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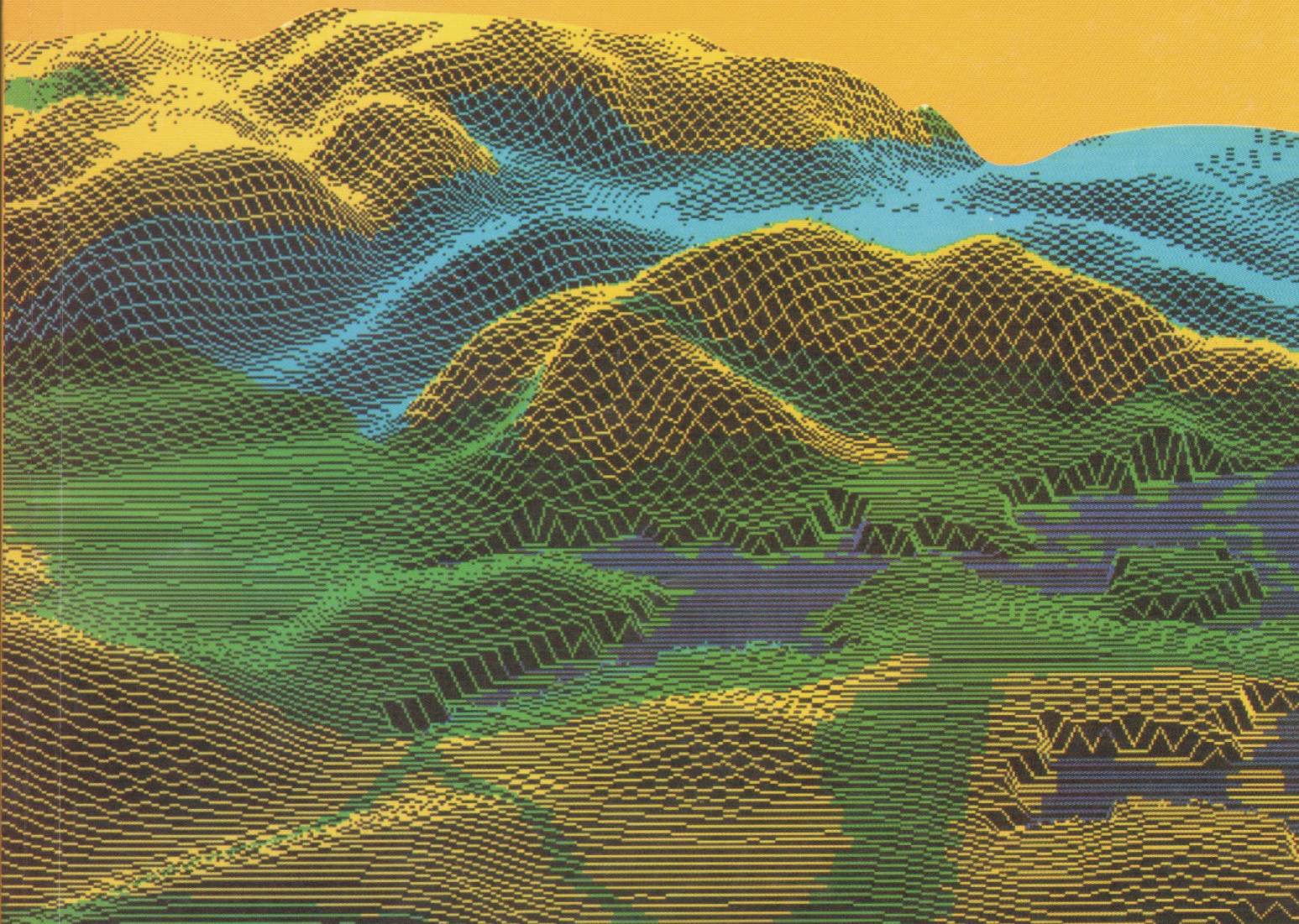

Český Těšín – a town hall

Photo: A. Vaishar

Opava – town centre, view of an old department store, more recent hotel and town hall spire at the back

Photo: O. Mikulík

Illustrations to O. Mikulík's, B. Kolibová's and M. Havrlant's paper

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SOCIO-ECONOMIC SITUATION AS A FACTOR OF CHANGES IN DEMOGRAPHIC DEVELOPMENT: CASE STUDY SLOVAKIA

Anton MICHÁLEK, Peter PODOLÁK

Abstract

Deterioration of socio-economic situation and growth of poverty, which have stricken an important part of the Slovak population also caused, besides other, changes in the demographic characteristics of the country. As the majority of population adapted to hard conditions it affected their demographic behaviour and led to a dramatic turn in demographic development of Slovakia. The study tries to analyze and explain the above mentioned changes in a broader context of socio-economic development of society. The results seem to suggest that the economic threat to family is a significant and determining element of the present demographic development inducing rapid and pronounced changes in the values of fertility, marriage and divorce rates.

Shrnutí

Sociálně-ekonomická situace jako faktor změn demografického vývoje na příkladu Slovenska

Zhoršení sociálně-ekonomické situace a růst chudoby, které v posledním desetiletí postihly významnou část slovenské populace, způsobily mimo jiné také změny v demografických charakteristikách. Většina obyvatelstva se přizpůsobila novým těžším podmínkám, což vedlo také ke změně jejich demografického chování a zároveň k výraznému zlomu v demografickém vývoji Slovenska. Cílem příspěvku je analýza a vysvětlení této změny v širším kontextu sociálně-ekonomického vývoje společnosti. Jak je patrné z výsledků, ekonomické ohrožení rodiny je významným determinizujícím prvkem současného demografického vývoje, především rychlých a výrazných změn v hodnotách plodnosti, porodnosti, sňatečnosti a rozvodovosti.

Key words: *socio-economic situation, Slovakia, demographic development*

1. Introduction

The present economic and social transformation in the Slovak Republic and other countries of central and eastern Europe manifests inter alia by changes in numerous indices of their demographic development. The present stage of transformation in the mentioned regions is characterized by changes which bring closer their demographic indices to those of other European countries. The values of indices of such phenomena and processes that are sensitive to changes of population's behaviour or decisions of the individuals have comparatively quickly and distinctly changed. The rapid decline of birth rate and fertility, increased share of extra-marital children, rapid decrease of the migration rate were recorded while the indices of marriage and divorce rates relatively stabilized at a level different from that in the past. On the contrary, slight changes were observed in indices, change of which requires transformation of external conditions and a longer interval – mean length of life, total mortality rate, and health condition of population. Positive trends (considerable drop) were observed only in abortions and infant and post-natal mortality.

2. Changes of socio-economic situation and their effect on demographic behaviour of population

Changes of demographic behaviour were expected, only the rapidity and depth of decrease of some of its indices connected with the drop of marriage and fertility rates are surprising. In contrast to the west European countries, where this second demographic transition (as the quoted series of the changes of demographic behaviour is sometimes denoted) occurred earlier, gradually and more or less spontaneously without any external pressure, experts generally agree on the fact that in our and other post-communist countries these changes were provoked by the new political and economic situation, which has also essentially changed the social situation. This was the pressure which influenced personal decisions in all spheres of the individual's life in all his/her life stages even in spite (or maybe precisely because of it) of the fact that it was accompanied by the different life style offer. It goes especially for the young people at the age when they decide on their future - marriage or parenthood. Impossibility to obtain credits, financial inaccessibility of housing and increased cost

of raising children undoubtedly lead to the change of thinking, more responsible decision-making concerning every step. The quoted influences of socio-economic nature have their effect on demographic development, which also proceeds in its own relatively independent line of long-term development and in certain relatively long-lasting phases.

On the other side, deterioration of the socio-economic situation and increasing poverty which has stricken an important part of the population affect the demographic development, namely the rapid and distinct changes in fertility, birth, marriage and divorce rates. In the consequence of these changes also pronounced deviations in other demographic characteristics, especially in age structure of population, become obvious.

3. The modern poverty and its protagonists

Slovak society has experienced various types of poverty in its history. Working class was the main carrier and victim of poverty in the 19th century. In the post-war period ending in the 1970's, social minorities were the ones most affected by poverty and at the present time households of the long-term unemployed or families with more children are exposed to the threat or experience of poverty. Results of numerous empirical studies oriented to the assessment of social situation and poverty of Slovak households allow for a compilation of simple picture of a poor Slovak household. It is characterized by: low income per family member mostly in the consequence of a long-term unemployment of the bread-winner (if the bread-winner works, then as a rule he is employed as unqualified or agricultural hand in the consequence of low educational level, here belongs also comparatively high number of urban households with higher educational level or qualification with bread-winner employed in the sphere of education, health service and culture), appurtenance to the Catholic religion, living in a small flat of low category and normally with inferior equipment. From the demographic point of view, the bread-winner of such a household is normally younger, and parent couples with three and more children and incomplete families are represented in this category. The households are normally characterized by higher isolation or bad family relations and lacking broader social or family background. This is often the case of households led by handicapped or chronically ill bread-winner. Observation of objective indices and results of various enquiries reveal that poverty becomes ever more influenced by labour market and size or completeness of family. Precisely these two categories of risk households, namely the households led by unemployed (especially long-term unemployed) bread winner and households of multiple children families are the ones most stricken by new poverty.

4. Social-economic situation (poverty) of the unemployed

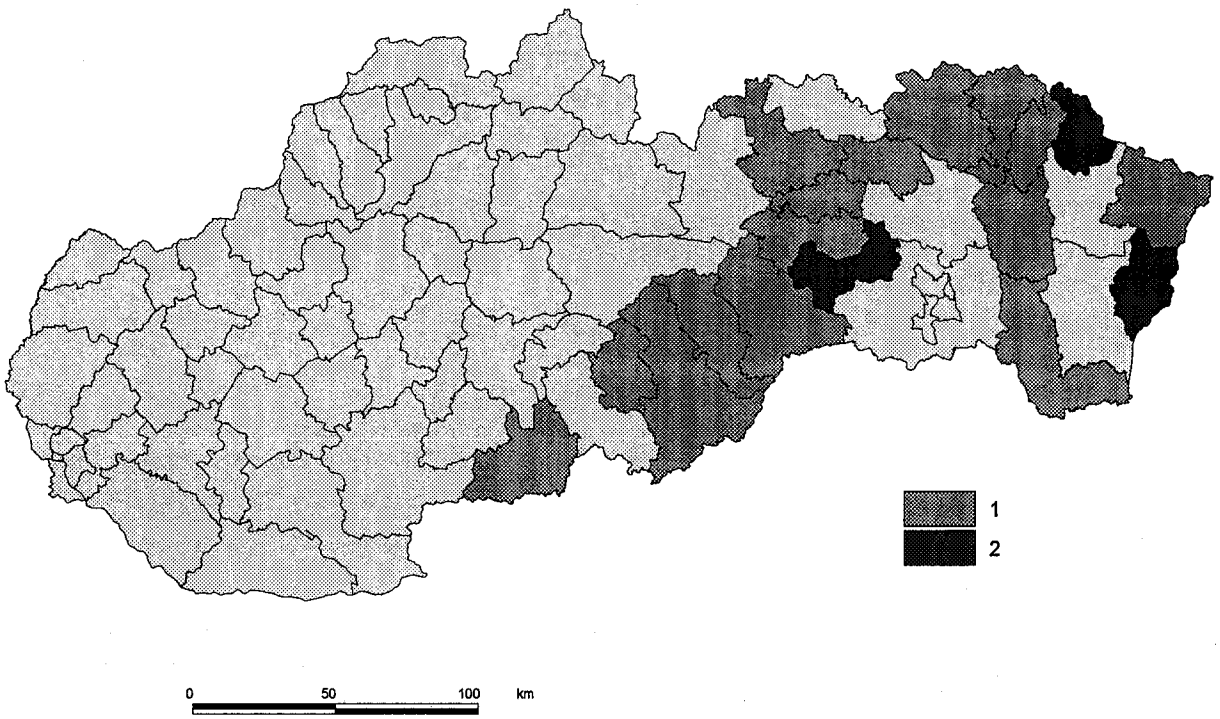
In the past, the hidden demographic and „fuzzy" poverty progressively changed and it is ever more influenced by position and success or failure of the person in question in labour market like it is in advanced countries. The traditional formula of relation of unemployment and poverty characterized by the share of the unemployed in poverty and the rate of poverty of the unemployed can be completed in Slovakia by the employed who are poor and the unemployed which are not poor (group of the speculating unemployed making use of combination of unemployment benefits and informal income). In spite of it, there is an evident and undeniably high rate of coincidence of the long-term unemployment and poverty. The rate of unemployment in some districts of Slovakia is persistently reaching a double value of the national average and precisely these districts are those where the long-term unemployment increases. In December 1999, the long-term unemployment moved around 230,000 persons equaling to approximately 43% of the total of the unemployed (Ministry of Work, Social Affairs and Family 2000). The present long-term unemployment in Slovakia is one of the most important phenomena on the labour market. A certain shift was noticed in recent years which is characterized by prolongation of the mean duration of single cases while the share of the long-term unemployed persons grows. The mean

Tab. 1: Structure of households by number of members and income (in %)

Income interval in Sk	Number of members							
	1	2	3	4	5	6	7+	Total
Do 1250	1.1	1.9	4.2	5.2	6.1	8.2	11.8	3.6
1251-2250	1.8	7.7	10.1	14.3	28.1	35.6	42.9	11.6
2251-3250	16.3	17.5	26.1	32.3	36.3	29.9	25.4	24.6
3251-4250	35.6	37.5	27.6	26.4	19.2	20.8	14.2	30.2
4251-5250	18.1	16.5	17.5	12.1	7.5	4.0	3.4	14.6
5251-6250	8.2	8.1	6.9	5.4	2.3	1.3	2.3	6.4
6251-7250	6.6	4.2	3.2	2.3	0.3	0.1	0.0	3.5
7251-8250	4.9	2.5	2.3	0.8	0.2	0.0	0.0	2.3
8251+	7.4	4.2	2.1	1.2	0.0	0.1	0.0	3.2
Share in total number of households (%)	21.2	23.0	17.7	25.4	8.7	2.8	1.2	100.0

Source: Mikrocenzus 1997. Bratislava ŠÚ SR

Fig. 1: Poverty regions in Slovakia (1998)



1 – regions with poverty level above average
2 – regions with very high poverty level
REMARK: The level of poverty was measured by unemployment rate, share of social dependants and average income.

time of registration of the unemployed in February of the last year exceeded the critical 12 months for the first time and reached 14.4 months before the end of the year. Simultaneously, the category of poverty became broader while the number and share of households ranking as permanently poor grow. The phenomenon of the „unemployment culture" is the key one of poverty in Slovakia. Some categories of the long-unemployed (homeless persons, Romas and a part of young unqualified people) constitute a basis of the „permanently poor population in Slovakia".

The income level of the majority of households led by long-term unemployed is situated under the limit of the subsistence minimum while social benefits are for the great majority of these households the basic and complementing income sources. Various enquiries (in which the respondents were on social benefits) prove that the level of the benefits with regard to the continuous growth of prices is low, allowing only „to survive". The income situation of the households depending on social benefits requires a serious reduction of consumption and it is accompanied by material, health, mental, social and other problems. Differences in material deprivations are evident (conditioned by numerous factors) and it is obvious that the urban households of the long-term unemployed, especially in the consequence of higher expenditure for rents, are more depressed than the households of the long-term unemployed living in rural areas. The long-term material deprivation in the rural areas also reduced the self-supplying capacity and the level of „social solidarity" (support by family, friends, neighbours, etc.). On the other hand, it should be also admitted that a great part of the long-term unemployed is not interested in jobs and their working capital is very low. The effect of disincentives influencing the high unemployment rate is very strong in Slovakia. Social benefits, especially in combination with other income, demotivate the unemployed. The expected improvement of the living conditions after obtaining a job is very low in a significant part of the long-term unemployed. This „trap" which does not motivate economic activity and does not bring any economic effect because the price of labour is so low, deforms and affects the behaviour on the labour market and consequently influences and increases the poverty rate. It is then necessary to create a greater scale between the social benefit and income from employment. Due to redistribution principles applied, as much as 46 % of the unemployed find themselves in the same income scale i.e. that from the 0.5 multiple of the net mean income per person to the mean income.

5. Economic problems and poverty of multiple-children households

Another very important category showing sings of poverty is the one of multiple-children and incomplete families. The declared programmes of social assistance to the families from the present and preceding governments to this category are formal and lacking support. The present economic conditions

cause deterioration of the social situation of households with children. Most of them live on a very limited budget and reduce all aspects of expenditures. The everyday needs are satisfied only at a limited rate and with problems. The economizing strategy of households with children especially, if they are three or more, applied on an ever greater group of needs, became an inevitable fact. Some enquiries reveal that as much as 77.4% of households with three dependent children and 95% of households with four or more dependent children live on an income oscillating near the subsistence minimum. The deterioration of social situation is declared by 68% of all families with four or more children. Very pronounced deterioration is declared by more than 40% of such families. Also the multiple-children households where both parents are working frequently fall under the poverty limit. Generally, monthly income per family member declines to the level of 75.3%, 65.2% and to 51.0% of the income mean of childless families in households with one, two, and more children respectively.

The trend of family allowances and the delayed increase of the subsistence minimum, as well as the stagnating state support for children's nutrition and education results in a distinct deterioration of the social situation of the multiple-children families. Reports of demographers are alarming in this aspect. They point at the fact that family in Slovakia is threatened above all from the economic point of view. Financial problems absolutely dominate among other problems of families in Slovakia. Impaired family's financial situation immediately provokes irritability between the partners. As much as 81% of the inquired think that irritability deteriorated in the last five years, while it is interesting that people with higher or high educational level are more irritable. Greater rate of stress, anxiety, and irritation provokes family crisis and often leads to the end of the marriage with all adverse personal and social consequences. A long-term and severe experience of financial deprivation quoted by 72.2% of respondents (results of the research of the International Centre of Family Research, 1998) makes their income hardly sufficient for purchase of the cheapest food items. Deterioration of the living situation of the majority of population is also proved by the fact that as much as 47 respondents fell under the poverty limit.

6. New elements influencing the development of birth rate

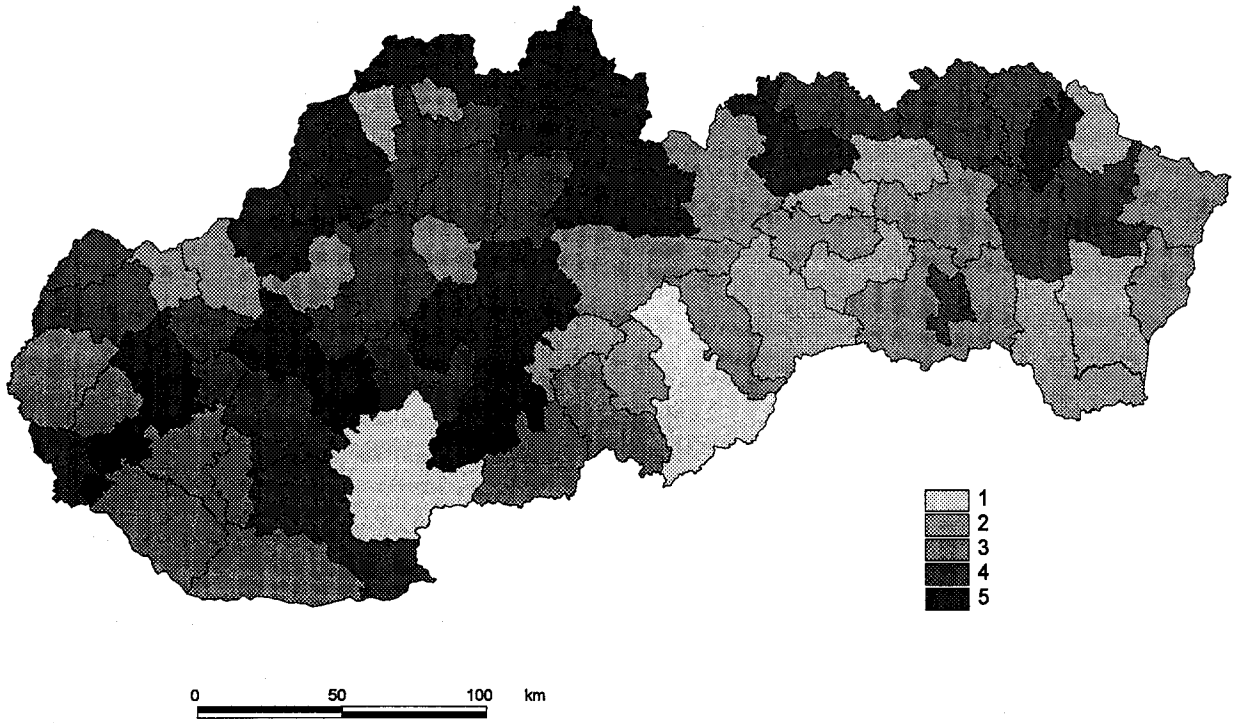
Perhaps the most pronounced changes manifested themselves in the development of indices of the natural reproduction in the last decade. An obvious decline in the number of new-born children is the most conspicuous trait of the population's development in the SR after 1989. The question to what extent is this development caused by demographic agents and to what extent it is the consequence of the socio-economic changes is now relevant. Any of the quoted agents plays its partial role although now it is clear that the low income or its sharing among more persons enormously influence the ideas on the number of children in the family. Besides the turn of the 80's and 90's was the period of declining number of women at the age of the maximum fertility. In contrast to many west European countries, the highest fertility in our country concentrates in the 20-24 age group of women. It is a demographic fact proven by the specific rates of fertility that the above mentioned age group gives birth to much less children than their counterparts from the 80's (not mentioning the 70's). It probably also relates to the financial burden represented by the child birth or unsolved question of housing. The specific rate of fertility of the 20-24 age group of women was 204.8 and 187.1 in the years 1980 and 1990 respectively and it dropped to 99.1 in 1998. On the other hand, this shrinkage is not compensated by increasing of fertility of the women at higher age.

Tab. 2: Natural population movement and reproduction rates in Slovakia in 1980 – 1998.

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998
Live births	95 100	79 989	78 570	74 640	73 256	66 370	61 427	60 123	59 111	57 582
Per 1000 inhabit.	19.1	15.1	14.9	14.1	13.8	12.4	11.4	11.2	11.0	10.7
Total fertility		2.09	2.05	1.98	1.92	1.66	1.52	1.47	1.43	1.38
Gross reproduction rate	1.127	1.013	0.992	0,941	0.930	0.814	0.742	0.712	0.696	0.671
Net reproduction rate	1,098	0,993	0,972	0,921	0.919	0.801	0.730	0.700	0.685	0.661
Specific fertility of women 20-24 y.	204.8	187.1	182.4	169.2	166.7	139.6	124.4	115.0	106.2	99.1
Specific fertility of women 25-29 y.	131.1	116.6	111.6	110.8	106.7	95.0	90.6	91.5	89.6	90.4
Mean age of mothers at birth of the first child	22.7	22.6	22.5	22.6	22.4	22.6	22.8	22.9	23.1	23.3
Extra marital births;	5 450	6 134	7 086	7 286	7 729	7 772	7 747	8 430	8 923	8 827
In % from total live births	5.7	7.6	7.8	9.8	10.6	11.7	12.6	14.0	15.1	15.3

Source: Štatistické ročenky ČSSR, ČSFR a SR v r. 1976-1992. Bratislava (ŠÚ SR).
Bilancia pohybu obyvateľstva Slovenskej republiky v roku 1993. Bratislava (ŠÚ SR).
Štatistická ročenka Slovenskej republiky 1998. Bratislava (ŠÚ SR, Veda). Vývoj obyvateľstva v Slovenskej republike. Bratislava (ŠÚ SR), 1999.

Fig. 2: Natality decline in districts of Slovakia in the years 1991 – 1998 (in %)



1 – 1.6 – 2.1; 2 – 2.2 – 2.9; 3 – 3.0 – 3.9; 4 – 4.0 – 4.9, 5 – 5.0 – 7.8

The number of women at the age of the highest fertility declines. Intensive processes of emigration from rural to urban areas, namely that of the younger population in the past decades, did not transfer the model of the multiple child family into the cities, rather the opposite is true. Immigrants in the cities adapt the family model to that of urban families with less children, which represents another demographic factor of the natural reproduction decline. Higher cost of housing and other activities in the cities also influence this decline. Number of children born as third or next dramatically dropped in the last years, while the families with one or two children prevail. This process is also influenced by factors of economic, social, psychological or religious nature. Material provision for children is ever more expensive. Young families cannot expect such a support from the state as 15-20 years ago. Such population stimuli as the need of descendants who would take over a family firm or farm do not exist in Slovakia in its present complicated economic situation. The bread-winners in many Slovakian regions lost their jobs for a long period and this naturally affects the reproduction behaviour of the population.

Table 2 shows the decline of reproduction and birth rates in the last decade in Slovakia. It is also obvious that the process of reproduction decline is differentiated in the Slovak society. The reproduction behavior of Roma population represents a very important factor. Although the reproduction of this ethnic group declined in recent years, the mentioned decline is far lower than in the rest of the population. Fig. 2 representing the spatial aspects of birth-rate decline proves it. The decline of birth-rate in the 90's is relatively lowest in districts with high representation of the Roma population. Four districts: Kežmarok, Vranov n. Topľou, Stará Ľubovňa, and Bardejov are an exception. These districts are characterized by a high share of the Roma population but the level of birth-rate values caused that they were included into seven districts with the highest birth rate in Slovakia in the nineties, and in spite of some decline they preserved this primacy. The Roma population represents at the present a serious social problem, unemployment rate is very high, but it does not influence their reproduction behaviour. Moreover, reproduction behaviour of the Roma ethnic group is influenced by surviving ideas about the necessity of having many children. In the past, Romas were accustomed to high family and children allowances, and although the system of granting this type of assistance was modified, apparently it was not sufficiently modified for the Romas not to rely on these allowances as the only income for their large families. New mechanisms to regulate the granting of allowances are only at the stage of planning.

The complex action of demographic, social and economic influences will show whether the mentioned phenomenon is of permanent or transitory nature in Slovakia. It is very probable that a distinct and general differentiation of the society will contribute to the processes of natural reproduction by some dynamic moments. After persisting stagnation of main demographic processes of natural reproduction such development (naturally depending on the social development of the society and in a long-term process) might mean, that the population of Slovakia will rank among the ones with more dynamic type of demographic reproduction, although on a level of intensity different from that which existed here some decades ago and with the distinct differentiation within the Slovak society.

7. Economic conditions as the dominant factor of development of the marriage and divorce rates.

Influence of reproduction behaviour of population and negative changes of the economic situation also manifest in the population composition by family status. The number of single men and women grows in the consequence of low or declining marriage rates. These single people do not found the households of their own, they mostly live with their parents as the acquisition of a proper living place in the case of marriage is financially inaccessible. It is possible that a part of these young people only delays the marriage (because of economic reasons) and a certain part of them will live in what is called actual or informal marriages and a part of them will not marry at all.

Sociological research shows that a great majority of the Slovak population is still convinced that marriage is the natural part of life of a young person. The decision of man or woman to preserve his/her status of „single" is still seen as rare. What has changed in recent years, is the external situation. Economic pressure actually leads to more responsible reflexions about the consequences of marriage and often to its delay what significantly lowers the marriage rate. There is practically no support from the state to young couples and the help of parents is limited as well. Another agent which distinctly influences the number of marriages is the age structure of the population. On the turn of the eighties and nineties, smaller groups entered the age category of the maximum marriage rate which is 20-24, which were born in the period of low birth rate period by the end of the sixties and beginning of the seventies. The decline of number of marriages in the course of the 90's is only a natural consequence of this situation (see Tab. 3). The maximum value of the marriage rate index was reached in the second half of the 70's (9.2 marriages per 1,000 inhabitants). The value of relative index of marriage dropped from 7.6 per mille in 1990 to 5.1 per mille in 1998. In terms of this index Slovakia complies with the European mean.

The agent of „richer life", a possibility opened by new conditions which originated after 1989, undoubtedly plays and important role apart from the economic pressure. Instead of early marriage other possibilities are available such as professional career, stays abroad, alternative ways of coexistence with partner, and the increased general influence of adversely operating economic agents against marriage rate.

The high level of divorce rate was evaluated as the most negative feature of the population's development in the former regime. The level of divorce rate in all countries of the former East Block (with the exception of Poland with the high share of people adhering to Catholic religion) distinctly exceeded that of the western Europe. In these countries, divorce was a simple matter and a method often used as solution of even trivial marital problems. The general climate in society favoured acquisition of an additional flat for the leaving partner in contrast to the present situation. The number of divorces almost doubled in Slovakia in the course of the seventies, reaching the number of 9 000 per year in the course of the eighties.

The absolute and relative number of divorces grew after 1990 until 1996 when it reached its maximum (9 400 divorces or 34 % of concluded marriages), the level, which stabilized in the last two years. Divorce is now more demanding and complicated with property and legal circumstances. Economic conditions in this case represent an apparently positive factor contributing to the stability of the marriage. However, existence of such marriages means an unsound development of co-existence and frequent traumatisation of children. Sociological research points out an interesting fact: the present-day marriage is more problematic in our country, it is exposed to more demanding tests more than ever in the past, influenced by personal ambitions of the partners, by problems of economically failing family, etc. Incomplete families fall into the group of socially dependent persons more frequently and easily than in some other countries of the western or northern Europe. Incomplete families face long-term economic problems in the present economic situation.

The changes of demographic development and socio-economic situation have their reflection in the structure of household. A number of households grows but their composition changes. In the course of the 90's, the number of single-member

Tab. 3: Marriage and divorce rate indices of Slovak population in the years 1980 – 1998

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998
Marriages	39 578	40 435	32 714	33 880	30 771	28 155	27 489	27 484	27 955	27 494
Per 1000 inhab.	7.9	7.6	6.2	6.4	5.8	5.3	5.1	5.1	5.2	5.1
Divorces	6 645	8 867	7 893	8 057	8 143	8 666	8 978	9 402	9 138	9 312
Per 1000 inhab.	1.3	1.7	1.5	1.5	1.5	1.6	1.7	1.8	1.7	1.7
Number of divorces per 100 marriages	16.8	21.9	24.1	23.8	26.5	30.8	32.4	34.2	32.7	33.9

Source: Bilancia pohybu obyvateľstva Slovenskej republiky v roku 1993. Bratislava (ŠÚSR).
Štatistická ročenka Slovenskej republiky 1998. Bratislava (ŠÚSR, Veda).
Vývoj obyvateľstva v Slovenskej republike. Bratislava (ŠÚ SR), 1999.

households increased and on the other hand, the share of five and more member households declined. The diminishing trend of average sized Slovak households is obvious. Statistical prognoses claim that the biggest increment is expected for the single-member households and incomplete family households.

8. Demographic, socio-economic development and ageing of population

Ageing of the population is not only a demographic, but also economic/political problem and one of the most serious symptoms of the modern European society. The share of older population eligible for the retirement pension guaranteed by the state will gradually decrease with the decreasing share of economically active component of the population in favour of older persons. In this aspect, the situation in the post-communist countries is simultaneously advantageous and disadvantageous. A very relative advantage which is also quickly fading, is a lower share of old persons and a higher share of youth. Disadvantage is the low work productivity, overall poverty of these societies and a rapid decline of fertility since the beginning of the 90's, which accelerates the process of ageing of their populations.

The distinct decline of birth rate will result very soon in a smaller reproduction basis and acceleration of ageing (expected as soon as in 2005). In spite of further and inevitable adaptations of age eligible for pension the situation will require a higher tax load of ever smaller productive part of population. The life of population of the Slovak Republic will be more expensive because there will be an ageing population living in small i.e. more expensive households with a high share of single-member households which are the most expensive ones. The expenses on paid institutional care for the old people living in atomised households will be also high. Three generations ahead the „savings" originating in present from the decreasing birth rate and care for children will result in high expenditure on care after old population.

We observed the process of demographic ageing on a national scale for the past decades (see Tab. 4). The share of reproduction age group is comparatively balanced in the post-war period and it still represents 55-60% of total population. Changes are observed in the share of child and post-reproduction components. The decline of the child component is observed as a consequence of the decreasing birth rate: 0-14 year old represented 27.3% in 1970. Then it was progressively declining to 26.1% in 1980, 24.9% in 1991 and to only 20.4 in 1998. On the other hand, the share of older post-production population increased from 16.4% in 1970 to 17.6 % in 1991 and 17.8% in 1998. A more rapid growth of the number and share of persons at the post-productive age is expected in the first decade of the next millennium when the potent years of the born in the post-war period and in the fifties will enter productive age. Then the decline of the new born children recorded in recent years will manifest and the load represented by unproductive components on the productive component of population will increase. Decline of the child component in the overall structure of population and growth of number of post-productive component means that the Slovak population lost the attribute of young and acquires the features of the west European society with all adverse economic and social consequences of the ageing population.

9. Conclusions

Demographic and social development of the Slovak Republic after 1990 is complicated, its future is unclear and hard to predict in many aspects. Although the direct population policy of the state is missing or is rather manifested by negative interventions, there are also indirect influences — those of tax and price policy, housing, and other, which affect the individual demographic behaviour of population.

The principal change of socio-economic situation distinctly affected the demographic behaviour of the population. Individual interests of young people, social pressures rooted in the limited social security (which existed here before and were acceptable for the majority) and a real threat of unemployment and growth of poverty led to deep and rapid changes of the populations'situation at an extent which was not expected at all. Apart from the

Tab. 4: Age structure of Slovak population (in %)

	PREPRODUCTIVE	PRODUCTIVE	POSTPRODUCTIVE	INDEX OF AGEING
1970	27.3	56.3	16.4	60.07
1980	26.1	57.7	16.2	62.07
1991	24.9	57.4	17.6	70.68
1993	23.5	59.1	17.4	74.04
1994	22.9	59.6	17.5	76.42
1995	22.3	60.2	17.5	78.47
1996	21.7	60.7	17.6	81.11
1997	21.1	61.2	17.7	83.89
1998	20.4	61.8	17.8	87.25

Source: Vývoj obyvateľstva v Slovenskej republike. Bratislava (ŠÚ SR), 1999.
Remark: Index of ageing is given by share of postproductive to preproductive population, higher value of index means the higher degree of population ageing.

demographic and long-term operating agents, the worse living conditions of young people (financial inaccessibility of housing, increased living cost, fear from loosing job, etc.), and the lack of interest on the part of political bodies in the development of the population (including the Government, Parliament and the majority of administrative bodies) contributed to sudden changes of demographic changes. Enquiries show that 90% of the present marriages depend on material help from their parents. Worse living conditions are complained about the same by young, middle age and older households. It is not surprising then that the population climate rapidly changed in the course of the 90's (with the exception of the Roma population, behaviour of which is specific). Most of the young people adapted themselves to the new conditions by their pragmatic demographic behaviour, and ever smaller part of them behaves in the „old" way (early marriage and procreation). The transformation of demographic behaviour in new social, economic conditions continues, the preceding model of marriage, birth and fertility rates is progressively abandoned.

It is possible to predict that the changing economic and social situation will bring about further modifications of demographic behaviour. Variability of demographic behaviour will broaden in line with the reached education, social position, economic security and subjective preferences.

Acknowledgement

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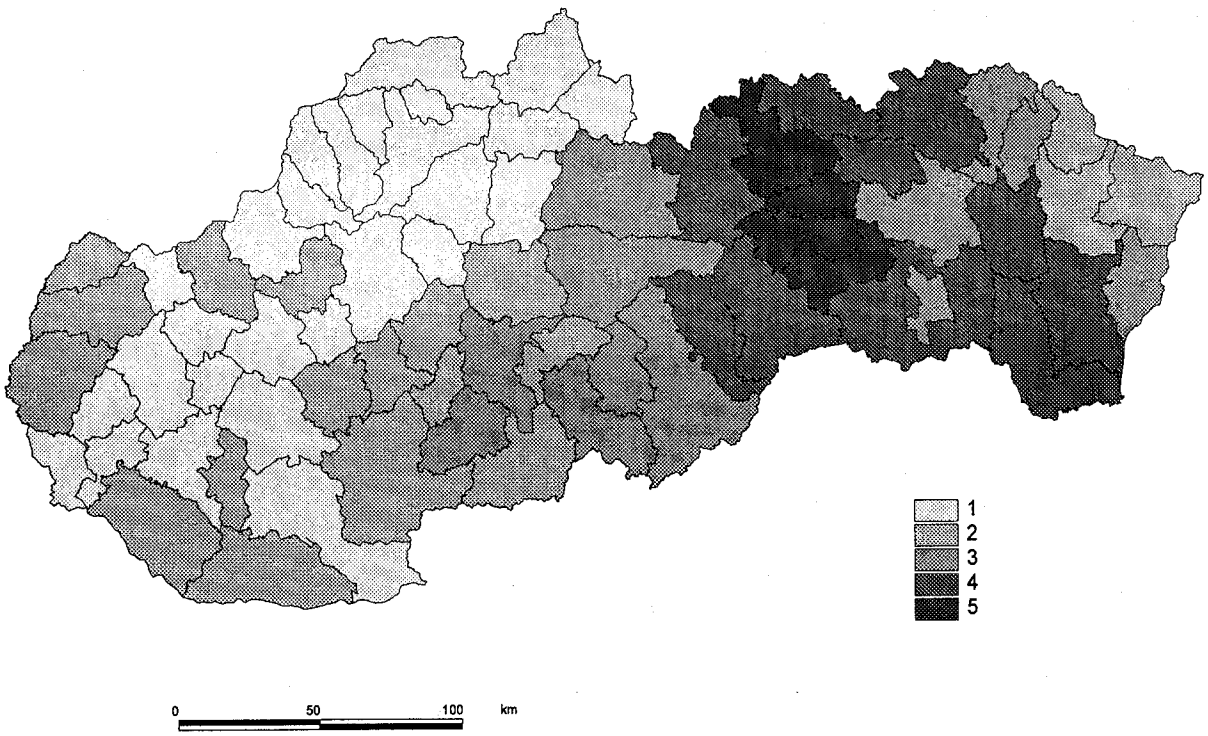
Fig. 3: Territorial distribution of the Roma population in districts of Slovakia (1998, in % from the total district population)



1 – 0.01 – 0.49; 2 – 0.50 – 1.49; 3 – 1.50 – 2.99 4 – 3.00 – 5.99; 5 – 6.00 – 9.43

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Reviewer

RNDr. Antonín VAISHAR, CSc.

Editorial note: The contribution is very topical also for the Czech Republic. However, discussions of the Czech expert public rather concern reasons to the changed demographic behaviour of the population. In addition to opinions which relate the changes to the impaired social position of young families with children, there are also theses about the rapid decrease of birth rate being conditioned by greater possibilities of young people to find self-determination, which makes them delay the conception of children for later age. The disputes suggest that the problem in question is considerably complex and structured and that it will take a longer time to learn the proper causes. The editors expect a follow-up to the theme seen from another point of view to be published soon.

INFLUENCE OF PHYSICAL AND SOCIAL FACTORS ON THE QUALITY OF URBAN ENVIRONMENT IN LJUBLJANA

Metka ŠPES, Aleš A. SMREKAR, Barbara LAMPIČ

Abstract

Interests of numerous users of space in Ljubljana that clash, oppose one another, and coincide are the topic that we wish to present by means of the selected indicators of the quality of dwelling environment. Air pollution, transport load, noise pollution, use of urban public transport, drinking water supply and waste-waters' treatment, as well as the accessibility of green areas to the residents are presented in more detail.

Shrnutí

Vliv přírodních a sociálních faktorů na kvalitu životního prostředí města Lublaně

Na základě vybraných indikátorů obytného prostředí jsou prezentovány jak shodné, tak protikladné zájmy četných uživatelů území města. Jsou podrobně rozebírány problémy znečištění ovzduší, zatížení dopravou, hluku, využívání hromadné dopravy, zásobování pitnou vodou i nakládání s odpadní vodou jakož i dosažitelnosti areálu zeleně pro obyvatele.

Key words: *quality of dwelling, indicators of the quality of dwelling environment, environmental pollution, sustainable development of the town, ljubljana, slovenia.*

1. Introduction

Urban ecosystems are marked with a strong material-energy flow, which rapidly affects the environment of limited tolerance capacity, in the forms of pollution or reduced quality of dwelling of its inhabitants. The activities which form and are parts of urban areas are concurrently also the main agents that influence the quality of urban environment. Interests of diverse users of space quite often clash, or oppose one another, and much rarely coincide. More aggressive activities (manufacturing industry, transport, etc.), which were the main agents of the development of individual towns, have simultaneously caused a series of negative spatial effects which have been primarily manifested as the excessive pollution of urban environment and the subsequent degradation of the latter, and also as the negative impacts on the inhabitants which are manifested in their health, economy and social sphere. However, because of the great settling density in towns, numerous people who actually play a double role are directly affected: on the one hand, they are the generators of the majority of negative environmental changes, and on the other, they are the receptors of these changes and their negative impacts. As a rule, in urban parts of poorer environment lower social groups of the population are concentrated (greater number of the aged, the young who try to establish their existence conditions, less educated with lower incomes, specific groups of families, immigrants), who have neither possibilities nor interest to improve their housing conditions or to take advantage of environmentally friendly improvements. Without some adequate external interventions or assistance the quality of dwelling in such urban parts further deteriorates, and the concentration of the lowest social population groups is ever more emphasized. However, the sociogeographic structure is an indicator that exerts significant influence on the understanding of the quality of dwelling environment and expected reactions.

According to the UNESCO recommendations (Vink, 1983), the most important factors of evaluating the quality of dwelling environment in towns are as follows:

- geographic location, landforms-surface features,
- climatic characteristics, quality of air,
- water flow across the urban ecosystem, drinking water supply, quality of water (streams, drinking water, groundwater),
- dumps, waste management,
- noise,
- green areas.

In addition, urban ecologists warn that the future sustainable urban development will have to meet six demands, which were confirmed and explained through mechanisms of ecosystem balance (striving for stable balance as known in the nature: functional independence of quantity and product, recycling, repeated use, symbiosis, etc.; Vester, 1991), as follows:

- to reduce mobility in urban areas (by means of geographic differentiation of individual spheres of human activities – work, residing, supply),
- to reduce private transport in towns,
- to develop and foster new information technologies,
- to reduce quantities of wastes and stimulate their recycling,
- to reduce energy consumption (combination of heating and power generation, municipal heating plants (Nijkamp, Perrels, 1994).

Consideration of the above-mentioned principles of development depends on understanding and perceiving the quality of dwelling environment by the residents of towns and urban areas, and on the most disturbing factor in such environment, which means, on residents' responses to negative changes in the environment.

2. Air pollution in Ljubljana

Because of its location in the basin, great concentration of population and the accompanying economic activities, Ljubljana ranked among the towns with the most polluted air in Slovenia even in the seventies; however, the air pollution has been radically reduced by now. The improved quality of air in Ljubljana is due to the expanded use of remote heating and gasification, and above all, the use of higher-quality coal in a thermal-power-and-heating plant (hereinafter: TE-TOL). Emissions of SO_2 and solid particles radically declined, while the emissions of CO_2 and NO_X began to increase primarily due to the impact of transport emissions.

By means of the energy balance of Ljubljana for the year 1998, which covers the most important energy resources (power, lignite, brown and black coal, liquid fuels, natural gas, etc.) (Inštitut, 1999), the emissions of harmful substances most frequantly present in the air were established, and the source of pollution was determined as well.

The air of Ljubljana is most heavily polluted by carbon dioxide (CO_2), sulphur dioxide (SO_2), nitrogene oxide (NO_X), and solid particles, mainly originating from manufacturing industry, transport, widespread use of energy, and the so-called energy transformers. The following two sources of energy, TE-TOL and another heating plant, Toplarna Šiška, which are the greatest energy producers in the Ljubljana area, are simultaneously also the biggest spot-sources of air pollution. (Elektroinštitut, 1999)

Tab. 1: Emissions of CO_2, SO_2, NO_X and solid particles (in %) by individual sectors in 1998

Sector	CO_2	SO_2	NO_X	solid particles
Manufacturing industry	5.8	2.2	3.1	1.2
Transport	28.3	0.9	50.1	38.1
Widespread use	17.0	10.4	8.6	4.3
Energy transformers	48.9	86.6	38.2	56.4

Source: Spremljanje, 1999

It becomes evident at the survey of the type and the quantity of consumed energy by individual activities, that the greatest percentage of emissions originate from power plants, TE-TOL in particular. The transport is an ever greater source of pollution, while the importance of emissions from widespread use decreases due to replacing solid and liquid fuels with gas. The percentage of emissions from industrial activities in Ljubljana is practically negligible now; moreover, the industrial sources did not play some more important role in air pollution in Ljubljana even in the past decades.

When the emissions of individual harmful substances are presented in more detail, the numbers read as follows:

The emissions of CO_2 increased by 1.4% in 1998, and amounted to 1,946,719 mt. The increase was particularly due to TE-TOL and transport.

For decades, it was SO_2 that polluted the air of Ljubljana most heavily. At the beginning of the eighties, the average yearly concentration amounted to as much as 200 (g/m^3, and thus, by four-times exceeded the limit value of acceptable concentration, while in 1998, the values declined to 27 (g/m^3. The maximum concentrations of SO_2 by individual measuring posts in Ljubljana differ significantly, but do not exceed, as a rule, the acceptable value of 50 (g/m^3).

In comparison with the year 1997, the emissions of SO_2 decreased by as much as 13.3%, and amounted to 11,223 mt. The energy transformers, TE-TOL in particular, contribute by far to the greatest percentage of emissions; nevertheless, the pollution caused by TE-TOL was considerably lower than the pollution that would have resulted from all buildings connected to remote heating. The reduced SO_2 emissions by TE-TOL in 1998 mainly resulted from: reduced contents of sulphur in domestic coal (from Trbovlje mine), from 2.81% in the year 1997 to 2.54% in 1998, lesser contents of sulphur in the Indonesian coal of good quality (from 0.2% to 0.16%), and radically diminished percentage of consumed domestic coal (30% only) (Inštitut, 1999).

However, the SO_2 emissions decreased in the widespread use and manufacturing industry as well, especially due to the

replacement of solid and liquid fuels with remote heating and gas, where the values of SO_2 emission are practically negligible.

The NO_X emissions in Ljubljana, mainly originating from transport, increased by 3.6% in the year 1998, and amounted to 6,987 mt. The oscillation of NO_X emissions shows that the percentage of transport emissions gradually declines, primarily due to increased emissions from energy transformers. Nevertheless, the actual fact is that transport continues to be a much greater, and above all, permanent source of NO_X emissions, which is also confirmed by the measurements of maximum concentrations, performed at the measuring post in the city center, where the average yearly concentrations amount to 75 (g/m^3).

The emissions of solid particles in Ljubljana amounted to 574 mt in 1998, which is by 9.3% less than in the year 1997. Their reduced emissions primarily result from technological modernisation of TE-TOL in the cleaning of smoke gasses in the 1993-1998 period. The proportion of energy transformers in emissions of solid particles reduced as well, due to the more extensive use of gas.

Tab. 2: Emissions of SO_2, NO_X and solid particles (in mt) of the greatest air polluter (TE-TOL) in Ljubljana in the 1996-1998 period.

Emission	1996	1997	1998	Assessment for Ljubljana in 1998
SO_2	8.623	11.328	9.025	11.223
NO_x	1.984	2.366	2.550	6.987
Solid particles	291	400	309	574

Source: Inštitut, 1999.

Excessive concentration of ozone becomes an ever greater problem in the protection of air in Ljubljana in the last few years. The value of acceptable maximum daily concentration of O3 was exceeded at two measuring posts in Ljubljana, most frequently from April through August, while the average annual concentration on both posts amounted to 40 (g/m^3 in the year 1998, and did not exceed the acceptable value (Hidrometeorološki, 2000).

3. Transport load of Ljubljana

Along with the gradual reduction of energy-related communal and industrial emmissions, the negative impacts of transport-related pollution of environment come to the front. The increase of transport in the town is not only manifested in traffic jams in the city center, but also and above all, on the traffic arteries in Ljubljana and its bypasses.

According to the data of the Ministry of Interior, there were 110,875 motor vehicles registered in Ljubljana in 1996, which means 2.46 persons per car; moreover, this number increased by the year 2000, and reached the index of 112. The increase in the city center is even more explicit, so that its index increased by as much as 23% in the same period. Owing to inadequate organization of traffic and moderate use of public transport, the town is more and more loaded with transport.

Daily traffic frequency (i.e. average yearly daily traffic) has sharply increased in Ljubljana in the last few years. Measurement results obtained by the Road Management Office of Slovenia (Direkcija RS za ceste) show the greatest frequency of vehicles on the northern and the western sections of the bypass, and the northern and the western arteries. The daily frequency on the above-mentioned sections exceeds 60,000 vehicles, and the most heavily frequented section of the northern bypass reaches the average daily frequency of 70,000 vehicles (Direkcija, 1999).

The remaining sections of the bypass and the arteries are slightly less frequented. In the town, the daily frequency of less than 30,000 vehicles prevails; however, this number already causes a pressing problem in the city center for the unobstructed traffic flow. Daily frequency of less than 30,000 vehicles on the bypass occurs on its recently constructed eastern section only and amounts to about 24,000 vehicles.

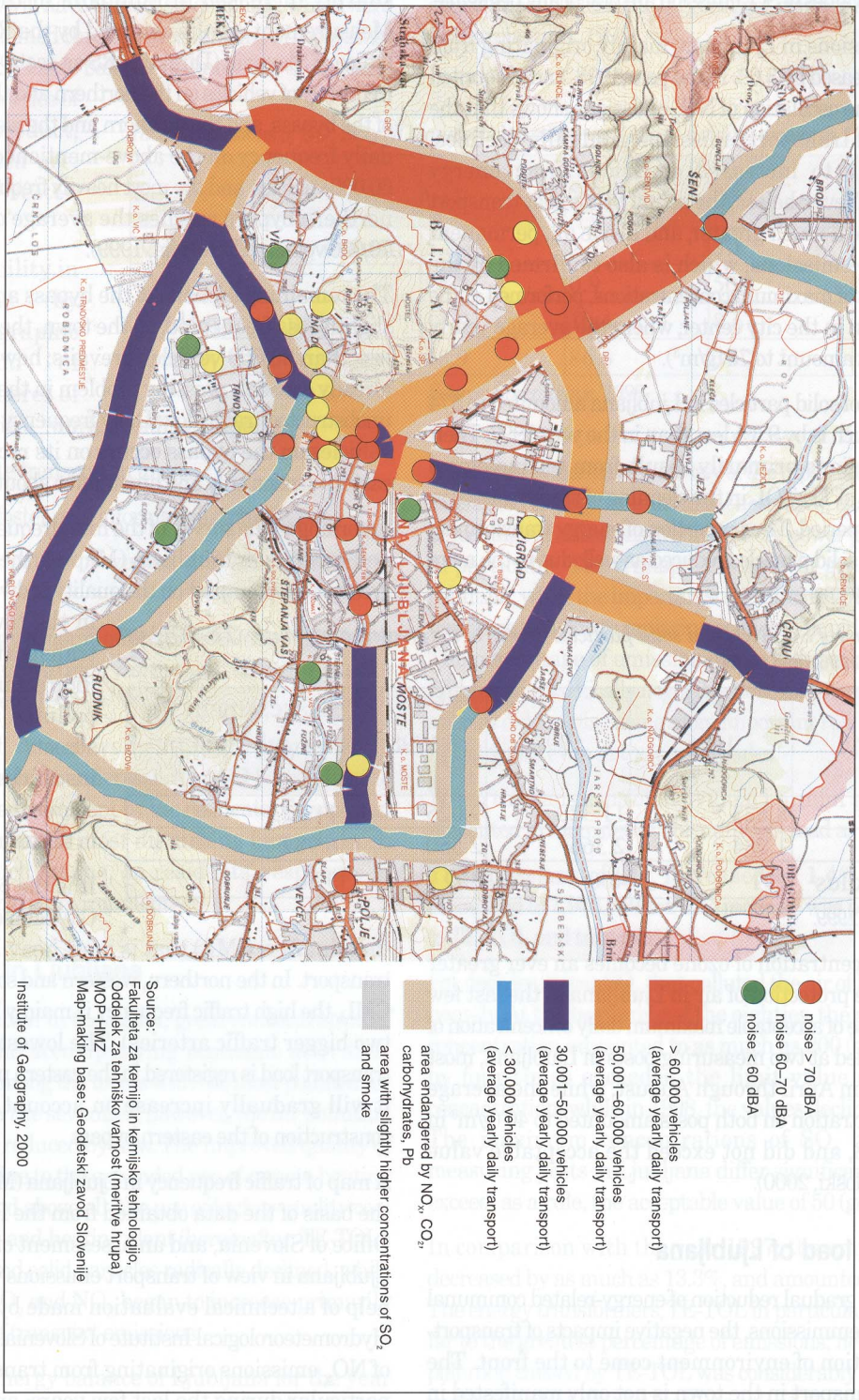
According to the survey of the most frequented roads, bypass and arteries in Ljubljana (Map 1), they do not have the greatest direct impact on the quality of dwelling environment in the town itself; but the transport itself has an indirect influence (through polluted air, concentrated street traffic, noise, insufficient parking areas, etc.) on the quality of dwelling in the town.

It is the central area of the City Municipality of Ljubljana (hereinafter: CML) that is most heavily polluted by the transport. In the northern, western and southern parts of the CML, the high traffic frequency is mainly linear (along one or two bigger traffic arteries). The lowest proportion of the transport load is registered in the eastern part of the CML, but it will gradually increase on account of the completed construction of the eastern bypass

A map of traffic frequency in Ljubljana (Map 1) was made on the basis of the data obtained from the Road Management Office of Slovenia, and an assessment of endangerment of Ljubljana in view of transport emissions was made with the help of a technical evaluation made by experts from the Hydrometeorological Institute of Slovenia. Namely, the values of NO_X emissions originating from transport increased, in particular during the last few years, and an ever greater influence of transport is also manifested in the increasing values of the maximum concentrations of NO_X.

The increased traffic in the CML is clearly evident from the three-year data on the average yearly daily transport on the Ljubljana bypass. It increased by gross 30% on its individual sections in the last two years. In spite of the completed construction of the eastern bypass, which means the established transport ring around the town, the traffic frequency has not declined but continues to increase.

Map 1: Assessment of air pollution, transport load and noise pollution



An ever greater density of transport in Ljubljana paralyses the traffic flow through the town; the average yearly growth rate on the arteries reached as much as 5.1%, even in the 1989-1994 period. When such growth rate is applied to the recentmost period, it turns up that we have to tackle a very acute problem requiring an immediate action; however, the ideal solution would be to reorganize the local private transport into modern urban public transport.

4. Accessibility of stops of urban public transport

Viewed from the aspect of urban planning, the city center of Ljubljana is not adjusted for the car as a means of mass transport; yet, the type of private transport increases. In Ljubljana, a qualitative system of high-capacity urban public

transport (high frequency of lines, greater travelling speed, good accessibility, qualitative offer) will have to take over certain duties that will result from the reorganization of non-moving traffic; namely, parking in the city center represents the greatest problem to the organization of transport in the town in the last few years. According to foreign experiences and criteria, only the areas located within the radius of 500 meters of a public transport stop are considered the residential areas of good accessibility.

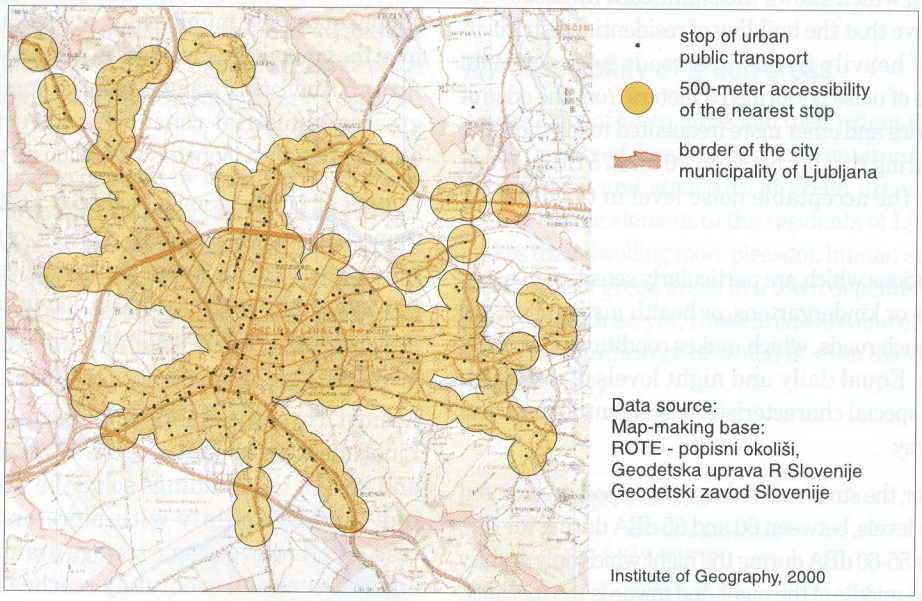
The public transport of Ljubljana is organized exclusively with buses; 21 lines of urban public transport with a total lenght of 228 km cover quite satisfactorily the greatest part of Ljubljana (Map 2). Viewed from the aspect of dwelling quality, the accessibility of urban public transport is of great importance, but the data show that its importance has gradually declined in Ljubljana. Namely, even in 1986, the buses of urban public transport transferred over 150 million passengers, while in 1996, the number already dropped to gross 110 million, which means that the number of passengers in urban public transport declined almost by a third in ten years. However, the number of cars on the streets of Ljubljana rapidly and constantly increases, and the effects are manifested not only in pollution but also in increased traffic jams and hold-ups in the city center and on the traffic arteries.

public city transport is not organized in the suburban areas of Ljubljana. Residents there can use local bus lines and local trains, which is the prevailing type of public transport in the eastern and southern peripheral sections of the municipality.

Along with the established good accessibility of stops of public city transport, its actual function in Ljubljana should be emphasized as well, because of the radical decline in the last few years. Namely, the use of public transport does not only depend on its accessibility but also on the frequency of lines, travelling speed and quality of offer. Although the buses consume at least five-times lesser energy per passenger, add much less to air pollution, their noise load is more environment – friendly (all viewed from the aspect of transported numbers of passengers), and despite the fact that they are much safer than the private passenger cars, their significance for the life of residents in Ljubljana has been steadily declining (with the exception of individual groups of inhabitants, such as retired persons, university and secondary-school students).

The Ljubljana residents have a favourable accessibility of stops of public city transport, on the average, but the picture deteriorates it evaluated by means of the criteria of qualitative, contemporary and fast transport. These are the main causes

Map 2: Accessibility of stops of urban public transport



According to the data of 1996, when the CML numbered 269,077 inhabitants, as many as 242,913 inhabitants (90%) have a very good access (up to 500 m) to the stops of public city transport. The city center is outstanding in very good accessibility of stops because all inhabitants there live within the radius of 500 m to the nearest stop. Besides this area, the areas along the traffic arteries and more important linking roads have a good accessibility of stops as well. It is slightly less favourable in the remaining areas of CML. As a rule, the

of unfavourable mentality and behaviour of the inhabitants towards urban public transport; they ever more prefer to use their own means of transport and thus, further contribute to the pollution of and traffic jams in the town. Moreover, in spite of the acute problems of traffic jams, the number of users of public city transport was continuously declined in the past few years.

5. Noise pollution in the urban environment

Noise gradually becomes an ever more important factor of the quality of dwelling environment, strongly depending on micro-location; therefore, individual data cannot be simply generalized for the wider urban environment. Noise pollution of the town has only been measured occasionally by now, and only on some selected locations.

In quiet residential environment, as well as in the vicinity of hospitals, schools and kindergartens, noise shall not exceed 55 dBA. Noise between 55 and 60 dBA is already disturbing for the dwelling environment, and noise of over 60 dBA is no more suitable for it.

In the residential districts of Ljubljana with lesser population density and, as a rule, more friendly organization of transport outside the city center or in urban periphery, daily noise levels are low, between 45 and 55 dBA, and during the night, they are lower, between 25 and 35 dBA. Higher noise levels, between 55 and 60 dBA during the day, and night levels between 35 and 45 dBA, are characteristic of residential districts with denser settling. Higher night levels are especially influenced by the agitated evening and morning hours, until 11 p.m., and between 4 and 6 a.m., which is due to proximity of parking areas. Measurements performed in the districts located close to the city bypass showed that the daily noise levels are suitable for such a residential environment (55 - 60 dBA), while the night levels were essentially higher, between 50 and 55 dBA, which shows the significant impact of the bypass and prove that the building of residential districts in the vicinity of heavily frequented roads is unsuitable. Measurements of noise performed 3 meters from the edge of the traffic arteries and other more frequented roads show the noise levels during the day between 70 and 75 dBA, which much exceeds the acceptable noise level in the dwelling environment.

Certain institutions which are particularly sensitive to noise, such as schools or kindergartens, or health institutions, are located along such roads, which makes conditions especially unfavourable. Equal daily and night levels of noise (64/62 dBA) are a special characteristic of residential disctricts along the railway.

In the city center, the streets with denser transport are exposed to higher noise levels, between 60 and 65 dBA during the day, and as much as 55-60 dBA during the night which only slightly decreases in the middle of the night and towards the morning. Lower noise levels in the city center are registered at buildings that are located at a distance of only some tens of meters from more frequented roads, or in the areas protected from the transport loaded environment with special construction forms of buildings. Quiet environment can also be found in the enclosed yards in the city center (Map 1).

The comparison of maximum levels of road noise between the years 1975 and 1995 shows that the noise levels decreased by 5 dBA in the two decades, on the average, which happened in spite of denser traffic; however, it is due to ever less noisy engines in vehicles. Along the roads where buses of public city transport are frequent, the maximum noise levels were higher by 6-9 dBA than they would have been if there were no buses. Thus, it can be concluded that noise in the vicinity of such roads could be reduced if modern and less noisy vehicles of public transport would be introduced.

6. Water supply, waste water drainage and treatment

Ljubljana consumes more than 27 million m^3 of water per year, without included losses in the mains network; more than 10 million m^3 are used in manufacturing industry (cooling water not included), and about 16 million m^3 in the households. Water consumption rapidly increased in the past decades; in 1940, it did not exceed 4 million m^3, by the year 1950, it increased to more than 6 million m3, in the year 1960, to more than 11 million m^3, and in 1970, to more than 20 million m^3. The greatest consumption was registered in 1987, as much as 33.9 million m^3, and then a slight decline began due to its lesser use in manufacturing industry (Brečko, 1996). However, the losses amounted to 46-50% of pumped water, which means that the amounts of water pumped from the groundwater are much larger than the registered number of m^3 of the yearly consumption, or the quantity of the water sold.

A public enterprise for water supply and sewarage system, Vodovod-Kanalizacija, which manages the majority of water supply in the city municipality of Ljubljana, pumps water from the groundwater reserves in a direct vicinity of the town. About 50 million m^3 water is pumped annually from 43 wells; greater industrial consumers have their own wells, contributing with more than 2 million m^3 water.

In 1999, all buildings in Ljubljana, i.e. 33,427 in number, were connected to water supply, and to 97% of them the supplied water came from the central water-supply system, and to the remaining 3%, mainly located in non-urban parts of the city municipality, the supplied water came from several minor systems.

Almost three quarters (24,588) of all buildings in Ljubljana were connected to the sewarage system in 1999, and 26% of the buildings solve the drainage of sewage individually, mainly with more-or-less-water-tight cesspools; however, some sewage drains directly into the environment and eventually reaches the groundwater. The manufacturing industry annually produces about 10 million m^3 of waste waters; some of them are so much polluted that their previous treatment is necessary before being discharged to the sewarage system. In addition, numerous plants have not properly maintained their „internal sewers", which has occasionally caused the uncontrolled escapes of waste waters and the consequent pollution of groundwaters. Domestic waste waters are mainly polluted organically and they pollute groundwaters with bacteria, viruses, nitrogene compounds, detergents,

etc. About 15 million m³ of waste waters are produced in a year; about a quarter less buildings than connected to the drinking water supply are connected to the sewarage system, and considerable amounts of waste waters drain to overflow cesspools. The highest common daily pollution of environment with waste waters from the manufacturing industry, households and other activities registered at the discharge to the central treatment plant (hereinafter: CTP) of Ljubljana amounts to 830,000 PE. Waste waters of all kinds which accumulate in the combined central sewerage system drain to the CTP which is located downstream of Ljubljana. However, on the way, some of these waste waters escape because of the existing untight sewers and drain directly into the ground. The average daily inflow into the CTP amounts to about 102,000 m³.

In the CTP, only the first phase, mechanical treatment, has been completed by now, with the capacity of 360,000 PE, while the second phase of construction, biological treatment, is supposed to be completed within the next four years. Insufficiently treated water is discharged into the Ljubljanica river; the mean annual discharge exceeds 50 m³/sec. A great threat to the quality of groundwater is also represented by oil derivatives which pollute water even in small quantities, which has the long-lasting consequences. In the seventies, there were about 7000 reservoirs for liquid fuels in the protected area; the register has not been updated later. Anyhow, their number has not increased since remote heating or heating with gas was introduced in the majority area of the town. Ljubljana has heavy traffic, so in the city center as on the arteries and the bypass which partly cross even the closer protected zones of the pumping stations, and represent a constant threat of pollution with lead and oils.

The groundwater is also polluted by agriculture, which is mainly specialized in the production of vegetables and fodder. Along with the use of pesticides, fertilizing as well represents a serious threat to the quality of water. The unused nitrogen is leached into the groundwater, for which the surplus of fertilizers or inadequate timing of their application are responsible, and results in higher concentrations of nitrates in it, while the spreading of solid or liquid manures causes its bacteriological pollution.

The results of analysis of water samples taken from the pumping stations for drinking-water supply of Ljubljana show that the quality of the pumped water throughout the year depends on the state of the groundwater and the precipitation; however, the water is suitable, since 85% of the pumped quantities need not even be disinfected. The quality of drinking water is generally suitable, and there are but few European towns of the size of Ljubljana that can pump the qualitative drinking water from quaternary sediments on the wider zones of the towns. Some physico-chemical parameters were only problematic in the water in Ljubljana, while the results of macrobiological controls confirm that the samples satisfy the specified criteria for drinking water.

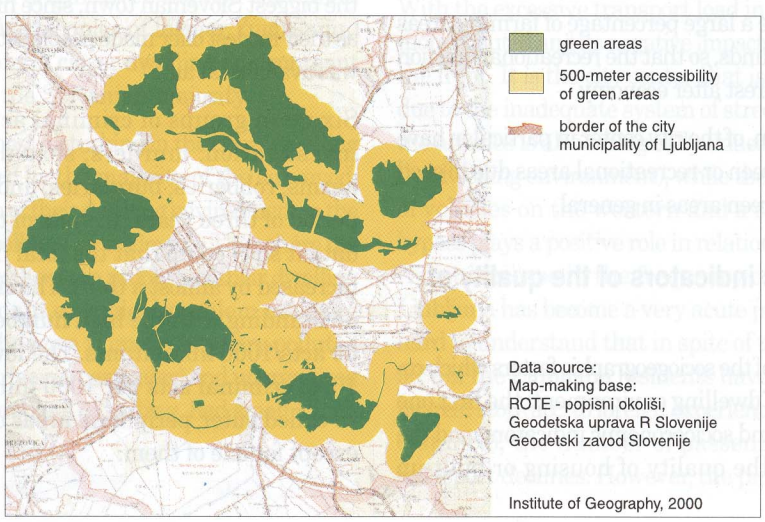
Within the series of sample controls made in the year 1996, the values of biocides of triazin type were also determined. Thus, atrazin was detected in some samples, but the values decrease if compared with the previous measurements of some years ago.

At one pumping station only, which pumps the water from reserves of the neighbouring river Sava and direct precipitation, great oscillations in the concentrations of chloride were registered; they were as much as twice higher in the wet season than those of the dry season. An anthropogenic influence of chlorides originating in winter season due to spreading salt on the roads surrounding the pumping station, is felt all until the summer.

7. Accessibility of green areas

Accessibility of green areas and their extent are an indicator of the quality of dwelling in urban environment. The size, distribution and structure of green areas represent an indispensable element to the residents of Ljubljana, which makes their dwelling more pleasant, human and healthy. The occurrence of green areas in a town depends on its size and natural features; yet, these areas are one of the goods in a town the significance of which is often discovered at their deficiency only.

Map 3: Accessibility of green areas



Ljubljana is a rather green town if compared with other towns in this part of Europe. The quantity of greenery in it has never been exposed as a problem or its special quality. However, extensive green areas in Ljubljana are not a result of complex and devised plans but they are mainly the result of natural conditions and certain individual strivings. A green zone embraces the entire town, and in some places, the greenery is indented even into the city center itself. In the south, the town borders to the Ljubljansko Barje moor, in the southeast, the green Golovec hill and its extension of Ljubljanski grad (the Castle of Ljubljana) wedge into the town, and in the west, the Tivoli park with its background of Rožnik hill is included into the city center. The spread of the town was restricted in the north by farming areas which have been preserved on these locations mainly because of water captures for the supply of Ljubljana. Much more problematic than the quantity is the structure of the greenery in Ljubljana.

Unfortunately, we do not have detailed data on the extent and structure, and the types of the existing green areas in Ljubljana. The orientation data of 1988, obtained from an enterprise for public utility management, Komunalno podjetje Ljubljana, show that the extent of green areas in the town of more than 25 m^2 of green area per resident is not problematic. The actual extent is even larger since the areas not managed by the Komunalno podjetje Ljubljana are exempted from the register (private gardens, for example). According to the urban planning criteria, 25-45 m^2 of green area per resident makes a pleasant dwelling environment.

However, the accessibility of green areas has a strong impact on the quality of dwelling and the feeling of urban population. A distance of 500 m was taken as a criterion of good accessibility of green areas; according to it, as many as 65% of the Ljubljana residents live in the areas of good accessibility (Map 3). The publicly accessible green areas having the primary function of recreation and air-cleaning, not economy, were taken into account, from the parks and lawns in the city center, to the meadows and forests at the rims of CML. Although rather abundant in forests, the entire eastern part of the municipality is quite under the average of Ljubljana as regards the percentage of inhabitants with the access of less than 500 meters to green areas. The conditions are similar in the southern part where a large percentage of farming areas extend over moorish grounds, so that the recreational function is of only secondary interest after economy.

The residents of the town, of the city center in particular, have a good accessibility of green or recreational areas due to good ordering of parks and green areas in general.

8. Sociogeographic indicators of the quality of environment

Two groups were made of the sociogeographic factors which co-influence the quality of dwelling environment: the first one includes demographic and socioeconomic indicators, and the second, indicators of the quality of housing or built-up environment. By means of overlaying the maps on the age of housings showing the town genesis, the settling density and the demographic indicators, and considering the function and morphology of town districts, the area of the present city municipality was divided into 13 quite homogeneous urban districts.

The analysis of sociogeographic indicators exposed two groups of city units with rather poor conditions. The first one includes the city center with the above-average proportion of the aged people, single-person households and single-parent families, or the most vulnerable social groups as regards the impacts of environment, with the least possibilities for improving their dwelling environment. As a rule, these groups hardly, or not at all, become aware of the main causes of reduced quality of dwelling environment and consequently, their responses to the impaired quality of dwelling are also inadequate. The old flats which are furnished below the average with toilet and washing facilities prevail in this area, since only 48% of the flats are completely furnished (in entire Ljubljana, 71%). Besides, the city center covers 35% of all jobs in Ljubljana, which makes 2.25 jobs/inhabitant (the average of Ljubljana is 0.57 job/inhab.). These are prevailingly the jobs in tertiary and quaternary sectors. The second group includes residential districts of recent origin with typical contemporary multistorey houses and high demographic vitality, but the yearly incomes of their residents are below the average (of entire Ljubljana). Very high settling density, practically verging on overpopulation in certain parts, represents a serious threat of more frequent socio-pathological phenomena, to which criminal acts belong in the first place.

Number and structure of criminal acts are a good indicator of the quality of dwelling in certain environment, because the conditions as, for example, cleanliness, peace, and safety of dwelling belong to the basic features of qualitative dwelling environment. Foreign experiences show that the increase in criminal acts reflects the impairment of social conditions. In town districts with impaired quality of dwelling environment certain specific functions develop and the interest to reside in such districts is lost, except for financially weaker class.

Such explicit differentiation has not developed yet in Ljubljana, the biggest Slovenian town, since high prices of flats, as well as their modest offer made people settle anywhere where a flat was available at all.

Six main groups of criminal acts are included in the investigation: murders, sexual delicts, heavy bodily harms, robberies, burglaries, and drug abuse, all for the period of three years. In spite of the short-term string of data it showed up that the total number of criminal acts increased by almost a third. The city center is particularly outstanding with the high number of criminal acts, over 30 acts/1000 inhabitants. The lowest number, less than 10, of criminal acts per 1000 inihabitants occurs in the so-called outer, peripheral areas of the city municipality, except for one of them.

It can be summed up that the number of criminal acts per 1000 inhabitants is greater in the so-called city units, and smaller in the peripheral units of the city municipality.

The city center is also outstanding with the prevailing percentage of individual groups of criminal acts, since the percentages of all categories, except for murders, are greatest precisely in this area. The robberies committed in the city center account for a very high percentage, as much as 55%, of all the committed robberies in Ljubljana.

The average yearly number of all traffic accidents in the CML in the 1994-1996 period was 7,172. A very high number of accidents was registered in the city center, on traffic arteries and bypass, because these are the most heavily frequented roads in Ljubljana.

By the number of killed in traffic accidents, the parts of the town with fast-moving traffic are most outstanding, with the greatest occurrence of bodily injuries ending in death. On the average, 36 people died in a year in the same period. A great number of accidents that happen in the city center and have no serious consequences are mainly due to low speeds.

Because of the lack of quantitative data about health conditions and feeling of the Ljubljana residents in their dwelling environment, we have made a so-called behaviouristic evaluation of residents' relations towards their dwelling environment, and of their perception of negative impacts of environmental factors on the quality of dwelling. On the basis of a survey which included 598 residents from different parts of Ljubljana, we have established that more than a half of the surveyed inhabitants are satisfied with the quality of their dwelling environment. Younger people are most critical of the negative phenomena in the environment, while older people have found satisfaction in the ecological improvements of the past 10 years.

Contrary to the results of investigations performed in the most degraded Slovenian regions, a correlation between the educational structure of inhabitants of Ljubljana and their relation towards the environment could not be established. It is characteristic of Slovenia that satisfaction of inhabitants with environment does not depend on their national origin. Even the non-Slovenian inhabitants (mainly other peoples of former Yugoslavia) response to the conditions of closer dwelling environment in a similar manner as the Slovenian majority.

The question of what is most disturbing in the closer dwelling environment is answered by the majority of the surveyed, irrespective of the location of their dwelling environment in the town, that these are the polluted air and noise. They share the opinion, that it is not only the main problem of their dwelling environment but the main ecological problem of entire Ljubljana. In addition, the town is pressed by very polluted streams (the Ljubljanica river in particular) and unorganized waste management (a problem of sorting, bad smell which spreads from the dump).

TE-TOL and transport are considered important sources of emissions, as are the industrial plants in certain parts of the town. Moreover, the manufacturing industry is declared the main culprit for pollution of the surface- and groundwaters; but the surveyed inhabitants much less willingly recognize their own sewage and noise as the polluters of environment.

9. Conclusion

The paper presents some selected physical and social factors which influence the quality of dwelling environment in Ljubljana; their role should be primarily understand in the light of sustainable development of the town.

Pollution of air in the town with traditional emissions (SO_2 and smoke) represented the main environmental problem in Ljubljana even two decades ago. In more recent time, with the extension of gas mains network and remote heating system, the percentage of individual minor emission sources radically declined, and by using ecologically less harmful fossil fuels (imported coal) in TE-TOL, the quantities of the above-mentioned traditional pollutants sharply decreased. It is expected that this favourable trend will continue in the future, with the essential qualitative change in the year 2004, when TE-TOL will start using gas because of the operation expiration of both boilers. The quality of air has improved proportionally to the reduction of emissions, and acceptable values of maximum concentrations are reached or exceeded only exceptionally (when the Trbovlje coal is used in TE-TOL and during several-day inversions). However, the increase in the concentrations of CO_2 and NO_X in the air of Ljubljana is worrying. A minor percentage of the increased emissions can be attributed to TE-TOL from which more NO_X is emitted with the use of imported coal; however, the greatest percentage originates from the traffic. The current trends are very unfavourable and even in the future they will not improve without some radical measures. The increased emissions of NO_X give rise to the formation of secondary polutant, ozone, which exerts a negative influence on living organisms, particularly in the warm half of the year.

With the excessive transport load in the town the air is ever more polluted and its negative impacts come more and more to the front. It is the city center that is most polluted which is due to the inadequate system of streets, and heavy traffic on the arteries is also ecologically unacceptable (directly amidst the dwelling environment), while the increase in the number of vehicles on the western and a section of the northern bypass plays a positive role in relation to urban environment. A fast increase in the frequency of cars on the streets of Ljubljana has become a very acute problem of the town. It is hard to understand that in spite of the fact that as much as 90% of the Ljubljana residents have less than 500 m to the nearest stop (acc. to foreign experiences, the limit of optimum distance), the number of passengers in the public city transport declines. However, the picture deteriorates if the

public city transport of Ljubljana is evaluated according to the criteria of quality, speed and timing with the needs of different groups of inhabitants.

Old and technically outdated buses of public city transport produce excessive noise and thus, pollute the streets with greater frequency of lines, which particularly applies to Šiška (a garage house of public city transport – morning hours). Moreover, in view of legal norms, the noise pollution is excessive even in the direct vicinity of health institutions, and certain schools and kindergartens.

Drinking water is supplied to Ljubljana from four bigger pumping stations. Its yearly consumption amounts to 27 million m3; however, almost twice as much water is pumped from the groundwater reserves because of the losses which amount to 46-50%. The central water supply system supplies drinking water to 97% of all buildings in the town. Water in the pumping stations mainly meets the basic requirements and standards; this statement, however, does not apply to all users. Some of them may get drinking water of poorer quality, which mainly depends on the quality of mains, their maintenance and material. When flaws occur in the mains, increased concentrations of lead or microbiological pollution can occur. Only three quarters of buildings in the town discharge their waste waters into the public sewarage system, and the total daily pollution of environment reaches as much as 830,000 PE. Waste waters mainly drain into the central treatment plant which only provides mechanical treatment. Thus, the insufficiently treated water heavily pollutes the Ljubljanica river, and further on, the Sava river. The greatest actual threat to the groundwater of the Ljubljansko polje is represented agriculture (pesticides, fertilizers), and a possible threat by point-sources of pollution (oil derivatives, fuel reservoirs, accidents).

On the average, Ljubljana has a sufficient extent of green areas, primarily of natural origin (Rožnik, Golovec, etc), which improve the quality of the dwelling environment. However, it lacks typical urban green areas (parks, organized walking and biking courses), intended for walks, recreation and leisure in general, and offering favourable esthetic feelings at their viewing from a suitable distance.

The investigation of social environment called attention to the low quality of dwelling environment in two urban areas: the city center, and one residential district of more recent origin with the dense construction of multistorey apartment houses and a great density of population, which already shows the signs of overpopulation of flats. These are also the areas with the increased social pathology (criminal acts, accidents, etc.). Irrespective of their educational or national structures, the residents there are less satisfied with their dwelling environment than the average of the town. Viewed from the aspect of future improvements, the prevailing conviction of the residents is very unfavourable because they believe that they cannot exert any influence on the causes, neither activities nor sources, of impaired environmental quality (heating plant, thermal power plant, manufacturing industry), and only exceptionally they are willing to recognize environmental polluters in the emissions which they produce themselves (heating, transport, sewage, noise).

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ADMINISTRATIVE DIVISIONS OF POLAND IN THE 20th CENTURY

Piotr EBERHARDT

Abstract

The paper presents political and administrative changes which were taking place in Poland in seven periods of XX century. The analysis begins from discussing the political dissociatings occurring before World War I, next the administrative division of Poland in the years 1921 – 1939. After presentation of the situation in Poland during the German and Soviet occupation, administrative changes in years 1946-1999 are shown.

Shrnutí

Administrativní členění Polska ve 20. století

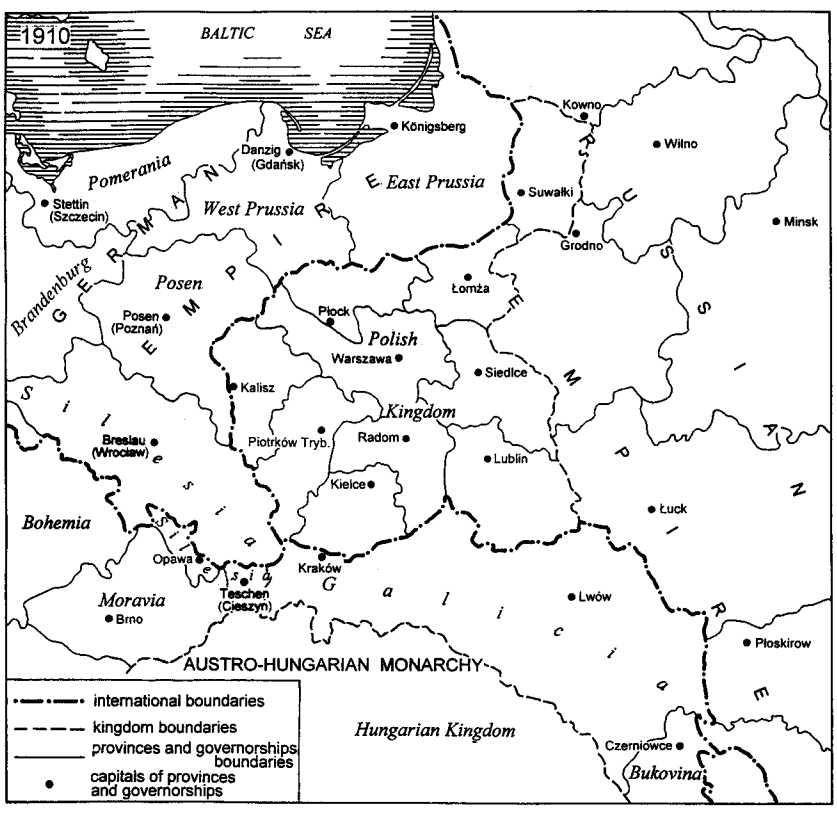
Článek dokumentuje změny v administrativním členění Polska během posledních sta let. Výchozím bodem je situace před 1. světovou válkou, kdy bylo polské území rozděleno mezi tři impéria: ruské, německé a rakousko-uherské; každý z těchto států měl přitom odlišný systém územního členění. Obrozený polský stát, který vznikl po podepsání versailleské mírové smlouvy v roce 1919 a polsko-sovětské válce v roce 1920, utvořil trojstupňové administrativní členění se 17 vojvodstvími, 264 okresy a 3195 obcemi. V září 1939 bylo Polsko okupováno Německem a Sovětským svazem. Oba tyto státy zde vytvořily nové členění, ovšem až do roku 1945 byla administrativní situace nestabilní. Po 2. světové válce se Polsko v důsledku dohod v Teheránu, na Jaltě a v Postupimi zformovalo v nových politických hranicích. K reformám členění státu došlo v letech 1950, 1975 a 1998. Při nich doznaly změn jak počet vojvodství, tak i jejich hranice. Hranice vojvodství v jednotlivých obdobích 20. století dokumentují mapy, jejichž nedílnou součástí jsou statistické údaje o jejich územním rozsahu i demografických poměrech. Aktuální administrativní členění Polska s 16 vojvodstvími uvádí poslední mapa s připojenou tabulkou.

Key words: *Poland, administration, territory, 20th century*

After Poland regained independence in 1918, and after its political boundaries had been finally established, the necessity arose of unification of the administrative divisions having existed until that time. Namely, until World War I, Polish territories were contained in the confinement of three states: Russian Empire, German Empire and Austro-Hungarian Empire. In each of these countries somewhat different units of administrative division functioned. They differed both in legal and in geographical terms.

The area belonging to Russia included the so called Polish Kingdom. This unit had not an even marginal autonomy, and since 1874 it was even called simply the Peri-Vistulian Country. It was divided into ten „gubernias" (governorships or provinces), with capitals in Kalisz, Kielce, Siedlce,

Fig. 1: Administrative division of Polish territory in 1910



Łomża, Piotrków Trybunalski, Warsaw, Lublin, Suwałki, Płock and Radom. The territory of this so called Polish Kingdom – excepting the northern part of Suwałki province, currently being a part of the Republic of Lithuania – belonged both in the interwar period and after World War II to Poland. The remaining Polish territories, incorporated by the Russian Empire after the partitions of the Polish-Lithuanian Commonwealth in the late 18th century, were treated as the western lands of the Empire and constituted parts of nine western Russian provinces (Kaunas, Vilnius, Grodno, Minsk, Vitebsk, Mohilev, Volhynia, Podolia, and Kiev provinces). Of those areas only the district of Białystok, being the western part of Grodno province, belongs nowadays to Poland.

Fig. 2: Administrative division of Poland in 1931

The territories belonging to the German Empire were divided into „provinces" and „regencies". As a consequence of the Versailles Treaty the Great Duchy of Poznań, called Poznań (German: Posen) province, returned to Poland. This province was divided into two regencies, namely those of Poznań (Posen) and Bydgoszcz (Bromberg). Then, a large part of the West Prussian province (Westpreussen), encompassing the regencies of Gdańsk (Danzig) and Kwidzyń (Marienwerder), also became Polish. Resulting from the division of Upper Silesia (Oberschlesien) the eastern part of Opole (Oppeln) regency was incorporated into Poland, too.

The former Polish territories, which belonged to the Austro-Hungarian monarchy, constituted in the second half of the 19th century the so called „Crown Country", divided into two districts: Cracow and L'vov. After 1865 the district administration was abolished in Galicia, the part of Austria which coincided largely with the „Crown Country", and its competences were transferred over to „poviats" („counties"). Due to this, there had been no counterpart in Austria for the Polish unit of voivodship, such as „governorship" in Russia and „regency" in Germany. After a series of quite complex political events the whole of Galicia, up to river Zbrucz in the east, encompassing 84 counties, was incorporated into Poland. The Cieszyn Silesia, having become the object of conflict between Poland and Czechoslovakia, constituted a separate administrative entity and was a part of the Bohemian Kingdom as the Austrian Silesia. Ultimately, it was divided into two parts, approximately along the course of the Olza river.

Simultaneously with the formation of the reestablished Polish state the problem of development of the new administrative division of the country emerged. In connection with the unregulated question of the political boundaries between states the ultimate administrative setting was established only in 1922.

In the territory regained from Russia nine voivodships (provinces) were established, namely the provinces of Warsaw, Łódź, Kielce, Lublin, Białystok, Volhynia, Polesie, Nowogródek, and Vilnius. In addition, Warsaw was distinguished as the capital of the country. Three voivodships were created in the previously German territories, the ones of Poznań, Pomerania and Silesia. The area of the former Galicia was divided among four provinces: Cracow, Lwów (L'vov in Russian or L'viv in Ukrainian), Tarnopol, and Stanisławów.

Altogether, resulting from these decisions was the division of Poland into 17 voivodships. They were, in turn, subdivided into „poviats" (counties), whose total number was 264. The third administrative tier was constituted by towns (611) and rural „gminas" or communes (3195 such units). From the point of view of hierarchical structure the three-tier system was established. The administrative division of the country remained unchanged until 1938, when a certain modification of the boundaries took place, while the number of voivodship units was kept at 17.

The interwar Poland occupied the area of 389.7 thousand sq. km. According to the Census of 1931, this territory was populated by 32.2. million people (see Tab. 1).

The largest of the voivodships in terms of surface area was Polesie (36.7 thousand sq. km), while the smallest was Silesia (5.1 thousand sq. km). The proportions in terms of

Tab. 1. The administrative division of Poland in 1939.

No.	Province	Area in sq. km	No. of poviats	No. of towns	No. of rural communes	Population total ('000)[1]	Population density (per sq. km)[1]
1	Capital city of Warsaw	0.14	4	1	-	1179.5	8 337
2	Warsaw	31.7	22	53	293	2460.9	78
3	Łódź	20.4	15	39	237	2650.1	130
4	Kielce	22.2	18	37	275	2671.0	120
5	Lublin	26.6	16	29	228	2116.2	80
6	Białystok	26.0	10	35	128	1263.3	49
7	Wilna (Vilnius)	29.0	9	15	96	1276.0	44
8	Nowogródek	23.0	8	10	87	1057.2	46
9	Polesie	36.7	9	12	79	1132.2	31
10	Volhynia	35.7	11	22	103	2085.6	58
11	Poznań	28.1	29	100	237	2339.6	83
12	Pomeranian	25.7	28	64	234	1884.4	73
13	Silesian	5.1	11	25	463	1533.5	299
14	Cracow	17.6	18	47	195	2300.1	131
15	L'vov	28.4	27	58	252	3126.3	110
16	Stanisławów	16.9	12	28	119	1480.3	88
17	Tarnopol	16.5	17	36	169	1600.4	97
	POLAND	389.7	264	611	3195	32156.6	83

Source: Rocznik Statystyczny 1939 (Statistical Yearbook 1939). GUS, Warszawa, 1939.

population were flatter. The biggest population number inhabited the Lwów voivodship (more than 3.1 million), and the smallest – the Nowogródek voivodship (a bit more than 1 million). The areas of southern and central Poland were densely populated. On the other hand eastern Poland featured low population density and a sparse urban network. The average surfaces of administrative units were larger in these areas.

The outbreak of World War II and the subsequent liquidation of the Polish state were results of the so called Ribbentrop-Molotov Pact. According to the first Soviet-German agreement of August 23rd, 1939, Polish lands were divided into two parts. The division line designed went from the south along the river San downstream to Vistula, then upstream Bugo-Narew and to the boundary of East Prussia. This design was altered due to the new Soviet-German pact concluded on September 28th, 1939, in Moscow. The dividing line was transferred eastwards from Vistula to the Bug river.

The area of the Polish state was finally divided so that 210 thousand sq. km went to the Soviet Union, while 188.7 thousand sq. km had to suffer German occupation (see Tab. 2).

The German and Soviet occupational authorities introduced their own administrative settings. Thus, on the basis of Hitler's decree issued on October 8th, 1939, the Silesian, Poznań and Pomeranian provinces were incorporated into the

Tab. 2. Division of the area of Poland between the USSR and Germany in 1939.

Territories occupied Division as of January 1st, 1941	**Surface area** in thousand sq.km	in%	**Population in 1939** in thousand	in %
Poland	389.7	100.0	35 339	100.0
Areas occupied by Germany, divided into:	188.7	48.4	22 140	62.7
German Reich	92.5	23.7	10 568	30.0
General Gouvernement	95.5	24.5	11 542	32.6
Slovakia	0.7	0.2	30	0.1
Areas occupied by the USSR, divided into:	201.0	51.6	13 199	37.3
Lithuanian SSR	8.3	2.1	537	1.5
Belarussian SSR	103.0	26.5	4 733	13.4
Ukrainian SSR	89.7	23.0	7 929	22.4

Source: Mały Rocznik Statystyczny Polski (wrzesień 1939 – czerwiec 1941) [Small Statistical Yearbook of Poland (September 1939 – June 1941)], London, 1941.

German Reich, along with the parts of voivodships of Białystok, Kielce, Cracow, Łódź, and Warsaw. These areas were incorporated in East Prussia (Ostpreussen), in the so called Gdańsk – West Prussian district (Reichsgau Danzig – Westpreussen), and in the Opole (Oppeln) regency. Besides this, the Katowice (Kattowitz) regency and the so called Warta-river-country (Reichsgau Wartheland) were established. Out of the remaining Polish territories taken by the Germans the authorities of the IIIrd Reich established on October 12th, 1939, the so called General Governorship (Generalgouvernement), which was divided into four districts (Cracow, Lublin, Radom and Warsaw). On the other hand, Soviet authorities incorporated the territories of eastern Poland into the Belorussian and Ukrainian republics. The district of Wilna was handed over the to Lithuanian Republic.

The German-Soviet conflict changed entirely the political situation. During just a fortnight all of the former eastern provinces of the pre-war Poland were taken by the Germans. The demarcation line established on September 28th, 1939, ceased to exist. The Nazi authorities introduced new administrative units in the occupied territories. By the decision adopted on August 1st, 1941, the voivodships of Stanisławów and Tarnopol, as well as the eastern part of the former Lwów voivodship were incorporated in the General Governorship. These areas formed the district called (again) Galicia (Galizien). The former Białystok voivodship, as well as the north-eastern counties of Warsaw voivodship, held between September 1939 and June 22nd, 1941, by the Soviet Union, were incorporated directly into the Reich after Wehrmacht had marched in. The remaining territories of the pre-war Poland (Volhynia and Polesie) were included in the Reich Commissariat Ukraine, while the regions of Wilna and Grodno were included in the Reich Commissariat East (Ostland).

The subsequent political-and-administrative changes were already linked with the military catastrophe of Germany, the Soviet army marching into Poland, and the decisions concerning boundaries taken by the victorious allies at the conference in Teheran and Yalta (the eastern border of Poland), as well as in Potsdam (the western border of Poland).

The new eastern boundary of Poland was traced approximately along the so called Curzon line, first proposed in 1919. In the north it divided the pre-war province of Białystok in such a manner that two counties, Grodno and Wołkowysk, were incorporated into the Belorussian SSR. On the other hand, the western part of Białystok voivodship and the three north-eastern counties of Warsaw province became an integral part of Poland. At this stretch of the border it was significantly moved eastwards in comparison with the demarcation line established in the agreement concluded in September 1939 by Ribbentrop and Molotov. The middle stretch of the eastern border of Poland went along the Bug river. Thus, it coincided with the eastern border of the General Governorship. On the southern stretch minor changes took place with respect to the demarcation line to the advantage of Poland. The new Polish-Soviet boundary was finally confirmed at the conference in Moscow on August 16th, 1945. Hence, a new borderline was traced across the territory of the pre-war Poland, this borderline becoming the eastern boundary of Poland since that time. The whole area located to the east of this borderline was incorporated to the USSR (i.e. the

Fig. 3: Administrative division of Polish area under German occupation in 1943.

voivodships of Wilna, Nowogródek, Polesie, Volhynia, Tarnopol, Stanisławów, as well as the eastern part of Lwów voivodship along with the city of Lwów). Poland lost 179.8 thousand sq. km of area to the advantage of the Soviet Union.

Tab. 3. The administrative division of Poland in 1946.

No.	Voivodship	Surface area in thousand sq. km	Population number	
			Total (in '000)	per 1 sq.km
1	Capital city of Warsaw	0.14	478.8	3396
2	City of Łódź	0.21	496.9	2344
3	Białystok	23.2	940.9	40
4	Gdańsk	10.7	732.1	68
5	Kielce	18.1	1717.9	95
6	Cracow	15.9	2133.4	134
7	Lublin	27.7	1889.1	68
8	Łódź	20.3	1772.4	88
9	Olsztyn	19.3	351.8	18
10	Pomerania	20.0	1406.5	70
11	Poznań	39.2	2422.1	62
12	Rzeszów	18.2	1535.4	84
13	Szczecin	30.3	892.6	30
14	Silesia	15.4	2823.4	184
15	Warsaw	28.3	2091.1	74
16	Wrocław	24.8	1941.1	78
	POLAND	312.6[1]	23 930.0[2]	77

[1] *Balance of area according to voivodships falls short of 0.9 thousand sq.km*
[2] *The military of about 304 thousand were not accounted for in the balance according to voivodships.*
Source: Historia Polski w liczbach (History of Poland in figures). Warszawa, 1993.

A compensation for the very large territorial loss in the east was constituted by acquisitions in the west. On the basis of the decision of the three victorious allies taken in Potsdam Poland acquired at the expense of Germany 102.3 thousand sq. km. Germany lost to the advantage of Poland the area located between the Polish-German border established in Versailles, and the new border which went along the Odra (Oder) and Nysa (Neisse) Łużycka rivers. This area encompassed the regencies of Opole (Oppeln), Wrocław (Breslau), Koszalin (Kslin), and large portions of the regencies of Szczecin (Stettin), Frankfurt (on Odra – am Oder), and Legnica (Liegnitz). Besides this, the area of the Free City of Gdansk (Freie Stadt Danzig), as well as the whole southern part of East Prussia (Ostpreussen), composed of the regencies of Olsztyn (Allenstein), Kwidzyń (Marienwerder), and the southern parts of Królewiec (Knigsberg, present-day Kaliningrad) and Gąbin (Gumbinnen) regencies, were incorporated into Poland.

Yet, in spite of this territorial compensation the total area of Poland decreased from 389.7 thousand sq. km to 312.6 thousand sq. km.

After the military activities had been terminated, the territory of Poland was divided into 14 voivodship units, namely: Warsaw, Łódź, Lublin, Białystok, Cracow, Kielce, Silesia, Pomerania, Rzeszów, Poznań, Gdańsk, Szczecin, Wrocław, and Olsztyn. Besides this, two towns acquired the status of voivodships (Warsaw and Lodz). Ten of the voivodship seats were located within the area of the pre-war Poland, while four (Olsztyn, Gdańsk, Szczecin and Wrocław) were located in the territories gained after the war (see Tab. 3).

A distinct majority of the selected voivodship centers had had a long tradition of being province capitals. This applied to Warsaw, Łodz, Białystok, Kielce, Lublin, Cracow, Katowice, and Poznań, having functioned during the whole interwar period as the capitals of provinces. On the formerly German, regained territories the traditionally significant role was played only by Wrocław, Szczecin and Gdańsk – historical capitals of large, well established provinces. Altogether, therefore, eleven voivodship capitals had sufficiently diversified technical infrastructures and traditions allowing them to fulfil the role of province capitals.

Directly after the war, two new voivodships appeared on the map of Poland, the ones of Bydgoszcz and Rzeszów. In case of Bydgoszcz this was linked with the transfer of the provincial seat from the neighbouring Toruń, which had been in the interwar period the capital of the Pomeranian province. The decision of transfer of the capital was rational, since Bydgoszcz was a bigger city, located more conveniently, and having relatively rich settlement infrastructure, and so the shift did not entail the necessity of undertaking any bigger investments. On the other hand, a lot of effort and cost had to be borne in order to bring Rzeszów to the position of a voivodship capital. This particular decision was caused by the changes of boundaries and the loss of Lwów (L'vov, L'viv). Przemyśl, a town from within the same area, was bigger, but in view of its peripheral location it was the centrally positioned Rzeszów that was selected for the capital of the new voivodship.

A similar administrative advance occurred to Olsztyn after the war, which was located in East Prussia before the war. In spite of the fact that it played the role of capital of a regency in the interwar period, it still was a rather mid-sized town (50 thousand inhabitants), strictly subordinated to the administrative authorities seated in Królewiec (Knigsberg). Given that only the southern part of East Prussia was returned to Poland, the centrally located Olsztyn became the unquestioned capital of this

Tab. 4. The administrative breakdown of Poland in 1970.

No.	Voivodship	Surface area in thousand sq. km	Population number	
			Total (in '000)	per 1 sq.km
1	Capital city of Warsaw	0.45	1 316	2936
2	City of Cracow	0.23	589	2542
3	City of Łodź	0.21	763	3556
4	City of Poznań	0.22	472	2139
5	City of Wrocław	0.23	526	2291
6	Białystok	23.2	1 176	51
7	Bydgoszcz	20.9	1 914	92
8	Gdańsk	11.0	1 469	133
9	Katowice	9.5	3 701	387
10	Kielce	19.5	1 890	97
11	Koszalin	18.1	796	44
12	Cracow	15.6	2 183	142
13	Lublin	24.8	1 925	77
14	Łodź	17.1	1 669	98
15	Olsztyn	21.0	980	46
16	Opole	9.5	1 059	111
17	Poznań	27.1	2 193	82
18	Rzeszów	18.6	1 758	94
19	Szczecin	12.7	899	70
20	Warsaw	29.4	2 518	86
21	Wrocław	19.1	1 977	103
22	Zielona Góra	14.6	885	61
	POLAND	312.6	32 658	104

Source: Historia Polski w liczbach (History of Poland in figures). Warszawa, 1993.

region of Poland. It had been traditionally the capital of the historical region of Warmia, and now has become the capital of both Warmia and Masuria.

In relation to the pre-war period the three-tier nature of the administrative system has not changed. The second administrative level was constituted by the poviat (county) units, of whom there were 299 (including 29 urban counties), while the third level was constituted by towns (703 altogether) and rural communes (3006).

As a consequence of the reform carried out in 1950 three new provinces were established in the formerly German territories, namely Opole, Koszalin and Zielona Góra. Out of these three, Opole was best prepared to the role of the province capital, having been for a long time the center of Opole Silesia. Formation of the Koszalin and Zielona Góra voivodships was, on the other hand, a debatable decision. Both were rather small towns (smaller than Słupsk and Gorzów Wielkopolski, located, respectively, close by). To bring them to the state allowing fulfilment of the functions of a self-standing province seat required undertaking of a number of infrastructural investment projects. These plans were to a large extent turned into reality and these two towns, located within a periphery with respect to the largest urban centers of Poland, became true voivodship capitals. Besides, there were five largest towns of the country that acquired the status of voivodship-towns (Warsaw, Lodz, Wrocław, Poznań, Cracow).

During the subsequent period the voivodship system was stable. On the other hand, on January 1st, 1955, communes were abolished, and replaced by a very high number of village units, „gromadas" (altogether 8790 of them). Between 1955 and 1970 a constant tendency existed of decreasing the number of village units and increasing the number of counties. Ultimately, the number of counties increased until 1970 to 391 (with 74 urban counties), while the number of village units decreased to 4671. The consecutive decision, which became valid on January 1st, 1973, was to liquidate the village units and to replace them again with communes, of whom there were 2365.

The administrative system composed of five large urban centers of voivodship rank, and 17 voivodship units, existed between 1950 and 1975 (see Tab. 4).

The setting of 17 territorially large voivodships which had functioned for 25 years was characterized by relatively small disproportions in terms of surface areas. Provinces were usually composed of a dozen counties or so. The three-tier system of territorial administration functioned efficiently and effectively. This was the result of a long tradition and existence of an appropriate settlement infrastructure in the towns playing the role of voivodship or county seats.

With political goals in mind the authorities of the Communist party liquidated the three-tier system in 1975 and introduced a two-tier state administrative system in Poland. This move involved the liquidaton of the poviat (county) level and the

Fig. 4. Administrative division of Poland in 1946.

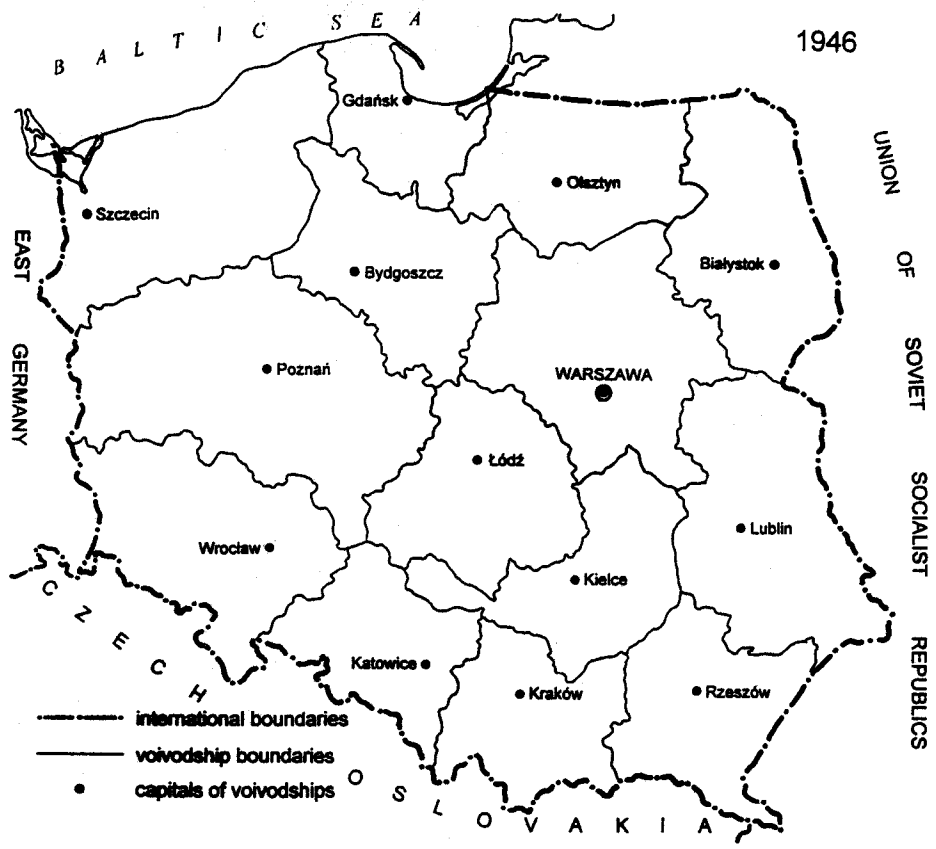


Fig. 5. Administrative division of Poland in 1950.

simultaneous increase of the number of voivodship centers from 17 to 49 (see Tab. 5).

The radical reform of the administrative division of the country was a very costly undertaking. It required preparing 32 urban centers to fulfilment of the role of voivodship

Tab. 5. The administrative division of Poland in 1990.

No.	Voivodship	Surface area, in sq. km	Population number	
			Total (in '000)	per 1 sq.km
1	Capital Warsaw province	3788	2421.6	639
2	Biała Podlaska	5348	305.3	57
3	Białystok	10 055	692.8	69
4	Bielsko-Biała	3704	900.2	243
5	Bydgoszcz	10 349	1110.8	107
6	Chełm	3866	247.2	64
7	Ciechanów	6362	428.4	67
8	Częstochowa	6182	776.7	126
9	Elbląg	6103	478.9	78
10	Gdańsk	7394	1431.6	194
11	Gorzów	8484	500.7	59
12	Jelenia Góra	4378	517.9	118
13	Kalisz	6512	710.8	109
14	Katowice	6650	3988.8	600
15	Kielce	9211	1126.7	122
16	Konin	5139	469.2	91
17	Koszalin	8470	508.2	60
18	Cracow	3254	1231.6	378
19	Krosno	5702	495.0	87
20	Legnica	4037	515.8	128
21	Leszno	4154	386.8	93
22	Lublin	6792	1016.4	150
23	Łomża	6684	346.7	52
24	Łódź	1523	1139.5	748
25	Nowy Sącz	5576	697.9	125
26	Olsztyn	12 327	753.0	61
27	Opole	8535	1018.6	119
28	Ostrołęka	6498	397.3	61
29	Piła	8205	480.7	59
30	Piotrków	6266	642.6	103
31	Płock	5117	516.4	101
32	Poznań	8151	1334.1	164
33	Przemyśl	4437	406.8	92
34	Radom	7294	751.1	103
35	Rzeszów	4397	723.7	165
36	Siedlce	8499	651.4	77
37	Sieradz	4869	408.2	84
38	Skierniewice	3960	419.3	106
39	Słupsk	7453	413.8	56
40	Suwałki	10 490	470.6	45
41	Szczecin	9981	972.1	97
42	Tarnobrzeg	6283	599.1	95
43	Tarnów	4151	670.3	161
44	Toruń	5348	659.1	123
45	Wałbrzych	4168	740.9	178
46	Włocławek	4402	429.4	98
47	Wrocław	6287	1128.8	180
48	Zamość	6980	490.4	70
49	Zielona Góra	8868	660.0	74
	POLAND	312 683	38 183.2	122

Source: Historia Polski w liczbach (History of Poland in figures). Warszawa, 1994.

Fig. 6. Administrative division of Poland in 1975.

Fig. 7. Administrative division of Poland in 1999.

capitals. The majority of these newly promoted centers were rather small towns of a marginal regional role. The new province seats were assigned the areas which had never before been gravitating functionally to them. This made it necessary to bear high investment costs on transport and communication infrastructure. The administrative system which emerged was functionally and spatially out of balance. Large size disproportions existed not only among the voivodship centers, but also among the provinces themselves. We can cite here the following example: Katowice voivodship (Upper Silesia) had some 4 million inhabitants, while the voivodship of Chełm – only 250 thousand. Liquidation of the intermediate administrative level constituted previously a poviats (counties) resulted in the situation in which too many commune level units belonged to one province. This made an effective organization impossible and forced to establish the so called district offices. They were becoming the actual new county organs. The formally existing two-level system was gradually turning into a three-level one. This, however, was taking place in conditions of overlapping responsibilities and powers of the particular levels of the administrative authorities.

As years went by, after a lot of infrastructural investment undertakings had been successfully implemented, the system composed of 49 voivodship units was getting more and more robust, in spite of its obvious shortcomings. The new voivodship seats got a very significant development impulse. The settlement system of Poland was acquiring an increasingly polycentric character. That is why the appearance of the concept of reestablishing the three-tier system, as well as the postulate of liquidating the majority of the voivodship units encountered an opposition from numerous local communities. There was a perfect awareness that losing the rank of a voivodship center by a town and acquisition of the position of a county seat would mean a downgrading, not just in terms of the status.

Yet, after the systemic and political transformations which took place after 1990, further maintenance of the small and economically weak voivodship units was becoming anachronic. The issue was not only in ensuring a higher effectiveness of spatial economy, the international aspects started to play a role as well. Integration at the level of regions within the framework of the European Union required existence of strong and large voivodship-type regions.

In the course of very sharp debates, which exceeded the scholarly community, three variants were proposed of the ultimate solution to the problem, namely division into 12, 17 and 25 provinces, and the reestablishment of the intermediate county level of about 300 such units. Without going into details of this violent political debate concerning the number and boundaries of voivodships, which lasted for a couple of years, let us note that the final decision was taken in 1998. The middle variant was selected, according to which 16 voivodship units were created (see Tab. 6).

Tab. 6. The administrative division of Poland in 1998.

No.	Voivodship	Capital	Surface area in thousand sq. km	Population number	
				Total (in '000)	per 1 sq.km
1	Dolnośląskie	Wrocław	19.9	2985.4	150
2	Kujawsko-Pomorskie	Bydgoszcz	18.0	2098.1	117
3	Lubelskie	Lublin	25.1	2242.0	89
4	Lubuskie	Zielona Góra	14.0	1020.3	73
5	Łódzkie	Łódź	18.2	2672.8	147
6	Małopolskie	Cracow	15.1	3206.6	212
7	Mazowieckie	Warsaw	35.6	5065.0	142
8	Opolskie	Opole	9.4	1091.1	116
9	Podkarpackie	Rzeszów	17.9	2117.3	118
10	Podlaskie	Białystok	20.2	1223.9	61
11	Pomorskie	Gdańsk	18.3	2179.1	119
12	Śląskie	Katowice	12.3	4894.2	398
13	Świętokrzyskie	Kielce	11.7	1327.9	114
14	Warmińsko-Mazurskie	Olsztyn	24.2	1460.4	60
15	Wielkopolskie	Poznań	29.8	3346.0	112
16	Zachodniopomorskie	Szczecin	22.9	1729.8	76
	POLAND		312.6	38 659.9	124

Source: Polska w nowym podziale administracyjnym (Poland in the new administrative division). Warszawa, 1998.

In comparison with the previous administrative system, the one recently introduced is better balanced in terms of size. The proportions between the largest and the smallest voivodships in terms of area are now 3.5:1, while in terms of population – 5:1.

An ultimate result of the reform of the country's administrative division was the establishment of a three-tier system composed of 16 voivodships, 308 poviats (including 65 urban counties), and 2486 „gmina" (commune) units. The latter are classified into so called urban communes (316 units), urban-rural communes (564 units) and rural communes (1606 units). Besides this, there are 870 settlement units having the status of towns. In rural areas of the country, contained within the communes, there exist 56,803 village units (among which 39,743 are the so called marshall villages). The statistical data presented, referring to various hierarchical levels imply that the settlement network of Poland is with respect to the functional and urban design aspects – and has always been – highly differentiated. That is why the problem of territorial administrative divisions played an essential role in the life of Polish society during the whole of the 20th century.

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Reviewer

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POSSIBILITIES OF TRANS-BOUNDARY COOPERATION BETWEEN MUNICIPALITIES IN AN INDUSTRIAL AGGLOMERATION SEPARATED BY THE FRONTIER – THE BORDERLAND AREA OF NORTHERN MORAVIA AND UPPER SILESIA AS AN EXAMPLE

Oldřich MIKULÍK, Barbora KOLIBOVÁ, Miroslav HAVRLANT

Abstract

The paper summarizes present results from the research of transboundary cooperation between Czech and Polish towns in the Ostrava-Katowice region. Research objectives were given by the project INTERREG-G-II whose part we solved for the Institut für Länderkunde Leipzig. A considerable portion of field research was public inquiry addressed to representatives of the Czech towns Ostrava, Karviná, Opava, Český Těšín, and those of the Polish towns Katowice, Jastrzębie Zdrój, Racibórz, Cieszyn and Bielsko-Biała. The structure of the public inquiry consisted of three groups of questions as follows: (1) specific features of the regions with emphasis on politic, economic and social changes after the year 1989 / 1990; (2) status and prospects of transboundary relations and cooperation; (3) evaluation of transboundary cooperation. Although the town representatives on the Czech side of the border approached the given theme with responsibility, the personal concern of their Polish counterparts was markedly greater. Tighter mutual links and interest in cooperation were more pronounced in towns with the closer geographical location.

In order to precise the pre-requisites and conditions for the development of neighbourhood, social and economic relations, we made a retrospective summary of the history of the development of border, landscape, environment, society and economy. Summarized were specific features of the 1990s and a selection was made of pros and cons as a basis of conditions and instigations for the development of Czecho-Polish relations in this region.

The solution of a number of problems calls for coordination and joint solutions. The two countries should be prepared to remove obstacles to the further development of transboundary relations. A lot of activities are hampered due to different norms and legislations. The entry of the two countries into the European Union would resolve the present problems which make the implementation of efforts and activities between the towns impossible.

Shrnutí

Možnosti přeshraniční kooperace měst v průmyslové aglomeraci rozdělené státní hranicí: příklad severomoravského - hornoslezského hraničního regionu.

V příspěvku jsou shrnuty poznatky z výzkumu přeshraniční spolupráce českých a polských měst v oblasti Ostrava - Katowice. Cíle výzkumu byly podřízeny zadáním úkolu INTERREG-G-II, jehož dílčí část byla řešena při Institut für Länderkunde Leipzig. Velkou část terénního výzkumu tvořilo anketární šetření, ve kterém byli osloveni představitelé měst na české straně Ostravy, Karviné, Opavy a Českého Těšína, na polské straně měst Katowice, Jastrzebie-Zdrój, Racibórz, Cieszyn a Bielsko-Biala. Strukturu otázek tvořily tři okruhy: zvláštnosti regionu s důrazem na politické, ekonomické a sociální změny po roce 1989 / 90, stav a perspektivy přeshraničních vztahů a konečně otázky i hodnocení přeshraniční spolupráce. Představitelé a zástupci měst na české straně hranice přistupovali k danému tématu sice odpovědně, ale u jejich polských protějšků byl osobní zájem zřetelnější. Těsnější vzájemné vazby a zájem o kooperaci byl výraznější u dvojic blíže položených měst.

Pro ujasnění předpokladů a podmínek pro rozvoj sousedských, společenských a hospodářských vztahů byl proveden retrospektivní souhrn historie vývoje státní hranice, krajiny, životního prostředí, společnosti a hospodářství. Byla shrnuta specifika 90. let 20. století a proveden výběr silných a slabých stránek jako základ podmínek a podnětů pro rozvoj česko - polských vztahů v tomto regionu.

Řešení mnohých problémů vyžaduje koordinaci a společná řešení. Česko i Polsko by měly být nápomocny při odbourávání překážek rozvoje přeshraničních vztahů. Řada aktivit je brzděna vzhledem k rozdílným normativům a právním předpisům. Vstup do EU by řadu dnešních problémů vyřešil.

Key words: *cooperation, region, Ostrava, Katowice, transformation, environment*

1. Introduction

The assignment of this research was based upon questions formulated to ascertain the essence, focus and examples of cooperation taking place in the area comprising the towns of Ostrava – Katowice, Karviná – Jastrzebie Zdrój, Opava – Racibórz, Český Těšín – Cieszyn, Třinec – Bielsko–Biala and their hinterlands. A questionnaire containing data on the specific features of these regions, with emphasis on the political, economic and social changes occurred after 1989/ 1990, the condition and prospects of trans–boundary relationships and cooperation and their evaluation, was used to do this research.

What were the prerequisites and conditions for developing neighbourhood, social and economic relations in this interesting area? We sought to partially answer a wide variety of questions raised by these relations by drawing up at least a brief retrospective summary of the historical development of the frontiers, landscape, environment, society and economy. Our aim was to define the most important changes that took place in this area until 1945, during the post-war period between 1945 and 1989 (era of socialism) and after the year 1990 (period of transformation).

2. Brief characteristics of the area

Two supra–regional centres namely Ostrava and Katowice dominate this area. Their activities formed their broader hinterlands, too. Spatial concentrations of industries that rose on both sides of the frontier were among the most important ones in both the Czech Republic and Poland.

Until 1920, no Czech–Polish frontier ever existed in this area. The Ostrava agglomeration began to form as far back as at the very beginning of industrial development, that is as far back as in the period of the Hapsburg monarchy. As early as in the period between World War I and World War II, Ostrava used to be called, as of right, the „steel heart" of the republic. After the establishment of Czechoslovakia in 1918, the heavy industry located in the Ostrava region markedly translated into the demographic and national structure of population, making it very specific. The strong Polish minority (most people of Polish origin moved to this area for work from Galicia) had and still has its basic and secondary schools, cultural and social organizations and consulates. Also the German minority (or Austrian respectively), even stronger than the Polish one, had its cultural and sports centres here. Besides Ostrava, where about 25,000 Germans lived, strong minorities of German origin lived, for example, in Bohumín, Nový Jičín, Bílovec and particularly in Opava. The influence of German minorities became stronger between 1938 and 1945 (also the influence of Polish minorities became stronger, particularly in the occupied Těšín region between 1938 and 1939).

Two basic factors, namely the historical heritage of the restored state and the potential, be it human or natural, affected the economic structure and its development on the Polish side of the area under examination.

The restored Polish state acquired a significant industrial area in the eastern part of Upper Silesia from the former Austrian–Hungarian monarchy and the imperial Russia. Having an extraordinarily favourable position within the so called Upper Silesia Basin, it was rich in coal mines, iron ore and other ores deposits to be found in the near surroundings, enabling mining and iron industries to develop here (a development similar to that of the Ostrava region).

The economic development between World Wars I and II was clearly defined by the needs of the restored state, in which Upper Silesia became Poland´s „steel heart" with its mines. Rural areas remained much poorer, which is also true of mountainous areas.

Fig. 1: Location of area under study

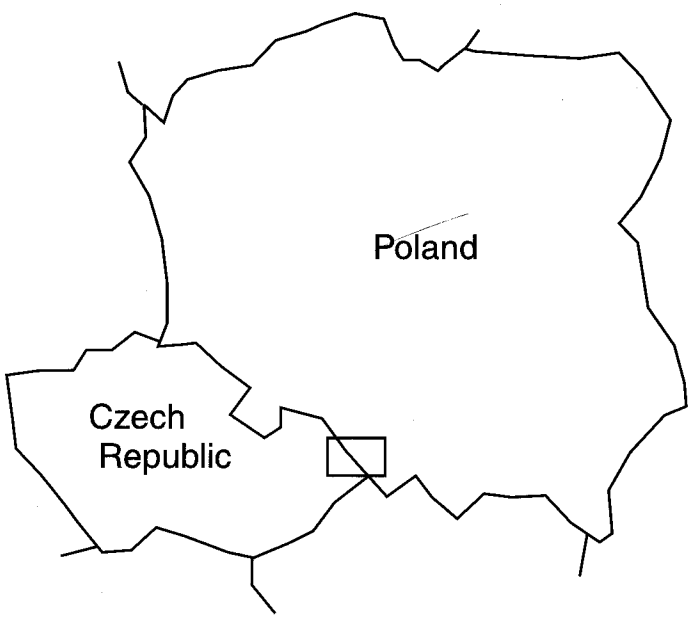
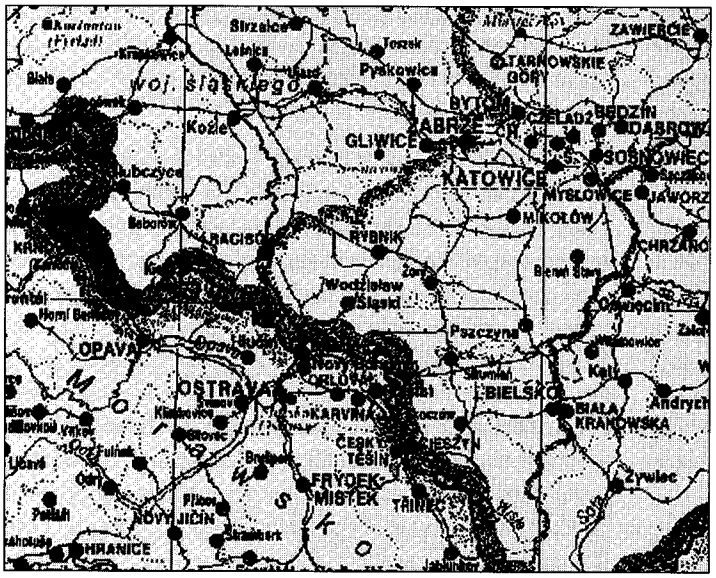


Fig. 2: Orientation map of the studied region Ostrava – Katowice.



The first post-war years are linked with substantial changes in the territory and with population migration. The compulsory transfer of Germans affected both the former industrial agglomeration of Upper Silesia of Poland and its formerly German part.

The area under examination can be characterized as a peripheral area with strong economic centres and distinct territorial differences in both natural, economic and social and ethnic components, which were often strongly influenced by the historical and political developments and international relations. The local population whose structure was multinational for a long period of time and substantially changed in various periods, went through some tension from time to time.

From the 1950s, the socialisation and industrialisation of economy was associated not only with the change of the political system and establishment of the Communist totality but also with the change in international relations, with the rise of two world power blocks and with the beginning of the so called cold war. However, the germinal form of nationalizing and collectivizing agriculture could be observed as early as in 1945 when the process of property nationalizion or confiscation started. The Ostrava and Katowice industrial areas are among those industrial areas in which the process of industrialisation culminated during the era of building up socialism. Seats and industries were gradually located in the landscape of this area, with a network of roads growing more and more dense. Being used with the growing intensity, the recreation space available in the hinterland of agglomerations was extended, and the lifestyle and social structure changed. The chronology of developments whose primary element was industrial production can be observed on both sides of the frontier. It was the industrial production that created the industrial character of this area, a character which dominated all other activities performed in it. The entire process of landscape and environmental management was characterized by an enormous growth of adverse impacts and phenomena. Produced by coal mines, metallurgical works, power stations, coking plants, coal treatment plants, heavy chemistry, traffic etc., these adverse impacts degraded the landscape and the environment. The landscape was loaded and devastated by mining subsidence, tips, soil, and water and air pollution. The pattern of settlements changed, and so did the transport and energy routes.

3. Development of relations

The period until 1945 was quite specific, primarily marked by the results of World War I and by the setting of the frontier, which was seen as a certain compromise between Czech and Polish interests and claims. The division of the Těšín area (historical land) in 1919 partly satisfied Czechoslovakia but generated an absolute disapproval on the part of Poland.

Until 1938, the official contacts were more or less cold but correct, with both countries opening their consulates in Ostrava and Cracow. The Munich Pact and the following events also translated into the Czech Těšín area by its being occupied by Polish troops and subsequently incorporated into the Polish state (even if the incorporated area did not reach as far as the Ostravice river – the historical border of the Principality of Těšín, but still it comprised the area reaching from the eastern fringe of Ostrava southwards as far as the valley of the Morávka river in the Beskydy mountains), a downright act of hostility and power.

The relations between Czechs and Poles began to slightly change after the rise of the Protectorate of Bohemia and Moravia when, at the same time, German ambitions toward Polish people began to manifest themselves. Czech consulate in Cracow still remained open to emigrants from the Protectorate. All this ended on September 1, 1939 with the German troops´ raid on Poland and the outbreak of World War II.

The post–war restoration of statehood was connected with essential changes in the territory of both countries. As far as the area under examination is concerned, these changes primarily took place in the former German territory in the Racibórz area and the western part of today's GOP (The Gliwice area).

The Polish section of the borderland area went through significant changes – territorial, demographic, national, social, economic and political – during the first post–war years. The frontier became a real frontier. There were almost no mutual contacts across the border. The official contacts were focused on solving the most urgent problems concerning both sides, such as Cieszyn – Český Těšín, sporadically there were cultural and educational contacts. For serious family reasons,

extra passes were issued to people to enable them to make visits on the other side of the frontier. The beginning of the 1950s and the beginning of the cold war saw a tightening of the function of the frontier. The eastern frontier of Poland became unpassable in both the mountains and on the banks of the frontier–forming Olše river, and a wire fence was erected and a ploughed field established with a daily–checked zone.

The introduction of the so called socialist economy and the rise of the military block also affected the development of the Ostrava region and Upper Silesia, both areas having the same functions and production potential: the primary focus was on developing heavy industry, with the production of arms being one of its segments, too. Contacts started to be established primarily between political officials but also between people in charge of production planning and those active in economic practice.

Every year, thousands of people would come to the Ostrava region (from the southern part of Poland) having been recruited. Several hundreds of them still work in the Ostrava region. Many of them settled here forever. Private travelling and recreation travelling began to develop very slowly at the end of the 1950s, with most of the travels being organized by travel agencies, or effected upon authorized and financially supported invitations from the other side.

In the early 1960s, contacts began to be also established between research institutes active in identical sectors. Mutual aid in emergency situations was granted (mine disasters, fire etc.), the institutes of the Academy of Sciences began to cooperate – here at the level of regional offices, too. Cooperation was established between Ostrava´s College of Mining and Cracow´s Academy of Mining and Metallurgy, between Opava´s Silesian Institute of Studies and Opole´s and Katowice´s Silesian Institute of Sciences and between the North Moravian subsidiary of the Czechoslovak Geographical Society in Ostrava and the Katowice-based department of the Polish Geographical Society that had its continuation in the cooperation between geographical offices of the then Pedagogical faculty of Ostrava and the newly opened Katowice University. Big presentations and public appearances of both partners served (and do so to this day) to develop the culture of mutual cognition and understanding and to improve the relationships and potential cooperation. Besides Czech ensembles, facilities and institutions, also cultural facilities, artistic ensembles and a theatre performing in the region of Český Těšín and intended for the Polish minority, together with the activities of the Polish Union of Culture and Education (PZKO), also contribute to developing this cooperation. The events held to foster cooperation include, for example, the folk festivals Goralskie swieto – Gorálský Festival organized both in Poland and in the Czech Republic – Jablunkov, Dolní Lomná (the festivals take place to this day, mostly with ensembles from Slovakia also participating), or the recent theatre festivals at the frontier (Cieszyn – Český Těšín) and festivals presenting musical ensembles.

The two metropolises, Katowice and Ostrava, also established certain forms of mutual cooperation within the framework of the so called agreements on friendship. In addition to the above-mentioned towns, some forms of cooperation have been established between other towns, too.

The 1970s represent a certain breakthrough into the possibilities of mutual contacts. The awareness of the geographical position of this area – with its function as a transit area within the European context, the environmental problems faced by this area particularly in densely populated industrial agglomerations, the need to intervene in economy, transport etc. translated into more frequent contacts of experts and in solutions jointly prepared by both sides. Also geography played a certain role here (university subsidiaries in Katowice and Ostrava). Also the contacts in the sector of businesses intensified to some extent, focusing on the possibilities of making use of production capacities on the other side of the frontier (e.g., the transport of Polish sugar beet to the sugar factory in Opava or from the Osoblahy region to Poland). In the 1980s, the intensity and frequency of contacts were further growing.

The 1990s saw a completely new epoch, an epoch characterized by efforts and also possibilities to develop all–round contacts, with both sides participating in them. However, the removal of all obstacles hampering contacts in all sectors may generate both positive and negative impacts on both sides. These are, for example:

- release of the frontier regime,
- existence of a single frontier crossing point with round–the–clock operation for trunk and „heavy-weight" (lorry) traffic in Chotěbuz near Český Těšín,
- increase in the number of frontier crossing points, particularly within the framework of „small border traffic" (also on mountain ridges),
- "passive" tourism, which dominates in both countries,
- an almost complete loss by Czechs of the interest in travelling to the Baltic Sea – tourist travel is affected,
- cooperation in tourist travel – bicycle tracks, travel agencies, coordination of sport and hiking events and their promotion,
- establishment of new contacts between villages or towns, associations of municipalities, agreements on cooperation between districts,
- intensification of the exchange of cultural events and organization of joint events or their coordination and mutual assistance,
- participation at fairs and exhibitions with the necessary promotion and supply,
- coordination of procedures leading to the development of designated territories,

- cooperation in the preparation of town and country plans and in the development of roads and transportation,
- partners formerly cooperating in planned economy are now competitors in the free market,
- cooperation in emergency situations affecting the other side (The Odra river),
- widening cooperation between universities – Opava´s Silesian University and Karviná´s faculty, private universities in Upper Silesia,
- a possibility of studying Polish language and culture at the Ostrava University,
- possibilities of carrying out sociological research in partner towns,
- interest by both sides in getting Slovak institutions and organizations involved in these activities in the regions belonging to the triple–area formed by the voivodship of Katowice, the Ostrava region and the Žilina region,
- intensification of cooperation in doing research on the borderland area using the grants provided by both sides,
- a strong interest of the consulates – that of Poland in Ostrava and that of the Czech Republic in Katowice – in the status, development, results, needs and possibilities of developing mutual contacts, and in supporting all factors of cooperation,
- rise of the Euroregions Těšín's Silesia and Silesia, preparations for establishing the Euroregion Beskydy with Polish and Slovak sections.

Establishing the cooperation between municipalities situated in borderland areas and between regional associations or districts, or establishing the so called Euroregions are the ways to intensify cooperation. At the present time, these ways are being searched for. Certainly, this contributes to mutual cognition and understanding, to removing prejudices on both sides – with these prejudices frequently having some historical background, or mutual personal dislikes. It also helps local and public administrations to exchange information with ethnic minorities settled in the borderland areas. At present, however, the cooperation takes place in social affairs, culture and sport rather than in economy, in which we are now, more or less, competitors.

Some possibilities – even if their number is limited, seem also to exist in the Euroregions. Here, the contact points or areas intended for identical uses can be searched for, including the search for possibilities of receiving funds allocated by the European Union for financing projects beneficial to both parties, projects that will serve the development desired in this or that sector. Projects to be implemented in the Euroregion Těšín's Silesia and in the Euroregion Silesia have a somewhat different focus, the establishment of the Euroregion Beskydy with Slovak and Polish participation is under consideration. Joint participation at fairs and exhibitions, and the development of information centres focus on the same objectives.

4. Field research – evaluation of surveys

A questionnaire submitted by the customer

of the study was used to carry out the survey. Formulations of individual questions were tailored for the representatives of municipal authorities. It also follows from the responses by institutions and companies, which received the questionnaire upon the recommendation of municipal authorities. This may have been one of the reasons why only few questionnaires sent out have returned.

The individual questions contained in the questionnaire served as a framework within which the controlled interview with the representatives of municipal authorities in selected Czech and Polish towns was carried out. The evaluation of the survey was carried out separately for Czech and Polish towns. The overall knowledge obtained through the inquiry survey and the synthesis of the knowledge obtained through field research were evaluated and formulated in conclusions.

4.1 The Czech side

Within the framework of the survey, the municipal authorities and local governments of the following selected towns were addressed: Ostrava, Karviná, Český Těšín, Třinec and Opava. On the part of the Czech Republic, 9 questionnaires were sent back filled–in. The questions concerned three basic areas:

4.1.1.Specific features of regions with emphasis on political, economic and social changes that occurred after the year 1989/1990. This topic contained five questions whose results are presented in the following analysis: All representatives of the selected towns say that they consider the post–1989 changes and their impacts on the Czech–Polish borderland area to be positive or more or less positive. The position and importance of the Czech–Polish borderland area within the context of the Czech Republic – almost half of the respondents say that they consider this area as one with some advantages – as compared with other parts of the country – in terms of its development just because of its location. Two thirds of the respondents say the economic situation of their town after 1989/90 is both positive and negative, 1/3 say it is more or less negative. Most of them say the social situation in their town is more or less negative, 77.8 % say the environmental situation is good or more or less good, 67 % say the traffic situation is bad and the situation in terms of safety is more or less bad. They were also asked about their opinion on the developments in these sectors in the following five years. All answers that we received were shifted, on the scale, by one degree to the left, that means that the respondents have a slight inclination to optimistic visions, or in other words, a hidden desire for an overall improvement in the situation in their town and region can be read from their answers. 89 % say that the support for further development of the region through additional measures and means within the international context is very important.

4. 1. 2. State and prospects of trans–boundary relationships and cooperation

This section of the questionnaire contains 9 questions.

67 % of respondents say that there were examples of cooperation as early as before 1989 (exemplified by the cooperation between Karviná and Racibórz and Wodislaw and between Ostrava and Katowice) – there was only official friendship between these towns and the contacts took place at the political level only. All towns under investigation cooperate with one or more towns in Poland at the present time. Direct cooperative relationships are stated by the representatives of the following towns: Ostrava with Katowice, Třinec with Bielsko-Biala, Český Těšín with Cieszyn, Karviná with Jastrzebie-Zdrój, Wodislaw and Jaworzno, Opava with Racibórz. 72 % of respondents claim that the cooperation was initiated by their own town (municipal authority). Of factors motivating the cooperation (which is being established now), the following ones (presented as options in the questionnaire) are stated: understanding between people, mutual cognition and understanding of the importance to overcome disadvantages resulting from the borderland location, solution to problems in trade and services, tourism, culture, and sport and programmes of urban development. In terms of the forms of cooperation, 50 % say that they include irregular cooperation, free contacts and occasional exchange of information, 50 % say that their cooperation includes a voluntary planned coordination of activities (such as joint harmonizing of plans). The most important areas of cooperation, ranked according to their importance ascribed to them by the respondents themselves, include the exchange of information and experience, communication to people, mutual understanding and cognition, economy and economic support, technical and transportation infrastructure, travelling, urban development, environment, nature and landscape protection.

The forms of publishing information on trans–boundary cooperation include its publishing in regional and local press (56 %) and in regional TV and radio (34 %).

4. 1. 3. Trans–boundary coooperation and its evaluation

This section of the questionnaire contains three standard questions evaluatedaccording to the proposed scale and three open questions.

89 % say that the cooperation works well or very well. 22 % say that there are factors (legal and administrative problems, that is different structures of public service, different modes of organisation) that hamper the trans–boundary cooperation.

The importance of the trans–boundary cooperation: most towns must intensify the existing cooperative relationships with Poland and establish new ones.

4. 2. The Polish side

Surveys with the use of questionnaires were also carried out in Poland, with respondents being the representatives of municipal authorities of the following selected towns: Cieszyn, Racibórz, Katovice, Jastrebie–Zdrój and Bielsko–Biala. Just as those representing Czech towns, they, too, recommended institutions and companies in their towns and regions whose representatives answered the questions contained in the questionnaire. In Poland, 17 questionnaires were returned filled in, that is 9 more than in the Czech Republic.

The questionnaires suggest the following:

4. 2. 1. Specific features of the regions with emphasis on political, economic and social changes occurred after 1989/90:

The impacts of the post–1989/90 changes on the Czech–Polish borderland area are perceived as positive or more or less positive. 89 % of respondents consider the area in which they live to be one with development advantages – as compared with other parts of the country – just because of being near the frontier. The evaluation of the individual spheres of life in the town – the post–1989/90 situation. 82.3 % say that the environmental situation improved the most, 70 % say that the social situation is good or more or less good, 65 % say the situation in traffic is good or more or less good and 50 % say that the economic situation is good. In terms of the prospects for the development of their town in the next 5 years, 76.5 % say the prospects are good or more or less good, 58.8 % say that they are good or more or less good for the social sector, 82.4 % say that they are good or more or less good for the improvement in the environment. Most of them, however, are less optimistic in terms of traffic situation and public safety. This question allows to draw a conclusion that the Polish side may have a more realistic view of the future developments than the Czech side. All respondents say that further – international as well as national – support of the development of borderland areas through additional measures and funds is very important (70.6 %) or important (29.4 %).

4. 2. 2. Trans-boundary relationships and cooperation: their state and prospects

Examples of trans–boundary cooperation before the year 1989/90. Half of the respondents say that this cooperation took place at the political and social levels and was predominantly formal without solving concrete problems. The existence of current forms of cooperation – 88 % say that there is a cooperation nowadays. Concrete relationships of cooperation with Czech towns at the present time – all respondents confirmed cooperation with their Czech counterparts. Besides, Bielsko–Biala claims cooperation with Frýdek-Místek, its village Bukowiec with Czech Jablunkov, Racibórz – besides Opava – also with Olomouc and Prostějov (education). In

terms of initiating trans-boundary cooperation – 82 % of respondents say the cooperation was initiated by their town. Motives to establish cooperation at the present time, ranked by the respondents according to their importance, include: exchange of information and experience (83 %), solution of environmental problems and to those faced by nature and landscape protection (81 %), solution of problems faced by culture and sport (64 %) and solution of economic problems (42 %). The respondents did not attach much importance to other areas presented in the questionnaire. Two types of answers were given to the question about the forms of the ongoing cooperation. According to these answers, one group of towns has irregular and loose contacts with their Czech counterparts, occasionally exchanging information with them, while the other group has some voluntary planned coordination of activities between their town and that of their Czech counterpart. The individual spheres of cooperation ordered by the importance attached to them by the respondents themselves suggest that 83 % say that the communication between people and mutual cognition and understanding are most important, 82 % say this about the exchange of information and experience, 77 % about tourism, 65 % about technical and transport infrastructure, 65 % about sports and games, 48 % about social affairs, 42 % about economy and economic support while the other spheres achieved values lower than 50 %.

The forms of publishing information on the trans–boundary cooperation: through regional TV and radio (47.1 %), through regional or local press (41.2 %).

4. 2. 3. Evaluation of trans–boundary cooperation

76.5 % of representatives from the selected towns say the cooperation works very well. Factors hampering the cooperation: of a wide variety of options, the respondents chose the two following – legal problems (53 %) and insufficient amount of information on both sides (47 %). Importance of the future trans–boundary cooperation: most of the towns must intensify the current cooperation with Czech partners and establish new contacts (76.5 %), the town is satisfied with the current status of trans–boundary cooperation, a lasting cooperation between both sides was established (17.6 %).

5. Summary

The representatives of Czech towns approached the given subject with appropriate responsibility, but their Polish counterparts showed much more personal interest in it. We also have to say that cooperation was closer between towns situated at a shorter distance from each other and having similar histories, thus similar problems, which they try to resolve jointly. This can be exemplified on a couple of towns formed by Český Těšín and Cieszyn. This double–town has good chances to follow its history after EU entry (after bringing their legal norms in line with those of the EU). The representatives of Racibórz showed the greatest activity in cooperating in the given subject. The attitude of the leading representative of the particular town to such campaign plays a major role, too, as he can affect the interest which the town and region take in it. The research also suggested another kind of dependence – the smaller the town the closer but also more concrete are the actions taken. People stand closer to one another.

The evaluation of the inquiry survey in both the Czech Republic and Poland suggests that there are no significant differences in the responses to the questions raised. People on both sides of the frontier perceive the post–1989/90 changes as positive. The Polish side better realises the advantages of the geographical location of this area in terms of its further development. There are no differences in the evaluation of the individual spheres of life in the particular towns. The Polish view of the prospects for further development of the settlements in the next five years is more realistic while the Czech view is too optimistic. All towns consider the national and international support of their regions to be very important. The trans–boundary cooperation before the year 1989/90 took place at the political and social levels.

According to our research, all towns in the area under investigation have had direct contacts since 1989/90. They seek to extend them on the grounds of their own activities. Exchange of information, communication to people, solution of environmental problems, creation of better conditions for trade, services, travelling, culture and sport and new programmes to develop towns are among the chief motives of cooperation.

Half of the towns have irregular forms of cooperation, the other half seek for planned coordination of activities. The spheres of cooperation are based on the motives of cooperation.

Trans–boundary cooperation projects are the result of broad activities performed by the General Consulates in Katowice and Ostrava, the Czech–Polish Mixed Economic Chamber, the Association of Towns and Villages of Upper Silesia and North Moravia, the Agency for Regional Development Ostrava, the Agency for Economic Development Třinec, the Chambers of Economy in Katowice, Ostrava and Opava, the Chambers of Agriculture etc.. At present, the respondents state projects ranging from projects of supra–national nature to local ones. These projects comprise the Odra River Basin programme implemented within the Phare programme, the Euroregions Silesia and Těšínské Slezsko and the Beskydy programme, which is under preparation now. In terms of intensifying hiking activities, there are particularly projects aimed at building cyclo tracks (Karviná, Opava, Racibórz and Cieszyn). Regions are jointly presented at international tourist travel fairs (such as Regiontour Brno). Joint information centres have been and are being established, with their databases being interconnected. A number of activities are focused on deepening the Czech –Polish contacts in the field of culture and sport through organizing regular events in Ostrava, Katowice, Racibórz, Opava, Český Těšín and Cieszyn. „Information Bases of Companies and Businesses" active in the regions Opava and Racibórz were established. Annually, the Economic Forum, a meeting of

entrepreneurs of three borderland regions in Poland, Czech Republic and Slovakia takes place. This year, a „Meeting of mayors of divided towns and villages of 2000" is to take place. Issues concerning the possibilities to study at Czech and Polish universities are under examination, too. Both regional television and radio and regional and local press are involved in publishing information on these issues.

The representatives of towns consider the trans–boundary cooperation with their partner town prevailingly positive. In their opinion, the main factors to support further development of trans–boundary cooperation comprise geographical position, historical development and solution of common problems in traffic, environment and enterprise. Also social, cultural and sport events, and virtually no language barrier, make their contribution to the extending contacts. On the other hand, legal and administrative problems hamper them. The Polish side also points out that the amount of information available in both countries is not sufficient. To improve the conditions it is recommended to increase the amount of information available in both countries, to seek for possibilities to overcome customs barriers, to establish a sufficient number of frontier crossing points, to simplify passport and customs procedures for children under 15 visiting the other country to take part in group events and to improve the road network including its coonnection to the motorway network. It is useful to make sure that environmental impact assessment studies are jointly conducted. Jastrzebie requires that a drinking water supply be ensured from the territory of the Czech Republic. Most towns are interested in intensifying cooperation with partners on the other side of the frontier and in establishing new contacts.

As regards the historical development and similarities in economic structure still dominated by – very problematic today – mining and metallurgy, which have largely devastated the landscape in the region and have adversely impacted the environment, the conditions for restructuring the economy and the entire social environment are similar as well. From a certain point of view, a very competitive environment has developed here. Good relationships of cooperation and their establishment aimed at resolving a wide variety of economic, social and environmental problems will certainly contribute to the future prosperity of the Ostrava–Katowice region.

6. Cooperation of towns

Ostrava – Katowice

The Odra River Basin Project (the water reservoir of Racibórz) – under the Phare programme.

Economic Forum – with Regional Economic Chamber of Katowice and Regional Economic Chamber of Ostrava as partners. It is an annual meeting of entrepreneurs from borderland regions. Connected with it is the REGION exhibition, an exhibition of Czech and Polish companies.

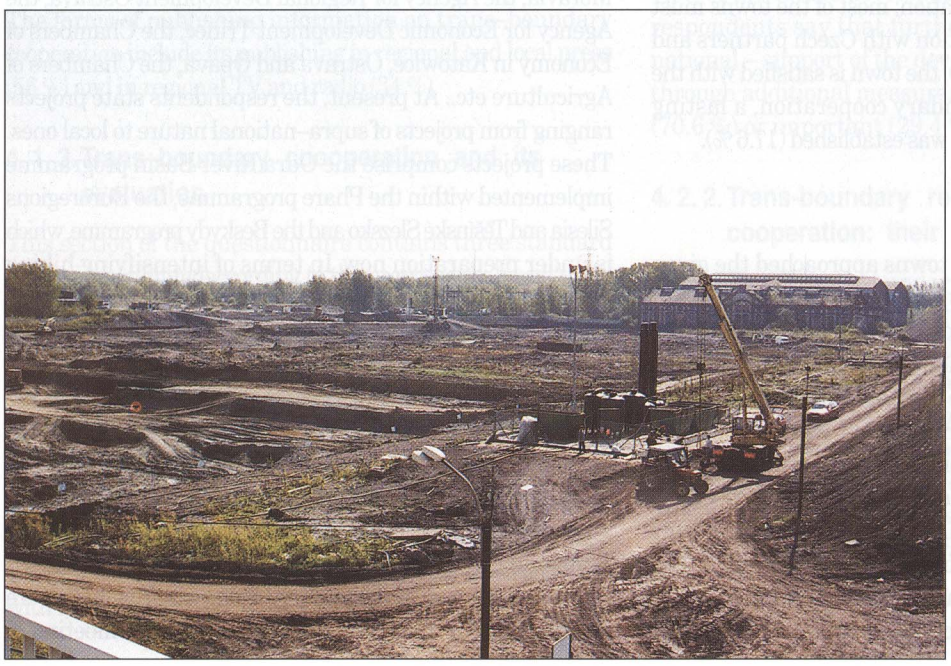
The Czech and Polish Culture festival – will be organized from the year 2000 on alternately in Ostrava and Katowice. Other forms of cooperation: with all towns of Upper and Lower Silesia through economic chambers.

Agreement on partnership contacts and cooperation between Ostrava and Katowice.

The Union of Settlements of Upper Silesia and North Moravia – from 1991 to 1999.

The representatives of local authorities of Katowice and Ostrava perform cooperation at joint meetings, symposiums and conferences focused on the assignments of public service and administration.

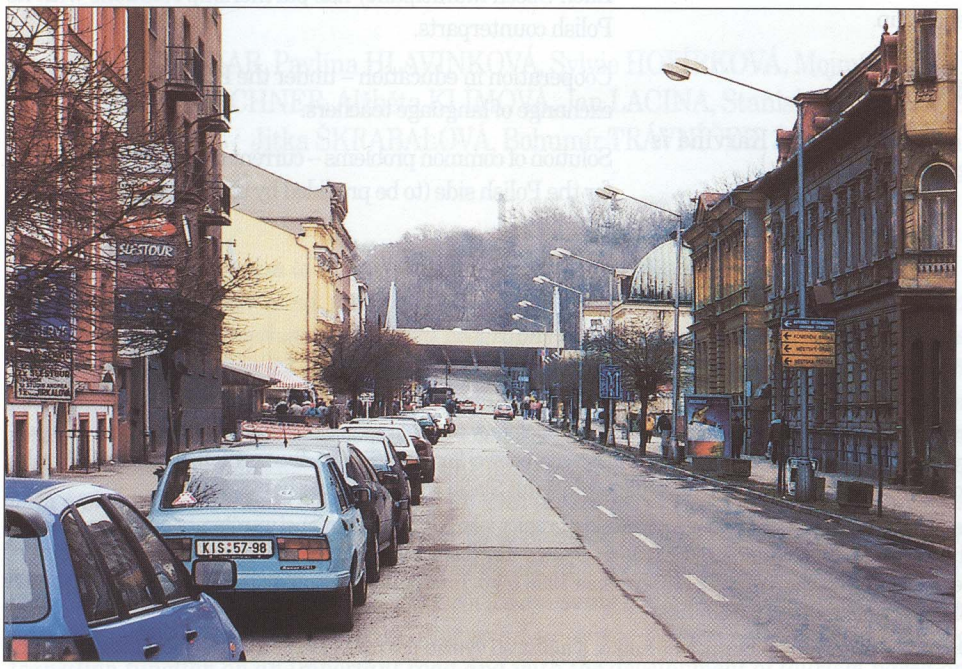
Fig. 3: Ostrava – land rehabilitation in a former mine, the coke plants Karolinka. This is where a new centre has been projected.



The US. based – Environment Protection Agency financed the Silesia–Katowice – Ostrava–Silesia programme implemented between 1991 and 1998. The subject of the project was cooperation in the research on environmental impacts of petrol stations, reclamation of mining and metallurgical heaps and the communal wastewater sediment management.

Both regions face the problems of restructuring mining and metallurgical industry with the aim of transforming them to comply with EU conditions.

Fig. 4 and 5: Český Těšín is separated from the Polish Cieszyn by the Olše River which runs along the state border. The two towns are connected by two old bridges – entrance to Poland (at the top) – return from Poland (below).



Český Těšín – Cieszyn

INFOREG 2000 – information network (tourist travel, culture, sport)

REGIONTOUR – cyclo tracks

Meeting of Mayors of Divided Towns and Villages in 2000

Organizion of joint activities – solution of road network problems (road traffic, railway traffic, coordination of police operations on both sides of the Olše/Olza river).

Opava – Racibórz

The towns of Opava and Racibórz and Krnov and Glubczyce initiated the rise of the Euroregion Silesia.

The DAYS of Racibórz in Ostrava and the other way round.

Joint presentations at tourist travel fairs in the Czech Republic and Poland.

Building of cyclo tracks (project) – Opava – Strahovice – Racibórz, Opava – Kravaře, Sudice – Třebom.

Cooperation between both municipal authorities – solution to a common traffic problem (development of a four–lane expressway – under design now), cooperation in education and science, culture and sport, public order and security etc. at regular meetings of municipal representation.

Cooperation of the Chambers of Economy.

Union of Municipalities of the Upper Odra River Region

Directorium of Racibórz Schools

Search for joint solutions in legislation and administration (frontier crossing points affairs).

Joint cultural events – e.g. the annual theatre festival, the Těrlice Film summer.

Třinec – Bielsko–Biala

Agreements on culture, education and tourism.

Agreements on cooperation between trade companies.

In addition to the above mentioned pair of towns also the participation and inclusion of Frýdek–Místek on the Czech side and of Bukowiec on the Polish side.

Concrete projects have not been set up.

Karviná – Jastrzebie–Zdrój

EUROREGION – the Mayor of the town of Karviná is chairman of the Council of Těšín's Silesia.

REGIONTOUR – the establishment of cyclo tracks in the territory of the Czech Republic and Poland.

Each Czech municipality has partnership relations with its Polish counterparts.

Cooperation in education – under the PHARE programme – exchange of language teachers.

Solution of common problems – current need of drinking water for the Polish side (to be provided by the Czech Republic).

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GEOGRAPHY OF SMALL MORAVIAN TOWNS: CASE STUDY BUČOVICE

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Abstract

The paper turns attention to the geography of small towns. As compared with large cities on one hand and very small rural seats on the other hand, small towns represent alternative environment for the life of certain population groups. The study employed methods of regional geography and included research of twelve towns in the historical territory of Moravia with less than 15 thousand inhabitants. A representative town chosen was Bučovice as the smallest of four polyfunctionally developed towns in the set with an important rural hinterland. Assessment was made of natural, historical, social and economic aspects of town development. Territorially, Bučovice represents a small town with the historical core, gradually developing housing parts without extreme neighbourhoods of pre-fabricated blocks of flats and with a pronounced industrial zone linked up with the railway. Main environmental problem is the passage of main road from Brno to Uherské Hradiště and further on to Slovakia through the whole town including the historical square. Town surroundings are typical of intensive agriculture in a fertile floodplain, the consequence of which is low ecological stability of the landscape. Prospects of Bučovice are being connected particularly with services to the rural hinterland, with the diversification of economy after wind-up of the formerly decisive timber-processing enterprise, with the transition function on an important road and with the development of tourism based on a well-known Renaissance chateau of high architectonic and artistic value. In terms of economic and communal indicators, Bučovice represents a middle among all other small towns which were subjected to the research.

Shrnutí

Geografie malých moravských měst na příkladu Bučovic

Příspěvek obrací pozornost ke geografii malých měst. Malá města představují v současném systému osídlení klíč k zachování stability venkova a zároveň jsou alternativním prostředím pro život určitých skupin populace v porovnání s velkoměsty na straně jedné a velmi malými venkovskými sídly na straně druhé. Při studiu byly aplikovány zejména metody regionální geografie. Byl realizován výzkum dvanácti měst na historickém území Moravy s méně než 15 tisíci obyvateli a jako reprezentant byly vybrány Bučovice, které představují nejmenší ze čtyř polyfunkčně rozvinutých měst souboru s významným venkovským zázemím. Byly zhodnoceny přírodní, historické, sociální a ekonomické aspekty vývoje města. Teritoriálně představují Bučovice malé město (4,5 tisíce obyvatel) s historickým jádrem, postupně se rozvíjejícími obytnými částmi bez extrémních panelových sídlišť a s výraznou průmyslovou zónou, navazující na železniční trať. Hlavním environmentálním problémem je průtah hlavní silnice z Brna do Uherského Hradiště a na Slovensko celým městem včetně historického náměstí. Pro okolí města je typické intenzivní zemědělství v úrodné nivě, jehož důsledkem je nízká ekologická stabilita krajiny. Perspektivy Bučovic jsou spojovány především s obsluhou širokého, byť nebohatého venkovského zázemí, s diverzifikací ekonomiky po úpadku dříve rozhodujícího dřevozpracujícího podniku, z tranzitní funkce na důležité komunikaci a částečně z rozvoje cestovního ruchu, opírajícího se o nejhodnotnější renesanční zámek mimo území Itálie. Mezi ostatními malými městy, která byla předmětem výzkumu, představují Bučovice ve velké části ekonomických i komunálních ukazatelů střed a lze je proto označit za město typické pro tuto velikostní kategorii sídel.

Key words: *small towns, regional prosperity, environment, territorial structure, Bučovice, Moravia, Czech Republic*

1. Geography of small Moravian towns

Geography of small Moravian towns is one of running research projects at the Brno branch of the Institute of Geonics, Czech Academy of Sciences. Recently, small towns begin to represent an alternative to living in medium-sized towns and large cities. Small towns are naturally not going to be bearers of general progress at the time of globalization. This does not mean, however, that their role in the national system of settlement is negligible. Our countryside would be considerably less stabilized without prospering Czech and Moravian small towns, the pressure on large towns would be increasing, and much greater parts of the country than today would be threatened by marginalization.

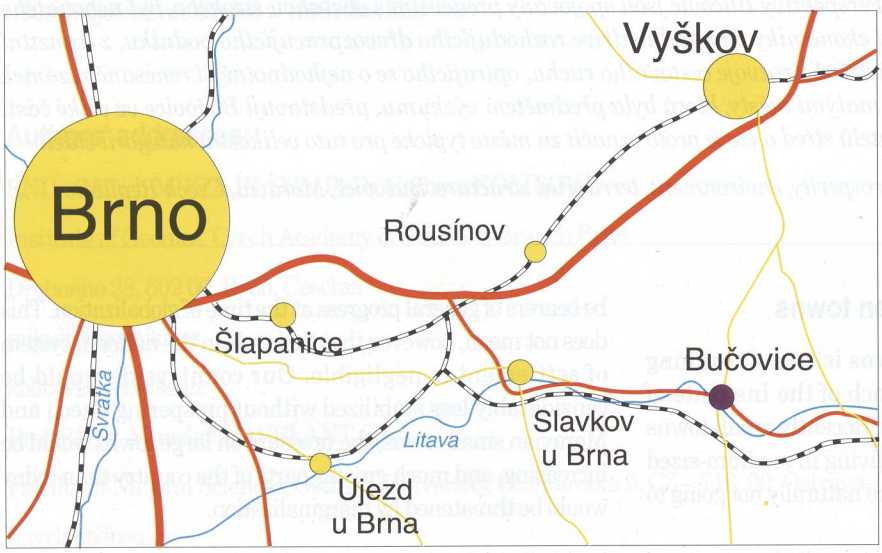
It is obvious that environmental problems following out of the concentration of people and their activities are usually less pressing in small towns than in cities. This does not apply only to the polluted natural environment but also to a lesser measure of the concentration of disturbing activities, dwelling environment, closer contact of people with the surrounding nature and the like. Furthermore, there are other positive aspects of living in the small towns, which are still not duly appreciated such as the environment with higher social control and hence higher personal security of inhabitants. Another aspect whose significance is going to grow is the fact that people do not need cars to move around in a small town. This not only helps to reduce the negative effect of traffic on environment, but also to improve the quality of social environment. A person moving around either on foot or on a bike, would develop current social contacts with other people, keep the town core living and pay attention to existing town problems. The above mentioned features of environment and way of living in small towns can be attractive for certain groups of population seeking rather peace, stability and better touch with nature. At the same time, the small towns can more or less provide all benefits of the basic stage of urban life, which means job opportunities, services, social contacts and information.

Small towns start to be paid more attention even in western Europe and northern America. It seems, however, that even our neighbouring countries with the similar historical development consider small towns to be seats larger than ours - towns with over 10 but rather over 20 thousand inhabitants. In this study small towns are municipalities with town status and with less than 15 thousand inhabitants. A question comes up whether this is only a different approach or whether the Czech and Moravian small towns actually differ from those in other central-European countries. A reason to these differences can be the heritage of central planning which preserved the seat structure of the 1940s. In the 2nd half of the 20th century the comparable west-European countries showed a trend towards the decreasing importance of micro-regional centres to the favour of mesoregional, i.e. at least mesoscale towns due to increasing population motility. Small towns gradually became an integral part of the countryside. In contrast, typical for Czech lands was a disintegrated structure of seats and pronounced fragmentation of industry, which was further strengthened by government investments into manufacture and housing within the framework of nivelization of living conditions in villages and towns. A considerable portion of investments was channeled to small towns in which very often manufacturing facilities were located with thousands of workers and extensive housing quarters. Result of the process was a still obvious micro-regional structure which began to weaken as late as during the last decennium, which is why the small Moravian towns still single out from the countryside.

Fig. 1: Location of Bučovice in the Czech Republic

The first stage of the study included 12 towns with the population ranging from 1.4 to 11 thousand: Adamov, Bojkovice, Boskovice, Brumov-Bylnice, Brušperk, Březová nad Svitavou, Břidličná, Bučovice, Budišov nad Budišovkou, Bystřice nad Pernštejnem, Bystřice pod Hostýnem, and Bzenec. The research employed statistic data where possible; however, many years passed since the last census in 1991, which brought considerable social changes. Other data originate from population balances, Labour Office, and land-registers. Geographic literary sources relating to the particular towns are not many. There are much more historical or natural historical documents. Available are also literary sources of national or regional

Fig. 2: Location of Bučovice in relation to the regional and district centres (Drawing P. Hlavinková)



character from which the data can be derived for the particular towns. Important was a field research which consisted in mapping the whole town and its closest surroundings, visiting major activities and in making the photodocumentation. Town halls of all studied towns were visited in order to make interviews with mayors or other officials. Another source of information was internet where the authors had to take to account the way of data setting. The mentioned information sources helped to generate a good picture of individual towns and the analysis was finalized during a subsequent discussion inside the team of authors and later on between the team and the mayors.

There were four towns in the set of twelve small towns, with a relatively well developed hinterland and clear central function, of which the authors picked up the smallest one – Bučovice for the case study. Bučovice is the second largest town in the Vyškov District (Fig. 2), consisting of the town itself and four integrated rural seats: Černčín, Kloboučky, Marefy and Vícemilice.

2. The case Bučovice

2.1 Land use

Population density in the cadastral area of the whole municipality amounts to 160 persons per km^2, nearly 370 persons per km^2 in the territory of the town itself, and 67 persons per hectare on the built-up area.

Tab. 1: Structure of Bučovice cadastral area (ha)

STRUCTURE OF CADASTRAL AREA		Total area	of this				
			Rural land	Forest land	Water surface	built-up area	other
2000	Bučovice	1180.1	949.3	1.6	9.8	54.3	165.2
	Černčín	292.5	239.8	26.2	1.1	7.1	18.3
	Kloboučky	665.9	411.5	208.9	3.0	9.5	33.0
	Marefy	488.6	411.4	9.9	6.2	9.5	51.7
	Vícemilice	514.8	420.9	37.7	2.1	10.6	43.5
	Bučovice total	3141.9	2432.9	284.3	22.2	91.4	311.7
1990	Bučovice	3143.0	2460.4	284.3	19.0	91.6	287.5

The largest proportions in the structure of built-up areas are those of dwelling houses (56 ha), infrastructure (10 ha), agriculture (6 ha) and industry (4 ha). Transport areas take up 126 hectares, handling areas 41 ha, other areas 50 ha, unfertile land 9 ha. There is a relatively large area of public greenery (55 m^2) per an inhabitant.

The structure of rural areas is markedly dominated by arable land whose proportion in Bučovice amounts to nearly 94% of total agricultural land.

2. 2 History

The town of Bučovice came into existence at a favourable traffic position of one-day distance from Brno on the main communication of WE direction from which a road turned to Ždánice in the south. The medieval Bučovice did not rank with important centres. A centralized estate was created in 1510 by joining the Bučovice and Nemotice manors, which played an important role for the position of Bučovice in the structure of settlement, otherwise dispersed in terms of properties. The town population was increased by Jews including those who were expelled to the region from Brno in the year 1454. An independent Jewish community existed in Bučovice until the year 1849.

In 1645, the development slowed down due to the Swedish invasion at which the town was burnt down. Economic structure of Bučovice was depending on agriculture as long as until the turn of the 18th and 19th centuries. Bučovice was a centre of the Liechtenstein manor Bučovice-Ždánice which managed 14.5 thousand hectares of agricultural and forest land in the year 1900. Poteery, drapery and coopery developed towards the end of the 18th century. In the 60s of the 19th century, the town had 14 weaving mills with nearly 2000 employees, of which the majority could not stand the competition of textile factories in Brno. The connection to the railway Brno – Kyjov in 1887 supported the development of other industries. A factory for bent furniture which became a basis for the later tradition of wood-processing industry was established in 1894. The industrial structure was extended

Tab. 2: Structure of rural land in the Bučovice cadaster (ha)

CADASTRAL AREA		Arable land	Gardens	Orchards	Vineyards	Meadows	Pastures
2000	Bučovice	887.3	54.0	4.5	0.9	0.5	2.2
	Černčín	227.0	12.0	0	0	0	0.8
	Kloboučky	383.9	13.6	3.5	0.1	7.3	3.1
	Marefy	384.3	13.2	9.3	0.5	0.3	3.7
	Vícemilice	396.8	16.6	6.5	0	0	0.9
	Bučovice total	2279.3	109.4	23.8	1.5	8.1	10.7
1990	Bučovice	2290.0	111.3	27.6	1.5	10.6	19.7

with food production, industry of building materials and later with other industrial branches.

Bučovice entered the 20th century as the town with an important proportion of trades and agriculture. The first half of the century brought up some cultural personalities such as historian František Šujan or ethnographer Augustin Kratochvíl, author of the *History of Bučovice* (1922). Industried developing after the year 1945 were machine and chemical industries. The localization of industries was followed by the development of housing quarters and infrastructure, and by the localization of tertiary activities. In the period of Czechoslovakia the town was situated on an important traffic vein connecting the two parts of the country. In the competition with neighbouring centres, Bučovice gradually won their dominance as a strong centre with the greater territorial reach of its functions. However, the town was weakened in 1960 by loosing its district function.

2.3 Relief and rock environment

The town of Bučovice is situated in the Central-Moravian Carpathians and its urban built-up area is concentrated on southern slopes of the Litenčická pahorkatina (Hilly land) and in the valley of the Litava River from which the Ždánický les (Forest) is stretching further to the south. The basic morphological axis and the landscape structure of the town and its surroundings are formed by the broad valley of the Litava R., which is an important traffic corridor with the residential built-up area and fertile agricultural soils. The valley floor is flat (up to 0.5 km wide), covered with alluvial sand-loam sediments (deep 6 – 10m), which dwell on a gravel-sand group of strata with sources of undergroundwaters. As to its gradient, the valley is asymmetric near Bučovice. The right-bank slope with exposition to the south belongs in the Bučovická pahorkatina (Hilly land) and is steeper, with morphologically obvious accumulation of colluvial deposits at the foot, modelled by erosion and sliding. It is articulated by a number of transverse valleys with alluvial cones, which are often used for communications. Surfaces on the foot colluvial deposits and alluvial fans are used for built-up areas.

The steep scarp melts into a flat hilly ridge stretching almost in parallel to the Litava R. valley. In the north, the ridge melts into a broad valley of the Černčínský potok (Brook) and Žlebový potok (Brook), which sharply bends to the south and ends the ridge across in the area of Marefy. This territory is formed by flysh clay- and sandstones. Only a very small area near Černčín is taken up by denudation remainders of Miocene sediments of the Carpathian Foredeep. Dominating is the erosion-denudation hilly relief. The thrust line of the group of nappes of the Ždánice Unit in the area of Černčín and the Výrová (305m) elevation point are not morphologically pronounced, characteristic is the occurrence of slides which develop in Quaternary slope sediments. The mosaic of Quaternary deposits is complemented with the thick covers of loesses and loess loams.

On the left bank of the Litava River the territory of our interest reaches the lower parts of the Mouřínovský potok (Brook) watershed and Kloboučky. The erosion-denudation hilly relief is characterized by flat ridges and opened valleys with marked valley floors which are built-up at some places, and which point to the north to the Litava River. The terrain elevation is gradually increasing southwards from 250m up to the peak of Radlovec (426m). The upland melts into the Litava R. valley by mildly inclined foot surfaces which are sometimes considered to be cryopediments. Prevailing Quaternary covers are colluvial deposits, loess loams and loesses. Processes in progress are surface erosion, linear water erosion and sliding (to a lesser extent).

The loesses and loess loams were in the past extracted as raw materials for the manufacture of bricks and the demand was combined with the extraction of mudstones with the admixture of quartz. The reserve of claystones is promising even for the future. The area of Bučovice is reached by the Kloboučky deposit of natural hydrocarbons (crude oil, natural gas) with the Mouřínov protected deposition area. The hydrocarbons accumulate at a depth of 700 – 800m, the paraffin-naphthene crude oil type is of kerosene character, the natural gas contains more than 90% methane.

Thanks to the communication and residential importance of the Litava River valley and the long-term colonization of mainly fertile rural landscape the relief of the territory has been considerably anthropogenized with conspicuous forms being road incisions and dikes. Beds of water courses were straightened and regulated. Arable land shows accelerated water erosion. Relief in the southern part of the territory in peak forested parts is relatively dissected and little affected by anthropogenic activities.

2.4 Soils

Valley floors of the Litava River and its tributaries are covered with alluvial carbonate sediments on which gley Fluvisols have come to existence. Loesses in the territory under study most often bear typical chernozems. With the increasing elevation and slope gradient the chernozems pass over brown chernozems into brown soils in the southern direction. The bedrock formed of marly clays up to marls or carbonate sands are in this area characterized by the occurrence of pararendzinas. The soils in question are medium-heavy, medium to strongly humic, with the humus of medium- to very high quality and with the neutral to mildly acid reaction.

2.5 Climate

Mean annual temperatures in Bučovice range around 8.8°C. Mean air temperature in the coldest month of January drops to -2.2°C. Mean daily minimum and maximum of air temperature in January is -6.2°C and 0.3°C, respectively. The warmest month of the year is usually July with an average temperature of 18.9°. Mean daily temperature maximum in July is 26.1°C.

Winter is characterized by mean daily temperatures of 0°C and lower, starting on average on 15 December and ending on 21 February. The long growing season, characterized by the mean daily temperature of 5°C and higher lasts on average from 20 March to 8 November. The short growing season with the mean daily temperature of 10°C and higher is characteristic of full spring. In the Bučovice region it begins on about 21 April and its end is usually recorded on about 10 October. Summer is characterized by the mean temperature of 15°C and more, starting on 22 May and ending on 10 September. There are 2.4 arctic days in Bučovice in a year (with max. temperature -10°C and less), 32.0 ice days (with temperature over the whole day lower than 0°C), and 16.3 tropical days (with max. temperature 30°C and more).

The slightly broken hilly relief and heterogeneous active surface in the Bučovice surroundings lead to micro-advective processes. It is anabatic micro-circulation during the day time and catabatic creeping of cold air from the slopes to the lower situated places at night. The Litava R. valley is characterized by radiation temperature inversions with small but detectable temperature differences as compared with the open terrain. This results in sometimes worsened preconditions for dispersion of atmospheric admixtures caused by the occurrence of occasional weak temperature inversions. Here we can measure a longer duration of stable temperature stratification than in the open flatland terrain. Sources of emitting exhalation can be admitted in Bučovice with a certain reservation at an elevation of above the half of the relative overtopping with the surrounding terrain.

Tab. 3: Average number of characteristic days in a year

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Year
Frost days[1)]	28.2	25.2	22.8	9.4	1.9	0.1	-	-	0.5	6.3	14.8	25.6	135
Summer days[2)]	-	-	-	0.7	4.6	9.9	16.7	14.6	6.1	0.3	-	-	52.9
Days with snow cover	16.2	12.7	3.3	0.2	-	-	-	-	-	0.1	1.6	10.1	44.2
Clear days	3.0	3.3	5.4	4.8	5.1	5.2	5.2	6.6	8.3	4.6	1.5	2.0	55.0
Clouded days	16.1	11.9	8.2	6.9	5.9	4.8	3.6	4.4	4.7	9.5	16.8	17.6	119.6

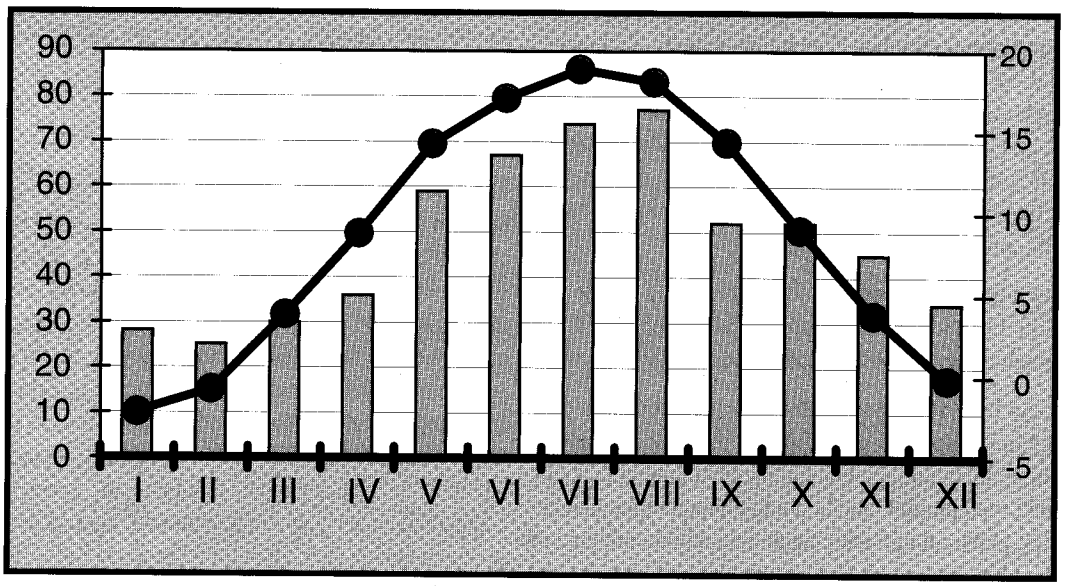
[1)] t_{min} = *-0.1°C and less* [2)] t_{max} = *25°C and more*

Regarding the town's altitude, Bučovice ranks with normally to weakly watered places of our country with on average 579mm precipitation amounts per year, of which 365mm fall in the warm and 214mm in the cold part of the year. The highest rainfalls are most frequently recorded in August, the lowest precipitation amounts fall on February. There are 123.1 days with rainfall in Bučovice, most frequent in March and November, and in the warm part of the year then in September. Bučovice and its surroundings have 25.3 days with snow in a year, of which the first ones arrive on average on 19 November and the last ones on 27 March. Days with snow cover amount to on average 44.2.

2.6 Water

Bučovice is situated on the Litava River, the left tributary of the Svratka River, springing in the Chřiby Highland, 19 km eastwards of Bučovice and opening into the Svratka R. at Židlochovice, 29 km south-westwards of Bučovice. The Litava River enters Bučovice from the east, passing the southern part of the town at a section of 2km, and continuing further on to the west. Its catchment area in Bučovice is 161km² and the

Graph 1: Climogram of temperature course (connecting line) and precipitation amounts (columns) in Bučovice



long-term mean flow rate amounts to 0.39 $m^3.sec^{-1}$. The river is classified in the category of water courses important for water management. Above Bučovice, it is classified as a water course with water of the 3rd quality class, i.e. with polluted water; below Bučovice, it is classified as a water course with water of the 4th quality class, i.e. with heavily polluted water. The Litava R. has two affluents in the cadaster of Bučovice, with a watershed area over 5km^2. The affluents are Kloboučka R. and Žlebový potok (Brook).

The regime and reserves of groundwaters are bound to regional hydrogeological units. As to the Quaternary sediments, important for collection are sediments of the Litava River floodplain and low terraces. Groundwaters in the Neogene gravels are bound to deeper positions of gravel sands. The Palaeogene flysh rocks show low reserves of groundwaters and the system of these waters' circulation is shallow. There is a sporadically occurring fissure permeability which is bound to tectonic faults. A reputed medicinal water spring occurs within the town cadaster near a former shooting range.

2.7 Living nature and landscape types

The town of Bučovice is situated in a warm and fertile valley which was cultivated already a long time ago by neolithic farmers. The activity of ancient farmers prevented development of forests and enabled distribution of thermophilic plant species into the heart of the Central-Moravian Carpathians. It was particularly Litava R. valley sides and valleys of the Litava R. tributaries with southern exposure where forest-steppe and steppe communities developed with a number of rare xerothermophytes such as feather-grasses, yellow pheasant's eye, great pasque flower, small pasque flower, burning bush, narrow-leaved inula, ground cherry, etc. A vast complex of broad-leaved forests remained preserved in the southern part of the region.

The present landscape of the Bučovice surroundings is differentiated into two types. The urbanized area is surrounded with the rural landscape of field type with steppe heath, orchards and scattered coppices in the flat hilly land. The southern part is reached by the forest landscape with deciduous and mixed stands and meadow enclaves. The area belongs in three altitudinal vegetation zones at elevations ranging from 215m to 426m. Prevailing is the beech-oak Vegetation zone 2 and communities of the oak Vegetation zone 1 occur in groups on sites exposed to sun. The highest elevations and shaded slopes of the Ždánický les (Forest) belong in the oak-beech Vegetation zone 3.

A major portion of the territory belongs in the range of thermophilic flora of the Pannonian Thermophyte. The southern forested part ranks with the Carpathian Mesophyte.

Although the Bučovice surroundings have been heavily altered due to anthropogenic activities, there is still a number of ecologically valuable steppe heath localities very rich in species, preserved amidst the field landscape, which occur mainly at the places of former extensive pastures, orchards and vineyards. Some of them were declared small-scale protected landscape areas. The town itself has two protected areas whose total acreage is nearly 9 hectares, and there are other three in the close vicinity of Bučovice.

The southern half of the region belongs in the Ždánický les (Forest) national park. Most valuable is its forested portion with still prevailing tree species of the original deciduous species composition – oak, hornbeam, linden, maple, field maple, ash, and beech at higher altitudes and on shady slopes. Nevertheless, even here we can see plantations of non-autochthonous conifers – Norway spruce, pine and larch. Robinia spreads especially along stand margins. The broad-leaved parts boast of colourful grove flora with hairy sedge, lily of the valley, wood melic, sweet scented woodruff, lungwort, Salomon's seal, cowslip primrose, wood anemone, herb Paris, bitter peavine, comfrey, European wood sanicle, sporadically also with february daphne, listera, etc. One of bird species under special protection nesting in the region is golden oriole.

In addition to the areas under special protection, there are several other ecologically important landscape segments in the surroundings of Bučovice such as the steppe heath on the slopes of Výrová north of the town, and a forest park situated between the cemetery and school buildings, distinguished by extremely diverse tree species composition and by the occurrence of many nesting bird species such as icterine warbler, black-headed warbler and great spotted woodpecker. A large remainder of wetlands is at the south-eastern town limits with nesting birds being lapwing and river plover. Adjacent ponds surrounded with sizeable willows represent a unique locality for reproduction of amphibians.

Marginal urbanized areas are characterized by a relatively large number of gardens and orchards. The central part has only few grown-up ornamental trees such as horse chestnut, silver birch, etc. A geometrically designed garden of 1.7 ha in size adhering to the western face of the chateau was reconstructed at the beginning of the 1960s (Fig. 3). Its most conspicuous elements are regularly trimmed stands of box and currants, which enclose plantations of northern white cedars, cypresses and trimmed hornbeams. The chateau itself has become a nesting place for common falcon and for a large colony of swifts.

2.8 Natural risks

Town's history mentions a winter flood from sudden snow thaw in 1855 when water flooded the whole surroundings of the castle. Other floods were recorded in 1865 and 1879. Floods in Bučovice and Vícemilice were partly contributed to also by shallow groundwaters which were rising up to the surface after heavy rains. Steep slopes of the Litenčická pahorkatina (Hilly land) descending into the Litava R. valley were in the past exposed to gully erosion and at some places also to slides. Gully terrains formed by deep ravines are in the Litenčická pahorkatina (Hilly land) overgrown with vegetation, mostly with robinias and bushes. Immediately above the town, in the forest on the slope Kalvárie, there are

Fig. 3 - Palace gardens (Photo A. Vaishar)

three deep gullies (Fig. 4). The ravines deep up to 8 m with steep slopes at the head are overgrown with bushy vegetation and no erosion activity was observed on their bottoms, covered with a layer of dry leaves and needles (at some places also with communal waste). The gullies end at the slope foot near garden hedges or in the vicinity of roads running along the foothill. The last of the gullies, situated at the utmost west, came into existence probably by widening a hollowed-out farm track. The stabilized condition of gullies relates to a good condition of the surrounding forest. It is a mixed forest with well developed shrub and herb layers and with a capacity to retain superfluous rain water. It is therefore a town's concern to maintain the forest and preserve its good condition for the future.

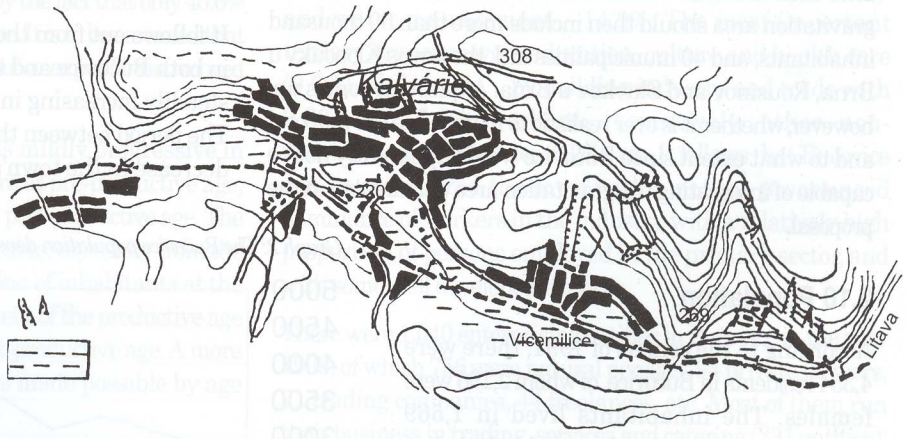
Slide slopes have not been observed in the immediate vicinity of the town. However, they can be seen eastwards of Bučovice, for example on the slopes of the Litenčická pahorkatina (Hilly land) in the Litava R. valley between Nevojice and Nesovice, in the area of the national nature reserve Malhotky. They show in a typical „bulging" relief which develops by sliding of the weathered layer of sandstones and claystones. It is therefore necessary to pay attention to places where the sequence of individual rock layers is disturbed during construction works. This happened during the construction of garages beneath the slopes north of town and happens at the present time east of Bučovice, at the foot of steep slopes where new sports grounds are being built.

The Litava River regulation and deepening of the river bed reduced the risk of floods because the new one which is up to 5m deep has a considerable capacity to stand high waters. However, the flood hazard has not been entirely eliminated by the measure.

2.9 Central importance

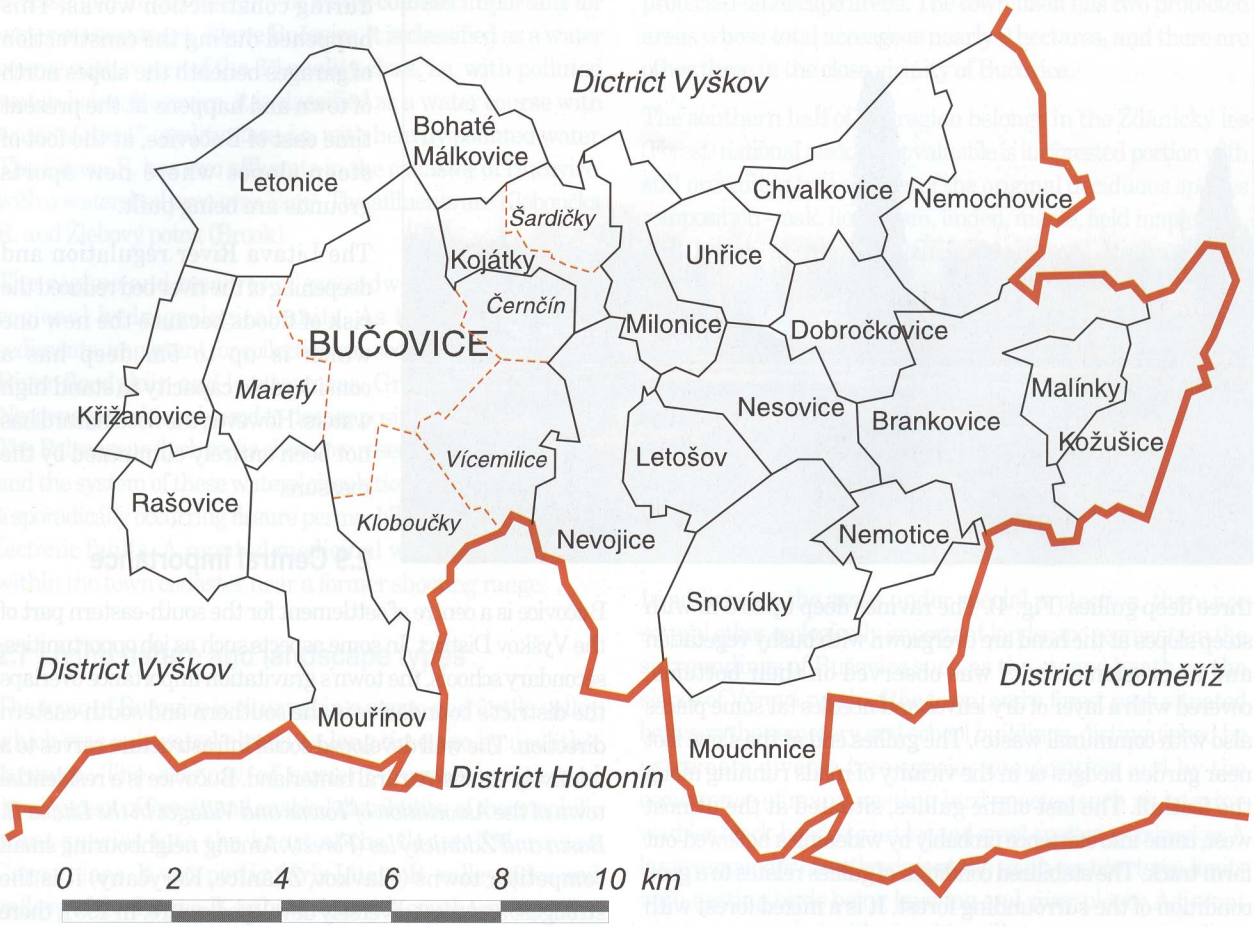
Bučovice is a centre of settlement for the south-eastern part of the Vyškov District. In some aspects such as job opportunities, secondary schools, the town's gravitation importance overlaps the district's boundaries in the southern and south-eastern direction. The well developed social infrastructure serves to a relatively extensive rural hinterland. Bučovice is a residential town of the *Association of Towns and Villages in the Litava R. Basin and Ždánický les (Forest)*. Among neighbouring small competitor towns (Slavkov, Ždánice, Koryčany) it is the strongest and most diversely developed centre. In 1991, there were 2,273 economically active persons commuting to Bučovice. The gravitation area of Bučovice as an appointed authority of state administration includes other 18

Fig. 4: Natural risks (Drawing M. Hrádek)



Slopes of the Litenčická pahorkatina (Upland) steeply rise above the northern edge of Bučovice with the Ždánický les (Forest) slowly rising towards the south. The steep slopes are furrowed up by rills of gullies due to the activity of rainwaters; there are shallow underground waters in the Litava River floodplain, which put into flood danger cellars of lower-situated houses in Bučovice and Vícemilice.
Explanatory notes: 1 - gullies; 2 - occurrence of shallow underground waters

Fig. 5: Province of the Bučovice Town Council as an appointed authority of state administration (Drawing B. Trávníček)



municipalities (Fig. 5) in addition to the integrated seats. According to the draft concept of administrative organization of the country, Bučovice should become one of centres onto which responsibilities will be transferred of district authorities after their activities will have been terminated. The Bučovice gravitation area should then include more than 50 thousand inhabitants, and 40 municipalities incl. the towns Klobouky u Brna, Rousínov and Slavkov u Brna. A question comes up, however, whether it is ever realistic to materialize the proposal and to what extent since Bučovice would apparently not be capable of integrating the gravitation area demarcated in the proposal.

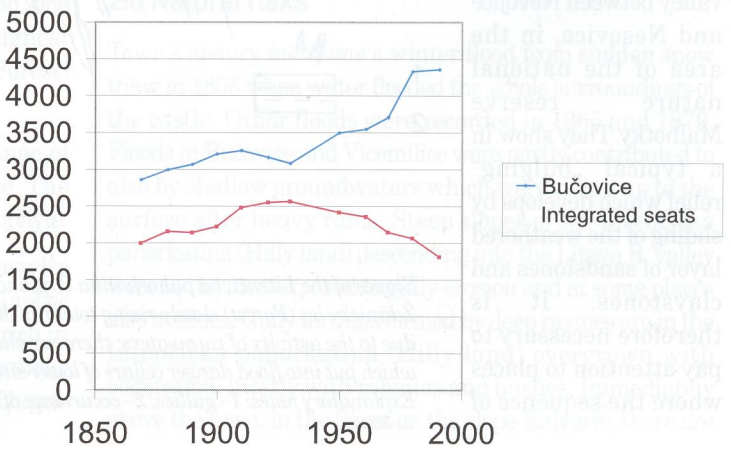
2.10 Population

According to the census of 1991, there were 4,354 residents in Bučovice, of whom 2,196 were females. The inhabitants lived in 1,569 economically independent households. Including the integrated seats (according to the present administrative structure), there were 6,165 persons living in Bučovice. At the beginning of the year 2000, the municipality had 6,389 inhabitants.

The Bučovice population development for the period since the existence of the count is illustrated in the following graph which presents separately data for the town itself and separately data for the integrated seats Černčín, Kloboučky, Marefy and Vícemilice.

It follows out from the graph that the population number in both Bučovice and the integrated seats was slightly but steadily increasing in the second half of the 19th century. The period between the years 1910 and 1930 shows a mild decrease in the town's population while the surrounding

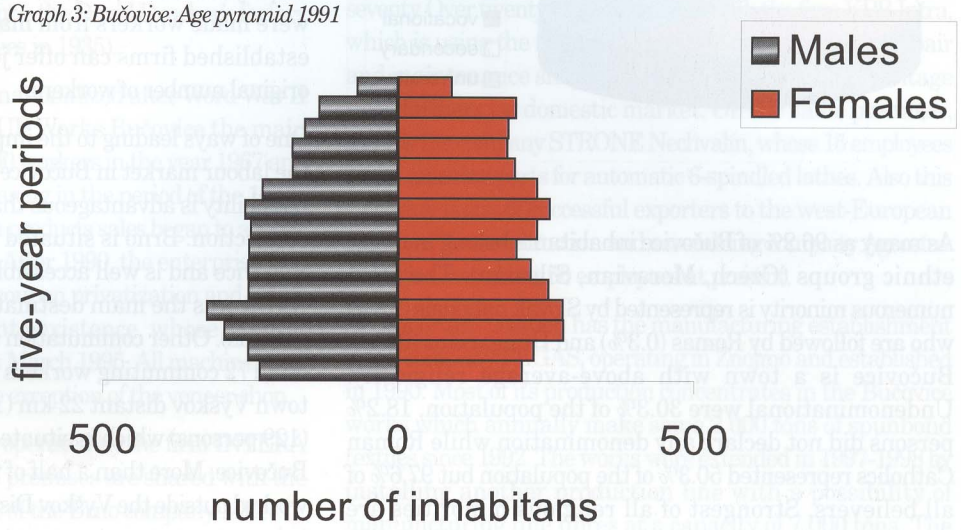
Graph 2: The Bučovice population development in 1869-1991



seats were still growing and their total population nearly reached the number of inhabitants in the town Bučovice itself. A principal turn in the population development arrived after the year 1950 when the number of town inhabitants rapidly grew until the year 1980 while the number of inhabitants in the integrated seats was steadily decreasing, most probably also as a result of migration of their inhabitants into newly built flats in the town. The period 1980-1991 recorded a stagnation of the town Bučovice and the on-going decrease in the population number of neighbouring seats.

In the period of five years 1994-1998, there were 335 new births and 320 deaths in Bučovice. This means that the town recorded a natural increment of 2.2‰. The positive balance is contributed to by the years 1994 and 1995 while the last three years of the period under study represent a loss in terms of the natural movement. In the same period of time, there were 651 persons newly moving to Bučovice and only 544 inhabitants moving from Bučovice elsewhere, which indicates a relatively large migration increment of 15.8‰. In general terms, the town population increased by a total of 122 persons in the 5-year period, which means by 18‰, result to the increase being particularly the migration attractiveness of Bučovice. However, a lively migration in the entire second half of the 20th century is corroborated also by the fact that only 45.6% of residents in Bučovice were born there. It is to be assumed that a considerable portion of the existing Bučovice population moved in here from the close surroundings.

Graph 3: Bučovice: Age pyramid 1991



The population's age structure was mildly progressive in 19913), when 21.5% inhabitants were at pre-productive age, 58.4% at productive age and 20.1% at post-productive age. The age structure in 1998 was less favourable, especially from the viewpoint of the decreasing proportion of inhabitants at the pre-productive age (18.3%) to the benefit of the productive age (63.2%) so far. 18.5% were at the post-productive age. A more detailed analysis of the situation is made possible by age pyramid.

In 1991, the age pyramid showed that the most numerous generation is that of 15-19 years of age. All five-year periods since the 1970s show steadily decreasing numbers of newly born children. Another maximum of population numbers exhibits the age group of 40-44 years. The female component of the population began to permanently overtop the male component from the age of approximately 45 years. Strange is the fact that the number of females at the age from 55 to 70 years is increasing in each 5-year group while the number of males in the same age groups gradually falls down. The Bučovice age pyramid is remarkable also by the fact that the numbers of inhabitants in the respective 5-year age groups are relatively very evenly distributed up to the age of 70 years. Especially the age pyramid of females is much more even than in other towns.

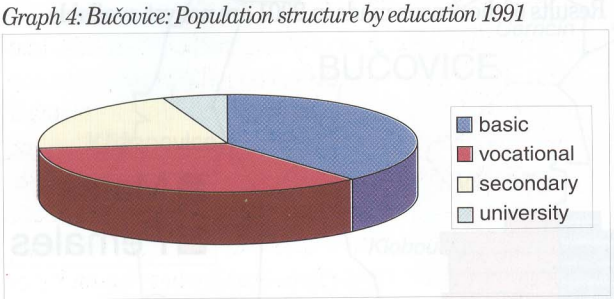
3) The last population census in the then Czechoslovakia. Results of the census made in 2001 are not yet available.

Although the employment structure of Bučovice in 1991 indicates the first place occupied by industry – 39.5%, the rate is not so high as in other small towns. High employment rates were in agriculture – 11.3%, and together with forestry and water management – 14.9%. The most important tertiary branches were education, culture and health care (9.6%), followed by building industry and trade with 9.0% and 7.8% workers, respectively, other non-manufacturing industries (6.2%), etc. It follows that Bučovice can be considered the town with a not too pronounced dominance of workers in the industry, with a relatively high proportion of persons employed in the primary sector, and with some well developed services.

There were 1,040 enterprising entities in Bučovice in the year 1998, of which 756 were natural persons, 94 private farmers, 71 trading companies, 44 freelances, etc. Most of them run their business in trading, services and catering (331 entities), in industries (168 entities), building industry (148 entities), other business services (real estates, finance, services for entrepreneurs – 135 entities), agriculture, forestry and fisheries (116 entities), etc. The standard of enterprising in Bučovice can be considered relatively high and diversified in terms of businesses. Private entrepreneurs have become one of the most important social groups in the town.

The population structure by education is characterized by high proportions of persons on both ends of the range. The greatest percentage (38.5%) in 1991 was that of inhabitants with only basic education the reason being high numbers of workers in the primary sector and the localization of industries with not too high demands on qualification. There were 35.2% of skilled workers over 15 years of age, 20.8% persons with secondary education, and 5.5% persons with the university degree.

Graph 4: Bučovice: Population structure by education 1991



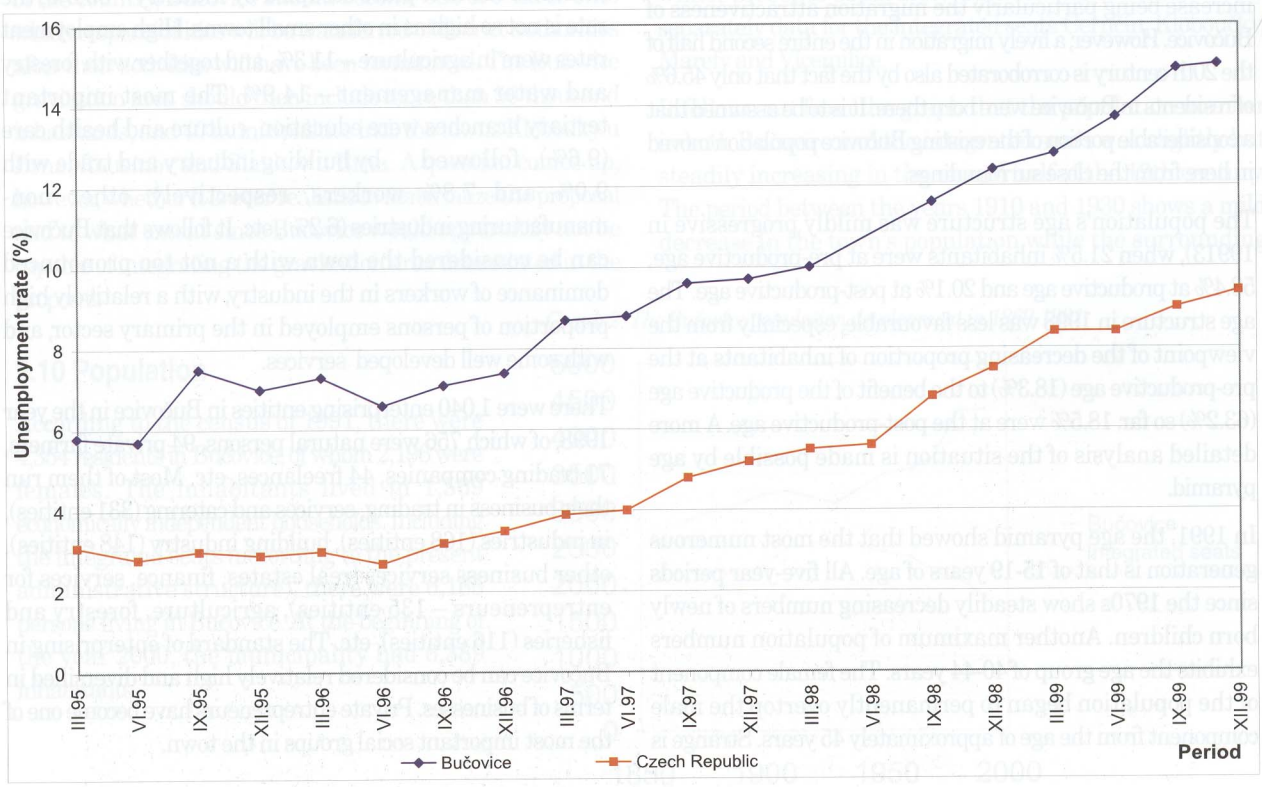
As many as 96.2% of Bučovice inhabitants belong in major ethnic groups (Czech, Moravian, Silesian). The most numerous minority is represented by Slovak nationals (2.9%) who are followed by Romas (0.3%) and Hungarians (0.3%). Bučovice is a town with above-average religiosity. Undenominational were 30.3% of the population, 18.2% persons did not declare any denomination while Roman Catholics represented 50.3% of the population but 97.6% of all believers. Strongest of all religious minorities are Evangelics (1.2% of believers) and members of the Czechoslovak-Hussite church (0.7% of believers).

The Bučovice area has the highest unemployment in the Vyškov District, which exceeds 20% at the eastern margin of the subregion and falls to 10% in some municipalities in the west according to local conditions. The number of unemployed persons in Bučovice in November 1999 amounted to 570 which corresponds to an unemployment rate of 14.97%.

The increasing unemployment rate in the town was doubtlessly affected by the close-down of the once dominant enterprise UP Bučovice, which had approximately 1,500 employees before the year 1990. Nevertheless, redundant were made workers from many other companies. Newly established firms can offer jobs to only a fraction of the original number of workers.

One of ways leading to the improvement of the situation on the labour market in Bučovice is commutation to Brno. The possibility is advantageous thanks to good railway and bus connection. Brno is situated at a distance of 37 km from Bučovice and is well accessible by train, bus or car; this is why it was the main destination as early as in 1991 (420 persons). Other commutation outflows with a total number of 1,172 commuting workers were directed to the district town Vyškov distant 22 km (158 persons), and to Slavkov (129 persons) which is situated at a distance of 11 km from Bučovice. More than a half of the commuters (597 persons) worked outside the Vyškov District. The trends are supposed to be same or even stronger at the present time.

Graph 5: Development of unemployment rate in Bučovice for the period 1995-1999 (Labour Office Vyškov, 1999)



2.11 Manufacturing activities

Dominating industry at the very beginnings of industrial production in Bučovice was wool industry. Fourteen weaving mills provided jobs for up to two thousand workers. The local textile industry experienced a crisis in the 1870s due to the introduction of new high-performance machines which could not be kept pace with by manufactures in Bučovice. The production was transferred to Brno. In 1894, the firm David Drucker was founded, which processed timber and manufactured wooden products and furniture. The company chose real estates between the town core and the railway station. After the constitution of the Czechoslovak Republic, Bučovice remained a town of tradesmen and farmers with only one big industrial establishment – the David Drucker's factory for wooden goods (916 employees in 1935).

The firm David Drucker was nationalized after Word War II and gave rise to Associated UP Works Bučovice the main factory of which employed 1,100 workers in the year 1967 and the number was further increasing in the period of the 1970s and 1980s. First problems with products sales began to appear at the beginning of the 1980s. After 1990, the enterprise was privatized in the first wave of coupon privatization and a new joint stock company came into existence, whose general assembly agreed liquidation in March 1995. All machines and equipments were sold with the exception of the veneer shop.

The existing veneer factory is operated by the firm INTERA wood with 50 employees. The premises are shared with the manufacturing establishment of the Brno company MERCI, which makes laboratory furniture. More than a hundred workers are employed by the firm Čechoplast making doors and windows of plastic materials meant particularly for export to Germany. Nearby we shall find the firm Spektrum 5, KOVO-DŘEVO whose 25 employees manufacture pallets, frames and foil doors. The company WOOD parket, arised through the transformation of the Bučovice branch of South-Moravian Timber Works and deals with the processing of broad-leaved lumber and with the manufacture of floorings. The number of workers increased during the 1990s from 120 to 140, which was also contributed to by the fact that a half of the production is exported to EU countries.

Newly founded in 1992 was the company DINA-HITEX, that makes medical textiles, mostly exported to Poland, Germany and Lithunia. The number of employees amounts to about seventy. Over twenty employees work with the firm KPB Intra, which is using the former premises of farm machines repair and maintenance shop. The company makes high-voltage transformers for domestic market. On the same premises, there is the company STRONE Nechvalín, whose 15 employees make machine parts for automatic 6-spindled lathes. Also this company is one of successful exporters to the west-European territory. The construction and assembling company Agrostav Bučovice, has about 50 employees at present.

An important position has the manufacturing establishment of the company PEGAS, operating in Znojmo and established in 1990. Most of its production concentrates in the Bučovice works which annually make some 2,000 tons of spunbond textiles since 1992. The works were extended in 1997-1998 by installing another production line with a possibility of manufacturing fine fibres at a capacity of 7,000 tons. The company employs 130 workers.

Fig. 6: NAREX Bučovice (Photo A. Vaishar)

The very beginnings of the present joint stock company NAREX Bučovice (Fig. 6) date back to the year 1958. The company makes nut and tube threading machines and tools of which about 40% are exported to the west-European countries. The number of employees was in recent years reduced from 190 in 1995 to a present total of 110. The opposite area is used by the firm OTECO CZ, (40 employees) which was established in 1992 and makes pressure blasting equipment to be used at surface finish of various segments. A part of the production is exported. The firm AZ ELEKTRO resides near the town centre and came into existence in 1991. It makes switchboards and offers also electric installations. Its labour force is 27 employees. The company BETAKOM with 25 workers makes frankotypes for banknotes, vaults and their equipment, mainly for customers from EU countries.

The company KORLAN runs a confectioner's trade. Since its foundation in 1996 the number of employees increased from 40 to 80. A slaughter house operated by the company Bajer a spol. was put into operation in 1984 and its labour force is 135 workers. In Marefy we have to mention the agricultural enterprise PROAGRO, Slavkov Feed Mixtures with a Belgian partner and 30 workers, and the company SCHALTTECHNIK-VERTRIEB-AUSTERLITZ (since 1999) – manufacturing electric distributing and switching equipments, whose labour force is about twenty.

Marefy used to be in the past a centre of agricultural production for the town and surroundings (Cooperative farm). The farm later split into two entities: PROAGRO Marefy and EB Klas Vícemilice. The first of them – PROAGRO was established in 1992 and farms on its own and rented agricultural land of 670 hectares of which a greater portion is arable land. Main crops are cereals (wheat and oats - on 390 ha), poppy, peas and rape. The majority of customer firms reside in the region. Apart from the agricultural activities, some employees of a total work force of 35 deal with textile manufacture. Similar characteristics apply also for the company EB Klas whose acreage of cultivated farm land is smaller and the number of employees lower. In addition to current farm works the company runs a whole range of other activities (repairs of farm machinery, trading activities, cabinet-making, blacksmith's and locksmith's works).

Animal production is not too extensive in Bučovice at the present time. Animals are kept only by several private farmers. The most important one resides in Vícemilice and keeps pigs and beef cattle. Production of other small farmers is mainly meant for individual consumption.

2.12 Transport

Bučovice has a favourable position for transport. The town is situated on the old Hungarian road which is today called the Class 1 communication I/50 Prague - Brno - Slovak border, incorporated in the international road network as speedway E 50 which crosses the Class 2 Vyškov - Bučovice - Ždánice - Archlebov (with the continuation to Kyjov). Passage rate of the speedway I/50 increased by 25% since the year 1990 and today is reaching 9.5 thousand vehicles per 24 hours, of which 25% are trucks.

The town's location in the railway network is also advantageous. Bučovice is situated on the 2-rail track Brno - Veselí nad Moravou – Vlárský průsmyk ((Pass) – Slovak border (the so called Vlárská dráha track). The loading of the track was relatively high until recently. The railway's significance fell down after Czechoslovakia split into two independent countries. The track is meant for express trains and Bučovice is one of express train stops. Trains ensure a satisfactory direct connection with surrounding centres – Brno, Kyjov, Slavkov, Veselí nad Moravou and Kunovice. The town is also a cargo railway station in which over 150 thousand tons freight used to be unloaded and loaded before the start of transformation.

Bučovice is a local traffic junction for coach transport. There are 12 coach lines passing the town and other 8 lines have here either their starting points or terminals. On working days, Bučovice is served by more than 100 pairs of bus connections. With the exception of Marefy which lies on the railway track and on the road No. 50, transport services available to the integrated seats are markedly worse. This is why an introduction is being considered of public transport which would connect the integrated seats with Bučovice by means of a small coach.

2.13 Technical infrastructure

The town has a water supply system which also covers the integrated seats. Source of drinking water for the municipal water supply is the Opatovice dam lake. Water quality is satisfactory. Public sewage system is still incomplete. The section to be finalized is a sewage collector for the left-bank part of the town within the space of barracks. The integrated seats of Černčín, Marefy and Kloboučky have only rainwater channeling system.

The town operates two sewage water treatment plants of which the older one does not meet present ecological requirements any more. The new plant was put into operation in 1995 and works on the mechanical-biological principle with fine-bubble aeration and sludge stabilization. However, its capacity is not used to maximum at the present time since it is up to now only receiving inputs from the right bank of the Litava R. and from the town district of Vícemilice.

Introduction of gas in Bučovice and other associated municipalities was accomplished in 1998. As many as about 40% flats are gas-heated and about the same number is heated by electricity (particularly apartment houses); the remaining 20% make use of solid fuels. The company NAREX operates a boiler house of its own, burning residual fuel oil and being equipped with separators of noxious substances.

Collection of solid communal waste which is deposited in the central landfill at Kozlany is ensured by the company Respono, a.s. Vyškov. In order to improve the quality of services provided in the sphere of waste management a

garbage collection yard started to be operated, which offers free disposal of hazardous, recyclable (paper, textiles, glass, plastic materials, iron scrap, metals) and residual (mainly bulky - furniture, wood) wastes, tyres and demolition waste.

The local telephone network was refurbished in 1997 with the analogue switchboard being replaced with a digital one. In March 2001, there was a total of 968 private home telephone stations, 223 stations of institutions and 40 fax connections; in the integrated seats there were further 329 private home, 36 institutional and 3 fax stations. This means that about 83% of households are connected to telephone. Signal coverage for the network of mobile telephones is good. Larger problems appear in connexion with the TV signal whose quality is poor in the major part of the town territory. This was the main reason to start assembly of cable TV in mid-1999, which provides the reception of 13 programs including satellite programs and serves to broadcast local news, too.

The town operates 18km of local roads. A local technical service company looks after town appearance, cleaning of public open grounds, town greenery, maintains the town lighting system and streets.

2.14 Tertiary

The town has a supermarket Renta operated by the consumer cooperative Coop Jednota and a wholesale shop Bazo. Retail shops are concentrated along the main passage road, in the main square and along the connecting street between the square and the railway station. Housing quarters have smaller grocery shops with additional assortment of home chemistry and cosmetics. Specialized shops can be found next to common shops with industrial goods. Regarding the leading industry in the town, there is a number of facilities selling furniture and other wooden products. There are also some specialized shops selling computers, mobile telephones, audio-video, weapons, etc. Some shops are run by entrepreneurs in manufacturing services. Although the competition of hypermarkets and Asiatic kiosks operated in Brno is severe, the retail assortment of goods in Bučovice has been still kept full.

Personal services to inhabitants are dominated by hair-dressers with cosmetic salons and other related services. Trades providing cleaner's, dry-cleaner's and repair services are not many. In contrast, there is a great lot of trades offering services relating to building and construction. Nearly ten companies runs various kinds of motor-car business. Other services in Bučovice include a real estate company, photographer's, travel agency and solicitors', print house, design office, accounting and financial counselling, etc. Financial operations can be made through the subsidiaries of the banking houses Česká spořitelna, Komerční banka (with an automatic teller machine), and Investiční a poštovní banka.

Ten catering facilities encompass the entire range of the industry. Demand is saturated but all existing enterprises are viable. Accommodation capacity of the town is above average (with nearly 150 beds – hotel, motel and private boarding houses) and is often used also by transit drivers heading for Slovakia.

Education system in Bučovice is represented by three stages. There are six kindergartens of which three right in Bučovice and three in the integrated seats. A 2-class primary school with 30 pupils is in Vícemilice. Two big basic schools form a complex with the gym, school canteen and outdoor sports

Fig. 7: Bučovice – The Grammar School (Photo A. Vaishar)

grounds. A special ESN school had 41 pupils in four classes in the school year 2000/2001.

The Bučovice Gymnasium (Fig. 7) will commemorate a 100 year anniversary in 2002. In the school year 1999/2000 it had 300 students in 10 classes. Another secondary school is college of commerce with a student hostel. Students commute from relatively distant places: in the school year 1999/2000 there were 160 of them from the Vyškov district, other from even more distant places their number totalling at 261.

The basic school of arts offers special lines of music, dancing and graphic arts. Non-traditional is the activity of a children brass band which occasionally performs with girls from the class of dancing. The House of Children and Youth offers activities also for groups of pre-school children and adults.

Health care services are mainly situated in a poly-clinic facility built and owned by the town. In addition to emergency medical service there are also surgeries of general practitioners and dentists, paediatry and gynecology, consulting rooms of several specialists, a pharmacy, and eye optic's shop. Several doctors run their practices in private facilities, one general practitioner and internal specialist are also in the house of seniors. The hospital hinterland is not unambiguous and splits also to the district town of Vyškov, Kyjov and Brno.

Fig. 8: House for seniors (Photo A. Vaishar)

Social services provided by the town include a house for seniors with 45 apartments, which was put into operation at the beginning of 1996 (Fig. 8). Another social welfare facility is the old peoples' house with 15 self-sufficient seniors and community care services.

Cultural activities concentrate in the chateau (museum) and in the Catholic House. The chateau has opened to public several Renaissance rooms and a chapel. The town museum operates a regional exposition of local history and geography and annually holds three to four exhibitions of paintings and borrowed collections. The Union of Catholic House Friends organizes cultural events and its lecturing activities are extensive. Young people meet at disco parties held in the former Sokol Hall. At the cinema Brigáda with up to four performances in the week according to the season there is a film club. The municipal council issues the quaterly Bučovice Bulletin to inform citizens of current events and town news. The town library in Bučovice has about 33 400 volumes and 1 200 readers of whom nearly 40% are children and young people. Local cable TV has launched its broadcasting.

The so far largest sports ground – a grassed football stadium with tennis courts adjacent to the chateau will have to be closed down in connexion with the construction of a highway bypass of the town. A new sports ground (two footbal playgrounds and tennis courts) is to be built in the locality U Hájku in place of the motor-cross track whose operation was stopped in 1999. After the baseball team TJ Bučovice proceeded to the 1st league, a playground for this sport is being built on the premises of basic schools. A beach-volleyball playground is situated at the open-air swimming-pool on the Kloboučka River. There is no stadium for winter sports in the town, the

former outdoor skating ground near the Litava R. bank has got dilapidated.

The Bučovice sports association puts together about 400 members in six groups. The most agile group in the organization Sokol Bučovice is the group of sports gymnastics whose team of men made the way into the 1st league. The football club FC Bučovice has 7 teams. The club of rocket modellers RMK Bučovice belongs in the best Czech teams. Scouting has a long tradition in the town with the very first scouts' group being founded in the year 1920. A part of the scouts' organization is the Junák group for children, which recorded a certain renaissance after the year 1989.

The union of honey-bee breeders in the town has a tradition older than 100 years; other organizations are cynologists, game managers, fishers and gardeners. Activities of Amavet club associate people working in their leisure time in the spheres of science, culture, technique and ecology. The club is a member of the international movement residing in Paris. There is also a voluntary association Volný čas (Leisure Time) Bučovice which groups school friends and financially supports school events. The union of voluntary firemen in Bučovice celebrated the 125th anniversary of its existence in the year 2000. Similar unions exist also in the integrated seats where they organize nearly all cultural events.

2.15 Garrison

Life in the town is connected with the existence of the 74th Rescue and Training Base of Civil Defense of the Czech Republic, which operates within the regional rescue system including a possible breakdown of the nuclear power station at Dukovany since Bučovice is the first town behind the zone of immediate danger. The regiment was helping to rescue people's lives and to liquidate consequences of floods in Moravia and eastern Bohemia in the years 1997 and 1998, respectively. In 1999, it provided assistance also in abroad – for example in Kosovo, Albania and Turkey. The garrison activities represent a supra-local and in some aspects even supra-regional function of Bučovice.

2.16 Tourism

The main town's tourist catcher is the chateau whose construction was made to order of the then owner of the Bučovice manor Jan Šembera Černohorský of Bučovice in the second half of the 16th century in the Renaissance style according to the plans of architect J. Strada. The Chateau is a four-winged building of three storeys with arcade galleries surrounded with a Renaissance garden and was subjected together with the garden to a number of modifications in the course of its history. Nevertheless, it is still being considered the purest Renaissance structure outside Italy in terms of the preserved original architecture with some interiors of high artistic value. The chateau and the garden are once again under reconstruction in these days.

Other monuments in the town include the Church of Assumption of Virgin Maria from the first half of the 17th century in the early Baroque style, the town hall of 1765 in the late Baroque, and the cubistic municipal house of 1913-1914. The former large Jewish community is commemorated only by a Jewish cemetery with tombs originating from the 17th century up to the year 1940.

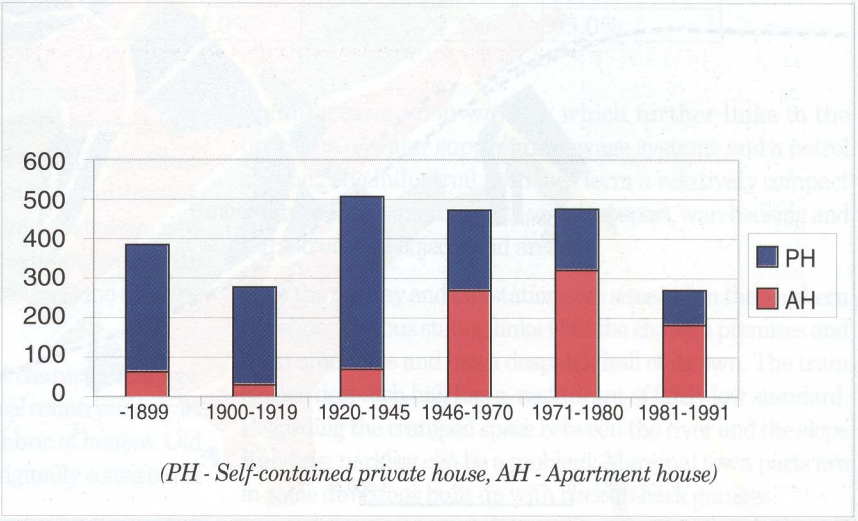
Apart from travelling for knowledge, the town is a good base for excursions into a number of surrounding historical localities (e.g. Austerlitz), for leisure tourism or bike trips. The town intravillan in the south links up with the Natural Park of Ždánický les (Forest) with a great choice of trip opportunities. Marked pathways are easy to follow up to the near Chřiby Mts. The town swimming-pool offers a cooling refreshment in summer seasons.

2.17 Housing

The 1991 census made in Bučovice indicated that there were 2,286 permanently inhabited flats in 1,419 houses, of which 1,347 flats were situated in self-contained houses. The town itself had 1,505 permanently inhabited flats in 706 houses, of which 626 flats (41.6%) were in self-contained houses. The present integrated seats of Černčín, Kloboučky, Marefy and Vícemilice had 616 permanently inhabited flats (29%) in 560 houses, of which 563 flats (91.4%) were in self-contained houses.

As many as 90% of housing resources were privately owned at the time of the census. State possessions were 5.8% with the remainder falling to cooperatives. 187 objects were uninhabited, 109 originally dwelling houses were used for recreation.

Graph 6: Bučovice – Age of housing resources in 1991



(PH - Self-contained private house, AH - Apartment house)

The pre-war Bučovice was mainly a town of one-family houses with the apartment houses being no exception, though. The post-war period preferred housing in blocks of flats but the construction of self-contained private houses was no less important. It must be assumed though that a considerable number of self-contained one-family houses was at that time built in the integrated seats. In addition, a relatively regular building can be stated which culminated in the period between the wars when 21.3% of housing resources in Bučovice were built. Nevertheless, nearly 20% of flats were newly constructed in each of the periods 1945-1970 and 1971-1980. An important portion of flats (16.3%) originates from the 19th century.

As many as 90% of flats were in 1991 built in houses of classic materials - stone and bricks. The second most used material were adobes (6.5% of flats), other building materials such as panels (3.2% of flats), and exceptionally timber (0.2%). The absolute majority of housing facilities (95%) have one or two storeys the rest reaching up to the height of three or four storeys; higher buildings are exception.

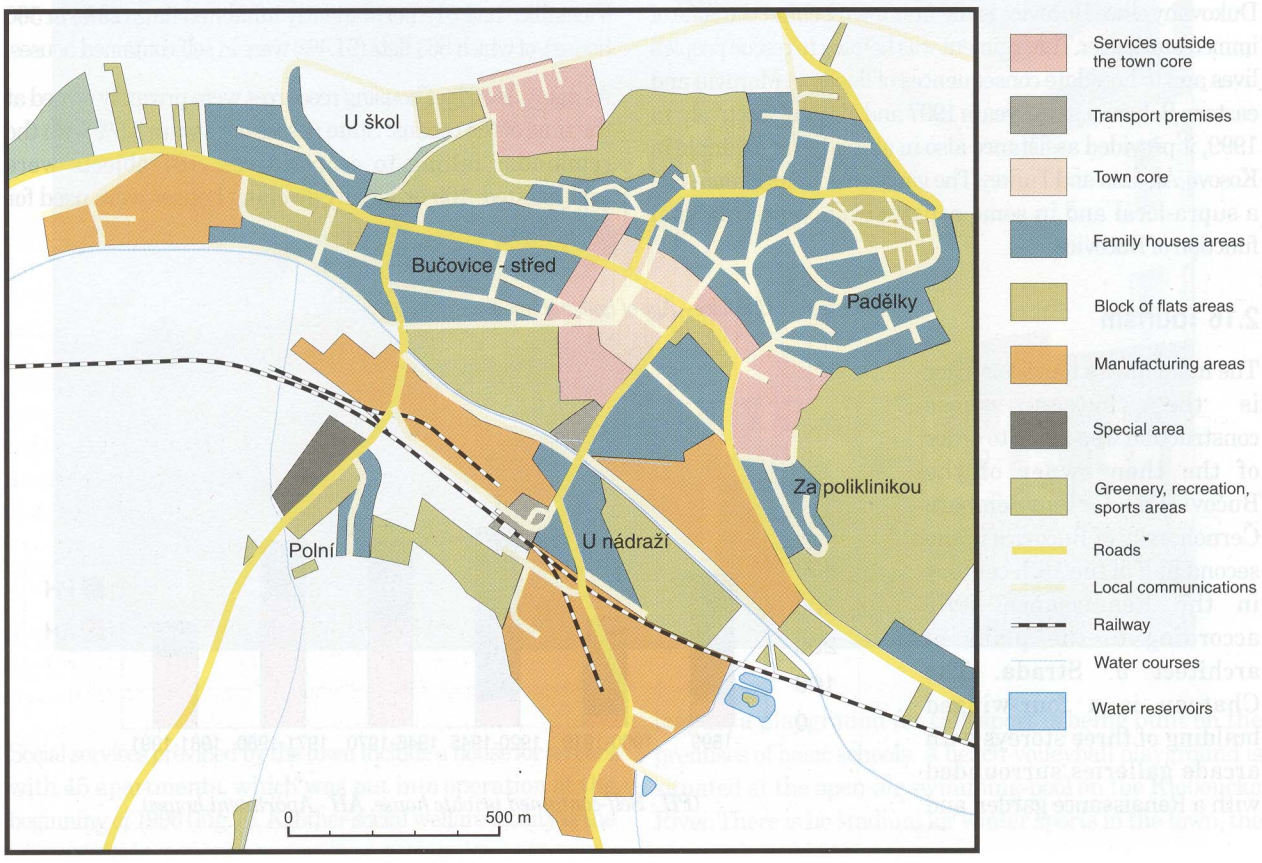
Dwelling area standards were better average with 1.07 inhabitant per a habitable room over 8m2 and 15.88m2 habitable area per an inhabitant. Most frequently occurring were apartments with three rooms but nearly the same number were 2-room flats. The 3-room flat occurred most frequently in apartment blocks while the 2-room flats were most found in the self-contained family houses, which is a rather usual phenomenon in the countryside. There was a relatively high percentage (18.5%) of apartments with four and more rooms but these were situated almost exclusively in the family houses. The same applied for 1-room flats (total 11.1%) which occurred more frequently in the family houses.

2.18 Urban fabric

The Bučovice intravillan is modified by the relief and by transition communication lines stretching through the Litava R. valley (Fig. 9). The town core is formed by a regular square rectangular on plane, enclosed by a church on its northern end and by the chateau on its southern end. The characteristic four-edged chateau mass with a tower in each corner dominates the town in spite of the fact that it is situated almost on the valley bottom. The northern face of the square is cut through by the perpendicular busy highway I/50 which means that the church space is separated from the remaining core. The square is surrounded mainly by 2- exceptionally 3-storeyed houses whose groundfloors house shops of various kinds. In the eastern face of the square there are two lanes with other central services. The square mass links up with the motel Arkáda situated right opposite to a new facility providing services.

In the church vicinity, the old housing resources combine with the architecture of socialism. In front of the church there is a tiny park with several statues, behind the church there is a little chapel. In addition, there is a multi-purpose building of cinema with a caffee, video shop and subsidiary of the Živnostenské spotřební a úvěrové družstvo. Opposite to the

Fig. 9: Urban fabric in Bučovice (Drawing P. Hlavinková)



object is a building with the shopping centre, typical of the 1970s or 1980s. Today we shall find here a range of private shops and services. The complex combines with the corner object of the Catholic House.

Schools concentrate in three main areas. The college of commerce is situated in an inexpressive object in the sub-central position. The Gymnasium with a park-type garden can be found in the dominating location on the northern slope of the valley. A part of the garden is taken up by a kindergarten. Behind the Gymnasium building there is a building of the special ESN school and basic school of arts. A special purpose area of two basic schools with the infrastructure can be found above the town and is separated from the town by a coppice.

Administration buildings are untypically aside the town centre such as the municipal council, or even on its far end such as the financial bureau and labour office in the building of the housing association Nový život. Medical care facilities are concentrated in the excentrically located polyclinic. The space above the town centre is dominated by a new attractive building of the house for seniors.

The Bučovice intravillan consists of several basic units of settlement which must be further added the intravillans of administratively associated seats. The entire structure is presented in the following table (census of 1991; administrative situation of the year 2000):

typical single-storey houses of which some were later extended. This housing area also includes sporadic facilities of non-dwelling nature including manufacturing facilities and some manufacturing shops can also be found in some family houses.

Bučovice does not have developed any typical residential quarter of villas from the period between the wars. Architecture of the socialistic period is represented by back-to-back houses or by detached houses which often have flat roofs. Numerous one-family houses were built after the year 1990 and are coming into existence now - usually signalling owners of higher social status. The neighbourhood units arise in the articulated terrain on the north-eastern and south-western town borders.

The town has a relatively diverse industrial base in terms of branches and size of companies. There are several identifiable industrial zones and individual objects. The most important industrial premises are bound to the railway. The largest of them is the property of the former UP works which is today used by several smaller private firms. The area links up with the premises of several wood-processing, machine and textile enterprises in the south. In the west at the railway there are premises operated by ČSAD, a subsidiary of the company Merci and infrastructure.

On the far western end the town is dominated by premises of the company NAREX with complementary activities while the eastern end is dominated by premises of the company PEGAS

Tab. 4: Bučovice - Basic units of settlement

Unit	Inhabitants	Pre-Productive Age	Productive Age	Houses	Flats	in family houses
Bučovice-Centre	1718	19.1%	53.5%	289	617	39.1%
U škol	991	11.2%	51.9%	156	318	45.9%
Estate Padělky	959	21.8%	54.4%	129	345	33.3%
Za poliklinikou	212	24.5%	53.3%	52	70	74.3%
U nádraží	159	23.3%	56.0	44	55	92.7%
Polní	311	12.5%	57.6%	35	99	20.2%
Černčín	278	25.5%	47.5%	95	102	92.2%
Kloboučky	490	19.6%	51.8%	147	161	95.0%
Marefy	317	31.9%	45.1%	103	113	89.4%
Vícemilice	726	23.8%	51.0%	215	258	93.0%

The character of housing resources in the central part of Bučovice is that of a typical provincial town. There are 2- or 3-storeyed houses in the core with amenities on the groundfloor. Apartment houses occur both solitary and in mini-estates. Older estates of flat blocks still respect street and block, new ones are of a typically loose form. An apartment house with good architecture representing the 1990 scan be found near the town centre (Fig. 10).

The self-contained houses are of different character and age. Some corners in the town resemble a typical countryside style. Broken relief modifies the pattern and fabric of houses. Old streets similarly as the road city limits originally consisted of

manufacturing non-wovens, which further links to the operation of water supply and sewage systems and a petrol station. The industrial premises form a relatively compact industrial zone interlaid with with transport, warehousing and infrastructural objects and areas.

Both the railway and bus stations are situated on the southern direction. The bus station links with the chateau premises and town amenities and has a despatch hall of its own. The train station despatch hall has a restaurant of fairly low standard. Regarding the cramped space between the river and the slope Kalvárie, parking can be a problem. Marginal town parts are in some directions built up with back-to-back garages.

Fig. 10: New flats built in 1990s (Photo P. Hlavinková).

Recreational areas are undersized with respect to the town's importance. Valuable is the chateau garden which links up with sports grounds, football stadium and tennis courts which are however missing any special facilities and have to face a soon close-down. Urban greenery in the inner town is represented by several smaller parks. A garden colony is situated between Bučovice and Vícemilice. The space above the town core has a final touch of coppice situated on the slope Kalvárie, which is further on linked to the town cemetery. A historically valuable locality is the Jewish cemetery.

2.19 Environment

Bučovice is a small town with relatively qualitative habitable environment which is in contrast with the surrounding rural landscape. The most pressing environmental problem is the passage of the main road communication through the intravillan in the west-eastern direction along its entire length. In addition to air-pollution, noise and collision risk the communication represents also a line barrier that splits the town into two parts. The problem will be resolved by building a highway bypass.

Air cleanliness was recently improved by accomplishing the introduction of gas into the town and integrated seats and by installing separators in the NAREX boiler house which burns heavy fuel oil. The major air-pollutor in the town is therefore road traffic.

Problems are in the sphere of water cleanliness. The Litava River is heavily polluted and usually missing riparian stands within the town's territory; its function as a beneficial landscaping element is therefore severy impaired. The putting into operation of a modern sewage water treatment plant in the year 1995 still does not show a 100% effect because the sewage system has not been completed yet and it is not all waste waters which enter the process of purification.

The habitable environment of Bučovice can be considered of good standard. There are no larger estates of apartment houses, a considerable portion of apartments can be found in the self-contained houses with corresponding green areas, particularly in the northern part of the town. The social environment can be considered stabilized with a high level of social control. Nevertheless, the recent economic development can put the social environment stability to jeopardy by means of increased unemployment and hence due to resulting socio-pathological phenomena.

The immediate surroundings of Bučovice can be classified as a landscape severely impacted by anthropogenic activities, with low ecological stability. The Litava R. biocorridor is mostly unfunctional here since the floodplain is converted into arable land up to the bank edge. In contrast, the forest complex of the Ždánický les (Forest) reaching into the southern part exhibits a high up to very high degree of ecological stability and includes a range of functional deciduous forest biocenters of the lower Carpathians.

An improvement of environment quality in Bučovice can be anticipated in connexion with the completion of technical infrastructure and putting into operation of the highway bypass. The town should pay attention to the maintenance and improvement of habitable environment for its inhabitants also with respect to the fact that the potential immigration

activity is expected to grow in the future. The missing permanent vegetation formations in the town's surroundings could be partly eliminated by adding the missing parts of biocorridors and biocenters of the territorial system of ecological stability.

2.20 Prospects

Main comparative advantages of the town include the town's location on the important route from Prague and Brno to Slovakia, the relatively diversely developed economic structure and the undisputable central importance of the town as related to the rural hinterland. A disadvantage is the close-down of the largest industrial enterprise in the town (UP Works) and the slow development of infrastructure in the comparison with Vyškov and partly also Slavkov in the last thirty years.

The liquidation of the UP Works can be used to alter economic structure in Bučovice, whose future would be based on a range of smal and medium-sized private firms operating in several industrial branches. A favourable pre-requisite of this solution is the existing structure of companies in Bučovice, facilities and infrastructure left after the UP works, favourable traffic location and the expected construction of the I/50 highway bypass which would improve the localization attractiveness of the town's industrial section. Based on the present situation it seems appropriate to further develop timber-processing, food, metal working, and building industries, transport activities, manufacturing services, possibly also other industrial branches. The structure can be well combined with the two agricultural enterprises.

The central importance of Bučovice could increase with the expected abolishment of district authorities and transfer of their administrative functions in the region onto so called appointed authorities. In this case, Bučovice would become an important centre of the relatively marginal region one of advantages being the already existing presence of subsidiaries of the financial bureau and labour exchange, and a certain intellectual hinterland based on the existence of educational facilities. A precondition is the maintenance of today existing educational, medical and retail functions and further development of cultural functions. The increase central significance should bring further development of services among other in finance, legal profession and the like. One of decisive issues is to keep mass public transport not only in the Litava R. valley but also in the perpendicular directions to it.

Bučovice has all necessary pre-requisites also for the development of housing functions. Excluded cannot be the dwelling of inhabitants commuting to Brno since the distance is 30 minutes by car and only a bit more by train. A precondition is the creation of suitable habitable environment inclusive social services. Regarding the fact that the space in the Litava R. valley will become ever denser by transport, infrastructural or industrial activities, it would be useful not only to reconstruct the old town quarters but to colonize also the elevated plateau situated north-west of the town, i.e. to colonize the space between Bučovice, Vícemilice and Černčín up to the actual connection of the three seats.

Bučovice has a certain potential to develop tourism which however does not have any chance to become the most important function of the town. After the final reconstruction of the chateau and the chateau garden the town will become attractive also for foreign visitors. Inland guests can then make use of opportunities for leisure outings in the Ždánický les (Forest). A precondition is to maintain or improve the existing infrastructure (e.g. along the planned cycling track) and to create a friendly environs for guests. Apart from this it would also be possible to support the accommodation of transit visitors on their trips to Slovakia or even visitors to fairs and exhibitions held in Brno.

In terms of prospects, an important function of Bučovice consists also in the localization of the regiment specialized in the solution of critical situations of technical and ecological character, whose significance can reach over the state border.

3.Conclusions

Bučovice can be classified a typical town of the group of twelve small Moravian towns in the sense that it does not represent extremes in any of the studied aspects. With its population (without the integrated seats) the town takes up the sixth place, as to the entrepreneurial activities of its inhabitants measured by the number of enterprising subjects per 100 inhabitants it is the fourth place. Parameters of housing resources quality put the town to about an average position in the whole set; technical equipment of apartments is worse, however. In terms of the share of flats in self-contained houses the town occupies the fifth place in the group. These values could suggest a rural character of the town. However, in the conditions of Moravia they rather indicate that Bučovice was impacted by the construction of prefabricated blocks of flats in the socialistic period less than the other towns. Labour market exhibits the third highest unemployment rate in the whole group as a consequence of the liquidation of the most important enterprise with the future prognosis being however more favourable than in the other towns. Bučovice can therefore be considered a certain representative of small Moravian towns although it should be pointed out at this place that each town is specific and some situational aspects may be entirely different.

The future of small Moravian towns can be expected to be considerably differentiated. The polyfunctionally developed centres of the rural hinterland can base their prosperity on services provided to the population of surrounding rural seats and this could also be a good solution for Bučovice. The remaining towns would be left another chance - specialization. It is necessary that the towns would set up their realistic visions which they are prepared to complete. The specialization might consist for example in super-local industrial manufacture, in the localization of special service providing facilities, in the development of recreational or spa functions, in carefully thought cooperation with other surrounding towns, etc. It is nevertheless not probable that this way will be

followed by all these small towns. Some of them will have to face a gradual loss of the urban character a a slow conversion into larger rural seats. A specific category includes small towns in the hinterland of large cities, which can participate in all advantages provided by the large city on the one hand, but put into hazard their own identity.

The development of small Moravian towns will further in the future offer a fascinating picture of the changing reality, successful completion or failures of individual visions, and altering position of the individual towns in the structure of settlement. There are other changes of trends to be anticipated in the nearest future, which can further modify the situation. Other consequences of the transformation of economic and social systems will start to show, the reform of regional administration will reach the micro-regional level. It is also the pressure of the European Union that could start to show - for example in the adoption of some tools of regional policies, and there are going to be conflicts to expect between the inavoidable tendency towards weakening of micro-regions and ruralization of small towns with ever growing trends to seek alternatives to the living in large cities. The realization of the launched trends will be studied at researching the second group of towns, planned for the years 2001-2002.

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THE 5th SLOVAKO-CZECH ACADEMIC SEMINAR IN GEOGRAPHY

Oldřich MIKULÍK, Peter MARIOT

The 5th Slovako-Czech academic seminar in geography was held in the Institute of Geography, Slovak Academy of Sciences in Bratislava on 13 December 2000.

The Seminar was the last event of a block whose goal was to link up with the long-term cooperation from years preceding the split of the common state. We wished not only to gain more information from each other, but to support establishment of new contacts between young experts in particular.

Issues to be gradually discussed in the course of the five years included similarities and differences in the development of the Slovak Republic and Czech Republic (Bratislava 1996), similarities and differences in the development of towns in the two countries (Brno 1997), specific features of the transformation process in hinterlands of large cities (Bratislava 1998), topical aspects of the territorial structure in the Czech Republic and Slovak Republic (Brno 1999), and the final Seminar made an assessment of the knowledge of status and development of socio-economic systems in the two countries at the turn of millenia (Bratislava 2000).

There were 16 papers presented at the last Seminar. The papers of Czech participants were focused on the issue of the Ostrava region. Bohumír Trávníček informed of some aspects of transforming processing industries in the Ostrava region in the period 1989–2000. Politic changes after the year 1989 with subsequent economic reforms markedly impacted nearly all manufacturing industries. The produce of giant works of heavy industries (metallurgy and machine industry) was gradually decreasing due to broken traditional export links with markets in countries of the former Soviet Union and other countries of central and eastern Europe. Transformation of industrial works in the Ostrava region, which has not been accomplished in several key cases, has brought massive slendering in many companies. This consisted mainly in closing down inefficient operations and dismissal of people from work for redundance. Newly coming investors and developers succeeded up to now only in partial filling of the gap; nevertheless, new investments in the region of northern Moravia can be seen a vitally important factor to support its future development.

Miroslava Sikorová presented in her paper an assessment of organizational changes and discussed the issue of employment in the Ostrava-Karviná coal mines after the year 1989. The transformation of mining industry induced by the politic and economic changes in the Czech Republic after the year 1989 severely impacted the largest Czech mining corporation specialized in mining black coal - Ostravsko-karvinské doly (OKD). Towards the end of the 1980s, the OKD employed over 100,000 persons and the proportion of black coal extracted in the Ostrava region amounted to 87% of total black coal extraction in the country. The restructuring of the company in the last ten years meant a reduction of jobs by 80 thousand and coal extraction volume decreased by 40% the changes having had a tremendous impact on the life in the region and contributing to the fact that the region has become one of the most difficult regions in the country. In her paper, M. Sikorová summed up main steps of the restructuring in the OKD, a.s. and discussed to details changes of organizational structure and the issue of employment.

Eva Kallabová informed of impacts of changes induced by the year 1989 on the system of apprentice centres and vocational schools in the Ostrava region. The initial situation of the entire education system in the region was rather complicated in the Ostrava region in the year 1989 and the changes which arrived in the course of the next ten years reflected in the apprentice centres and vocational schools which represented a domain of the pre-November educational policy here. The number of apprentices dropped by 23%, which was connected with massive branch shifts (from mining and metallurgy to services). A correlating problem is taking up jobs by school-leavers where it is exactly the group of „skilled" workers which is prevailing among the registered unemployed school-leavers. Improvement of the situation does not have to do just with the administrative measures but rather with the consistent confrontation of trends in unemployment, economic situation, general acquaintenance and needs of employers.

Jitka Škrabalová made an assessment of the development of environment pollution in the Ostrava-Karviná region. The Ostrava-Karviná conurbation is the largest industrial area in the Czech Republic. Its

tremendous growth dates back to the period after World War II when the produce of heavy industries rapidly increased. Mining in the landscape, together with the developing metallurgy, chemistry and other industrial productions resulted in the high concentration of people and hence in the high environmental load. However, the situation began to slightly improve after 1990. The volume of harmful substances in the atmosphere is gradually decreasing and their concentration starts to approach permitted limits. The descending trend can also be seen in the volume of discharged sewage waters - both industrial and communal. The main reason to the situation is the economic development of the country after the year 1989 when the socialist economy was changed into market economy and the heavy and mining industries were put a gradual damper on. Another, no less important reason, was the gradual introduction into practice of new, more environment-friendly manufacturing technologies.

Barbora Kolibová presented a paper discussing the perception of changes in life-style by the population of the Ostrava region. The interpretation of life-style changes is based on a survey made by us in 1999/2000 with a choiced set of employees from three companies residing in Ostrava, which represent the cardinal and still traditional industrial branches in the region - mining, metallurgy and chemistry. By the survey we wished to capture the shift of life-style in the process of transformation, standard of living, and perception of environment quality. There was no possibility for us to make a comparison in this field with the period prior to the year 1989. A contribution is supposed to be the comparison of different profession groups or that of two different social groups of employed and unemployed persons. The studies are a part of the long-term research focused on the assessment of regional changes of environment in the Ostrava area.

Jana Zapletalová focused her paper on the issue of topical traffic problems in the Ostrava region. Traffic has always been and still is one of key factors for the model region of Ostrava and particularly for its core area. The reconstruction after 1990 greatly altered freight flows and transported volumes. Passenger transport also marked considerable changes which were conditioned both by the decreasing jobs available in the region, and by the preference of cars over mass means of transport in a certain portion of the population. Together with the fact that some lines or connections were not profitable, all this led to their severe reduction or close down. Traffic serviceability of the territory, especially in its marginal parts, was conspicuously changed. The paper dealt with an analysis of the changes.

Antonín Vaishar informed of prospects and visions of small towns in the hinterland of the Ostrava agglomeration. Brušperk is one of small towns in the immediate hinterland of Ostrava and Frýdek Místek. The town without industries and panel blocks of flats offers an interesting alternative of dwelling in the industrial region. Although there is some remote transmission of polluted air from the core of the Ostrava region and the technical infrastructure has not been completed yet, Brušperk has a relatively qualitative and stabilized housing and social environment combined with a fairly good range of services. The town's identity and its cultural background cannot be casted doubt upon. The perspective of Brušperk consists in strengthening the alternativeness of life-style in contrast with other towns in the Ostrava region.

Oldřich Mikulík closed the morning block with his paper discussing possibilities of transboundary cooperation between towns situated in the Ostrava-Katowice conurbation. Research objectives were based on tasks of the project INTERREG-II-C whose part we resolved for the Institut für Länderkunde in Leipzig (Germany). The paper brings an assessment of the rise and changes of state border in this region, a characteristic of the territory and selected five pairs of towns including their social and economic development. An assessment was made of landscape and environment condition, specific features of the 1990s were summed-up together with pros and cons as a basis of conditions and instigations for the development of Czecho-Polish relations in the region. A great portion of the field survey was the public inquiry in which representatives of town authorities from selected towns on respective sides of the border were addressed. The inquiry included three groups of questions: specific features of the region with the emphasis on the politic, economic and social changes after the year 1989/90, status and prospects of transboundary relations and cooperation, and evaluation of the transboundary cooperation.

The afternoon block of papers was opened by Vladimír Ira who informed of transformation processes and intra-urban structure in Bratislava. As a post-socialist city, Bratislava went through a complex of complicated processes over the last ten years, which reflected in the morphological structure of the change and distribution of functions and area use as well as in the transformation of social structure. The character of transformation processes is differentiated in the urban space and this is why five

functional-genetic zones were singled out in the town territory (historical core, internal city, housing estates, residential areas and peripheral zone), in which the demonstration of transformation processes was supposed to differ. In the capital of Slovakia, the transformation was affected by growing tertiary activities and by their spatial concentration in some of its parts. It was particularly towards the end of the 1990s that the impact of international actors (corporations) together with the globalization processes significantly contributed to the dynamic transformation of the city. The most important transformation processes within the intra-urban structure of Bratislava are considered to be tertiarization, commercialization of the town core and internal city in particular, intensification of building inside the internal city, housing estates and peripheral zone, and sacralization in the housing quarters.

Daniel Kollár dealt in his paper with the recreation potential of the Slovak-Austrian borderland. The methodological base of the work is an assessment of selected localization and realization travelling pre-requisites. Taking into consideration both the goal of the paper and the character of the region the pre-conditions used from the group of localization pre-requisites are the natural elements of landscape system, cultural and historical construction monuments and periodically repeated events influencing the development of tourism in the region. The realization pre-requisites of travelling are represented by accommodation, catering, entertainment, sports and recreational facilities and services. The work results in a classification of municipalities into categories from the viewpoint of their recreational potentials and prospects for the development of travelling in this borderland region.

Peter Mariot came on the top of his set of papers dealing with politic geography with a model of the Slovak politic scene introducing an original approach towards the illustration of the structure of politic parties in the Slovak Parliament. On the example of results from four elections he documented changes in the structure and distribution of powers in the Slovak National Council (1990, 1992) and in the National Council of the Slovak Republic (1994, 1998) classifying the politic subjects represented in the Slovak Parliament into four types as follows: dominant (50% votes and more), strong (25 - 49.9% votes), complementary (10.0 - 24.9% votes), and assistant (5.0 - 9.9% votes).

Anton Michálek gave his paper the name „Suicidium - Development and conditions of regions in the Slovak Republic." The contribution aimed at providing the general information about some important characteristics of suicides occurring in Slovakia. The suicides are investigated from the aspect of their development, structures (sex, age, motive and execution), present situation and regional distribution by districts. A greater part of the paper is devoted to seeking dependences between the rate of suicides and the socio-economic situation in the districts. A relevant finding is the fact that the environment-problems in the regions negatively affect the rate of suicides.

František Podhorský -as traditionally- informed about the religioseness of the Slovak population, which according to the general opinion considerably affects the attitude of people to social and politic events. Results from an analysis into the relation of religioseness of the population and their electorial preferences revealed however that it is also other criteria of their decision-making such as social status, nationality, etc. which have a prevailing influence for their decision-making at events such as elections to legislative bodies and local boards of representatives.

Peter Podolák informed of trends, causes and consequences of Slovak population ageing. The main factor in the development of population ageing in Slovakia is the decreasing fertility with the effect of decreasing mortality playing a somewhat inferior role. The process of population ageing in the long-term cross-section was not continual and exhibited both irregularities of the population development and oscillations of the main determinants of ageing, fertility in particular. The demographic ageing of Slovak population deepened in the course of the 1990s, and the population started to age very markedly especially from „the below" of the age pyramid due to the steadily dropping numbers of newly born children. Nevertheless, the ageing also shows from „the above" of the pyramid the fact being conditioned by ever increasing numbers of persons who reach high age. The consequences of population ageing reflect at the demographic, socio-economic and psychological levels.

Vladimír Székely focused his paper on intra-regional disparities - unemployment and its flows in the Trenčín region. He analyzed the time-spatial differentiation of unemployment and its flows (inflow into the register of jobless and outflow from the register of jobless persons) in 9 districts of the Trenčín region in the years 1997-1999. He identified a nearly continual growth in the majority of district unemployment rates with the simultaneous process of extending district disparities with monthly data on the district flows of jobless persons using for the determination of district gross turnover rates of the unemployed. On

the basis of calculation results he reported that the higher gross turnover rates of jobless persons are exhibited by districts with lower unemployment rates from the central part of the Trenčín region (Trenčín, Ilava). Districts with the lower gross turnover rates of jobless persons are at the same time districts with higher unemployment rates originating from the marginal parts of the region.

Ján Szöllós closed the afternoon part of the workshop with his contribution concerning the geographical aspects of using natural gas in the Slovak Republic. Natural gas is at the present time the most important source of energy in Slovakia. Its utilization affects the formation and change of the spatial organization of human society. In addition to electrification which was accomplished in the 1960s, the connection to gas is at the present time a similar phenomenon which affects the regional development. Of all non-renewable resources of energy, rock gas shows the least adverse impact on environment and this is why it is considered to be the fuel for the period of transition until the wider utilization of renewable resouces develops. Important are also the international aspects of using rock gas since the slovak territory is passed through by the most important transit route of gas pipeline from Russia to western Europe. Diversification of natural gas imports and interconnection of the Slovak power supply infrastructure with the infrastructure of countries of the European Union are greatly important from the viewpoint of power supply security and prospects of entering the European Union.

After a lively discussion, the Seminar participants passed a final resolution in which they recommended to find a new form for the continuing future cooperation. Organizers of the five seminars in geography held in the period 1996-2000 (O. Mikulík and P. Mariot) have found their successors in A. Vaishar and V. Ira.

We believe that the cooperation will be further successfully developing. Results from all seminars held so far are summed up in five seminar proceedings issued in Bratislava 1997, 2001 and in Brno 1998, 1999 and 2000 with papers published in original Czech and Slovak languages.

DR. PETER MARIOT (60)

We congratulate herewith to Dr. Peter Mariot, CSc., member of the Editorial Board of the Moravian Geographical Reports, to his important anniversary: he celebrated his 60th birthday on 25 November 2000.

Dr. Mariot graduated from the Faculty of Natural Sciences at the Komenský University in Bratislava in 1962. In the same year, he started working in the Institute of Geography, Slovak Academy of Sciences in Bratislava where he is still employed. He has been life-long devoted to the issue of geography of travelling and tourism, more recently also to politic geography. His publication activities both in the field of science and in the field of popularization are profuse. He is author of more than 30 books in which he materialized all his experience from research trips abroad (Mount Everest 1984, The North Pole 1993, The Galapagos 1989, 1990, 1994, etc.)

On the day of his 60th birthday Dr. P. Mariot presented a selection from his book publications. (Photo O. Mikulík)

We wish Dr. MARIOT much enthusiasm, vitality and pleasure in his continuing scientific work and we are looking forward to the continuing cooperation with him.

Editorial Board

DR. JAN MUNZAR (60)

Dr. J. Munzar (right) at the International Climatological Conference in Cracow, September 2000 – at a discussion with Ass. Prof. Dr. M. Lapin from the Komenský University in Bratislava.

Chairman of the Editorial Board of the Moravian Geographical Reports, prominent Czech expert in historical climatology and member of the Scientific Board of the Institute of Geonics, Czech Academy of Sciences, Dr. Jan Munzar, CSc. celebrated the important life anniversary on 6 April 2001. The Editorial Board appreciates his organizational capabilities and precision work which helped to the success of the first eight volumes of the periodical with his own contribution of publication activities for the magazine being also not at all negligible.

Dr. Munzar graduated from the Charles' University in Prague (meteorology) and published since the year 1966 over 150 technical communications from climatology, history of meteorology and historical geography. A selection of 75 references to his works is presented in a medallion of the magazine Meteorologické zprávy (Meteorological Bulletin) No. 2/2001.

We wish our colleague much strength for the future volumes of MGR, successful scientific work and before all good health and good humour which are necessary pre-requisites of professional success.

Editorial Board

REVIEW

KUPČÍK Ivan: Münchner Portolankarten „Kunstmann I-XIII" und zehn weitere Portolakarten - Munich Portolan Charts „Kunstmann I-XIII" and Ten Further Portolan Charts. - Deutscher Kunstverlag München Berlin, 2000. 176 pp., 5 fig., 23 colour. fascimiles.

Price of DM 298.-, EUR 152.36.-

A revised and completed new edition of Friedrich Kunstmann's 1859 original work, together with thirteen rendered color plates and ten other sea charts of early 16th century from Munich portolan charts collection, including those missing since 1945 was very successfully edited by Deutscher Kunstverlag publishing house. The book is bilingual, in German and in English.

Besides Lisbon, Madrid, Paris, London, Venice and the Vatican, Munich represents another important source of preserved hand-drawn portolan charts from this important period of sea discoveries. The earliest portolan chart, deposited in the Bavarian State Library, is by Battista Boccario and dates back to 1426. Nearly a half of portolan charts deposited in Munich come from the period between 1500 and 1520. There are also five remarkable charts from the sea atlas by Fernao Vaz Dourado from 1580.

One of the leading scientists in History of cartography, Dr. Ivan Kupčík, revised the original work of Friedrich Kunstmann, supplied commentaries to individual portolan charts including imprint date correction following the latest research results. He paid special attention to sea charts, which were lost from the Bavarian State Library during or after World War II and which were reproduced in compliance with the reliable copies of Munich originals, now deposited in the Bibliotheque Nationale in Paris. This book also includes the first reproduction of all portolan charts described in 1859 Kunstmann's work, marked as „Kunstmann I-XIII" and in addition another 10 portolan charts from the Munich collection, marked as „Addition 1-10". The facsimiles of all portolan charts are produced in outstanding quality, thoroughly written commentaries to each chart are accompanied by an index of persons and places mentioned in the text and also by a complex bibliographic catalogue.

Ivan Kupčík, who worked with Prof. Karel Kuchař at the Prague Charles University has been for many years in Munich as a researcher, draws us in his work to the oldest cartographic documentation of Portuguese discoveries. This work that is important for international scientific research also documents the extremely valuable cultural heritage of the history of mankind and deserves our attention.

Milan V. DRÁPELA

Karviná – town square, remainder of the old town part

Photo: O. Mikulík

Karviná – building of Silesian University, before 1990 seat of the District Commitee of the Communist Party of Czechoslovakia

Photo: A. Vaishar

Illustrations to O. Mikulík's, B. Kolibová's and M. Havrlant's paper

Bučovice – the main square

Photo: P. Hlavinková

The Bučovice chateau

Photo: A. Vaishar

Illustrations to paper of A. Vaishar et al.