average level that is noted in the Dolnośląskie Region.	According to spider diagram situation PL515Jeleniogorsk is more or less on European average	
2	We can observe an outmigration from the subregion – with only few exceptions such as the suburban areas (especially around Jelenia Góra), however these zones are very narrow. Also, on the areas of great touristic and cultural value, people are migrating from bigger towns (mostly from outside of the subregion). New settlements are much more scattered. It leads to the chaotic development of spatial structures.	According to spider diagram Net migration goes from 5 to 6. And is high and became even higher. Is in line with conclusion case study	
3	There is dichotomous process in settlement development. There are some villages, which are totally not inhabited, as well as there are some villages with good location and attractive landscape surroundings that have noted a considerable share of newcomers in last two decades.	Indicator 23 Urban fabric shows an increase in acreage. Partly in line with conclusion left	
4	There is one principal and basic reason for an outmigration – collapse of industrial functions which were dominating on these areas in the past.	According to spider diagram Net migration goes from 5 to 6. And is high and became even higher. Is in line with conclusion case study	
5	High level of unemployment – collapse of many industrial activities; reduction in the previous employment in industrial factories cannot be compensated by employment offered by tourism institutions.	According to indicator 22 unemployment stays very high (score 8 in 2000 and 8 in 2006) Is in line with conclusion case study	
6	In the lowland part of the subregion, the big agricultural enterprises have appeared – process of consolidation of land can be observed. In the upland and mountainous part, the agriculture plays less and less important function in spatial organization and economical structures.	-	n.a.
7	The biggest tourist investments are now located in the touristic areas.	Indicator 15 night spend is high (score 7 in 2000 and 2006)	

8	There still persists a stereotype that that region is very polluted and ecologically destroyed – the so-called “Black Triangle”. In the past, a number of large industrial factories did really produce a lot of pollutions – right now this situation has changed for the better. Now the quality of environment is much better.	According to indicators emissions and fertilizers have strongly increased (due to intensification agriculture) and is therefore not in line with conclusion left.	

Only two conclusions from the case study are not in line with our indicator and LUF analysis.

Divergences explanation:

Ad. 1.
Jeleniogórski subregion is on European and also on Polish average according the general socio-economic situation. But in the relation to regional (dolnośląskie region) average, it is below. Dolnośląskie Region is one of the dynamic and most developed area in Poland, with high level of regional competitiveness. And within the region, almost all indices placed Jeleniogórski subregion below the regional average.

Ad.2.
Example of one such indicator, which is in line with the finding number 1.

Ad.8.
The fertilizers were not analysed in the case study. The general conclusion form the case study is based on a historical analysis of the development of that subregion. In the 1970. and 1980. it was really polluted area. Such situation caused a really big ecological disaster. And now – coppering to that situation in 1980. – it is much better. Maybe still the statistics are not very beneficial for that subergion (LUF analysis says that), but general perception of the inhabitants and local stakeholders, as well some ecological data about occurrence of some rare spices, says that the situation is not so bad (case studies analysis says that).

3 Case study PL312 Chelmsko-Zamojski

This analysis has been implemented for NUTS region PL312. According to the spider diagrams (see also Annex I), Chelmsko-Zamojski is performing below the EU-average (of five), except for LUF 3 “Food & Energy” and LUF 5 “Biotic conditions”. LUF 2 “Leisure & Recreation” and LUF 3 “Food & Energy” which are slightly improving, whereas LUF 4 Housing & Infrastructure deteriorates. One reason for the deterioration is may be the decrease in net migration, resulting is less people arriving in the region.

Regarding the individual indicators, one can observe an increase in agrarian inputs. Companioned with an increase in natural protected area.

3.1 Spider diagrams (LUF analysis)

Table 4 LUF analysis for NUTS region PL312 Chelmsko-Zamojski

LUF	2000	2006	
LUF1 work	3	3	-
LUF2 Leisure and Recreation	3	4	Improvement
LUF3 Food & Energy	5	6	Improvement
LUF4 Housing & Infrastructure	3	2	Deterioration
LuF5 Abiotic conditions	4	4	-
LUF6 Biotic conditions	5	5	-

Table 5 Indicator analysis for NUTS region PL312 Chelmsko-Zamojski. Only for selected indicators.

Indicators	2000	2006	Diff	
Pre_prim04	5	3	-2	Decrease
Gross_Do06	1	2	1	Increase
Gross_va07	4	5	1	Increase
Gross_va08	1	2	1	Increase
NH3_emis12	5	7	2	Increase
Net_migr14	2	1	-1	Decrease
Natural_18	4	7	3	Increase
P_surplu19	5	8	3	Increase
NO3_conc24	7	8	1	Increase

3.2 Comparison with Case study

Table 6 Overall comparison LUF analysis with conclusions for case study PL312 Chelmsko-Zamojski

Nr	(Case Studies)	LUF	Comparison
1	In this peripheral, mono-functional agricultural region, the land use changes are of relatively low dynamics.	Regarding the EU-average, the region has a very high fractional coverage of harvested area (Area_har01) and stays stable	
2	Natural conditions are mostly very favourable for agriculture but at the same time, the region belongs to the poorest in the EU.	Area has a very low GDP (Gross_Do06). Improves slightly from value 1 to 2 over the period 2000 – 2006.	
3	Chełmsko-Zamojski registers a demographic structure imbalance and difficulties in local economy as a consequence.	Net-migration (Net_migr14) decreases slightly from value 2 in 2000 to the value 1 in 2006	
4	The gradual land use changes within agricultural land are observed. Generally, its area is slowly decreasing mainly due to the abandoning of meadows mowing and neglected drainage systems in the river valleys or forestation of steep slopes. The most common change in land cover is the increase of cereals cultivation and the abandoning of sugar beetroots, tobacco, flax, hemp and potatoes cultivation.	Natural protected CDDA and Natura2000 area is significantly increasing (Natural_18), from value 4 in 2000 to value 7 in 2006.	
5	Introduction of rape cultivation results from the development of one of the best prospering workshop of food industry branch – fat processing factory. Initiation of maize cultivation for fodder purposes within the region is caused by cattle breeding intensification.	Agrarian input and output increases (NH3_emis12, P_surplu19), companied with a general economical increase (Gross_Do06), but also the gross added value in agriculture is increasing (Gross_va07).	
6	Average farm size is increasing dynamically, mainly due to a more significant dynamics of land leasing.	Agrarian input and output increases (NH3_emis12, P_surplu19), together with an increase in gross added value by agriculture (Gross_va07), while the population is migrating away (Net_migr14).	

7	The only capital expenditure of that kind included new artificial water reservoir with an area of approximately 1 000 ha.	Natural protected CDDA and Natura2000 area increased significantly (Natural_18)	
8	The residential areas in the vicinity to Chełm and Zamość along the main roads are enlarging. On the other hand, the area of Roztocze Hills and the water reservoirs surroundings are gaining in importance in the field of tourist and recreation function with some desired infrastructure developing	The number of monuments (Monument21) or the nights spend in tourist accommodations (Nights_s15) stay stable. Accessibility remains very low (MULTIMOD00) with a value of 1.	
9	Agriculture becomes more frequently associated with green energy production, mainly because of wind power plants or energetic plants cultivation.	No indicators	n.a.
10	Only 1% of the total area of Chełmsko-Zamojski region is protected in the form of national park. Environmental and landscape protection function is linked nowadays with agriculture to a greater extent and as a result, the wildlife is significantly richer than for instance 20 years ago, when more intensive farming and industrial activity dominated.	No indicators	n.a.

Divergences explanation:

Ad. 3. Net migration is fluctuating in analyzed time period according to official statistics. However two statements are extremely important to underline. First of all weakness of regional centre during last two decades caused permanent outflow of young people that time, what has more harmful impact on demographic situation than dynamic but short-lasted emigration advantage. The equally remarkable statement is related to the way of migration statistics gaining in Poland. It's relying on voluntarily of submitting changes of residential address. That's why especially foreign migrations (but not only) are registered rarely. As a consequence permanent negative migration balance in the region is registered, but its value underestimated.

Ad. 8. LUF observation can be treated as unproved from case studies point of view. The region as a whole is peripheral, low accessible from any of bigger sources of potential tourists and key transport nodes, in spite of having important transport corridors within. However it needs to be added, that real investments occurring in tourism and recreation hasn't reflected in economic dimension, e.g. number of visitors. It's observed, that tourist and recreational function of land use began increasing during last years, even though number of tourist visits hasn't increased then according to official data. For instance, artificial reservoirs or ski slopes in the region are mostly new investments. Although tourism and recreation still plays marginal role for regional economy, it became more important in local scale and one of the most frequent processes of multifunctionality introducing in rural land use changes in the region, which isn't transformed rapidly in land use sense

4 Case study ES212 Basque Eurocity (Spain)

This analysis has been implemented for NUTS region ES212. According to the spider diagrams (see also Annex I), and compared to the Basque Eurocity in France, the region in Spain performance around the European average, only appears to be less subjected to change. The area scores well in LUF 2 Leisure & Recreation and LUF 4 Housing & Infrastructure.

The total area of agriculture is decreasing with less input, which points towards extensification. Regardless a decreasing agriculture, the economic situation is increasing.

4.1 Spider diagrams (LUF analysis)

Table 7 LUF analysis for NUTS region ES212 Basque Eurocity (Spain)

LUF	2000	2006	Difference
LUF1 work	5	5	-
LUF2 Leisure and Recreation	6	6	-
LUF3 Food & Energy	5	5	-
LUF4 Housing & Infrastructure	5	6	Improvement
LuF5 Abiotic conditions	4	5	Improvement
LUF6 Biotic conditions	5	5	-

Table 8 Indicator analysis for NUTS region ES212 Basque Eurocity (Spain). Only for selected indicators.

Indicators	2000	2006	Diff	
Area_har01	1	0	-1	Decrease
Status_o03	3	5	2	Increase
Gross_Do06	8	10	2	Increase
Gross_va08	6	9	3	Increase
Green_Ur09	7	6	-1	Decrease
P_surplu19	8	7	-1	Decrease
Sport_an20	4	5	1	Increase
Unemploy22	9	8	-1	Decrease
NO3_conc24	2	1	-1	Decrease

4.2 Comparison with Case study

Table 9 Overall comparison LUF analysis with conclusions for case study ES212 Basque Eurocity (Spain)

Nr	(Case Studies)	LUF	Comparison
1	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.	Indicator Net_migr14 is extremely low, and not changing over time.	
2	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.	Indicator Populati17, shows a small increase of population and economic growth (Gross_Do06)	
3	One of the most considerable changes in land use are related to the migration from peripheral areas to the coastal and urban areas.	-	n.a.
4	People living in rural areas resign from cultivation of land, moving to towns and changing the way of production to organic.	Agricultural inputs (NH3_emis12, N_surplu16,P_surplu19) are decreasing and cultivated are decreases (Area_har01), which points towards extensification.	
5	In this region of Spain rural tourism is more popular (to foreign visitors) than classical coastal tourism.	-	n.a.
6	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.	-	n.a.

Ad 3,5,6.

In this case there are no LUF analysis on the lower level, so we cannot confirm all case study results.

Ad 3
Net migration is on 0 level and it is extremely low. We do not have LUF analysis on the lower level, so we cannot confirm the case study results.

Ad 5
We do not have LUF analysis on the lower level, so we cannot confirm the case study results

5 Case study DK011 Øresund (Denmark)

This analysis has been implemented for NUTS region DK011. According to the spider diagrams (see also Annex I) , Øresund in Denmark, scores in half of the functionalities well above the European average (LUF 1 Work, LUF 2 Leisure & Recreation and LUF 4 Housing & Infrastructure), while the other functionalities remain very low (LUF 3 Food & Energy, LUF5 Abiotic conditions and LUF 6 Biotic conditions). This means quite big extremes in the different functionalities (see Table 10).

Furthermore, the overall change in functionality is decreasing. Only 3 of the 24 indicators are showing a change in the period 2000-2006, namely: Multimod00, Status_o03 and Natural_11. And these indicators show a decrease in their value. For explanation indicators, see also Annex II. Also notice in Annex I that for 7 indicators there was no statistical information from Eurostat, which is quite surprising.

5.1 Spider diagrams (LUF analysis)

Table 10 LUF analysis for NUTS region DK011 Øresund (Denmark)

LUF	2000	2006	
LUF1 work	10	8	Deterioration
LUF2 Leisure and Recreation	9	9	-
LUF3 Food & Energy	2	2	-
LUF4 Housing & Infrastructure	10	7	Deterioration
LuF5 Abiotic conditions	3	3	-
LUF6 Biotic conditions	3	2	Deterioration

Table 11 Indicator analysis for NUTS region DK011 Øresund (Denmark). Only for selected indicators.

Indicators	2000	2006	Diff	
Multimod00	10	9	-1	Decrease
Status_o03	7	6	-1	Decrease
Natural_11	7	4	-3	Decrease

5.2 Comparison with Case study

Table 12 Overall comparison LUF analysis with conclusions for case study DK011 Øresund (Denmark)

Nr	Case Studies	LUF	Comparison
1	The major land use change in the Øresund region during the last 25 years was recreation and residential area increase. This was an effect of urban sprawl, suburbanization, summer houses building expansion as a result of living standard improvement and transformation of rural areas for leisure activities with a lesser agricultural production function.	Population density is very high, with a lot of tourism and monument sights. Whereas the area harvested is very small.	
2	General framework of regional spatial plans, especially in the capital region, were relatively effective in protecting the environmental (green) corridors, but to a less extent regarding traditional rural landscape of Danish rural areas preservation.	High scoring green cities	
3	Due to the urban sprawl and agglomeration functions pressure, the agriculture was gradually retreating to more peripheral areas and to Jutland.	Very little agrarian activity regarding EU-average (Area_ha has a value 2)	
4	Industry transition to high-tech branches occurred, what brings today an impact on clean environment and well-organised landscape in agglomeration surroundings.	Status of bathing water quality is decreasing (Status_o03)	
5	In respect of transport infrastructure investments, the railway and bicycle transport networks development is currently a priority. Road investments are and will be taking place in the Copenhagen suburbs.	Indicator Multimod has a slightly decreasing value from 10 in the year 2000 to 9 in the year 2006. But no conclusions can be derived from this with respect to conclusion left column.	n.a.
6	The spatial conflict of wind power plants with other functions is a barrier in introducing them into the rural landscape, but concerning the future energy prices increase, it seems to be necessary as well as a broader introduction of plants cultivated for energy production purposes like willow (salix).	No energy indicators available	n.a.

Ad 4
It's hard to explain this phenomenon. During the case study we saw only part of the area and resisted on the opinion of experts and literature. Statistics describe only part of the environment (in this case, only the quality of bathing water - that is, on the shores of the sea and lakes), and therefore do not show all the changes that have occurred during this period. According to experts, state of the environment is improving - not only in terms of quantity (indicators) but also qualitative (landscape)

6 Conclusions

Table 19 shows that Land Use Functions (LUFs) are a valuable tool to indicate the functioning of the region and the dynamics in time. This report compared the conclusions made in the case studies, based on surveys made by Jerzy Bánski and his colleagues, with the LUF and basic indicator analysis at the associated NUTS level.

The reports *Case_studies_report_Oresund* (Mariola Ferenc & Marcin Mazur, 2012), *Case_studies_report_Basque* (Konrad Ł. Czapiewski & Mariola Ferenc, 2012) , *Case_studies_Chelmsko-zamojski* (Marcin Mazur ,2012) *Case_studies_report_Jeleniogorski* (Konrad Ł. Czapiewski, 2012), were made independently from our analysis. Conclusions from these reports were extracted and compared with our LUF and associated indicator analysis. Please notice that for Basque Eurocity there are two NUTS regions involved (FR615 in France and ES212 in Spain), as well as for Øresund (NUTS region DK011 in Denmark and NUTS region SE224 in Sweden). This could be considered as some kind of duplication in Table 19.

There are only 6 LUF results (15%) that show a conflicting conclusion compared with the conclusion from the case studies, namely conclusions nr 1and 8 for PL515, conclusion nr 8 for PL312, conclusion nr 4 for DK011, and conclusions 1 and 4 for SE224. May be the biggest issue is that for 32% of the conclusions of the case studies, no information can be derived from the LUFs or indicators. One reason is that a number of these conclusions are related to internal dynamics (e.g. conclusion 3 from ES212, where it is concluded that people living in rural areas resign from cultivation of land, moving to town) within the NUTS region. While all our indicators are from statistical sources that refer to the entire administrative region. Another reason is that related indicators to the conclusion are just not available. It must also be noted that some of the conflicting LUF results can be due to mismatch in the period of time. Our LUF analysis has been done for the period 2000 – 2006, while answers to questions within the case study surveys might have been related to a longer or shorter time period.

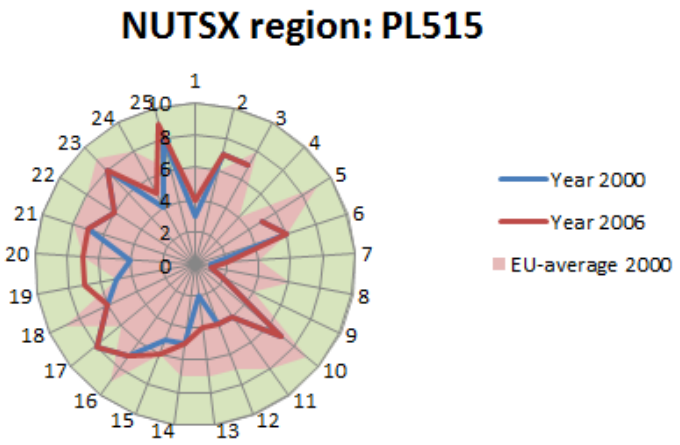
Table 13 Overall summary of LUF scores in relation to the conclusions from the case studies

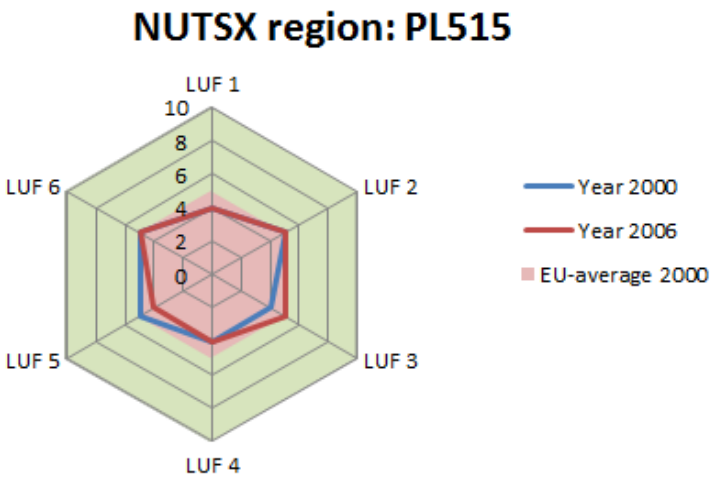
	Case study	NUTS region	NO LUF result	Corresponding LUF	Partly corresponding LUF	Conflicting LUF result	Total
1	Jeleniogorski (Poland)	PL515	1	4	1	2	8
2	Chelmsko-Zamojski (Poland)	PL312	2	6	1	1	10
3	Basque Eurocity (France)	FR615	2	3			5
4	Basque Eurocity (Spain)	ES212	3	3			6
5	Oresund (Denmark)	DK011	2	3		1	6
6	Oresund (Sweden)	SE224	3		1	2	6
	Totals		13	19	3	6	41
	Percentage (%)		31.7	46.3	7.3	14.6	100.0

But overall, it seems that the LUF analysis can be a quick and easy tool to reveal the current situation and highlight the dynamics from the past.

7 Annex I Spider diagrams indicators & LUFS for case studies LUPA

Case study PL515 Jeleniogorski

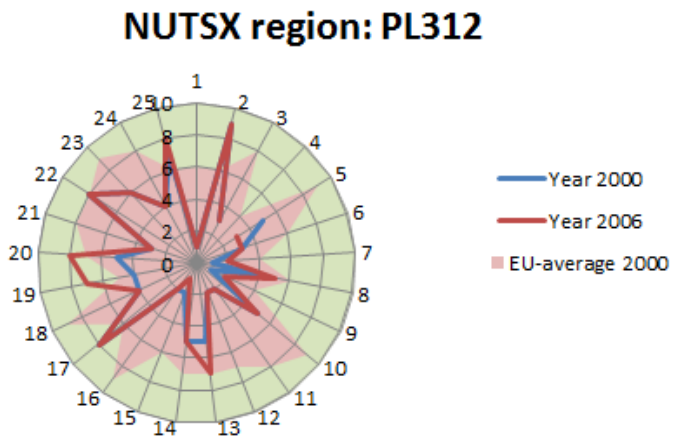


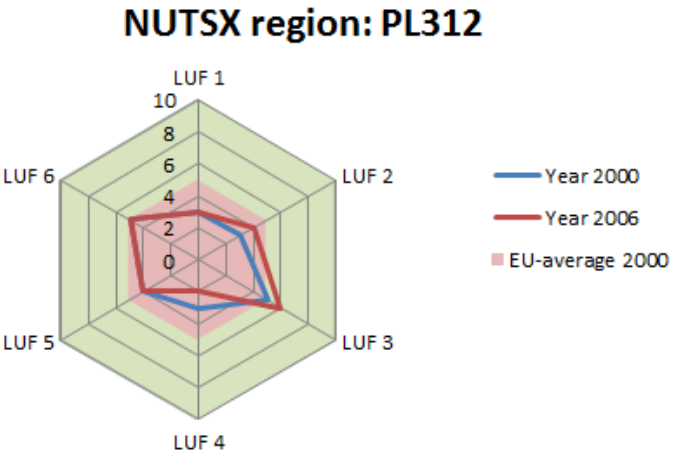


Region							
PL515	Jeleniogorski		Score		Avrg		
			2000	2006	2000	2006	ref
	Multimod00	2	3	4	6	6	10
	Area_har01	3	7	7	6	6	10
	Landcove02	4	7	7	8	8	10
	Status_o03	5			4	4	10
	Pre_prim04	6	5	5	9	9	10
	Forest_a05	7	6	6	6	5	10

	Gross_Do06	8	1	2	4	6	10
	Gross_va07	9	1	1	6	6	10
	Gross_va08	10	2	2	4	5	10
	Green_Ur09	11	7	7	9	9	10
	Landcove10	12	4	4	8	8	10
	Natural_11	13	4	4	7	8	10
	NH3_emis12	14	2	4	7	7	10
	Navigabl13	15	5	5	7	7	10
	Net_migr14	16	5	6	6	6	10
	Nights_s15	17	7	7	9	9	10
	N_surplu16	18	8	8	6	6	10
	Populati17	19	6	6	9	9	10
	Natural_18	20	5	7	5	9	10
	P_surplu19	21	4	7	7	6	10
	Sport_an20	22	7	7	8	8	10
	Monument21	23	6	6	8	8	10
	Unemploy22	24	8	8	9	9	10
	Urban_fa23	25	4	5	8	8	10
	NO3_conc24	26	8	9	6	6	10
	LUF 1	2	4	4	5	5	10
	LUF 2	3	5	5	5	5	10
	LUF 3	4	4	5	5	5	10
	LUF 4	5	4	4	5	5	10
	LUF 5	6	5	4	5	5	10
	LUF 6	7	5	5	5	5	10
	LUF_SOC	8	4	5	5	5	10
	LUF_ECO	9	4	5	5	5	10
	LUF_ENV	10	5	5	5	5	10
	LUF_TOTAL	11	4	5	5	5	10

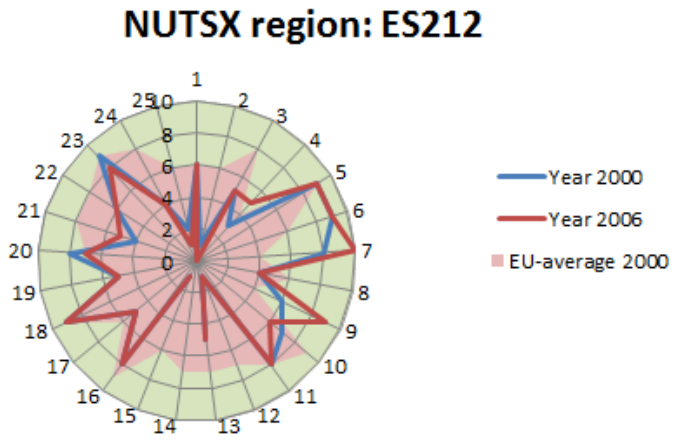
Case study PL312 Chelmsko-Zamojski

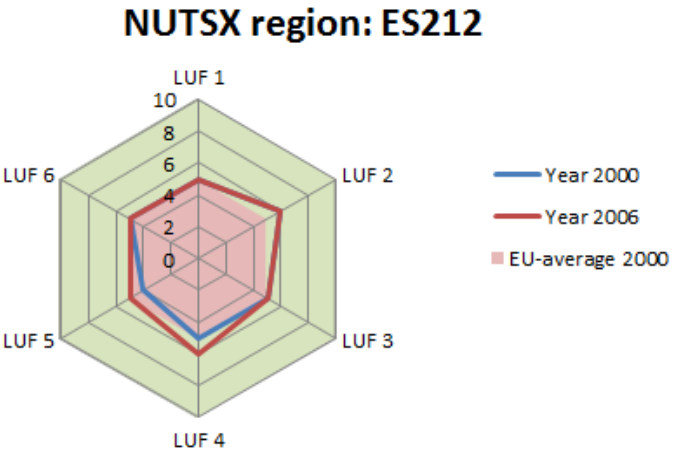




Region							
PL312	Chelmsko-Zamojski		Score		Avrg		
			2000	2006	2000	2006	ref
	Multimod00	2	1	1	6	6	10
	Area_har01	3	9	9	6	6	10
	Landcove02	4	3	3	8	8	10
	Status_o03	5			4	4	10
	Pre_prim04	6	5	3	9	9	10
	Forest_a05	7	3	3	6	5	10
	Gross_Do06	8	1	2	4	6	10
	Gross_va07	9	4	5	6	6	10
	Gross_va08	10	1	2	4	5	10
	Green_Ur09	11	5	5	9	9	10
	Landcove10	12	2	2	8	8	10
	Natural_11	13	2	2	7	8	10
	NH3_emis12	14	5	7	7	7	10
	Navigabl13	15	5	5	7	7	10
	Net_migr14	16	2	1	6	6	10
	Nights_s15	17	2	2	9	9	10
	N_surplu16	18	8	8	6	6	10
	Populati17	19	4	4	9	9	10
	Natural_18	20	4	7	5	9	10
	P_surplu19	21	5	8	7	6	10
	Sport_an20	22	3	3	8	8	10
	Monument21	23	8	8	8	8	10
	Unemploy22	24	6	6	9	9	10
	Urban_fa23	25	4	4	8	8	10
	NO3_conc24	26	7	8	6	6	10
	LUF 1	2	3	3	5	5	10
	LUF 2	3	3	4	5	5	10
	LUF 3	4	5	6	5	5	10
	LUF 4	5	3	2	5	5	10
	LUF 5	6	4	4	5	5	10
	LUF 6	7	5	5	5	5	10
	LUF_SOC	8	3	3	5	5	10
	LUF_ECO	9	4	4	5	5	10
	LUF_ENV	10	5	4	5	5	10
	LUF_TOTAL	11	4	4	5	5	10

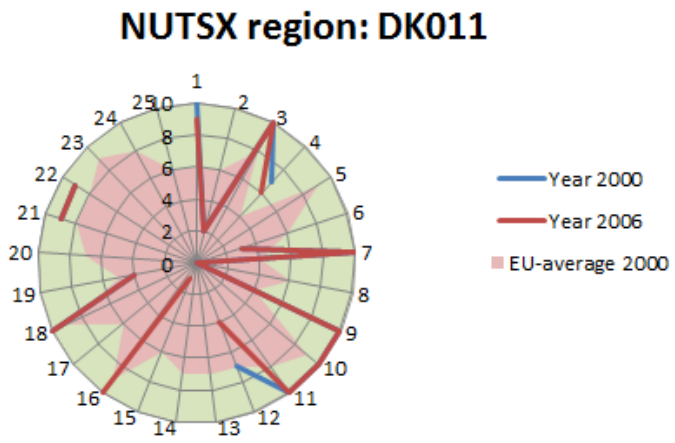
Case study ES212 Basque Eurocity (Spain)

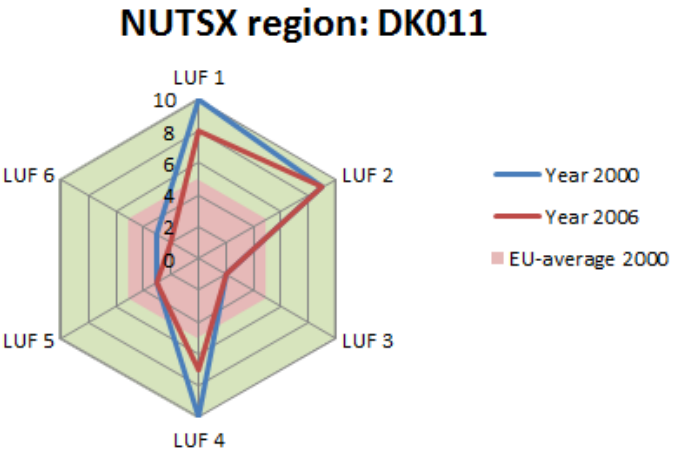




Region							
ES212	Basque Eurocity (Spain)		Score		Avrg		
			2000	2006	2000	2006	ref
	Multimod00	2	6	6	6	6	10
	Area_har01	3	1	0	6	6	10
	Landcove02	4	5	5	8	8	10
	Status_o03	5	3	5	4	4	10
	Pre_prim04	6	9	9	9	9	10
	Forest_a05	7	9	9	6	5	10
	Gross_Do06	8	8	10	4	6	10
	Gross_va07	9	4	4	6	6	10
	Gross_va08	10	6	9	4	5	10
	Green_Ur09	11	7	6	9	9	10
	Landcove10	12	8	8	8	8	10
	Natural_11	13	1	1	7	8	10
	NH3_emis12	14	5	5	7	7	10
	Navigabl13	15			7	7	10
	Net_migr14	16	1	1	6	6	10
	Nights_s15	17	8	8	9	9	10
	N_surplu16	18	5	5	6	6	10
	Populati17	19	9	9	9	9	10
	Natural_18	20	5	5	5	9	10
	P_surplu19	21	8	7	7	6	10
	Sport_an20	22	4	5	8	8	10
	Monument21	23	6	6	8	8	10
	Unemploy22	24	9	8	9	9	10
	Urban_fa23	25	4	4	8	8	10
	NO3_conc24	26	2	1	6	6	10
	LUF 1	2	5	5	5	5	10
	LUF 2	3	6	6	5	5	10
	LUF 3	4	5	5	5	5	10
	LUF 4	5	5	6	5	5	10
	LUF 5	6	4	5	5	5	10
	LUF 6	7	5	5	5	5	10
	LUF_SOC	8	5	6	5	5	10
	LUF_ECO	9	5	5	5	5	10
	LUF_ENV	10	5	5	5	5	10
	LUF_TOTAL	11	5	5	5	5	10

Case study DK011 Øresund (Denmark)





Region							
DK011	Øresund		Score		Avrg		
			2000	2006	2000	2006	ref
	Multimod00	2	10	9	6	6	10
	Area_har01	3	2	2	6	6	10
	Landcove02	4	10	10	8	8	10
	Status_o03	5	7	6	4	4	10
	Pre_prim04	6			9	9	10
	Forest_a05	7	3	3	6	5	10
	Gross_Do06	8	10	10	4	6	10
	Gross_va07	9	0	0	6	6	10
	Gross_va08	10	10	10	4	5	10
	Green_Ur09	11	10	10	9	9	10
	Landcove10	12	10	10	8	8	10
	Natural_11	13	7	4	7	8	10
	NH3_emis12	14			7	7	10
	Navigabl13	15			7	7	10
	Net_migr14	16		1	6	6	10
	Nights_s15	17	10	10	9	9	10
	N_surplu16	18			6	6	10
	Populati17	19	10	10	9	9	10
	Natural_18	20	4	4	5	9	10
	P_surplu19	21			7	6	10
	Sport_an20	22	9	9	8	8	10
	Monument21	23	9	9	8	8	10
	Unemploy22	24			9	9	10
	Urban_fa23	25	10	10	8	8	10
	NO3_conc24	26			6	6	10
	LUF 1	2	10	8	5	5	10
	LUF 2	3	9	9	5	5	10
	LUF 3	4	2	2	5	5	10
	LUF 4	5	10	7	5	5	10
	LUF 5	6	3	3	5	5	10
	LUF 6	7	3	2	5	5	10
	LUF_SOC	8	9	8	5	5	10
	LUF_ECO	9	6	4	5	5	10
	LUF_ENV	10	3	3	5	5	10
	LUF_TOTAL	11	6	5	5	5	10

8 Annex II List of Land Use Functions (LUF2) and underlying indicators

- LUF1: Provision of work
- LUF2: Provision of leisure and recreation
- LUF3: Provision of primary products
- LUF4: Provision of housing and infrastructure
- LUF5: Provision of abiotic resources
- LUF6: Provision of biotic resources
- LUF_SOC; Level of social functions
- LUF_ECO; Level of economical functions
- LUF_ENV; Level of evironmental functions
- LUF_TOTAL; Average level of all functions
- MULTIMOD00;Indicator 0: Multimodal potential accessibility
- AREA_HAR01;Indicator 1: Harvested agricultural areas
- LANDCOVE02;Indicator 2: Landcover - Artifical non-agricultural vegetated areas (0/000)
- STATUS_O03;Indicator 3: Status of bathing water
- PRE_PRIM04;Indicator 4: Pre-primary education
- FOREST_A05;Indicator 5: Forests and semi-natural areas
- GROSS_DO06;Indicator 6: Gross domestic product (PPS)

- GROSS_VA07;Indicator 7: Gross value added at basic prices - agriculture and fisheries
- GROSS_VA08;Indicator 8: Gross value added at basic prices - total
- GREEN_UR09;Indicator 9: Green urban areas
- LANDCOVE10;Indicator 10: Industry and commercial areas
- NATURAL_11;Indicator 11: Natural leisure
- NH3_EMIS12;Indicator 12: NH3 emission (kg N/ha)
- NAVIGABL13;Indicator 13: Navigable rivers and canals
- NET_MIGR14;Indicator 14: Net. migration
- NIGHTS_S15;Indicator 15: Nights spent in tourist accommodations
- N_SURPLU16;Indicator 16: N-surplus
- POPULATI17;Indicator 17: Population density
- NATURAL_18;Indicator 18: Natural protected areas - CDDA and Natura2000
- P_SURPLU19;Indicator 19: P-surplus
- SPORT_AN20;Indicator 20: Artifical leisure areas
- MONUMENT21;Indicator 21: Number of tourist sights
- UNEMPLOY22;Indicator 22: Unemployment rates > 14 years old
- URBAN_FA23;Indicator 23: Build up areas
- NO3_CONC24;Indicator 24: NO3 concentration of leaching (mg NO3/litre)

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