

## THE ATLAS OF THE EURO-REGION NEISSE (ERN)

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### Summary

The paper gives a short report on the project of a thematic atlas of the Euro-Region Neisse (ERN). The ERN was established 1991 and covers parts of Poland, of the Czech Republic, and of Germany. The atlas will include about 25 maps of the scale 1 : 500 000 with stress on social geographic themes. Problems of collecting, acquisition, and preprocessing of data are specified. Further on the paper deals with the used base units and the chosen method of cartographic representation. The production technology which bases on the application of EXCEL and FreeHand is described. Finally the state of the work is reported.

### 1. On the Euro-Region Neisse (ERN)

Similar to Euro-Regions at the western border of Germany new Euro-Regions were established along the eastern border after 1990. In spite of similarities to Euro-Regions, which have been existed longer, there is a special situation with the eastern ones: They are all located at the border of the European Community.

The Euro-Region Neisse (ERN) is located around that point where the Polish-Czech, the Czech-German, and the German-Polish borders meet (*Fig. 1*). The ERN was established in 1991 and named after the Neisse River, which is the southern border between Poland and Germany (in Polish: Nysa) and has its upper course in the Czech Republic (in Czech: Nisa). The region covers nearly 12 000 km<sup>2</sup> - 4547 km<sup>2</sup> in Poland, 3041 km<sup>2</sup> in the Czech Republic, and 4378 km<sup>2</sup> in Germany.

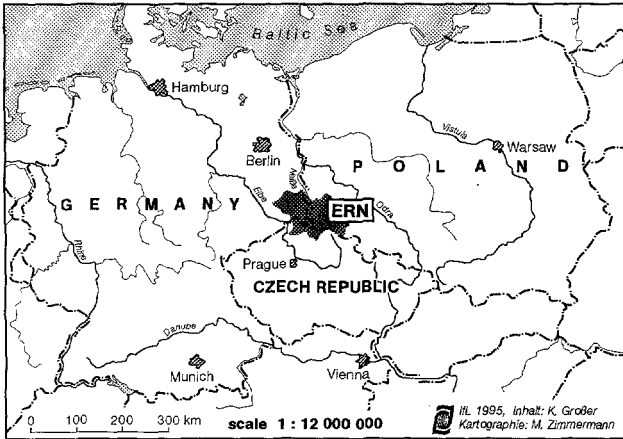


Figure 1

## 2. Outline of the project

In spring of 1994 at the Institute of Regional Geography (Institut für Länderkunde) in Leipzig a project was started with the aim to develop a thematic atlas of the ERN. The project is supported by the Ministry of Sciences and Culture of the Federal State of Saxony.

The atlas will include two parts:

### *Part A Physical-geographic maps*

- Physical geographic survey
- Elevations
- Hydrography and river bassins
- Land use
- Reservation areas
- Environment
- .....\*

*Part B. Social-geographic themes with stress on population*

Distribution / density of population

Development of population

Age and sexual structure of population

Living standard

Employees in the main branches

Labour market

Religions

.....\*

The social-geographic part will represent the state of the early nineties. Some maps however should show the changes from the eighties to the nineties which is more or less the period of the development caused by the political change in Eastern Europe.

The main scale of the atlas is 1 : 500 000. This scale very well fits in the A3-format, which is the largest format of the colour printer, available at the Institute of Regional Geography .

### **3. Collecting, acquisition, and preprocessing of data**

One of the main problems to solve has been the acquisition of suitable data and relevant material. We were faced with several difficulties:

- a) When the project was started a special statistics of the ERN did not exist. A group for data exchange within the ERN organisation was established only last year. The first results of its work have been too general and not suitable for detailed thematic maps.
- b) Relatively new census data do only exist for the Czech part of the ERN. The last census took place in the Czech Republic in 1991.
- c) Each official statistics of the three countries has its own principles of classification. For example the population in the three countries is classified into differing age groups (Table 1).
- d) Some data on industries and environment are secret or not available in the detailed form as we need.

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\* The list of map themes is subject of change. It depends on the availability of data and sources which of the themes must be cut and which ones can be added.

e) The administrative units of the region to depict has been not stable. In East Germany new Federal States were established in 1990. The administrative division of the counties (Kreise) was reorganized in 1994 (formerly 10 Kreise, now 6 Kreise).

*Table 1 Age groups according to the statistics of the three countries of the ERN*

Age group		german part of the ERN	polish part of the ERN	czech part of the ERN	restructured for the ERN
children		0 - 17	0 - 14	0 - 14	0 - 14
economic active popul.	female	18 - 59	15 - 59	15 - 54	15 - 59
	male	18 - 64	15 - 64	15 - 59	15 - 64
pensionaries	female	≥ 60	≥ 60	≥ 55	≥ 60
	male	≥ 65	≥ 65	≥ 60	≥ 65

During the last five years the number of communities in the German part of the ERN was reduced from 335 to 198. An inverse process took place in the Czech Republic. The number of Czech communities located in the ERN has been increased. A new administrative division in Poland is planned.

Because of the above mentioned problems it has been rather time consuming to acquire the data and to make them homogeneous. The primary data were delivered by several Bureaus of Statistics: the Statistical Bureau of the Vojevodship Jelenia Gora, the Statistical Bureau of the Czech Republic in Prague as well as the Statistical Bureaus of Northern Bohemian counties (okres), and the Statistical Bureau of Saxony. We got the data as dBase files or as booklets. Because the attribute data are needed as EXCEL files (see also 5.), we had either to convert the delivered data into the EXCEL format or to put it from the lists into the computer.

#### 4. Basic units and method of cartographic representation

To give the user a reliable idea of the social phenomena and development in the ERN we aimed at a high spatial resolution. Therefore it was decided to use the communities as base units. Nevertheless we had to find a compromise, taking into account the rapid changes of basic units (see 3.e) and the enormous differences in the sizes of the base units. As shown in *table 2* the mean size of the ERN communities in Poland is six times larger than in Germany.

In a pilot studie six choropleth maps on population change and population structure were produced [1]. In these maps the areas of the 40 communities (gminy) in Poland do not give a satisfying image of the spatial structures. For this reason and to avoid the

distortions in perception and cognition caused by choropleth maps in general we have changed the method of representation. All social data should be represented by range graded symbols. But what to do with the 40 gminy? In order to approach the real structure we related the data of each community (gminy) to its settlements. Therefore each community is represented by 10 to 20 symbols filled with the same colour.

*Table 2 Number and areas of the communities in the countries of the ERN in 1991*

	german part of the ERN	polish part of the ERN	czech part of the ERN	ERN
number of communities	335	40	161	536
areas of communities				
smallest area (km <sup>2</sup> )	1,6	5,4	1,3	1,3
mean area (km <sup>2</sup> )	13,1	86,0	18,3	-
largest area (km <sup>2</sup> )	63,6	437,1	114,9	437,1

To get a similar spatial resolution in Germany the administrative units of 1990 are used, not the new (partly larger) communities of 1995. So every map contains about 1000 symbols, which represent the relatively small communities in the Czech and in the German part of the ERN and the settlements in Poland.

### 5. Production technology

The six published maps [1] were generated using the PC ARC/INFO. They were plotted on an electrostatic CalComp plotter. To get the printing originals these plots were scanned and plotted again on film.

The necessary change of the method of the cartographic representation method made us to search for another production line. It was not possible to generate the desired range graded symbols by the ARC/INFO immediately. Moreover we wanted to integrate a relatively detailed base map and to have the option of comfortable editing of the graphic data.

The solution of our problem was rather simple and includes the following steps:

*Construction of a base map in the FreeHand:* The base map was derived from the map "Physical geographic survey" which belongs to the Part A of the atlas and was elaborated on the base of topographic maps 1 : 200 000. This special base map fits

better to the thematic contents than a nongeneralised topographic map used as background.

*Generating of an XY-EXCEL-diagram from the data to represent, using the Gauss-Krüger-Coordinates of the centre points of the communities or settlements, respectively.*

*Import of the EXCEL-diagram as a special layer into the FreeHand file, which already contains the base map and the outlines of the range graded symbols.*

*Filling the range graded symbols by changing their formats according to the symbols of the EXCEL-diagram in the background.*

The disadvantage of this technology is, that it takes about 5 to 8 hours to change the formats of the symbols. On the other hand we are able to edit all elements of the map (the base map as well as the thematic contents) very easily and can generate the printing originals from the FreeHand file immediately .

## **6. State of the work and final remarks**

In April 1995 the map "Physical geographic survey" was finished, from which the base map of the thematic maps can be derived. At the same time first examples of XY-diagrams were prepared in EXCEL and imported into FreeHand files. The data for 12 themes - mostly on population - were ready to be processed to maps.

To produce all planned maps some more data have to be collected. Because some data are not available for all communities, probably a few map themes will be represented in smaller scaled maps (1: 1 Million) on the base of counties (Kreis, okres). In spite of these problems it is the first time that the Euro-Region Neisse is mapped thematically in a medium scale.

The project has to be finished until September 1995. It does not include the costs for printing. Therefore it is not shure, if the atlas will be printed. In any case colour copies of the atlas will be distributed to the cooperating institutions, to the administration of the ERN and to other people who are interested in our results.

## **References**

- [1] GROSSER, K., DROTH, A. & HENKER, ST.: Karten zur Bevölkerung der Euro-Region Neisse. Beiträge zur Regionalen Geographie, Bd.38, Institut für Länderkunde e.V., Leipzig 1995