

POLISH ACADEMY OF SCIENCES
INSTITUTE OF GEOGRAPHY AND SPATIAL ORGANIZATION

GEOPOLITICAL STUDIES

vol. 2

**THE POLISH-LITHUANIAN BORDER REGION
RESEARCH PROBLEMS AND SCIENTIFIC
CO-OPERATION**



Warsaw



1997

The bulletin entitled **Geopolitical Studies** publishes scientific papers, results of research and scientific seminars, carried out, organized and co-organized in the framework of the research project on „**Geopolitical dimension of Polish socio-economic space**”. Work within this project, approved and financed by the State Committee for Scientific Research (project no. 6P04E5310) is carried out under the leadership of Professor Marcin Rościszewski, Ph. D., in the Institute of Geography and Spatial Organization of Polish Academy of Sciences.

Errata - Geopolitical Studies, Vol. 2

Page	Line	Print	Should read
5	8 from the bottom	adjustment	adjustments
8	13 from the top	Poland's Eastern	of Poland's Eastern Border
9	4 from the top	active	are active
	16 from the bottom	proteced	protected
	15 from the bottom	Possibillies of the their use	Possibilities of their use
11	11 from the top	It decided	It was decided
	12 from the top	has been topics	topics
46	3 from the bottom	on	of
52	9-10 from the bottom	Planing Office of the Central Planing	Planning Office of the Central Planning
63	9 from the bottom	The basis of data	Data supplied by
67	note 13	noties	notions
93	table 4	Lokalities	Localities
144	table 4	Lithuania	Lithuanian
		Mane	Name
		Lenght	Length
200	table 3	borders un the region	border
			in the region

S.15122A

POLISH ACADEMY OF SCIENCES
INSTITUTE OF GEOGRAPHY AND SPATIAL ORGANIZATION

Geopolitical Studies

vol. 2

**THE POLISH-LITHUANIAN BORDER REGION
RESEARCH PROBLEMS AND SCIENTIFIC
CO-OPERATION**

Edited by
Maciej Jakubowski

Warsaw



1997

<http://rcin.org.pl>

Research project

Geopolitical dimension of Polish socio-economic space

Financed by:

State Committee for Scientific Research (project no. 6P04E5310)

Directed by:

Prof. dr hab. Marcin Rościszewski

Institute of Geography and Spatial Organization

Polish Academy of Sciences

Twarda 51/55, 00-818 Warszawa, Poland

Language editor

Ewa Korcelli-Olejniczak

Technical editor

Anna Tkocz

Maps drawn by

Stanisław Cabała

PL-ISSN 1429-009X

<http://rcin.org.pl>

CONTENTS

M. ROŚCISZEWSKI	- Towards the Unifying Europe (Introduction)	5
	Report and Resolution of the Polish-Lithuanian Seminar	7
A. STASIAK	- Transborder Co-operation and the State Regional Policy	17
R. BAUBINAS	- Co-operation in the Lithuanian-Polish Border Region: Geopolitical, Social, Geographical and Ecological Aspects	21
M. ROŚCISZEWSKI	- The Suwałki Region - a Geopolitical Node. Some Contributions to the Study of Poland's Eastern Border.	31
J. L. SIEMIŃSKI	- Questions on the Spatial Organization of the Polish-Lithuanian Border Area.	43
C. SADOWSKA- -SNARSKA	- The Economy of Suwałki Voivodship in the Transformation Period (adjustment aspects)	69
A. STANAITIS	- Peculiarities of the Development of Population and Settlements in the Lithuanian-Polish Border Region and Prospects for Demographic Potential.	83
P. EBERHARDT	- Demographic Issues Concerning the Polish-Lithuanian Borderland	102
M. KOWALSKI	- Ethnic Characteristics of the North-Eastern Borderland of Lithuania	115
J. CHRISTAUSKAS	- Transportation Infrastructure in Lithuania.	133
T. KOMORNICKI	- Transport Links between Poland and Lithuania - Present State, Use, Prospects.	149
J. TAMINSKAS	- Environmental Factors of the Lithuanian - Polish Border Region. Possibilities of their Use	159

B. DEGÓRSKA	- Legally Protected Areas of Polish Eastern Border Voivodships (with particular consideration of the Polish - Lithuanian border region)	173
E. KRAUČIUNAS	- Geopolitical Analysis of Bioproduction in the Lithuanian-Polish Border Zone	193

TOWARDS THE UNIFYING EUROPE (Introduction)

Marcin ROŚCISZEWSKI

Institute of Geography and Spatial Organization
Polish Academy of Sciences
Warszawa

The fact of undertaking joint studies on the problems of development of the border areas of our two countries is a kind of *signum temporis*, the sign of the time we have to face today. It is an event - one of many, anyway - which will facilitate the European process of unification.

After the disintegration of the „external empire” of the USSR in Central Europe, followed by the disintegration of the USSR itself, the countries and nations kept before in dependence gained their political sovereignty. In these new circumstances both Poland and Lithuania have faced the secular challenge constituted by the process of unification and integration of Europe. Both our countries took up this challenge with determination and with awareness that this is the only way in which they can secure for themselves the proper place in the development processes of Europe and of the world.

Lithuania and Poland, being presently associated members of the European Union, start to undertake co-operation aimed at the development of the areas located on both sides of the common border. Such a co-operation has existed for some time now within the numerous border areas of Western Europe. Poland attempts to develop such a co-operation with all of its neighbours. This kind of co-operation, established on the level of local or regional communities and authorities, becomes now one of the most important elements of Europe's integration. In the case of Poland and Lithuania this co-operation is a significant element in the integration with the European Union. It is namely imperative that the effective and real adjustment to the legal norms and regulations which are in force in the Union take place here.

Scientific studies, exchange of experience and co-operation of scholars allow to identify numerous fundamental problems concerning the development of the border areas and play the role of a kind of outpost preceding the more long-term activities. The encounters of the scientists are also essential in view of the fact that they facilitate mutual recognition and better understanding of problems, frequently very different, which exist on the two sides of the common border, and

finally also the search for the optimum solutions, required for the purpose of development of the space of our common border area.

Currently, various research centers and study teams in both our countries undertake a number of initiatives oriented at the consideration of different aspects of activity going on within the border areas. In this context it is therefore encouraging that Polish and Lithuanian geographers have also started to cooperate in this domain by organizing the Ist Polish-Lithuanian Seminar devoted to the problems of the Polish-Lithuanian borderland.

Let us note with satisfaction that the Seminar was organized on the Polish side by the Institute of Geography and Spatial Organization of the Polish Academy of Sciences in Warsaw, and from the Lithuanian side - by the Institute of Geography of Vilnius. The co-chairmen of the Seminar were Professor Ricardas Baubinas (Lithuania) and Professor Andrzej Stasiak (Poland).

The Seminar was financed within the framework of the research project „**Foundations of the development of Poland's eastern and western border regions**" (no. 6 6109203), as well as from the own financial means of the Institute of Geography and Spatial Organization in Warsaw.

The papers from the Seminar are being published as the second volume of the *Geopolitical Studies*, which was initiated in the framework of realization of the research project "**Geopolitical dimension of Poland's socio-economic space**", financed by the Polish State Committee for Scientific Research and carried out in the Institute of Geography and Spatial Organization of the Polish Academy of Sciences under the leadership of the present author.

It is with satisfaction that we should note the publication in the *Geopolitical Studies* of the output from the Polish-Lithuanian Seminar, devoted to the problems of the common borderland, which by itself constitutes a definite geopolitical fact, contributing to the new European and Central European reality.

REPORT

on the 1st Polish - Lithuanian Seminar on Research on Polish - Lithuanian
Transborder Cooperation
Wigry - Mariampolė - Alytus, June 2-9, 1996

Mariusz KOWALSKI

Institute of Geography and Spatial Organization
Polish Academy of Sciences

On June 2-9, on both sides of the Polish - Lithuanian border, a Polish - Lithuanian seminar was held, organized by the Institute of Geography and Spatial Organization of the Polish Academy of Sciences (IGiPZ PAN) and the Institute of Geography of Vilnius (Geografijos Instytutas Vilnius). Its subject was the research on transborder co-operation in the broad meaning of the term.

The Polish Delegation included: Professor Andrzej Stasiak (IGiPZ PAN) Chairman of the delegation, Professor Piotr Eberhardt (IGiPZ PAN) Professor Ryszard Horodeński (Warsaw University, Białystok campus), Professor Janusz Siemiński (IRWiR - Institute of Rural and Agricultural Development Polish Academy of Sciences), Doctor Marek Proniewski (Warsaw University, Białystok campus), Doctor Cecylia Sadowska (Warsaw University, Białystok campus), Bożena Degórska, MA (IGiPZ PAN), Mariusz Kowalski, MA (IGiPZ PAN), the Secretary of the Seminar.

The Lithuanian Delegation included: Doctor Ričardas Baubinas (Institute of Geography, Vilnius), Chairman of the Delegation, Doctor Julius Taminskas (Institute of Geography, Vilnius), Edikas Kriauciūnas, MA (Institute of Geography, Vilnius), Professor Algirdas Stanaitis (Vilnius Pedagogical University), Doctor Irene Čekmonienė (Vilnius Pedagogical University), Doctor Julius Christauskas (Vilnius Technical University).

The other participants namely: Vidmantas Povilonis (Consul of the Lithuanian Republic in Sejny), Tomasz Romańczuk (Senator of the Voivodship of Suwałki), Wacław Olszewski (Speaker of the Voivodship of Suwałki Local Government Assembly), Marian Kanoza (Director, Voivodship Office, Suwałki), took part in the debates.

The Lithuanian Delegation was greeted on the Polish soil on June 2, in front of the Lithuanian Consulate in Sejny. On the following day, at 9 a.m., the plenary session began, i.e. the official part of the Seminar. Professor Stasiak was the first

to take floor. He greeted all the participants. Afterwards, Director Marian Komoza greeted both Delegations in the Voivodship of Suwałki on behalf of the Voivod of Suwałki, Mr. Cezary Cieślukiewicz, who was absent. The next to take floor was Doctor Ričardas Baubinas, Chairman of the Lithuanian Delegation, who greeted all the participants.

A short break was followed by the substantive part of the debate.

The following participants presented their papers in the following sequence:

1) Professor Andrzej Stasiak - Regional Differentiation of Poland and Related Problems Concerning Regional Policy of the State.

2) Dr Ričardas Baubinas - Co-operation in the Lithuanian-Polish Region: Geopolitical, Social, Geographical and Ecological Aspects.

3) Professor Marcin Rościszewski - The Suwałki Geopolitical Node. Some Contributions to the Study Poland's Eastern (because of the Author's absence the paper was read by Professor Janusz Siemiński).

4) Dr Irene Čekmoniė - The Differentiation and Characteristics of the Lithuanian borderland from the Linguistic and Ethnic Aspect.

An animated discussion followed the presentations.

After the lunch break the session resumed.

The following participants presented their papers in the following sequence:

1) Professor Algirdas Stanaitis - Peculiarities of the Development of Population and Settlements in the Lithuanian-Polish Border Region and Prospects for Demographic Potential

2) Professor Piotr Eberhardt - Demographic Issues Concerning the Polish-Lithuanian borderland.

3) Professor Julius Christauskas - Transport Infrastructure in Lithuania; Characteristics of the Lithuanian-Polish borderland Region.

4) Professor Ryszard Horodeński - Issues Concerning the Employment Market in the Voivodship of Suwałki.

The presentation of the papers was followed by the discussion of issues raised by them. On the following day a field tour of the Voivodship of Suwałki took place. The route was the following: Wigry - Suwałki - Jeleniewo - Smolniki - Wizajny - Goldap - Stańczyki - the Hańcza lake - Suwałki - Wigry.

In Suwałki both Delegations were received by the Voivod of Suwałki and the Speaker of the Regional Government Assembly, who explained problems concerning the development of the Voivodship to the participants.

In Jeleniewo, the participants of the Seminar were received by the Mayor of the Gmina (municipality) of Jeleniewo, and then visited a local farm. They also learnt about the organization of the Association of Gminas, which are located there and active in the field of the protection of the value of natural environment. The participants of the Seminar were also received by the Mayor of Wizajny. They also visited a farm specializing in agrotourism, and later the point where the territories of Poland, Lithuania and Russia meet. The final item in the agenda in that place was a visit paid to a Polish-Lithuanian family. In Goldap, members of both Delegations were briefly informed on problems concerning the development of the Town by its Deputy Mayor. They visited the most interesting places, including a recently open checkpoint between Poland and Russia. The participants of the Seminar were also officially received in the Town Hall. During the excursion they visited places interesting from the touristic and sightseeing perspective: a panorama view point at Smolniki, a flyover at Stańczyki and the Hańcza lake.

The session continued on June 4.

The following participants presented their papers in the following sequence:

1) Professor Janusz Siemiński - Questions on the Spatial Organization of the Polish-Lithuanian Border Area.

2) Dr Marek Proniewski - Directions of the Development of the North-Eastern Macro-Region in the Light of the Regional Policy of the State

3) Dr Julius Taminskas - Environmental Factors of the Lithuanian-Polish Border Region. Possibilities of their Use.

4) Bożena Degórska - Legally protected areas of Polish Eastern border voivodships (with particular consideration of the Polish - Lithuanian border region)

5) Mariusz Kowalski - Ethnic Characteristics of the North-Eastern borderland of Lithuania.

6) Edikas Kriaučiunas - Geopolitical analysis of bioproduction in the Lithuanian-Polish border zone

7) Cecylia Sadowska-Snarska - The economy of Suwałki voivodship in the transformation period (adjustment aspects).

Problems raised in the papers were discussed afterwards.

After the lunch break a joint meeting of both Delegations took place. It summarized the results of the Polish part of the Seminar and discussed a programme for the future research work. A joint resolution of both Delegations was passed as a result.

The Polish part of the Seminar was completed with a special dinner.

On the following day, the 6th June, a study tour of the areas inhabited by Lithuanian minority was made before crossing the Lithuanian border.

In Sejny both Delegations were received by Mr. Vidimantas Povilionis, the Consul of the Lithuanian Republic. The resolution passed on the previous day was presented to him. Afterwards, the participants of the Seminar went to Puńsk. They were greeted by the Mayor and by representatives of Lithuanian organizations. A meeting was held during which problems concerning Lithuanians living in Poland were discussed. Afterwards, both Delegations visited two Lithuanian farms. After lunch in a Lithuanian restaurant, both Delegations crossed the Lithuanian border. The Lithuanian part of the Seminar began. After a cordial welcome on the Lithuanian soil, both Delegations went to Marijampolé, a district city in the western part of Lithuania.

On the following day, i.e. June 7, a working meeting with the Marijampolé District Authorities took place. The discussion involved prospects for transborder co-operation between the voivodships of Suwałki and Mariampolé. An excursion through Marijampolé - Vilkaviškis - Kalvariija - Simnas - Alytus followed next. The participants visited the regional park of Vištitis and discussed the geopolitical context of trans-border co-operation, with special attention to the Vištitis (Vištineckoe) Lake problem. Upon the arrival in Alytus a working meeting with the Mayor took place. The role of that centre in the transborder Lithuanian-Polish co-operation was discussed.

On the following day, a working meeting with the Alytus district Authorities took place. The participants discussed the prospects for transborder co-operation between the voivodships of Suwałki and Alytus. At the same time, the municipal Authorities of Alytus arranged a flight over the district of Alytus for the Chairmen of both Delegations. This had helped to understand the problems concerning the spatial development of the Region.

On the same day, in the afternoon, an excursion along the route of Alytus - Seiriai - Meteliai - Lazdijai - Veisiejai - Leipalingis - Druskininkai - Merkinė - Alytus took place. The participants visited regional parks of Meteliai and Veisiejai, the national park of Džukija, and learnt about problems concerning the development of the town of Lazdijai and the Raigardas Reserve. They also visited and evaluated the prospect site for a checkpoint near Kapčiamiestis. Afterwards they visited the grave of Emilia Plater. In Druskininkai, they learnt about the qualities of the town as a health resort.

After the parting on Sunday morning 9, on June 9, the Lithuanian Delegation went back to Vilnius, and the Polish Delegation to Warsaw, through the checkpoint at Ogrodniki.

The results of the Seminar were satisfying to both Parties. They were reflected in the jointly passed Resolution. First of all, it was decided to continue joint research on problems concerning the transborder co-operation, in order to stimulate the Polish-Lithuanian borderland. In relation to the issues above, both Parties have reached the decision to delimit in the Polish-Lithuanian borderland the region which would be a basis for joint scientific research. In Lithuania, the area would probably include two regions, of Marijampolė and Alytus, with special regard to the following border districts, of Marijampolė, Vilkaviškis and Lazdijai, and the city of Druskininkai. In Poland, the main borderland region would be the voivodship of Suwałki, with special regard to its eastern part (among other places, Suwałki, Augustów and Sejny). It decided that joint studies in the following has been topics would be continued, according to the uniform methodological and statistical criteria:

1. issues concerning demography and settlement, including the balance between the labour force and the unemployment; evaluation of urbanization processes and socio-ethnic conditions,
2. issues concerning the development of technical infrastructure which is to lay foundations to intensify an international exchange of goods and people, including mainly the transport axes and problems concerning present and prospect checkpoints,
3. issues concerning an intensification and modernization of agriculture, having a difficult time in relation to the transformation of the national economies,
4. issues concerning the development of tourism, recreation and therapy in health resorts, and the establishment of appropriate foundations for these fields of activity,
5. broad issues concerning the protection of the environment in the border region through creation of mechanisms precluding degradation of the quality of the environment.

It has been decided that the controversial idea to establish the Euroregion (Neman Nemunas, Niemen) will be considered, depending upon relevant political decisions made by the Governments of both Countries and the results of studies carried out. As it is known the Treaty on the creation of the Euroregion Neman was signed in June 1997.

By expressing the will for further co-operation, both Parties obliged themselves to a mutual exchange of any research findings and information concerning the territory covered by the research. This should concern first of all statistical data and cartographic documentation. They also obliged themselves to provide assistance in maintaining mutual contacts, what should involve mainly scientific exchange and assistance in respective voyages to Poland and to

Lithuania. Both Parties also declared assistance in research concerning municipal budgets, economic transformation processes occurring in the surveyed area. Finally, they decided to organize regular (annual), similar seminars during which the results of research work on the subject under investigation would be presented. It was determined that the next bilateral seminar, focusing on cooperation among local governments on both sides of the border, should be held in the Autumn of 1997.

RESOLUTION

The 1st Lithuanian-Polish Seminar devoted to transboundary co-operation took place in the House of Creative Work in Wigry, Poland, on June 2nd - 5th, 1996, and then on June 6th - 9th, 1996, on the Lithuanian side.

From the Lithuanian side the Seminar was organized by the Institute of Geography of Vilnius.

The Lithuanian participants of the Seminar were:

1. Dr. Ričardas Baubinas - head of the delegation (Institute of Geography, Vilnius),
2. Dr. Julius Taminskas (Institute of Geography, Vilnius),
3. Mr. Edikas Kraučiuonas (Institute of Geography, Vilnius),
4. Professor Dr. Algirdas Stanaitis (Vilnius Pedagogical University),
5. Dr. Irena Čekmonienė (Vilnius Pedagogical University),
6. Dr. Julius Christauskas (Technical University of Vilnius).

The participants of the Seminar from the Polish side were:

1. Professor Dr. Andrzej Stasiak - head of the delegation (Institute of Geography and Spatial Organization of the Polish Academy of Sciences, denoted further on as IGiPZ PAN, Warsaw),
2. Professor Dr. Piotr Eberhardt (IGiPZ PAN, Warsaw),
3. Professor Dr. Ryszard Horodeński (University of Warsaw, Białystok campus),
4. Professor Dr. Janusz Siemiński (Institute of Rural and Agricultural Development, Warsaw),
5. Mr. Mariusz Kowalski (IGiPZ PAN, Warsaw),
6. Dr. Cecylia Sadowska (University of Warsaw, Białystok campus),
7. Ms. Bożena Degórska (IGiPZ PAN, Warsaw),
8. Dr. Marek Proniewski (University of Warsaw, Białystok campus).

Beside these participants the Seminar has also hosted the representatives of the authorities, including the Director of the Town Planning, Architecture and Construction Inspection Department - Mr. Marian Kanoza and the Consul of the Republic of Lithuania in Sejny, Mr. Vidmantas Povilionis. Both delegations were

received in person by the Voivod of the Suwałki voivodship - Mr. Cezary Cieślukiewicz and the President of the Self-Government Assembly of the Suwałki voivodship - Mr. Waclaw Olszewski, as well as the Marshalls of the communes of Jeleniewo and Wizajny, and the Mayor of the town of Goldap. On the Lithuanian side meetings with the representatives of administrations of the Marijampole and Alytus districts and of the self-government of the town of Alytus took place.

The programme of the Seminar was carried out in its entirety. All the papers announced were presented. In accordance with the programme each series of papers was followed by a discussion, and in addition to that a discussion summarizing the whole meeting took place.

Resulting from paper presentations, session discussions and intensive conversations of less formal nature, both sides reached the conclusion that common research devoted to the problems of transboundary co-operation aiming at activation of the Lithuanian-Polish border region, and then at carrying into effect the issues of regional policy, should be continued.

Both sides have made the decision as to the delimitation of the Polish-Lithuanian border area under study. On the Lithuanian side the adopted area encompasses three districts, namely Marijampole, Vilkaviškis, Lazdijai and the town of Druskinnikai. In addition to that, the purposefulness of including in the studies the town and district of Alytus should be considered. On the Polish side the fundamental area of study will be constituted by the eastern part of Suwałki voivodship, encompassing, in particular, three towns: Suwałki, Augustów and Sejny. Joint studies will be continued, according to the unified methodological and statistical criteria, in the following directions:

- 1) questions of demography and the settlement system, including the question of labour force balance and unemployment, the assessment of urbanization processes and socio-economic conditions;

- 2) questions of development of technical infrastructure, which ought to form the basis for intensified transboundary traffic of goods and persons, with special emphasis on the main transport axes, and issues related to the present and potential border crossings;

- 3) questions of intensification and modernization of agriculture, which is now going through a difficult period in connection with the transformation of the national economies;

- 4) questions of development of tourism, recreation and health resort care, together with establishment of an appropriate basis for these domains of activity;

5) questions of ecology, including the broadly conceived protection of the environment in the border region through the creation of mechanisms preventing degradation of environmental assets.

The controversial problem of creation of the „Niemen/Nemunas” Euroregion will be considered according to the political decisions taken by the governments of the two countries and the results obtained in the other directions of the study.

In view of the novel character of the papers presented at the Seminar and their scientific value both sides have made the decision to proceed with the publication of the whole set of Seminar materials. The Lithuanian side undertook to translate their papers into English and to send them by mail to Warsaw until September 30, 1996. The Polish side will translate the Polish papers into English and will publish the entire set of papers in a separate English-language volume. Publication costs will be covered by the Polish side.

Both sides take the obligation of supplying the respective other side with all the results of inquiry, as well as all available information concerning the territory under study.

Both sides take the obligation, within the limits of capacity, to provide assistance to the other side in maintaining mutual contacts.

Both sides declare to extend help in the study concerning the budgets of communes, and the economic transformation processes taking place within the area in question.

Both sides will mutually supply each other with statistical material and cartographic illustrations.

Both sides will continue research on the subject considered. The results of this research will be presented at the future Seminars. The future Seminars ought to take place regularly every year. The next bilateral Seminar should take place in Autumn 1997. It will be devoted to the co-operation of local self-governmental bodies on both sides of the border.

The present Resolution was written in two languages: Lithuanian and Polish, in identical version.

Head of Lithuanian delegation



Head of Polish delegation

KIEROWNIK ZAKŁADU
Prof. dr hab. inż. Stanisław Stasiuk

TRANSBORDER CO-OPERATION AND THE STATE REGIONAL POLICY

INTRODUCTION BY THE CHAIRMAN OF THE POLISH DELEGATION AT THE FIRST POLISH-LITHUANIAN GEOGRAPHIC SEMINAR ON TRANSBORDER CO-OPERATION

Andrzej STASIAK

Institute of Geography and Spatial Organization
Polish Academy of Sciences
Warszawa

In the period from June 2 to June 5, 1996 the first Polish-Lithuanian seminar on the co-operation in the field of research studies of the Polish-Lithuanian borderland was held. The very fact that the meeting of Polish and Lithuanian scientists and the scientific seminar on research in the area situated on both sides of the Polish-Lithuanian border took place, should be registered as important. This first meeting, organized on the Polish side by the Institute of Geography and Spatial Organization of the Polish Academy of Sciences, within the framework of the research programme „Foundations of the development of western and eastern transborder regions of Poland”¹, under the leadership of the present Author, has brought several important results.

1. During the seminar a broad exchange of opinions took place; the participants of the seminar had the opportunity to enlarge their knowledge of the borderland, while taking part in field-trips and meeting local authorities on both sides of the border.

2. A set of papers of a high substantial value was aquired, which the Polish side is publishing in compliance with the undertaken obligations in the current, second volume of the publication „Geopolitical Studies”, supervised by Prof. Marcin Rosciszewski within the framework of the research project: „Geopolitical dimension of the Polish space”.

¹ Research project No 661309203 under the above-mentioned title was carried out in the years 1992-1995 and has resulted in numerous publications, especially in the series of Bulletins No 1-12, on Polish-German, Polish-Belarussian, Polish-Ukrainian, Polish-Hungarian and Polish-Russian (Kaliningrad District) co-operation.

3. The decision was reached, stated in the final declaration, about the necessity of continuing joint studies in the region of the Polish-Lithuanian borderland, aiming at the promotion and development of the region, as well as formulating premises for framing the regional policy.

4. The decision was taken concerning the delimitation of a region in the Polish-Lithuanian borderland which would form the basis for joint studies. Also the main thematic directions were formulated.

At the time of the seminar the decision about creating the Euroregion „Neman” (Lith: Nemunas, Pol: Niemen) had not yet been made. At present the decision has been taken (June, 1997) and this fact will undoubtedly activate economic relations between the state and the municipal administration, as well as scientific contacts related to the whole Euroregion. This fact does by no means exclude the need to continue joint research on a more limited territory of the immediate Polish-Lithuanian borderland. Therefore, I consider that the decisions and the work set during the first Polish-Lithuanian seminar should be continued.

I would now like to focus my attention on the problems of regional policy. During the Polish-Lithuanian seminar, as well as on many other occasions and in numerous publications, I have expressed the opinion, which I still support, about the necessity of creating a new canon of the state regional policy. Such a canon should refer to the period of systemic and economic transformations and concern the poorer but at the same time strategically important regions.

A territory of this kind is the broadly interpreted Polish eastern borderland, recently called „The Eastern Wall”, an area encompassing 9 voivodships including the Suwalki voivodship which borders with the Republic of Lithuania.

Delays in the socio-economic development, low population density, dominance of rural population, insufficient infrastructural development, lack of large urban centres (aside from Białystok and Lublin), belong to the important characteristics of this region. One of the reasons of the existing situation is the fact that the border separating Poland from the Soviet Union was a closed border and it did not stimulate economic development. This contributed to the fact that the regions situated along the Polish eastern border became peripheral regions. Hence the term „The Eastern Wall” which we coined in the 1970s. At present Prof. Marcin Rościszewski introduces the term „Eastern Economic Activity Zone”² connected with the new

² M. Rościszewski - „Organization of a two-level territorial division of the country in the geopolitical aspect” in: „Opinions and Materials of the Expert group appointed by Adam Struzik, the President of the Senate of the Republic of Poland related to the administrative (territorial) division of the country”, Warszawa, June 1997.

role of these regions as a „Gate to the East” for Poland and the rest of Europe. Reference is made to Via Baltica leading from the West through Poland and Lithuania to Finland and Saint Petersburg.

Today the borders are open to a great extent and the systemic and economic transformation lead towards economic development based upon market mechanisms.

The market and competition system has its own rules which rather cause the strengthening of economically stronger regions through the investment concentration and innovations and leaving weaker and less attractive regions from the viewpoint of capital allocation largely to themselves. In the process the weaker regions become actually drained of their own resources.

Therefore I continue to emphasize the opinion that in the conditions of systemic transformations a policy of equalizing the opportunities through the regional policy is needed, which should be a by-product of the general strategy of the development of the state.

In Poland an adequate regional policy is necessary, first of all with respect to the whole eastern borderland which is not capable of overcoming the existing development barriers and delays based on its own resources.

- In the first place there is a need to propose a concept of agricultural and rural development as the rural population comprises the absolute majority of the inhabitants of the eastern borderland.

- Furthermore, decisions about the choice of growth poles on this territory and the stimulation of their development are needed. The growth poles in this region should first of all include the region of Kuźnica Białostocka and Sokółka, the Free Custom Zone of Małaszewice, the Medyka-Przemysł node, the Special Economic Zone - Suwałki-Gołdap-Elk connected with Via Baltica, a transportation corridor, and selected voivodship capitals. Apart from the role of the corridor of Chelm-Dorohusk also the effects of the possible road Via Intermare which shall connect the Black Sea Area (Odessa) with the Baltic Sea Area (Gdańsk) should be determined³. Also centres of economic activity related to Via Intermare can be taken into consideration.

- Decisions about the development of transportation infrastructure and new border crossings are necessary.

- Last but not least, there is a need of initiating the programmes of international and transborder co-operation, primarily in the framework of such

³ Also M. Rościszewski op. cit.

initiatives as the Euroregion „Bug”, the Euroregion „Neman” (now being established) and in the first place, the programme of „The Green Lungs of Poland” and of „The Green Lungs of Europe”. Unfortunately this latter programme which was initiated a few years ago with lots of initiative is presently starting to „wither”.

The foregoing proposals additionally refer to the Polish-Lithuanian borderland. The seminar has clearly confirmed the necessity of creating a regional policy, as the Polish-Lithuanian borderland belongs to a larger area which is adapting to the systemic transformations with some difficulty, is seriously afflicted with unemployment, is characterized by slow pace of structural transformations of the economy and so far a very small inflow of external capital. At the same time it is a region of great potential resulting from its location, the possibility of transborder and international co-operation and excellent natural conditions which, if properly used, can become the source of a specific „ecological rent”. The above-mentioned international projects („The Green Lungs of Europe”, „The Euroregion Neman”), as well as other smaller initiatives are needed in order to activate these potentials. This of course does not diminish the need and importance of direct transborder co-operation and of the initiatives of local authorities.

It is difficult to formulate postulates of regional policy of our neighbours, in this case Lithuania. Nevertheless, on the basis of the materials from the first Polish-Lithuanian seminar a general conclusion can be formulated that it would be useful to follow and compare the process of creating regional policies in both countries, to exchange experiences in this field and possibly coordinate selected projects and decisions⁴. One can therefore hope that the next Polish-Lithuanian seminars on transborder co-operation will contribute to this goal. We should wish ourselves success in this respect and we should aim at the accomplishment of these wishes.

Warszawa, July 2, 1997

⁴ I presume that one of the consequences of our seminar was: The First International Conference on: „Co-operation of Poland and Lithuania in the field of spatial economy in the border regions”, Wigry, October, 3-7 1996, Materials from the Conference Suwałki-Warszawa, December 1996, edited by Prof. Janusz Siemiński. It is also worthwhile to pay attention to the quarterly journal „Lithuania” edited by Leon Brodowski; see: Lithuania 1/2/22/23 97 Warszawa

COOPERATION IN THE LITHUANIAN-POLISH BORDER REGION: GEOPOLITICAL, SOCIAL, GEOGRAPHIC AND ECOLOGICAL ASPECTS

Ričardas BAUBINAS

Institute of Geography
Vilnius

INTRODUCTION

The modern Europe is characterized by rapid processes of integration. They change the functions of state borders: the barrier function of borders disappears, whereas, their contact importance increases. The mentioned processes also include the states of Central and Eastern Europe.

The Lithuanian state border is a new phenomenon for its society. It induces a spontaneous interest of politicians, businessmen and scientists in the border region. Unfortunately, Lithuania lacks the experience of investigation and purposeful formation of the border region. For this reason, the practice and scientific substantiation of the border region policy are insufficiently mutually related whereas scientific investigations - uncoordinated. This is first of all true with respect to the Lithuanian-Polish border regions the transformation of which into Euroregion and its territorial planning left the phase of scientific substantiation behind.

Under such circumstances the integrated geographical investigations gain special importance. An exhaustive knowledge of the context of regional formation creates the basis for rationalizations of the functioning of the region, increasing its efficiency and prediction of its future development.

CONCEPTION OF THE BORDER REGION

From the geographical point of view the region is represented by a territory which has historically developed, is integrated and continuous, notwithstanding that it has no distinct boundaries. Such regions require long term integration processes.

A historical region on both sides of the present Lithuanian-Polish border has not developed despite various favourable historical premises. Unfortunately, after World War I the political boundaries in this region played a strictly barrier function. The region lost its transitory importance, the international socio-economic relations were broken off. After World War II the strict barrier function of the state border survived. The regions on both sides of the border were peripheral ones for Lithuania and Poland.

The administrative division of the border region offered no advantages for the development of a continuous region. In the interwar Lithuania the border region was divided into three administrative districts (Vilkaviškis, Marijampolė and Lazdijai). In the post-war years the border region directly included the administrative districts of Kalvarijos, Lazdijai and Veisiejai. In the years of the reform of administration (7th decade), three administrative districts were created (Vilkaviškis, Marijampolė and Lazdijai), which included the territories of 7 former districts [3]. After the administrative-territorial reform carried out after the restoration of self-dependence in Lithuania the boundaries of the former Soviet districts have remained the same but they are governed by 2 local governments - Alytus and Marijampolė. They include 6 rural and 3 urban districts.

In the post-war practice of territorial planning the formation of border region was not supported. According to a different conception of territorial development the Lithuanian-Polish border region is included into 2 or 3 nodal regions (Alytus, Marijampolė, Kaunas) [4]. It should be pointed out that the territories on both sides of the border had no organizing and uniting centre.

The speculations on the creation of the Euroregion „Nemunas” (Niemen, Neman) are in most cases based on the premise which on the Lithuanian side will include two first rank administrative units: Marijampolė and Alytus districts. Sometimes it is projected to include Kaunas. Unfortunately, it is often forgotten that the territory integrated into the region should be interconnected with functional links. These links are obviously missing due to a complicated development of territorial planning. This is more so in view of the fact that the territory which lacks a regional centre has a mosaic character: in both districts there are territories little related with the border region. On the other hand the second stage of territorial-administrative distribution is to begin in due course. We can expect that in this stage twice as many local governments will be capable of giving details on the peculiarities of territorial organization.

It is of primary importance that according to European practice the transnational regions are developed on the basis of territorial local governments whereas, Lithuanian districts are not territorial units of local government.

Bearing in mind what was said above, the potential border region of co-operation is analyzed as a formation of 3 administrative districts - Marijampolė, Vilkaviškis and Lazdijai, the territorial border of which runs along the Lithuanian-Polish frontier. It is a priori obvious that as a result of functional links the territories of Marijampolė and Druskininkai towns and possibly Alytus organically belong to this region.

According to this scenario the Lithuanian-Polish border region Vilkaviškis, Marijampolė and Lazdijai districts and Marijampolė and Druskininkai towns takes 6.7% of Lithuania's territory and its population makes 5.4% of the total population of Lithuania. The Lithuanian-Polish border (106 km) makes 6% of four perimeters of the Republic of Lithuania.

GEOPOLITICAL CONTEXT OF COOPERATION IN THE BORDER REGION

From the geopolitical point of view the mentioned short sector of the border is very important.

Concentrating on this we can distinguish 3 features characterizing the geopolitical context of the region.

In the first place this sector of the Lithuanian border is an exceptionally positive zone of international contacts relations which in the context of European integration is analyzed as an example of coordination of interests between the countries with an especially complicated past. The path to European integration with the Polish constituent is the dominating one in the Lithuanian foreign policy. Besides, this sector of the border is the only one for Lithuania which represents no demarcation and delimitation problems.

Another important feature of the considered border sector, which is important for co-operation, is its regional significance. This border sector represents the only, though narrow, corridor between the Baltic states and Central and Western Europe. For this reason it finds itself in the sphere of interest not only of Lithuania and Poland but of many other countries as well.

The third important circumstance, which is favourable for international co-operation, is the stable ethnic structure of the region which has developed historically. The existence of a strong Lithuanian Diaspora on the Polish side of the border is a strong factor stimulating mutual relations and at the same time offering no problems of territorial integrity of Poland. The Lithuanian inhabitants of Pusk are undoubtedly an example for any other interpretation of ethnic relations.

However, it should be noted that along the mentioned positive circumstances the idea of developing a four-party Euroregion „Nemunas” (Niemen, Neman) is also rather politically controversial: problematic border sector between Lithuania and Russia, multitude of scenarios regarding the future development of Kaliningrad region, controversial state development of Belarus. This geopolitical context is not very promising for a multiparty territorial formation. It can be expected that the region under study will never lack the attention from the neighbouring countries because it is like a wedge in the integrity of the CIS.

The geopolitical importance of the region and its integral functions will gain more significance with intensive integration processes in the Baltic Sea region.

ECONOMIC-GEOGRAPHIC CONTEXT

As a result of development peculiarities the studied region has no distinctive economic specialization and is internally contrasting.

Industry and building industry is poorly developed in this region (Table 1). In the Soviet years there was a project to create in Marijampolė an important industrial centre. However, the actual development of the town has delayed the plans. In the years of economic reforms the technological trade and machine industry complex was shattered. Food industry remained the strongest branch of the economy: and Marijampolė has sugar, dairy and meat plants. In Druskininkai there is a meat cannery, in Vilkaviškis - a vegetable cannery. Besides in Marijampolė and Lazdijai districts the capacities of timber processing industry increase. A large plant producing plates from timber showing and glued timber constructions operates in Kazlu Ruda. Marijampolė has one of the largest factories of bulky yarn in the Baltic region Kalvarija produces woolen fabric.

Vilkaviškis has a sewing factory. Marijampolė also produces food packing machines. The industry of building materials is poorly developed in the border region. Only in Lazdijai district there exist some small plants of building materials and saw-mills.

Today big changes can be observed in the development of industry. In some plants producing ferro-concrete constitutions, woolen cloth, canneries woolen yarn, plates from timber showings the volume of production has decreased since 1990 by 10-150 times. The metal processing plants have been closed. However, lately the volume of production of bulky yarn, timber commodities, clothes, etc. is again increasing. Ceramic commodities are exported. It should be noted that the industrial complex of the region used to be and still is rather independent: the enterprises were not included in any industrial amalgamations of Vilnius and Kaunas and had almost no technological relations. The neighboring Alytus was in

the Soviet years the only successfully developed regional centre. Its industrial potential is by fair higher than in the whole border region (5. 2% of the Lithuanian industrial production).

Table 1

The share of the region in Lithuanian economy (%) 1994* [2]

Index	Marijampolé town and district	Lazdijai district	Vilkaviškis district	Total in the region
Industrial production	2.8	0.0	0.4	3.4
Building investments	4.1	0.1	0.4	4.8
Grain production	3.0	1.0	3.1	7.1
Number of cattle	2.3	2.1	3.2	7.6

* Including Druskininkai

The power economy is also poorly developed. Only two small hydroelectric power stations are operating, only Marijampolé is supplied with natural gas. Kazlu Ruda has a large regional base of oil products redistribution.

The local natural resources offer no opportunity for the development of extraction industry. The Lazdijai district has certain resources of non-metallic minerals/grovel. In the Vilkaviškis district there are small resources of brown arc and oil but their exploitation would be unprofitable. The expansion of Marijampolé is prevented by the lack of drinking water.

The agriculture of the region is comparatively well but unevenly developed. In the Vilkaviškis district and in the central part of Marijampolé district the soils are fertile and highly culturalized whereas, in the Lazdijai district the agricultural capacity is rather low (the bioproduction branches of economy are discussed separately).

The evaluation of the structure and distribution of the branches of economy and comparison with the same factors in the Suwalki district allow to assert that the production potential on both sides of the border is similar and there are no possibilities of supplementing each other.

Table 2

Foreign investments 1996 [5]

	Marijampolė	Marijampolė district	Vilkaviškis district	Lazdijai district	Druskininkai	Alytus	Lithuania
Enterprises *	1 609	888	1057	498	634	2 232	119 296
Joint enterprise	5	3	4	1	3	22	742
Foreign investments (thous. Lt)	2 243	454	1 287	30	2 030	32 002	1 406 388
Average investments per enterprises (thous. Lt)	449	151	322	30	677	1 455	1 895
Investments per capitum (Lt)	43	9	24	1	94	414	379

* Number of enterprises (1995 06 01)

At present the sphere of trades services develops most rapidly. The trade is connected both with large local industrial enterprises and with border exchange (especially the re-export of moter-cars).

The development of the sphere of services is ever more associated with transit (e.g., 6 new hotels and motels were built in the Lazdijai district). Taking into consideration the transitory position of the region and the crossing of different roads (Lithuania-Poland, Lithuania-Russia, Russia-Russia, Central Europe-Baltic States) it is likely that the sphere of services will continue to develop in the future.

The development of trade in the region is controversial. Local flows of travelers and motivation of local international trips convince that the exchange of commodities is intensive. Perhaps this is the reason that formally the exchange of commodities within the region (especially in the Lazdijai district) is lower than the average value in Lithuania.

The attraction of the region for investors is low and uneven. The attraction for investors coefficient in Marijampolė (4.8) is even higher than the average value in Lithuania (4.5), in Vilkaviškis district - a bit lower (4.3), whereas, in the Lazdijai district such coefficient is one of the lowest in Lithuania (3.7). Unfortunately, the direct-foreign investments in the region are considerably lower than in Lithuania. In the neighbouring regional centre Alytus the foreign investments (per captium) are by almost 10 times higher than in Marijampolė (Table 2).

SOCIAL CHARACTERISTICS OF THE REGION

One of the most important indicators of the social state of the region is the income of the inhabitants. Unfortunately the income of the inhabitants in the border region is lower than the average value in Lithuania. The average monthly salary in Marijampolė is by 1%, Druskininkai - 24% lower than in the large cities of Lithuania. In the Marijampolė district the salaries are by 22%, in Vilkaviškis district -16%, and in Lazdijai district - as by much as 28% lower than the average value in Lithuanian districts.

The situation on the labour market is controversial. In Marijampolė town and district and Vilkaviškis district the level of unemployment is lower than in Lithuania, whereas in the Lazdijai district and Druskininkai - almost twice as high than on the average in Lithuania.

In the Lazdijai district, where the situation on the labour market is the worst, the level of unemployment reaches 11% (of able-bodied people). About 81% of

unemployed are workers; over 71% of unemployed live in villages. Unqualified workers make 28% of the unemployed (the absolute majority of them are women). More than a half of the unemployed are aged 30-49. There were 63 candidates to one vacant worker's labour place and 109 candidates to civil worker's labour place. According to unofficial data the labour market includes over 41% of able-bodied persons. In the Marijampolė district the insufficient labour market includes 34% of able-bodied people [1].

Some other indices of the social state of the region are also lower than in Lithuania's towns. The inhabitants are insufficiently supplied with housing, the supply of services is lower, the material basis of medical institutions is worse.

There are no Universities or colleges in the studied region. However, there are 2 high schools and 5 trade schools.

The level of delinquency in the region is by far higher than in Lithuania.

ECOLOGICAL CONTEXT

The ecological conditions of the region are determined both by the peculiarities of landscape and the character of anthropogenic impact.

The border region is a watershed and is characterized by a great diversity of landscape fit for development of tourism and recreation.

The Lithuanian-Polish border zone has the highest rank geoeological axis - a very important element of natural framework. The vicinities of Vištytis lake represent one of the most important geoeological centres in Lithuania.

The natural conditions and level of culturalization vary over the region. The plains of Vilkaviškis and Marijampolė districts are strongly, though not long ago (since the end of 17th century) culturalized. The Vilkaviškis district has the lowest value of woodedness (10.7%) in Lithuania. The woodedness of Marijampolė district is 25%, of Lazdijai 39.2% (higher than the average value in Lithuania). The different degree of culturalization and uneven stability is revealed by the ratio between little and strongly effected areas. In Lithuania this ratio is 8.6, in Vilkaviškis district - 3.2, in Marijampolė district - 6.4, in Lazdijai district - 10.4.

The relative area of natural geosystems in Marijampolė is by five times smaller than in other large Lithuanian towns.

It should be noted that in the narrow border zone a sensitive to anthropogenic impact landscape prevails. There are many, geoeological windows, and areas of dispersion of material.

The region encompasses 20 protected territories (13 in the Lazdijai district) including 3 situated on the Lithuanian frontier.

In the mentioned districts there are no serious pollution problems.

By special investigations it was determined that at present in the Lithuanian-Polish border zone there are no conditions for serious transnational problems of nature protection. The mentioned sector is the safest one from the ecological point of view.

Most serious problems of nature protection are associated with unclean trolled recreation and intensive agriculture and forestry. The main task of nature protection is to develop an optimal landscape.

In general, the ecological conditions are favourable for transnational recreation.

CONCLUSIONS

1. The Lithuanian-Polish state border region is full of contrasts, one, historically undeveloped and has no administrative and organizing centre which would be favourable for integration.
2. Geopolitical circumstances are favourable for co-operation.
3. The social-economic state of the region are no favourable premise for mutual supplement, i.e. integration.
4. Ecological conditions raise no problems in cooperation and are favourable for recreational use of the territory and transnational nature protection.

REFERENCES

1. *Darbo rinka ir gyventoju užimtumas*. Vilnius, 1995.
2. *Lietuvos miestu ir rajonu socialine ir ekonomine raida*. Vilnius, 1995.
3. Maksimaitiene O. *Lietuvos istorine geografija ir kartografija*.
4. *Problemy rozwitija systemu zaselenia i rajonnoj planirowki w respublikie*. Vilnius, 1981.
5. *Tiesiogines užsienio investicijos Lietuvoje*. Vilnius, 1996.

THE SUWAŁKI REGION - A GEOPOLITICAL NODE. SOME CONTRIBUTIONS TO THE STUDY OF POLAND'S EASTERN BORDER¹

Marcin ROŚCISZEWSKI

Institute of Geography and Spatial Organization
Polish Academy of Sciences
Warszawa

1. INTRODUCTION

It occurs sometimes that a certain region, remaining at the margin of spatial transformations and devoid of political significance, becomes all of a sudden, due to the appearance of new circumstances, the object of international interest, political discussions and controversies.

This is what happened in the recent years to the region of Suwałki in north-eastern Poland. The reason of this lies in the changes which took place beyond the Polish eastern border in connection with the collapse of the external imperial sphere of influence of the Soviet Union and then with the breakdown of Soviet Union itself in 1991. Consequently, the area in question started to border with three different states: the Russian Federation - Russia, since the District of Kaliningrad (Ger: Königsberg, Pol: Królewiec) is an exclave of that country, Lithuania, and Belarus¹. The latter, though, has given up a part of its sovereignty in the years 1995-1996 in order to become more integrated with Russia, within the so called Commonwealth of Independent States.

Thus, under the new circumstances, which emerged after 1989, a natural development took place, i.e. the strengthening of connections between the Suwałki region and the neighbouring countries. The flow of people and goods intensified. It has turned out however, that we deal in this area with the emergence of a number of controversial situations as well, the most important of them concerning the transport connections between Russia and its Kaliningrad exclave. This

¹ The first approach to these problems was shown by the author: in the publication: „Suwałki Węzeł Geopolityczny - z problemów polskiej granicy wschodniej” (The Suwałki Geopolitical node - on the problems of the Polish eastern border) in: *Geografia w Szkole*, Nr 4, 1996, pp. 195-202.

problem, if not unambiguously solved and explained in the proper time, may take on the character of an international conflict.

The present paper considers issues concerning this question.

2. AN ATTEMPT AT DELIMITING THE AREA

The range of the issues which are considered in the paper cannot be exclusively limited to the area encompassed by in the boundaries of Suwałki voivodship. The proposed reach has namely to account for the appearance and dynamics of various kinds of transboundary connections with the neighbouring states, the boundaries of which, aside from the boundary with Lithuania, stretch beyond the boundary of this particular region. In reality, then, we deal with a space of functional character, encompassing also the north-eastern part of Olsztyn voivodship, which borders with Kaliningrad District, and the northern part of Białystok voivodship, which borders with Belarus' (the latter being since April 1996 member of the Commonwealth of Independent States). Various kinds of transboundary connections develop here. These connections display the tendency to rapid differentiation and amplification and they should be appropriately placed in the broader context of the conditions resulting from the transformations which take place in the neighbouring countries. That is why the boundaries of the region considered should not be too precisely defined at present.

3. THE FUNCTIONAL DYNAMICS OF THE AREA

It can be assumed with a high degree of simplification that two main, though by no means exclusive functions start to dominate within the area in question, namely tourism-and-recreation and transport. These two functions also start, in distinction to the other ones, to take supra-national significance within the region. Let us yet note that the rapid increase of importance of the two functions has been observed since the political changes which began to occur in 1989.

Until 1989 the area bordered with the Soviet Union. This was the supreme international relation and it was only within it that the relations with the three Soviet republics could take place. Such relations, though, had in reality a fully formal and decorative character, with no effects in terms of needs and aspirations of the local communities. It was only after 1989, and especially after 1991 (break down of the USSR, broad opening of the boundaries by the formally independent republics for passenger and commodity traffic) that we could speak of the development of neighbourly relations. Under the new circumstances of market economy being established in all our countries, these relations have been constituting and still constitute the sum of individual activities, starting with

bazaar trade and smuggling, up to formal and well organized commercial contacts. The abruptly expanding transboundary interpersonal contacts are conducive to co-operation of people and communities, often artificially separated by the boundaries established in 1944 by the USSR.

The two main functions mentioned above which will dominate the dynamics of development of the space considered, will now be presented in greater detail.

4. NATURAL ENVIRONMENT AS A GROWTH'S FACTOR

The qualities of natural environment in the Suwałki region are often of unique character, even in the international scale. This concerns natural and landscape qualities, as well as conditions of the development of tourism and recreation. Just for the sake of illustration we can cite here Augustowski Forest or Romnicka Forest. The same applies to Augustów Lake District. The problems of natural environment cannot be cut across by the voivodship boundaries. With respect to this, at least the eastern part of the Mazury Lake District and the wetlands of Biebrza river valley, must be considered here. Within these areas some unique elements of vegetation or animal world have been preserved. It is by no means incidental that these areas were included in the so called "Green Lungs of Poland", as subject to special protection and development programme which considers however the possibility of the access of these territories for the purpose of tourism and recreation. The programme mentioned is not limited, anyway, to the territory of our country, but envisages a broader international co-operation, implied by the idea of the "Green Lungs of Europe". This broader area would include, in particular, the post-glacial lakelands stretching towards the east, located primarily in Lithuania and Belarus', and constituting the continuation of similar areas of the north-eastern Poland, featuring similar qualities of natural environment.

In the framework of the discussion concerning the realization of these broad schemes let us as an example show the proposals concerning the full use of the Augustowski Canal built in the first half of the XIX century. The entire Polish stretch of the canal is being used for tourist purposes. The remaining stretch, located in Belarus', and reaching Neman river, of some 20 km of length, requires reconstruction of several ruined locks and the cleaning of the canal itself. This would allow to open the tourist route constituting an attraction of European scale.

The development of the tourism and recreation function will exert crucial influence on changing the orientation of the previous economic activities conducted within the areas of Suwałki region. This will also enable to increase employment in the domains linked with the new directions of economic activity.

5. NEW TRANSPORT FUNCTIONS

The second dynamically developing function within the north-eastern territories of Poland is transport. In the new circumstances the area in question gains a special significance due to the course of the international transport connections. They open up important chances for economic activation. Simultaneously, however, one must consider two essential issues. The actual transport routes and their use cannot constitute any hazard for the current state of the environmental assets of the region. This requirement is equivalent to minimization of the potential threats and it should constitute the absolute priority for all kinds of activities in the domain in question. The second issue refers to the geopolitical significance of the area in view of the current neighbourhood questions, and of the potential threats which may arise therefrom for the Polish *raison d'être*. These two issues will now be discussed in more detail.

Via Baltica vs. Via Hanseatica

The breakdown of the Soviet Union in 1991 ultimately set the stage for the regaining of independence by the three Baltic states - the republics of Lithuania, Latvia and Estonia. It has become a natural tendency for them to try to acquire a transport connection allowing a land linkage with Europe. Such a connection is also in the interest of Finland. This connection could not omit the territory of Poland. There were two choices, however, with respect to this.

The first choice was the so called *Via Baltica*, which would use the existing road system. This system is currently under modernization (whose the objective is to bring the respective roads to the standards of a motor or expressway). The route links Tallinn in Estonia (having a ferry connection with Helsinki in Finland) with Riga (Latvia) and then Kaunas in Lithuania. The Polish-Lithuanian border is crossed by the route in Sangruda/Budziska (where in 1993 the modern border crossing point was open). The road continues through Suwałki, Augustów and Białystok towards Warsaw. In Warsaw it meets one of the main European axes (Terespol-Warsaw-Berlin), as well as the currently developed North-South connections. Similarly, the railway line, after the segment between Trakiszki (Poland) - Sestokai (Lithuania) has been reconstructed, now connects directly the countries considered with the railway system of Poland. In both cases, i.e. of the road and railway routes, the territories of Russia and Belarus' are omitted. *Via Baltica* was classified as one of the main European transport corridors, the development of which can count on financial assistance from the European Union. Assistance meant for the Baltic states is also extended by the Scandinavian countries.

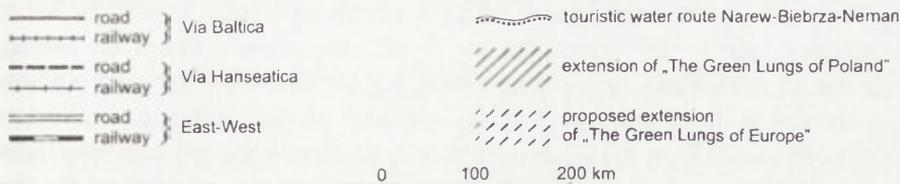
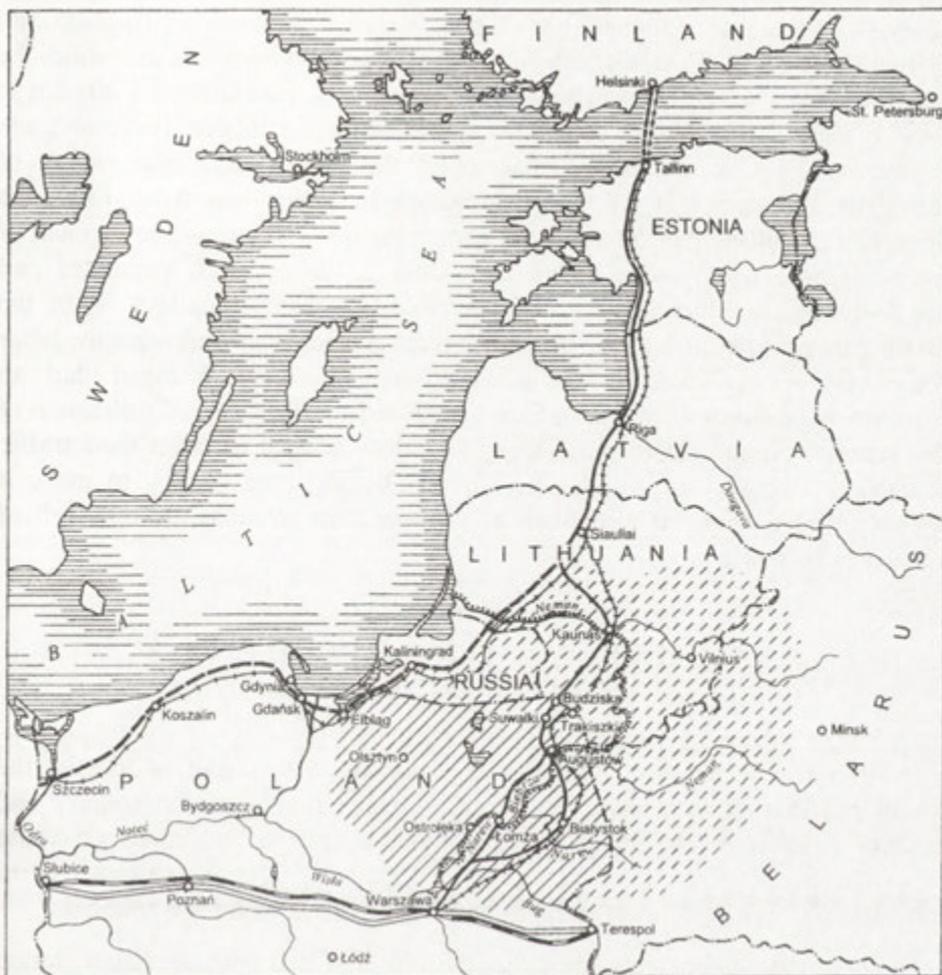


Fig. 1. The course of the main transportation connection with Finland, the Baltic Countries and the Kaliningrad District - Via Baltica and Via Hanseatica - as well as with Belarus and Russia against the background of the extension of „The Green Lungs of Poland” and „The Green Lungs of Europe” (proposed extension)

The second choice for the connection of the three Baltic states with Western Europe was constituted by the road route from Tallinn (Estonia) through Riga (Latvia) and Sauliai (Lithuania) to Tilzha (Russia - Kaliningrad District) and then to Kaliningrad. Then, through Elbląg and Gdańsk to Szczecin, in Poland, the route would go to Hamburg. The name of this line is Via-Hanseatica since it is foreseen that it should connect several towns belonging to this medieval trade organization. The intention was to make out of this route a factor of promotion of the regional co-operation of the countries of the Baltic Sea Area. From the viewpoint of Polish interests this latter choice has lower priority. The segment of the route crossing Western Pomerania would go through less populated and developed areas, which would hardly justify the financial outlays. With the existing transport system of the country and the development tendencies the latter route may be considered as a secondary option (it is envisaged that an expressway be constructed there). Side by side with this, in case of realization of this route the Baltic states and Finland would be obliged to direct their traffic through the territory of Russia (Kaliningrad District), and thereby to make it dependent on the eastern neighbour with whom their relations are now full of tension and disparities.

6. KALININGRAD DISTRICT - THE DILEMMAS OF CONNECTIONS

After the breakdown of the Soviet Union in 1991 a part of Russia, the Kaliningrad District, got separated from the main territory of that country and became its exclave. The direct access is possible only via sea route. Overland access is possible through the territories of Lithuania, Belarus', to some extent Latvia and potentially Poland, and has to be agreed upon with these countries.

Let us remind that since the end of the World War II until the disintegration of the Soviet Union the area considered was entirely off limits. It was in fact a great military base of the navy, the air forces, the missile forces (including nuclear missiles) and armoured forces. An army of approximately 0.5 million was concentrated here, as an essential element of the strategic expansion intentions of the USSR in the western direction. Currently the military effectives decreased. The district itself is open for the visitors from the outside and for the economic activity directed from abroad. Local authorities of Kaliningrad District tend to make a „free economic zone:\” out of it, but its scope has not been as yet clearly defined. In the new conditions the authorities of the district seem to have enjoyed until now a certain degree of autonomy, which is conducive to a certain inflow of foreign capital and to the development of some areas of entrepreneurship. It must be emphasized that definite benefits are acquired in this

context by the Polish side, first of all due to exports of food products and to other forms of economic co-operation, primarily in the domain of food processing. Until recently three border crossings functioned between Poland and the district, namely the railway crossing of Skandawa - Zhelesnodorozhnyi, the road crossing in Bezledy, and the joint railway and road crossing in Gronowo. There are still several road bridges destroyed at the end of the World War II on the Polish side, waiting for repairs, which will allow open the expressway to Elbląg and Gdańsk, constituting a segment of the envisaged Via Hanseatica. On the Russian side a fragment of the motorway is being constructed between Kaliningrad and the Polish-Russian border. At the end of 1995 the road border crossing in Gołdap was opened, where there is also a possibility of reconstructing the railway junction across the boundary.

7. QUESTIONS CONCERNING THE SO CALLED "SUWAŁKI CORRIDOR"

The opening of the road border crossing in Gołdap and prospects for a respective railway connection (Gołdap - Krasnolesye, some 10 km long) provide new development opportunities for the Suwałki region. An additional factor is constituted by the "special economic zones" designed for Suwałki, Gołdap and Elk, the purpose of which is to attract investments that would entail employment increase in the region now featuring high unemployment rates.

The development of the transboundary transport connections can be perceived as a normal process related to the advance in the bilateral and multilateral international relations. This is also enhanced by the spreading of transborder co-operation processes. At the end of 1995 and in the beginning of 1996, though, the Russian tendencies were uncovered aiming at acquiring special privileges in this area in the domain of transport [in the form of a yet undefined kind of "exterritorial corridor". After subordinating Belarus', Russia wishes to expand its transport linkages with the Kaliningrad District within its own strategic concept. In addition to this, there is the goal of securing transport routes independent of the land connection through the Lithuanian territory, used exclusively until now. The existing coincidence of problems gains here geopolitical significance and becomes important for the Polish *raison d'être*. Let us yet turn attention to some other aspects of this issue.

- a. It is beyond doubt that Poland is interested in the development of its north-eastern areas. The main factors which may have an impact on the course of such activation were presented before in this paper. With respect to transport development there is, as mentioned, the question of preventing environmental hazard. Traffic intensity in this area is at present relatively low, and it gives

no rise to the need of undertaking any greater investments in this domain. It may turn out sufficient for the forecasted demand of local or regional nature to modernize the existing transport network.

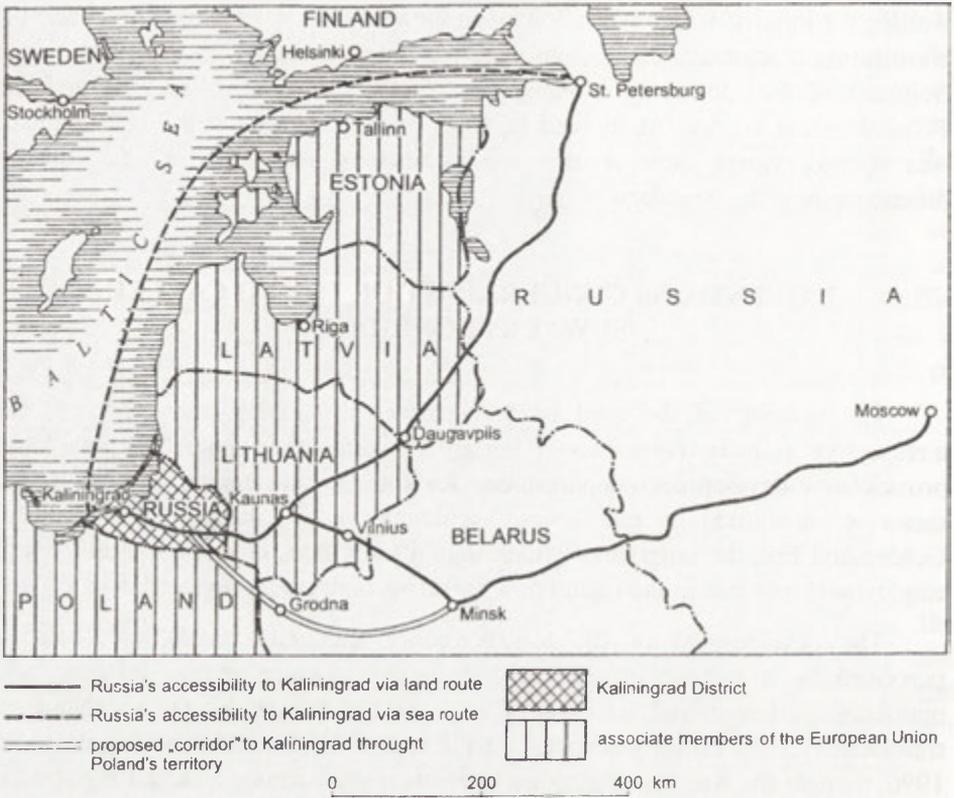


Fig. 2. Geostrategic accessibility of the Kaliningrad enclave

b. Polish assent to the establishment of the “extraterritorial corridor” may be perceived as Poland’s contribution to the pressures exerted by Russia on Lithuania, the territory of which had to be crossed until now by connections between Russia and Kaliningrad District. Both Lithuania and Poland are presently associate members of the European Union. Poland offered to Lithuania - and also to the two other Baltic states - the creation of a free trade zone, and the support for the Lithuanian attempts at becoming member of CEFTA (the Central European Free Trade Association). The development of good neighbourly relations between Poland and Lithuania is an essential

question for Poland, although Polish authorities cannot forget the legal guarantees for the rights of Polish population in Lithuania.

- c. The final success in realization of the transport “extritorial corridor” through the Suwalki region would first of all have a military-strategic significance for Russia, as the establishment of an alternative to the connections crossing Lithuania. When undertaking presently the effort of reconstructing its empire, Russia does not want to be dependent or constrained in the land access to the Kaliningrad District. In view of the unequivocally expressed opinion of the majority of Central European countries, including Poland, as well as the three Baltic states, about joining NATO and the integration with the European Union, Russia wishes to reestablish in Kaliningrad District its military bridgehead. Therefrom also the attempts at gaining international acceptance for the treatment of this territory as a “flank area”, linked with acceptance for the strongly increased military presence there. This kind of concept gives Russia an instrument for exerting various kinds of pressures on Poland, it also casts doubts on the future of co-operation in the framework of the Baltic Sea Area (of which it also makes a part), and finally it may constitute a convenient pretence for hampering the process of integration of the Central European countries with the European Union and NATO.

On the Russian side these actions do not result from the feeling of being militarily threatened by the West. Russia wants to ensure that a possibly broad area in Central Europe - and first of all Poland - will remain in the so called “grey zone”, which, over time, and given advantageous circumstances, could again fall under Russian influence. This is consistent with the traditional Russian imperial doctrine.

The stance taken by the authorities and the population of the Kaliningrad District is not clear in this context. It appears that we rather observe a tendency to preserve or even extend the present scope of independence. They see their future in the framework of the integration processes taking place within the community of the countries of the Baltic Sea Area. By establishing the free economic zone on the territory of the whole district this area would gain a true opportunity for a rapid development which might be stifled by the Russian drive to militarization.

- d. From the Polish point of view the establishment of special obstacles to the transport development between Russia and Kaliningrad should not to be considered an alternative. This would not be consistent with the bilateral agreements signed nor with the binding principles of international co-operation. Furthermore, from the Polish point of view the existing connections

are sufficient for ensuring adequate conditions for the present traffic intensity. On the other hand an agreement on the creation of special transit or an exterritorial transportation corridor for the satisfaction of the Russian military needs, cannot be a subject for discussion. This would be a threat to Poland's sovereignty and would undermine the trustworthiness of the Polish aspirations for joining NATO. Likewise, the hypothetical needs of Belarus' in terms of access to the sea cannot constitute any argument here, since on one hand Belarus' has a normal connection with Klaipeda (Lithuania) and the Kaliningrad itself, while on the other hand Poland has created a facilitated access for Belarus' to the harbours of Gdynia and Gdańsk.

8. "EUROREGION NEMAN"

The concept of formation of the so called Euroregion Neman was first coined by the authorities and the representatives of the self-governmental body of Suwałki voivodship. This potential spatial entity would include, besides Suwałki voivodship itself, and possibly the northern part of Białystok voivodship, the south-eastern areas of Kaliningrad District, two districts of southern Lithuania (Marijampole and Alytus), and finally Grodna province in Belarus'. The objective of creating the Euroregion would be the development of multilateral primarily economic transboundary co-operation. The development of the mentioned functions was to be considered.

This concept had an innate weakness consisting in the lack of consideration for the existing geopolitical circumstances, which have appeared here already at the regional level. The tensions and disparities between Lithuania and Belarus', which had yet appeared before the progressing migration of Belarus and Russia were neither taken into account. Apart from this it is an assumption of the functioning of Euroregions that there be an effective co-operation at the level of local self-governments. There are no such bodies neither on the Belarussian nor on the Russian sides. The respective institutions are only being established on the Lithuanian side. Finally, one can ponder nowadays on the capability of Belarus' to take sovereign decisions concerning international co-operation.

It appears that after the governmental negotiations with Belarus' and Lithuania (beginning of 1996) the bilateral co-operation will be developed in the domain of transboundary relations. It will be more effective and, most probably, subject to weaker pressures and less sensitive to external conditions. The greatest chances for the creation of an Euroregion exist nowadays, it seems, on the Polish-Lithuanian line. These chances will yet be enhanced by the active participation of

both countries in the European integration processes, and by the shared opposition to Russia's imperial tendencies².

9. CONCLUSION

The short presentation of the geopolitical problems related to the north-eastern territories of Poland indicate the necessity of a special approach to the questions connected with transboundary co-operation. Each of the four countries neighbouring with Poland in the east require a separate treatment in the domain of development of bilateral relations. Hence, they must be subject to the decisions of the state, defining foreign policy. They cannot be established exclusively at the level of provincial authorities. In relation to Suwałki voivodship we deal in reality with three separate political entities (Belarus', Lithuania, Russia), with respect to which state policies have to be conducted and the Polish *raison d'être* defined.

The Polish eastern border currently requires special attention. On one hand our country is interested in a possibly wide co-operation with all of its neighbours to the East and the North. The integration processes within Europe have an objective nature and Poland insists on an active participation in these processes. The transboundary co-operation is one of the essential elements of the processes. Our country is not interested in having its eastern boundary become a new dividing line in Europe. On the other hand, though, we have to cope with the fact of growing qualitative differences in the development, first of all with respect to Belarus' and Russia. This results from the differing rates and intensities of the structural transformations in the economic, social and political domains and the vision adopted by Russia as to its place on our continent.

All this amounts to the conclusion that the Polish eastern boundary constitutes nowadays an essential element of our foreign policy. The geopolitical circumstances, which exist here, have their own dynamics, and they ought to become subject to special and incessant care.

² Euroregion Neman was formally established in 1997 by Poland, Lithuania and Belarus. The above mentioned issues are nevertheless current.

QUESTIONS ON THE SPATIAL ORGANIZATION OF THE POLISH-LITHUANIAN BORDER AREA

Janusz L. SIEMIŃSKI

Institute of Rural and Agricultural Development
Polish Academy of Sciences
Warszawa

INTRODUCTION

The present Polish-Lithuanian border has a permanent character. We have been and are neighbours and as such we are urged to maintain good neighbourship, mutual contact, and all kinds of exchange, ranging from economic to cultural relations. Regardless of the windings of policies and the vagueness of politicians, there is therefore a need for investigating the problems of this neighbourship, for reliable evaluation, and determination of the direction of co-operation in order to bring it to a normal European level.

The present Polish-Lithuanian border area is one of the most neglected regions in Europe. Therefore the author starts from the statement that just now the proper conditions have come into being, or - more - the necessity arose of using the now given opportunities, by making even risky decisions, developing certain ideas and minimizing potential threats. For these reasons it is also to be expected that, whatever the structures and opinions on the central level are (these evolve as well), the conditions have come forth for undertaking real co-operation in the scientific circles, among institutions, local authorities, communities, local societies, and even individuals.

This study aims at presenting major problems related to the spatial organization of this area in a global, European, Baltic, and more regional or local context, which are the preconditions for an appropriate formation of the principles of transboundary co-operation between Poland and Lithuania.

QUESTIONS ON THE SPATIAL ORGANIZATION OF THE POLISH LITHUANIAN BORDER AREA WITHIN A GLOBAL CONTEXT

Traditionally, border areas belonged to the periphery and this meant that they featured markedly worse conditions for social-economic development (compared with the central regions of the given country), backwardness in their spatial organization, and their subsequent old - fashioned nature.

In countries of Western Europe, as well as on other continents, it was decided to take care of the border areas some 20 years ago. It was stated that the current situation of these areas could and should be changed, that there was a possibility of activating these regions - mainly economically, and finally, that it was possible, and even advisable that these regions (situated in two, three, and sometimes more countries) would cooperate and thus create real perspectives for development. In a short time the idea of the so called „Euroregions”, hence border areas (see below) has been worked out, proposing that areas which are divided by political frontiers are nevertheless interconnected by various bounds, e.g. economic, social, and cultural ones, and even family bounds.

The transformations that begun in Central-eastern Europe after 1989 and the breakdown of the former Soviet Union led to a fundamental change of the situation for the border areas of the countries in the former „soviet block”. Conditions came about for a new view on these border areas, albeit with considerable retardation (as compared with the west European countries). This was also the case of the Polish-Lithuanian border area.

The region where the problem of transboundary co-operation was relatively early taken up (as far as Poland is concerned) was the area in Poland and united Germany. The Polish-German border has now become the border between Poland and the EU-countries as well. At the end of May 1991 the so called „Euroregion Nysa” came into being on the initiative of the Germans, and other regions were also proposed later on.

The problems of the Polish-Lithuanian border region are different than those along the Polish-German border. The understanding of the necessity of developing co-operation in the Polish-Lithuanian borderland had to mature. The first contacts were made rather early, but the practical co-operation, on the basis of the treaty of the middle of 1994, began in January 1995.

The present border between Poland and Lithuania is one of the oldest frontiers. This borderline (the so called Foch line) which was established in 1919 endured in spite of the initial dissatisfaction declared by both countries, the subsequent tensions during the period between the wars, and the closing of

the border (in a socio-economic sense) during the times of the former Soviet Union. It is now some 77 years old. These areas, which had been strictly divided practically since the end of the first world war found themselves in new circumstances which allow the start of positive processes, including an appropriate spatial organization of the areas on both sides of the frontier. Various problems of the organization arise in this relation.

One of the consequences of the division of the Polish- Lithuanian border area during several decades (i.e. the period 1919-1989), of a region which had been a political and economical unity for many ages, is the exceptionally low standard of development, even against the background of middle European conditions. Still, now, in spite of many favourable changes, the situation in these regions is characterized by an apparent socio-economic backwardness, a certain torpor, and even some distrust. This is a consequence of the 70 year - isolation of these areas: the frontier was in fact a cordon impeding near-border co-operation, blocking any contact between the local communities of both countries, also during the existence of the so called Lithuanian SSR.

The processes mentioned, started in 1989, have also created an opportunity for a change in the spatial development of the borderland. Hence a change of former organization became one of the key problems. In relation to this it is indispensable to investigate the state of the existing organization and its numerous conditions (including historical ones).

INVESTIGATIONS INTO THE CURRENT SPATIAL ORGANIZATION OF THE POLISH-LITHUANIAN BORDER AREA

In the second half of 1994 a Polish-Lithuanian team for transboundary co-operation in the field of spatial organization was established (the author is one of its members). This team inaugurated its activities in January 1995 with a plenary session (8 persons from the Polish side and an equal number from the Lithuanian side, under the direction of the undersecretaries of the relevant departments of Poland and Lithuania). During this session a first meeting was fixed in Wigry near Suwałki (the second meeting took place in Lithuania, Lazdijai in the same year). The main aim of this meeting was to form (Polish and Lithuanian) work groups, to elect the leaders of these groups, and to establish the principles for further co-operation. The problem of the spatial limits of the area was discussed, i.e. the region which according to both the Polish and Lithuanian participants was to be the border area, the object of study and research. Initially the area on the Polish side included more or less three former townships (those of Suwałki, Augustów, and Sejny). On the Lithuanian side there were three regions (Vilkaviškis, Marijampolė, and Lazdijai). The town of Druskininkai was added to

the research area during the second meeting of the work groups (on the initiative of the Poles).

Before attempting an analysis and evaluation of the problems (connected with the recording of the existing situation) certain points of departure are to be accepted. The first one concerns the delimitation of the territorial range of the border area mentioned above. At the beginning it should be stressed that it is a difficult and controversial problem to establish adequate spatial units. There is a lack of studies concerning the limits of the Polish-Lithuanian borderland. The units of reference are different in both countries. The best Polish equivalents of the mentioned three regions in Lithuania would be the former townships, but formally these units do not exist (although there are the so called district offices of the public administration which cover the regions of Suwałki, Sejny, and Augustów, but which are alien to the Polish culture and traditions)¹. When presenting the hypothetical Euroregions of Poland and its eastern neighbours, some authors mentioned the following areas in north-eastern Poland:

- the Suwałki-Marijampolė area,
- the Białystok-Grodna area, and well as
- the Podlasie-Palesie area (more to the South) and
- the Olsztyn-Kaliningrad area (more to the west of the present Polish-Lithuanian border).

The author describes these regions as „potential regions of transboundary co-operation”. The lack of justification for the thus fixed regions, and the qualification „they have common problems to solve” do not give this and any other territorial extent of these regions a definite character. The following Euroregions are a separate problem that reaches beyond the scope of this paper:

- „the Bug” and
- „the Carpathians”, as well as
- „the Kaliningrad Euroregion”, but this is still another question, to be treated later.

¹ E.g. Eberhardt P.: Problematyka tzw. euroregionów na wschodnim pograniczu Polski (The problem of the so called Euroregions on the eastern border of Poland): Podstawy rozwoju zachodnich i wschodnich obszarów przygranicznych Polski (Principles of the development on the western and eastern borderland of Poland). Bulletin nr 5. Węzłowe problemy współpracy przygranicznej (Key problems of trans-border co-operation). PAN-IGiPZ, Warszawa, August 1994 (pp. 55-73).

During the second session of the mentioned team (in Lazdijai) it was established that beside the already mentioned areas on the Polish and Lithuanian side, the town of Druskininkai is to be included in the field of study. This proposal made by the Polish delegation was accepted by the Lithuanians. This decision however, does not end up the question of a suitable delineation of the Polish-Lithuanian border area. For instance during the first Polish-Lithuanian seminar devoted to transboundary co-operation² the municipal government of Alytus expressed not only its interest but the wish to belong to this area (the borderland), referring among others to the town's and region's good contacts with Poland. This means that the question of the delineation of the research area is still an open one.

An interesting proposal was presented by the Lithuanian side during the mentioned first Polish-Lithuanian seminar. A project for a new administrative division in Lithuania was presented. According to this division there would be two provinces along the border, namely those of

- Marijampolé, with the districts Marijampolé³, Vilkaviškis and Šakiai, and
- Alytus⁴ with the districts Alytus, Lazdijai, Varena, including the separate town of Druskininkai

In this case the inclusion of the three former townships in to the border area on the Polish side (those of Suwałki, Augustów, and Sejny) gains extra substantial support. The addition of the former township of Goldap to the mentioned three borderland townships can be considered, but it must be remarked that this district does not border with Lithuania.

A significant problem is constituted by the geo-political conditions connected with the Polish-Lithuanian borderland. This question will be omitted here, because it was discussed in another study⁵. Let us only state here that the form of the spatial organization of the entire Polish-Lithuanian border area depends on the settlement of this question. It has a distinct European context and comes close to the concept of the so called "Euroregions" and other related issues.

² Wigry-Mariampole-Alytus-Druskininki, Seminar organized by joint team from Poland and Lithuania, June 2-9 1996.

³ Surface 4.463 km², population 198.2 thousand including 52.280 inhabitants of the town Mariampole.

⁴ Surface 5.425 km², population 202.0 thousand including 77.303 inhabitants of the town Alytus.

⁵ See the text of M. Rościszewski entitled "„Geopolityczne uwarunkowania polskiej granicy wschodniej" (Geopolitical conditions at the eastern frontier of Poland). In: Węzłowe problemy współpracy przygranicznej (Key problems of trans-border co-operation). Bulletin nr 5. PAN-IGiPZ. Wasaw. August 1994.

QUESTIONS ON THE SPATIAL ORGANIZATION OF THE POLISH-LITHUANIAN BORDER AREA IN A EUROPEAN CONTEXT

One of the most interesting concepts, related to the development of many European countries, is the concept of the so called „Euroregions”. The concept of Euroregions, referring to the borderland, originated and crystallised after the Second World War. Therefore it is relatively „new”. It matured in several west European countries, and the formation of the first Euroregions was preceded by years of preparation, deliberations, consultations. Many difficult matters could be discussed and solved in this period. Owing to various compromises the following essentials were established:

- programme principles for the Euroregions, including aims and tasks;
- principles for their founding and implementation;
- political principles aiming at the integration of the borderland with other regions (within the framework of implementing the idea of a united Europe in the 21st century).

The first Euroregions, i.e. transborder regions in western Europe, came into being as a result of relevant treaties and agreements concerning transboundary co-operation by the bordering countries (mainly two or three, seldom more). The following circumstances were at the basis of the idea of Euroregions which was shortly thereafter implemented:

- the borderland is recognized as a lagging region,
- the retardation of these areas forms a sort of barrier and even a restraint for the development of the given country and by consequence the regions are to be supported from outside (using national funds), because
- these regions will not be capable of overcoming their backwardness;
- common undertakings of bordering countries may solve many difficult problems of these areas, particularly in the field of trade, or in environmental protection, but also in matters of science, and technology, tourism, culture, etc.

This means that political as well as socio-economic and ecological considerations were at the basis of the formation of Euroregions.

Thus, Euroregions had not only to attain certain regional goals, but to serve political purposes as well. The latter must be kept in mind, in particular because the political aims are connected with the development strategy of the countries of the European Union, to which Poland also aspires. There are, however, fundamental differences between the countries of the EU and those which are not

in it. The western European Euroregions were founded along the borders of well integrated, financially relatively strong countries with a similar economic profile, and with a comparable living standard of their inhabitants. The Euroregions attempted along the outer borders of the EU-countries have and should have another character.

Whereas the Euroregion in western Europe played a certain historical role, in spite of the fact that many complicated questions could not be solved (conflicts of interests could in many cases not be resolved by making compromises), the question of Euroregions like the one between Poland and Germany gives rise not only to controversies but also to serious reservations. Still other questions are connected with the concept of Euroregions between countries which do not belong to the European Union. In the case of Poland and its eastern neighbours, the weight of these problems differs with the given bordering country. The concept of Euroregions has more reasons to be of concern to Poland and Lithuania, than in the case of the Polish border with the Ukraine, Belarus, or Russia (more precisely the Kaliningrad district). Such, certainly not exceptional opinion results from several causes, among which the political, national, and historical ones should be mentioned in the first place. This does not change the fact that the work on an Euroregion along the Polish-Ukrainian borderland is in an advanced stage, whereas it is still being delayed in case of the Polish-Lithuanian border area.

Euroregions had and have many adherents but also adversaries. Euroregions around the Polish-German border have a different character (than the west European ones) and their very concept gives rise to serious controversy (not only of political nature in fact).

The hypothetical Euroregions along the border of Poland with its four eastern neighbours have a different character. In the west, Poland has a mighty neighbour while the partners in the east are weak.

Particularly now the political problems and goals are closely connected with the economy, and the former are achieved by the strength of the latter. Social, cultural and business matters add to this. All this is very complex and requires enormous deliberation, examination, care, especially because each decision in these matters implies consequences which are difficult to foresee. The value of potential benefits and disadvantages is hardly measurable, and very controversial. It may never be calculated from immediate interests or may bring forth questions which could evoke mutual distrust, accusations, unwillingness.

The concept of Euroregions has an intellectual bearing. One may agree with it and support it, or on the contrary, deny it. One thing is certain, however: this concept needs further analysis and should be interpreted appropriately.

QUESTIONS ON THE SPATIAL ORGANIZATION OF THE POLISH LITHUANIAN BORDER AREA IN A „BAL TIC” CONTEXT

The future development of the border areas of Poland and Lithuania depends to a considerable extent on the solution of many problems on a European scale (see the previous section), but also on broader questions of the development of the Baltic Sea region. Conceptions and strategies of the spatial development with reference to the Baltic Sea countries which had been presented and discussed at the second Conference of Ministers for Spatial Organization in Tallinn (in December 1994) were elaborated following the pattern that had been applied in the programme „Europe 2000”. In this way the Baltic Sea countries decided to engage in common studies, including those related to planification, after a more than 50-year period of standstill due to the existence of the „iron curtain”.

The basic document here is the international Program „VASAB 2010”. The general aim of this program is to ensure that the area of the Baltic Sea will (in 2010) be characterized by:

- a variety of mutual connections in the field of trade, transport, culture, and education,
- a strong identity that enables it to play an important role in Europe and the world,
- a differentiation of the development of the particular subregions, depending on their individual possibilities,
- maintenance of an equilibrium between development and environmental protection,
- a planning philosophy based on principles of compliance, participation, openness, and trust.

The Baltic Sea area has a high level of spatial coherence with a strong differentiation in the standard of living of the population and with social-economic differences. This area should elaborate a strong identity, establish its profile, stress its strong traits, engage in a competition with the other regions of Europe, in order to contribute to a united Europe and to gain significance and strength. In relation to this the area should become a well functioning whole, a permanent and well balanced (pro-ecological) development. It is stressed that matters which require an immediate solution may not be decided without a long-term planning.

Departing from the assumptions mentioned above, the representatives of the Baltic Sea countries agreed upon working out a concept for spatial development under the title „Visions and Strategies around the Baltic 2010” (VASAB 2010). The purposes therein are the following:

- support of the development of a network of relations in the Baltic Sea area,
- broadening of knowledge about the countries in this region,
- valuation of important infrastructural projects,
- promoting spatial ordering and planning.

The essence of "VASAB 2010" consists of four fundamental values, namely:

- economic and social development,
- maintenance of an equilibrium between development and the needs of the environment,
- freedom (in the sense of enabling a free choice, according to individual preferences),
- solidarity (concerning the participation in the benefits of the development and responsibility before higher level structures are engaged in the given question; the representatives of institutions on a lower level are urged to use their own subsidiaries and possibilities).

"VASAB 2010" presents, in spatial categories, a desirable and realistic perspective for the future. This includes the following objectives:

a. A competitive system of cities gains importance thanks to co-operation in the Baltic Sea area and Europe, with special regard to the Baltic Ring of European cities;

b. The system of towns strengthens their spatial coherence;

c. The connections between the urban regions and their agricultural hinterland will have a positive influence on the regional economy and the ecological equilibrium;

d. The cities offer their inhabitants and investors attractive living conditions;

e. The network of transport and communication in the countries of the Baltic Sea Region (BSR) will favour the dissemination of pro-ecological forms of transport;

f. The network of transport and communication shapes the conditions for an effective co-operation within the BSR and between the BSR and the rest of the world;

g. Production of energy will to an increasing extent rely on renewable and pro-ecological sources;

h. The transboundary co-operation should to a considerable extent contribute to an improved economic and social coherence;

i. The islands are to be the tourist root of the BSR;

j. The development of the coastal zone is being planned with due regard to the balance between environmental protection and economic progress;

k. A Baltic network of protected natural areas is demarcated;

l. Spatial organization contributes to harmonisation and preservation of the spatial cohesion beyond the country borders;

m. Spatial planning will be based on principles of commitment, participation, and reliability;

n. Spatial organization contributes to the harmonisation of industrial and regional planning.

The aims and directions of action as they have been sketched here can and should be taken under consideration in particular in the approach to the future social-economic development of the areas on both sides of the Polish- Lithuanian border, since both countries, i.e. Poland and Lithuania belong to the family of Baltic states⁶.

⁶ Baltic Europe in the Perspective of Global Change (Europe 2010 Series, Volume 1) EUROREG (ed. A. Kukliński). Oficyna naukowa, Warsaw, 1995.

Towards a spatial development concept in the Baltic Sea region. Third Conference of Ministers for Spatial Organization. Tallin, December 1994: documents, study material, comments. Published by the Regional Planning Office of the Central Planning Office with its seat in Gdańsk. Warsaw-Gdańsk, April 1995.

Governmental Programme for the Development of Economic Cooperation with Eastern and Baltic States. Subprogramme „Regions”. The development of contacts with the regions and districts of the Russian Federation and other Eastern and Baltic states. Central Planning Office. Warsaw, April 1995.

Governmental Programme for the Development of Economic Cooperation with the Eastern and Baltic States. Subprogramme „Promotion”. Theme: intensification of the role of Poland in the economic relations of the Western and Eastern states. Central Planning Office. Warsaw, April 1995.

The study of the countries in the Baltic Sea region presents also border areas with a great potential of developing transboundary co-operation within the time perspective till 2010. The following ones are mentioned with reference to Poland and its neighbouring countries:

- a borderland zone along the Polish-German frontier,
- the area of the bay of Gdańsk, or in practice a part of the Polish provinces including those of Gdańsk and Elbląg, together with the Kaliningrad region,
- the area along the borders between Poland, the Kaliningrad region, and Lithuania or also
- the Polish-Lithuanian-Kaliningrad-Belarusian area,
- potentially other areas.

The previously mentioned areas are denoted as Euroregions in a different concept. One of these is the Euroregion "Pomerania" covering the two north-western provinces of Poland, a part of Mecklemburg in Germany, the southern part of Sweden with Malmo and Ystad, and the Danish island Bornholm⁷.

During the second Baltic Economic Forum in Chelchy near Elk in February 1994, the idea of a new Euroregion „the NEMAN” was put forward, and a year later, in February 1995, the purpose of founding that Euroregion was specified in the final document of the conference.

The concept of establishing Euroregions (transborder areas) has been presented earlier. We will merely state that against the background of other Euroregions, the initially sketched concept of a vast Euroregion "NEMAN" (see Fig. 1) seems to be very interesting and deserves attention and consideration, in spite of various kinds of doubts as well as restrictions. The potential Euroregion "NEMAN" thus places itself very well as a "Baltic Euroregion" (four countries, including three Baltic ones, with differentiated interests but interdependent economies, similar problems, conditions, and strivings - except Russia, an awareness and even necessity of co-operation, potential benefits, the need for protection of the values of nature, the achievement of better conditions for the development of the transborder areas, etc.). Moreover this idea fits well in with the concept of integrating the countries in the Baltic Sea district and it may serve the integration of the European states. The concept of the

⁷ The so called Euroregion „Pomerania” is omitted here, because it is a very disputable problem. This question is discussed below. The Euroregion of the Kaliningrad district, proposed by W. Misiak in 1994, requires further discussion as well.

Euroregion „NEMAN” however requires, further specification and study. Certain common or interwoven elements of this area may be used as a basis, i.e.:

- the basin of the river Neman, which also covers a part of Polish territory,
- similarity of components of nature including landscape,
- the area belongs entirely to the so called „Green Lungs of Europe”,
- the settlement and industrial structures are similar,
- the awareness and need for co-operation and integration are growing.

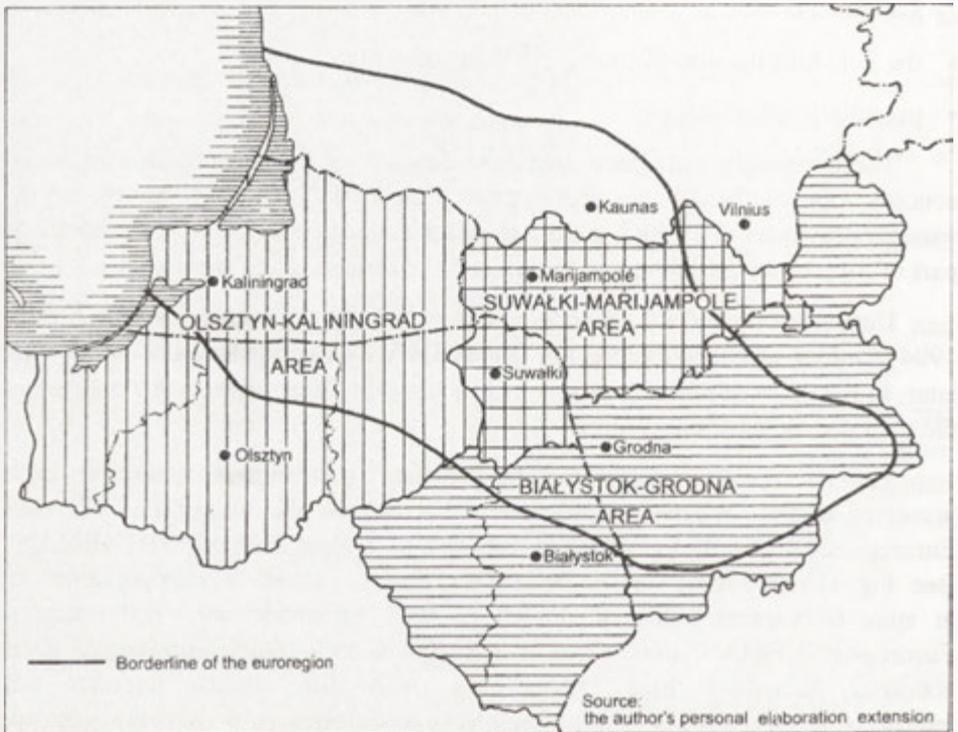


Fig. 1. Hypothetical borderline of the Euroregion „Neman” (Niemen/Nemunas)

Future cohesive elements for this potential Baltic macro-region (Euroregion) might be:

- the entry of the Baltic countries (except Russia) into the CEFTA,
- the course of the „Via Baltica” motorway,
- integration of economic structures,
- exchange of goods and the development of trade,
- cultural co-operation.

QUESTIONS ON THE SPATIAL ORGANIZATION OF THE POLISH-LITHUANIAN BORDER AREA IN A MACRO-REGIONAL AND REGIONAL CONTEXT

Various conclusions may be drawn from the considerations presented. The question of European integration and the reintegration in the development of the countries around the Baltic Sea places itself on the foreground. This reintegration may have different facets. In the context of the concept of Euroregions, the need for the elaboration of regional plans is a key problem, already in the phase of their foundation. This is because these plans are seen as an instrument for shaping the development in the economic, social, and spatial aspect. The transboundary co-operation would be wholly effective if it could rely exactly on the indications of regional plans, under the condition that these were worked out in a uniform manner. The problem is however, that different techniques and methods are applied in various countries, that there are different approaches to matters like registration of data, that there are different administrative territorial divisions, that various questions are accentuated, etc. The evidence is given by a Polish study („The development concept of the Suwałki province and the development strategy of this province”) and a Lithuanian study (Lietuvos-Lenkijos pasienio regionu pletros projektas, Vadinis etapas).

Studies concerning the whole North-Eastern macro-region made in the seat of that macro-region, i.e. in the Regional Planning Office in Białystok, are of a different character. A study entitled: „Major problems and social effects of the transformation of the economy in the North-Eastern macro-region (report on the regional policy)” from 1993 deserves special attention here.

Irrespective of their character, the existing studies require profound analysis with regard to their suitability for the present study, with putting down everything of value within the context of the already mentioned considerations, and rejecting unrealistic proposals for change. One of such proposals for instance is the concept of an exclusively endogenous development. In the light of the given information (see: outline of the research problem - the European and Baltic context), this concept is unacceptable. The most desirable concept would be the one with a partly exogenous character (support from the outside is necessary for the province of Suwałki and it is already realized) and a partly endogenous trait.

Beside this concept there are also other ones which deserve consideration and which can be written down mainly in the following way, namely concepts of:

- multifunctional development,

- order (in a broad sense, i.e. mainly: social, economic, spatial),
- renovation (see the ideas of ECOVAST, the European organisation for the protection of villages and small towns),
- activation and development of local communities, „community development in short”,
- eco-development,
- development strategy.

The latter has been elaborated (see: the development strategy for the province of Suwałki. Suwałki, March 1993), but it needs to be brought to the fore and many questions which are outlined in the present study have to be analyzed anew. „The necessity of support for the region” as it is proposed in that study, for example, is reasonable, but it may not be limited to the use of support of the kind of "STRUDER" alone. The list of the weak and strong sides of the region certainly deserves attention:

Weaknesses

- Unemployment;
- Low indicators of infrastructure development
- Weak economic development;
- Collapse of state enterprises;
- Lack of capital;
- Weak sector of small and medium-sized enterprises;
- Low level of the „macro-region”

Strengths

- Geographical location; Nearness of „markets for sale in the East”;
- Resources of „nature „and landscape type”;
- Clean environment;
- Land and assets for investment;
- Shared aims for development;
- Activity of regional investment;
- Ethnic and religious differentiation.

The most important problems of the province are connected with the previous list of its weak and strong sides:

- 1) unemployment,
- 2) underdevelopment of infrastructure,
- 3) economic and spatial development of towns,
- 4) demographic problems, including maintenance of balance of the sexes in the country side;
- 5) problems with cultivation of land in agriculture.

With respect to this, activities have been undertaken such as:

- development of the infrastructure and its modernization,
- support to small scale production (enterprises),
- education of the population and development of counselling,
- promotion of the province, etc.

These activities deserve attention, but they may not suffice, since the pace of reforms is quite low.

QUESTIONS ON THE SPATIAL ORGANIZATION OF THE POLISH-LITHUANIAN BORDER AREA IN A REGIONAL SENSE

At the beginning of the research and development project which has been proposed but not yet evaluated by the State Committee for Scientific Research⁸, the author chose the following priorities with respect to the Polish-Lithuanian border area:

- a) development of the technical, economic, and social infrastructure which is to constitute the basis for an intensive international exchange of goods and persons (including the so called infrastructure of road and railway border crossings) and their significance, especially that of the former, for the improvement of the living conditions of the population of these areas, along with enhancement of their attractiveness as places for housing, work, investment, recreation;
- b) transformation of the settlement structures adapting it to the new character and the new functions of the border areas, in connection with economic, demographic, and sociol-cultural reform;
- c) intensification and modernization of agriculture and development of non-agricultural functions, especially in small towns in rural areas;
- d) development of recreation and of health resorts in these areas and creation of a suitable basis for such kinds of activity;

⁸ R&D -project- „Grant request prepared by the team under the direction and editorship of the author for the Central Planning Office and National Committee for Research Scientific entitled: „Perspektywy rozwoju obszarów przygranicznych polsko-litewskich w ujęciu regionalnym i lokalnym” (Development prospects for the polish-lithuanian borderland in a regional and local perspective). (Four Institutes in Warsaw and five in Suwałki). Warsaw-Suwałki, August-October 1995.

- e) protection of the natural environment, its rational formation and cultivation facilitating the use of the natural values without threatening them;
- f) work on a development concept for the area under investigation on the basis of the self determination of the local communities, involving them in the process of constructing the given projects or development programs and the acceptance of responsibility for their realization. Problems connected with the spatial organization of these areas can be considered within three contexts:
- the European (see the discussion of the „European context”);
 - the Baltic one (see the discussion of the „Baltic context”);
 - the regional one (see the macro-regional and regional context as well as the discussion below).

The question of the Polish-Lithuanian borderland has a distinct regional character which may not be omitted in a planning study. This implies a broader look at this borderland - not only from the angle of an eventual „Euroregion Neman” (eventually excluding the Kaliningrad enclave from it), but even from the scale of both countries. It is therefore very important to identify the problems of the present situation, problems of the development thus far, and the chances and barriers for further development. In this context it seems appropriate to distinguish the following problems connected with this area:

- demographic and social
- concerning the natural environment
- cultural heritage
- recreation and health resorts
- the settlement system⁹
- infrastructure in a broad sense¹⁰
- industry
- agriculture and forestry
- and eventually other problems, e.g. bilateral contacts with trading, cultural, sports character etc.

⁹ Including housing.

¹⁰ Including social infrastructure (and services), and the technical infrastructure including the so called infrastructure of border crossings, as well as waste management.

These problems have been presented in a different setting in the prepared project, namely in the form of so called detailed studies concerning:

- demography, socio-cultural life and social infrastructure;
- settlement;
- natural environment;
- recreation (leisure, tourism, sports and health resorts);
- technical-municipal infrastructure;
- industry (economic conditions);
- agriculture and food industry (distinguished especially with regard to the particularities of the region);
- financial conditions.

Almost all of the mentioned questions are shown in the form of descriptions, tables and maps. In addition to this the „project outline” includes the full list of thus far produced work (in the fields which have been stipulated) and information about the authors, their output etc.

QUESTIONS ON THE SPATIAL ORGANIZATION OF THE POLISH LITHUANIAN BORDER AREA IN A LOCAL SENSE

At the beginning of 1993¹¹ the author prepared another project proposal for research and development presented on the sixth congress of the State

Committee for Scientific Research. This project originated long before the ratification of the Polish-Lithuanian Treaty. Thus the author acknowledged that the basis for a future Polish-Lithuanian co-operation will be the contacts between the local communities from both countries, irrespective of the windings of the political elites in Poland and Lithuania. These contacts are to shape a climate of neighbourship and good relations (as they should be expected) on the governmental level. Thinking about the form of this co-operation, the author adopted from F. Perroux his wrongfully forgotten creative theory of polarized regions and his „growth poles”, activating the development of the surrounding areas, hence the whole border zone. In this context the functions of these centres and their future role in this area become important, as places which initiate the development of these very centres (including the possibility of restoring urban

¹¹ Preferencje rozwojowe byłych i obecnych miasteczek pogranicza polsko-litewskiego w obsłudze ruchu transgranicznego” (Development preferences of the former and present small towns in the Polish-Lithuanian border in serving the transborder traffic). IGiK, Warsaw, April-June 1993.

rights in the case of some former small towns) and the surrounding area. The author stresses at this place the exceptionality of these areas, which have the rank and significance reaching beyond the two countries.

The starting point is the present situation in the Polish-Lithuanian borderland. These areas are marked by an exceptional low level of cultivation, also under Polish conditions. Meanwhile certain problems (e.g. in the field of ecology, recreation, agriculture) not only might, but ought to be solved commonly according to the principle of mutual benefit.

The area being the object of the author's interest (Fig. 2) has certain specific features, namely:

- characteristic location;
- high value of nature and landscape (especially lakes, forests, and characteristic surface relief);
- touristic values and peculiarities (including monuments of architecture);
- a very interesting cultural mix and an unusual history of this land;
- existence of many places that once have been small towns (Table 1 and 2).

The characteristics mentioned were the departure for this study. The awareness of the particularities of the field of study was decisive for the character of this research project and is indicative of its originality.

Table 1

Demographic development and the status of the investigated former and present larger and smaller town
(in the Polish part of the study area, the Suwałki voivodships)

No.	Towns	Population in the years						Year of foundation	Urban rights lost in	Urban rights restored in
		1950	1960	1970	1978	1988	1992 ¹			
1	2	3	4	5	6	7	8	9	10	11
A.	A. Presented towns:									
1.	SUWAŁKI	16 360	20 669	26 315	36 701	57 627	63 913	1715	—	—
2.	AUGUSTÓW	9 196	14 705	20 165	23 659	27 713	29 089	1557	—	—
B.	B. Former and present towns:									
3.	Sejny	1 508	2 468	3 509	4 237	5 605	5 944	1595	1869	1923
4.	Lipsk n/Biebrzą	709	785	773	1 130	2 243	2 509	1580	1869 (1870)	1983

1	2	3	4	5	6	7	8	9	10	11
C.	Former small towns - seats of the municipality									
1.	Bakałarzewo	295	393	380	371	703	727	1603	1869 (1870)	—
2.	Filipów	1 510	1 582	21 643	1 795	1 927	2 532	1570	1869	—
3.	Jeleniewo	303	316	339	401	481	510	1782	19 th	—
4.	Krasnopol	1 071	1 226	1 290	1 259	1 293	1 322	1770	century	—
5.	Przerosł	467	483	548	544	594	893	1576	1870	—
6.	Puńsk	350	408	543	822	1 112	1 095	1647	1857	—
7.	Raczki	1 025	1 176	1 262	1 426	2 004	2 245	1558	1870	—
8.	Wiżajny	861	887	915	926	961	1 036	1606	1869 (1870)	—
D	D. Former small towns not being the seat of the municipality									
9.	Bereźniki	364	345	349	331	300	304	1559	1805	—
10.	Szczerba	164	203	266	271	289	318	1767	1827	—
E.	E. Other villages which are the seat of a municipality (for comparison)									
1.	Dubeninki	235	336	377	699	831	769			
2.	Giby	503	558	576	555	602	637			
3.	Nowinka	193	231	285	287	288	294			
4.	Płaska	398	401	375	388	371	372			
5.	Rutka-Tartak	149	184	279	341	397	419			
6.	Szypłiszki	226	227	277	287	295	295			

† Situation as of December 31 for A and B; the data for C, D, and E are estimated on the basis of „Wydruk...” (Print out of the census districts and statistical regions as of May 13, 1993)

Source: Data from sub-system MS (Census Office) and Provincial Statistical Office in Suwałki, May 1993.



● Present towns	SUWAŁKI AUGUSTÓW	MARIJAMPOLE ALYTUS
● Former and present towns	SEJNY	DRUSKININKAI VILKAVIŠKIS
⊙ Former towns	Bakalarzewo Filipów Jeleniewo Krasnopol Przerosi Puńsk Raczk Wiżajny	Kalvarija Kapčiamiestis Kybartai Lazdijai Leipalingis Seirjai Šeštokai Simnas Veisiejai Virbalis
● Other former small towns	Bierzniki Szczebra	Krosna Vištytis
○ Other localities	Dubeninki Nowinka Giby Płaska Szypliszki Rutka Tartak	

Fig. 2. The Polish-Lithuanian border area under investigation

Table 2

Demographic development of settlement of units in the Lithuanian part
of the study area

Localities	1959	1979	1989	1992	1996
Mariampolė	19 621	28 763	50 616	52.3	52 034
Alytus	12 350	28 074	73 072	77.5	77 354
Druskininkai	5 765	11 160	22 502	24.1	22 060
Lazdijai	3 109	3 928	5 593	5.9	5 892
Veisiejai	1 513	1 468	2 023	2.1	2 174
Vilkaviškis	5 072	8 566	14 044	14.4	14 276
Kybartai	6 244	6 430	7 052	7.2	7 100
Virbalis	1 429	1 487	1 553	1.6	1 513
Kalvarija	4 698	5 600	5 744	5.7	5 759
Simnas	1 661	1 709	2 239	2.2	2 339
Kačiamiestis	828	780	719	*	*
Leipalingis	1 234	1 403	1 829	*	*
Serijai	1 164	1 149	1 010	*	*
Šeštokai	973	854	759	*	*
Krosna	362	380	396	*	*
Vištytis	601	728	591	*	*

* data not available

Source: The basis of data Professor Algirdas Stanaitis, to whom the author is grateful for assistance.

**QUESTIONS RELATED TO THE POSSIBILITIES OF
DEVELOPMENT OF FORMER SMALL TOWNS IN THE POLISH-
LITHUANIAN BORDERLAND**

The following three clusters of proposed development directions can be distinguished:

a) former and present small towns as concentration points for tourism and sight-seeing;

- b) former and present small towns as centres for service and crafts, primarily service and provision for the surrounding areas in the field of bio-dynamic (ecological) agriculture;
- c) former and present small towns as socio-cultural centres.

Ad a) This proposal conforms to the contents of the author's hypothesis concerning the concentration of the expected growth of tourism in this region, especially in the former and present small towns. In view of their history, uniqueness, picturesque and individual character these places may change into major tourist centres. In other words, the remaining values of these places, including exposing, presenting, and disseminating such values as the spatial shape of the town, the monuments of sacred and profane architecture, other material and spiritual relics, monuments of nature, cultural traditions, e.g. in the field of language, fine arts, and music), should be taken care of. The extraction and popularization of all these values and vices in both countries (and all over Europe) aims at creating new important tourist attractions, for the cultural landscape of Poland and Lithuania, beside other, specialized ones, like water hostels, swimming pools, centres for fishing, sailing, sight-seeing, skiing, horse riding, and other forms of recreation. As it is to be expected, a gradual transformation of the entire area begins by way of development of these essential centres. It is a transformation of these regions into a tourist holiday-making region of nature and landscape qualities which are unique for both countries (and for Europe as a whole). A key element in a thus conceived setting should be the care and conservation of unique natural qualities and their ecological protection (author's proposal).

With regard to the neglect of the borderland, the author of this project delineates his main hypothesis already in the title of this paragraph. With in the necessary socio-cultural, economic, and spatial revitalization programme of the whole area priority should be given to the former and present small towns as specific multifunctional centres, focusing on the process of the desired transformations. In other words: in the incontestably assumed necessity of a broadly conceived activation of the Polish-Lithuanian border area, priority is to be given to the indicated places as socio-cultural-economic and tourist centres in the sense that their faster, more harmonious and balanced development would be a catalyst for transformations of the whole borderland. This is in the well understood interest of both countries, primarily of local communities on both sides of the border. The concept of (spatial, economic, social, ecological, and even moral) order is connected with this question.

The concept outlined is not in conflict with the strategy of development of the voivodship of Suwałki, and it is in line with other concepts, among these the recently promoted „Green Lungs of Europe”.

Ad b) Like every settlement unit, the former and present small towns, taken as the object of study must have a guaranteed economic basis for development. It is assumed that they develop mainly as centres with a service character (including the care for the inhabitants of the municipalities in which they are located) and as service centres for „unconventional”, „alternative”, ecological agriculture. It is true that agriculture on the post glacial moraines of the upland of Suwałki was and is of an extensive type. In the ecologically relatively pure fields there are good opportunities for ecological agriculture, combined with local food processing and agro industry. Food produced from such raw materials would be bought eagerly, not only by the local population, but also by tourists, holiday guests, and inhabitants of other regions in both bordering countries. It would also be competitive for the chemically treated products of West European agriculture. In the framework of this concept a small town would become the main local centre of „its” municipality serving the surrounding area; a „local centre” in the traditional and modern sense of the word, i.e. a multi-functional centre. Such view implies that it is possible and reasonable that also other functions be developed, like crafts and small-scale, non-polluting manufacturing¹².

In this context the hypothesis may be formulated that the service-production function is and should be one of the many functions of former small towns, developed on a par with their other functions.

Ad c) As it has been stated already, the development thus far of the former and present small towns in the Polish-Lithuanian border area should not be separated from their extraordinarily rich and very original cultural heritage. The cultivation of this legacy is the duty of, in particular, socio-cultural associations of mainly local character. On the Polish side these are, for instance:

- the Association of Friends of the Land of Augustów;
- the Socio-Cultural Association „Suwalszczyzna”;
- the Cultural Society of Suwałki;
- the Association of Friends of the Land of Sztabin of the Memory of K. Brzostowski.

On the Lithuanian side there are first and for all:

- Druskininku miesto savivaldybe (Druskininkai),
- Lazdiju miesto savivaldybe (Lazdijai).

¹² Most of the former and present small towns in the region under study are currently the seats of the municipalities, hence centres with a developed administrative function.

These associations and societies have their seats not only in the capitals of the meso-regions, like Suwałki and Marijampolė but also in former and present small towns like Lipsk, Sztabin, Puńsk, or Sejny, as well as in Druskininkai, Lazdijai, etc. This is a proof of activity going on right now, which should be remarked, supported, developed. It indicates also that the relevance of small towns as socio-cultural centres confirms their rank in the settlement structure in this region and thus predestines them to play an important role in the future as well. Thereby, confirmed is in particular, the current and, as may be assumed, prospective function of the places which now belong to the category of former present small towns as locations for secondary schools, i.e. as educational centres of significant rank exceeding the local level. It also points to their role as locations for concentration of institutions like museums, „regional chambers”, or culture clubs.

The functions sketched here bear a promise for the specific role and rank of small towns as the most important christallization centres in the structure of rural areas, forming their socio-cultural profile. Hence the development of these functions is and will be indispensable, and this constitutes a further research hypothesis.

In the light of the previous argument it gets clear, what the role of the infrastructure is to which the author ascribes the priority status in the modernization not only of the places under consideration, but also of the whole border area. Within this setting, the former and present small towns would occupy a fundamental position as nodes of the infrastructure.

Further problems to be undertaken are: analysis and functional classification, analysis of the spatial structure of the former and present small towns, their typological organization, etc. As an outcome of this procedure the author wants to delineate the conditions and criteria of potential restitution of urban rights for some former towns in the region.

Against this background the basic research hypothesis appears, namely: the main role in servicing the transborder traffic will be fulfilled by the former and present towns in the Polish-Lithuanian borderland. Interdisciplinary research on the whole border area with special attention to the former and present small towns is needed for testing this hypothesis. This is to be research of a regional and local character, reckoning with

- external conditions (including international ones, e.g. the use of foreign experience);
- internal conditions (reckoning with the particularities of the areas on both sides of the border).

The units of study include on the Polish side the municipalities and the former and present small towns in the north-eastern part of the country, and on the Lithuanian side the cities and towns in the south-western part of the country (see map and table).

OTHER QUESTIONS ON THE SPATIAL ORGANIZATION OF THE POLISH- LITHUANIAN BORDER AREA

Experience with the Polish-German transboundary co-operation shows that juridical and financial conditions form an enormous barrier; other hindrances are the various regulations and forms relative to the functioning of regions, towns, local communities, etc. Another kind of barrier is constituted by the language, or by certain prejudices. This must be kept in mind, and it is a matter of fact that both interested states, the regional authorities in the borderland, and the planning institutions have to overcome these barriers in a common effort. A helpful thing in this respect would be to publish a Polish-Lithuanian and Lithuanian-Polish dictionary of planning¹³.

Another factor influencing the analysis and study of the borderland is the administrative-territorial division (which is different in Poland and Lithuania). This problem is related in particular, to the exactness of analyses dependent on:

- statistics (different units of reference are here a certain barrier, hampering the progress of the work);
- cartographic material (a step forward in this respect was made with the study completed by the joint Polish-Lithuanian Committee for „Geological-Environmental” Studies¹⁴, obtained moreover, we must mention the source material obtained within the framework of „the Green Lungs of Poland” and broader „the Green Lungs of Europe” programmes.

All this does not alter the fact that cartographic work done in Poland „ends” at the frontier between Poland and Lithuania, and that such work done in Lithuania equally „ends” at that border (this does not apply to popular maps - tourist and car maps, especially the recent ones).

¹³ See: Deutsch-Polnisches Handbuch der Planungsbegriffe (German-Polish dictionary of planning notions).

¹⁴ The work of the Polish part carried out by the State Institute of Geology in Warsaw.

INSTEAD OF A CONCLUSION

The author finally draws attention to the fact that the presented problems related to the spatial organization of the Polish-Lithuanian border area have not only their particularities, but also a great weight for a broader dimension, if not a European then at least a Baltic one. There is therefore a need for elaboration of such a concept for the development of this border region, that could become a model for other in central and eastern Europe. The founding of such a future concept on a scientific basis creates a real chance of making it feasible.

THE ECONOMY OF SUWAŁKI VOIVODSHIP IN THE TRANSFORMATION PERIOD (ADJUSTMENT ASPECTS)

Cecylia SADOWSKA-SNARSKA

University of Warsaw
Białystok Campus

The ultimate success of systemic transformation depends not only upon the macroeconomic policies, their principles and implementation, but also upon the advances in the reconstruction of the economies of individual regions of the respective countries, that is, in the case of Poland - of individual voivodships.

The fundamental importance for the systemic transformations in the economy should be ascribed to:

- changes in the ownership structure of the economy;
- changes in the sectoral and branch structure of the economy;
- inflow of foreign capital;
- creation and development of the environment conducive for economic activity, generally referred to as [adequate] business environment;
- changes on the labour market.

The scales and the rates of these transformations are differentiated across space, therefore some sectors of economy and some regions in Poland undergo quicker systemic changes and adapt better to the requirements of the market economy. Thereby, these regions gain the opportunity of a sustained accelerated growth, while those where the respective processes advance with the slowest rates are threatened with the progressing demise of economic activity and the persistent high excess supply of labour.

The present paper constitutes an attempt of illustrating the economic transformations taking place in Suwałki voivodship in the years 1989-1995, as perceived against the background of transformations going on in the whole of the country. In particular, the intention was to show the extent to which the region in question has the requisite capacities of adaptating to the principles and conditions of the systemic transformation. This is insofar important as at the beginning of the transformation the Suwałki voivodship has been classified as

one of the voivodships with the lowest development level and with essential delays in the sphere of the living standards of the population.

1. CHANGES IN THE OWNERSHIP STRUCTURE OF THE ECONOMY: PRIVATIZATION

One of the key elements in the transformation of the Polish economy is constituted by the restructuring of the ownership relations. This process should be seen in a two-fold perspective: on the one hand privatization of the previously state-owned enterprises, and on the other hand - creative privatization consisting in the establishment of new private companies, including primarily, the emergence of small and very small units managed by natural persons, as well as commercial code companies.

In the period 1990-1995 the processes of ownership changes affected in the Suwałki voivodship 54 enterprises, that is - 48.6% of all such units existing at the end of 1990. Thus, in relative terms, the advancement of these processes was higher than on the average in the country, this average being at approximately 42% of the number of enterprises existing at the end of 1990. The dominating privatization path in the voivodship analysed was restructuring through liquidation, which was applied until the end of 1995 to almost 90% of the transformed state-owned enterprises. The method of capital transformation was applied to only six enterprises (11.1% of the transformed ones), while the respective average for the whole of Poland was 30.3% (see Table 1).

Liquidation through bankruptcy was in the voivodship considered applied to 29 enterprises, i.e. to 53.7% of the enterprises restructured (38.8% on the average in the country). The thus high share of liquidation through bankruptcy is also a demonstration of a relatively low attractiveness of the assets of enterprises being liquidated. This method of privatization is in practice reduced to physical liquidation of the enterprise, to the disappearance of production and consequently to the increase of unemployment.

In the domain of privatization of the agricultural estates in the Suwałki voivodship until the end of 1995 as many as 71 enterprises were liquidated and transferred to the Agency of Agricultural Assets of the State Treasury.

While the processes of privatization of the state-owned enterprises took place primarily under the influence of the technical and economic attractiveness of the respective assets, with a less important influence being exerted by the socio-economic environment, the process of creative privatization reflected quite adequately the capacities of adaptation of the socio-economic structures of individual regions to new economic conditions.

Table 1

Privatization of the state-owned enterprises in the years 1990-1995

Figures as of A - 31.12.1991 B - 31.12.1995		Totality of the state-owned enterprises (1)	ENTERPRISES SUBJECT TO OWNERSHIP TRANSFORMATION											Included in the assets of AAA*
			TOTAL		THROUGH LIQUIDATION						BY CAPITAL PRIVATIZATION			
					law on state enterprise, article 19			law on privatization, article 37						
			1	2	1	2	3	1	2	3	1	2	3	1
Poland	A	8 441	1 258	14.9	534	6.3	42.4	416	4.9	33.1	308	3.6	24.5	1 654
	B	8 441	3 554	42.1	1 379	16.3	38.8	1 098	13.0	30.9	1 077	12.8	30.3	
Suwałki voivodship	A	111	25	22.5	18	16.2	72.0	6	5.4	24.0	1	0.9	4.0	71
	B	111	54	48.6	29	26.1	53.7	19	17.1	35.2	6	5.4	11.1	

(1) as of 31.12.1990 (taken as the start of privatization)

Notation: 1 - the number of enterprises

2 - in % of the total number of enterprises

3 - in % of the total number of enterprises subject to transformations

*Agency of Agricultural Assets of the State Treasury

Source: data from the Central Statistical Office (GUS)

During the period of transformation a dynamic increase of the number of private economic agents took place, and in particular - of the companies with domestic as well as foreign capital, with special emphasis on companies owned by physical persons. This dynamic development took place in all the voivodships, but with quite a differentiated intensity.

It should generally be stated that in the voivodship here considered the dynamic growth of enterprise has not occurred, like, anyway, in the other voivodships of „The Eastern Wall” of Poland (see Table 2, Maps 1, 2 and 3). The degree of saturation with private economic agents is very low, as it is shown, for instance, by the indicator of the number of companies of physical persons per 1000 inhabitants, which attains 23.9 in Suwałki voivodship while the national average is 43.9.

Table 2

Development of the number of the private sector agents
in the years 1989-1995

A - 1989 B - 1995		Private domestic companies	Joint venture companies	Companies of physical persons	
				number	per 1 000 inhabitants
Poland	A	10 420	369	845 677	
	B	90 843	24 086	1 693 427	43.9
Suwałki voivodship	A	46	2	9 054	
	B	640	91	11 612	23.9
Białystok voivodship	A	150	2	16 233	
	B	1 115	122	27 912	39.8
Łomża voivodship	A	26	4	6 123	
	B	184	37	9 370	26.5
Warsaw voivodship	A	2 018	103	82 697	
	B	20 037	8 071	161 415	66.8
Cracov voivodship	A	466	21	28 536	
	B	4 386	896	61 611	49.6
Poznań voivodship	A	275	39	47 469	
	B	5 313	1 572	81 209	60.0

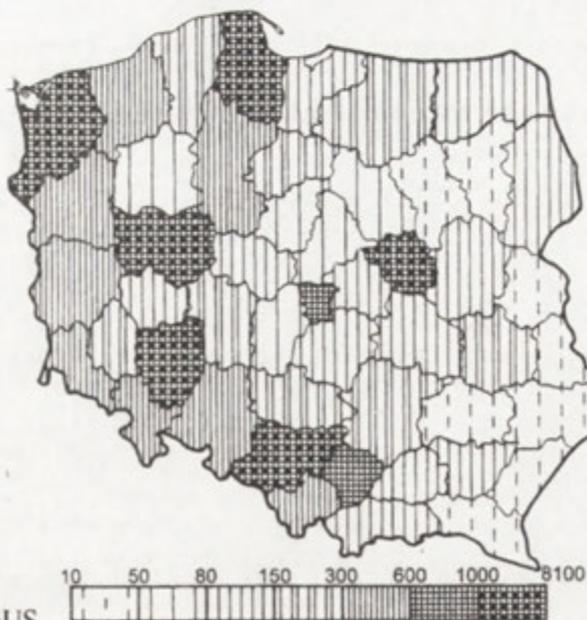
Source: data from GUS

Map 1. Commercial code companies with domestic private capital
Numbers of units as of 31.12.1995



Source: data from GUS

Map 2. Commercial code companies with a share of foreign capital
Numbers of units as of 31.12.1995



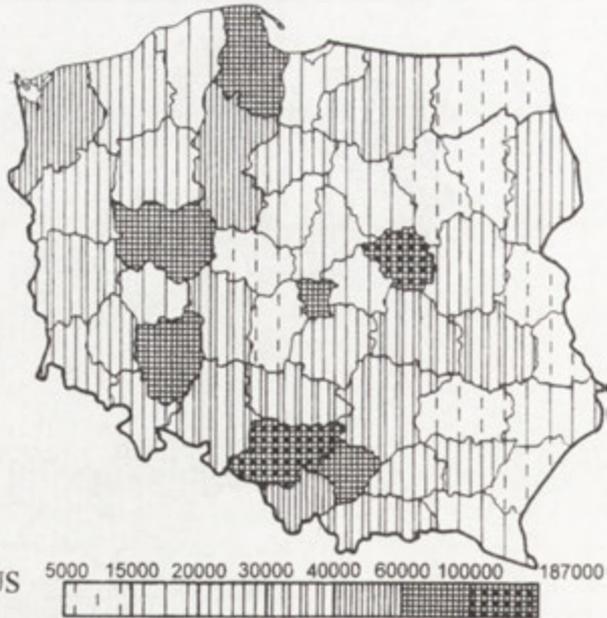
Source: data from GUS

Let us observe that in the majority of the eastern border voivodships it was expected that after the borders have been opened they would become the bridgeheads for many western and Polish firms for the purposes of trade and investment in the countries of the former USSR. Until now, though, no intensive activity neither in trade, nor, in particular, in production, has been observed. Likewise, the factor of location close to the border has not become decisive for allocation of capital. The influence of the nearness of the border, treated as development factor, is quite weak and is limited primarily to the development of the so called "grey zone" (the hidden economy). This sphere of economy, and especially the activity in border trade, makes it easy to live and survive for many people.

The effect of the undertaken privatization activities is constituted by the changes in the ownership structure of economy. In the years 1989-1995 the share of the private sector, outside of private farming, measured in terms of employment, increased in Suwałki voivodship from 6.9% to 28.3% (while the respective average for the whole country has increased from 10.1% to 35.3%).

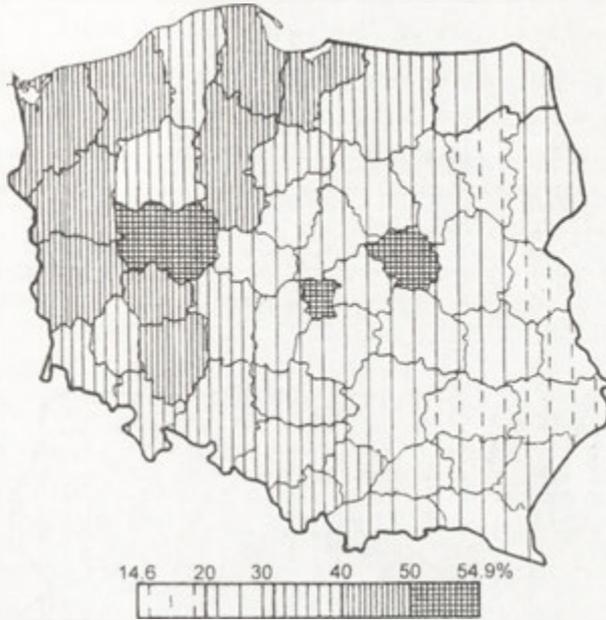
It must be generally stated that the Suwałki voivodship, similarly as the remaining voivodships of north-eastern Poland, belongs to the regions with the lowest degree of privatization in the country, see Map 4.

Map 3. Firms of natural persons conducting economic activity
Numbers of units as of 31.12.1995



Source: data from GUS

Map 4. Share of persons employed in the private sector outside of private farming in total employment in 1994



National average: 35.3%

Source: data from GUS

2. CHANGES IN THE SECTORAL AND BRANCH STRUCTURE OF THE ECONOMY

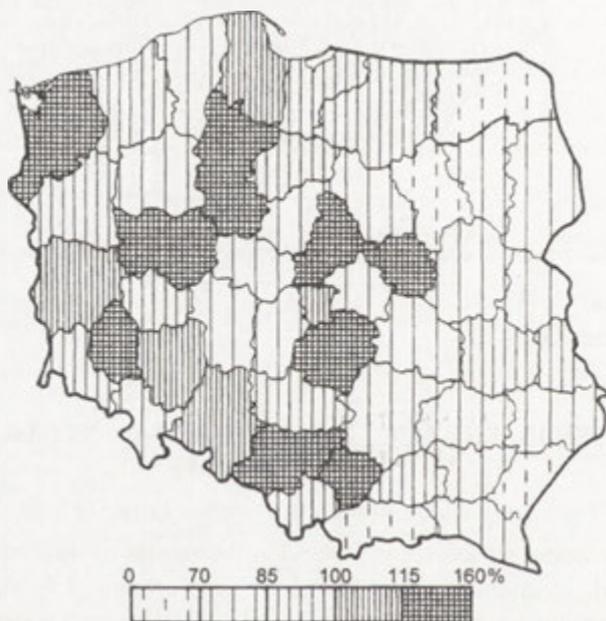
The employment structures in Poland in the period of the centrally managed share-controlled economy were subject to certain deformations. These deformations reflected not only the attained level of economic development, but also the influence of systemic factors. The very low share of the private sector in the total structure of employment was a practical consequence of such definite ideological preferences. The employment structure was also characterized by a high share of farming and forestry, a low share of the service sector, resulting largely from the assumed priority of the material production sphere.

The year 1989 was the turning point in terms of appearance of the first symptoms of the market approach to the labour resource economy. The time which has elapsed since then is too short, though, for deep structural transformations to take place. Still, the very abandoning of the doctrinal foundations the economic policy to the advantage of the market-based economy ought to imply many changes in the employment structure.

The general direction of changes in the sectoral structure of employment in Poland during the period of transformation consisted in the pronounced increase in sector III - by 7.4 percentage points at the expense of sectors I (decrease by 2.3 percentage point) and II (decrease by 5.1 percentage point).

Thus, similarly as on the average in the country, there has been in the Suwałki voivodship a decrease of employment in sector I (from 43.7% in 1989 down to 39.9% in 1993) and in sector II (from 22.5% to 18.4%), with simultaneous employment increase in sector III - by 7.9% (from 33.8% in 1989 to 41.7% in 1993).¹

Map 5. GDP value in production factor prices, per capita in 1992
Poland = 100.0%



Source: Produkt Krajowy Brutto i dochody ludności wg województw w 1992 roku (GDP and incomes of population according to voivodships in 1992; in Polish). Zakład Badań Statystyczno-Ekonomicznych GUS i PAN. GUS, Warszawa, 1994.

¹ The assessment of changes in the employment structure refers to the years 1990-1993, because the data for 1994 were already grouped in accordance with the new classification system and are therefore not comparable with the previous data.

An especially high apprehension is caused by the scale of retrogression of the sector II, which is related to the process of disindustrialization, leading to the impoverishment of the regional economic structures.

The thus shaped economic structure of the voivodship considered, where the farming sector dominates (constituting in 1994, according to SNA classification, 40.8%), has an essential influence on the developmental delay of this voivodship. In view of the lower profit generation capacity of its farming sector the Suwałki voivodship attains a decidedly lower level of the GDP per capita than on the average in the country (in 1992 the Suwałki voivodship attained merely 64.5% of the national indicator value, see Map 5).

3. INFLOW OF FOREIGN CAPITAL

Another indicator of the capacity to adapt to the principles and conditions of systemic transformation is constituted by the interest in the region expressed by foreign investors.

Foreign capital is one of the existing potential forms of an external input to economy and of bringing back its ability to grow. The joint venture companies may contribute importantly to the inflow of modern organizational and technological solutions in the economic activity, and also to the absorption of unemployment.

At the end of 1995 there were 91 companies with a share of foreign capital in Suwałki voivodship, i.e. only 0.4% of their total number in Poland. Foreign capital invested per capita at the end of 1994 was at 5.7 PLN (Polish zloty), while the national average was at 152.7 PLN.

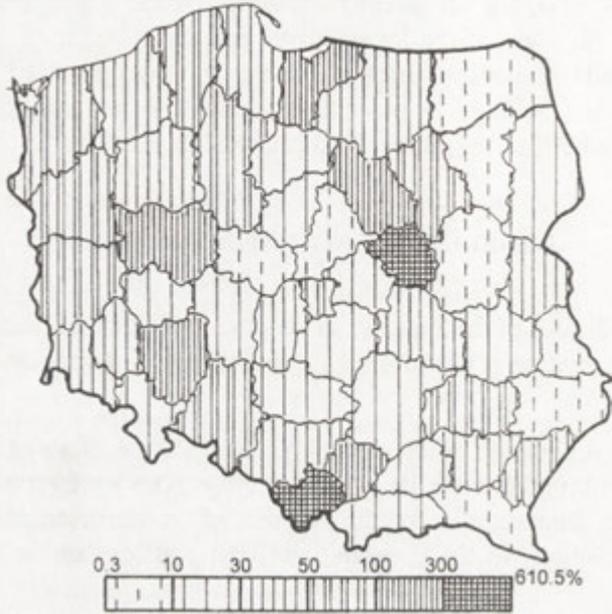
The Suwałki voivodship, like all of the eastern voivodships of Poland, is being avoided by foreign investors (see Map 6).

Presently, the general regularity in the spatial distribution of joint venture companies is constituted by the preference for economically well developed regions, which have advantageous transport conditions, relatively well developed infrastructure, and adequate scientific, intellectual and cultural potential. Generally speaking, foreign capital does not invest in Poland in these locations where it would be most desired from the point of view of interest, that is, for instance, in regions featuring high unemployment.

The fact that 90% of foreign investors located themselves in the six most developed voivodships (Warsaw, Bielsko-Biała, Poznań, Katowice, Wrocław, Cracow) is partly due to the lack of national strategy with respect to foreign

capital.. If, namely, a given country has no ideas [with that respect], foreign investors will simply implement their own strategy of taking advantage.

Map 6. Foreign capital per capita in % of the national average as of December 31st, 1994



Source: data from GUS

4. CREATION AND DEVELOPMENT OF BUSINESS ENVIRONMENT INSTITUTIONS

In the processes of restructuring the region and the creation of new entrepreneurship in the conditions of market economy an essential role is played by the variety of institutions, including social and economic organizations. They altogether form the regional and local setting for the conduct of economic activity, referred to as business environment. Simultaneously, such institutions support the functioning of the governmental administration and of the self-governmental bodies, stimulating regional growth.

Special importance ought to be attached to the functioning of such business environment institutions as banks, brokerage bureaus, regional development agencies, agencies of local initiatives, economic development foundations,

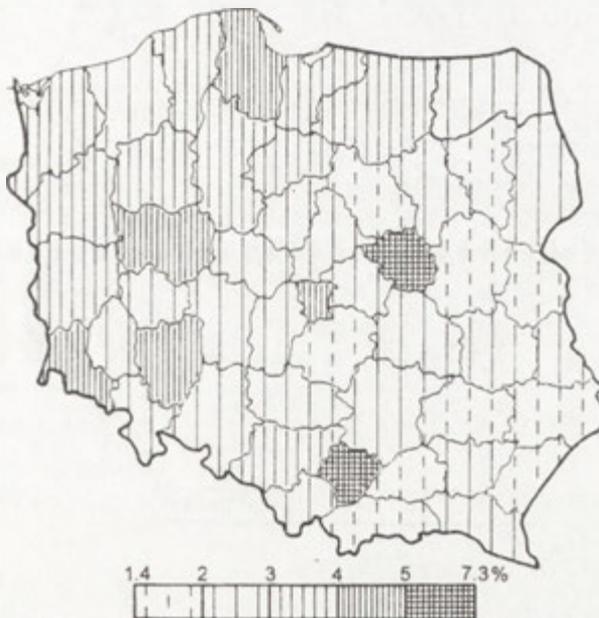
enterprise incubators, business support centers, consultancy centers and agencies, schools of management and business administration, economic chambers, exchange offices, exhibitions, etc.

The studies of the development of the business environment institutions in the region in question, when perceived against the background of the country as a whole, have shown that this region ranks among the areas where the numbers of respective entities is the smallest.

The backwardness of the sector of business environment institutions in the Suwałki voivodship is also demonstrated by total employment numbers in these institutions. The employment at the end of 1994 totaled 3.736 persons (i.e. mere 2.4% of total employment in the voivodship). The average share of employment of business environment institutions in Poland is 3.2%.

The situation of the voivodship considered in terms of employment share of the business environment institutions in comparison with other voivodships is shown in Map 7.

Map 7. Share of employment in business environment institutions in total employment as of December 31st, 1994



National average: 3.2%

Source: data from GUS

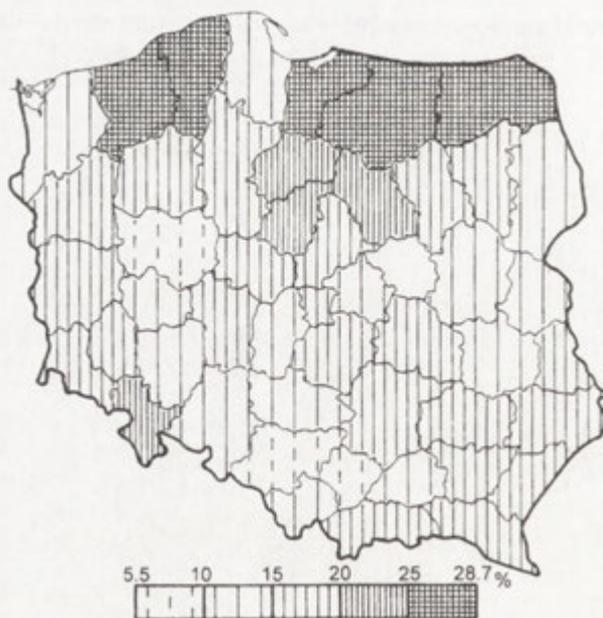
5. LABOUR MARKET AND UNEMPLOYMENT

The transformation of Polish economy in the direction of the market system changed the situation on the labour market - first of all a dramatic drop of employment took place together with an appearance of unemployment.

In the years 1989-1994 the decrease of the number of persons employed in the region in question was bigger than on the average in the country. In the Suwałki voivodship employment decreased by 49.5 thousand persons, i.e. by approximately 24%, while the national average was 15%.

Since the beginning of the appearance of explicit unemployment the Suwałki voivodship has belonged to the group of voivodships featuring the highest unemployment rates. At the end of 1995 this rate was 27.6% (in 1993 it was at 30.3%, in 1994 - at 28.6%) and was near to the national maximum, see Map 8.

Map 8. Unemployment rates according to voivodships as of December 31st 1995



National average: 14.9%

Source: data from GUS

The problem of unemployment, which appeared in the Suwałki voivodship, concentrates the essence of all the economic troubles of the region. It is the more

so that the dominating feature of the labour market in the Suwałki voivodship is the persistent, long-term unemployment, with respect to which primarily the social assistance measures are undertaken, rather than the activating ones, but which do not bring tangible effects. Mass unemployment and impoverishment of the population also generate the phenomenon of social acceptance for the emergence and development of the hidden economy.

6. CONCLUDING REMARKS

A general reflection which can be formulated on the basis of the assessment of the adaptation of regional economy in the Suwałki voivodship to the fundamental systemic changes which occurred in the years 1989 - 1995, and in particular on the basis of analysis of such phenomena as changes in the ownership structure, changes in the sectoral and branch structure of economy, inflow of foreign capital, emergence and development of the business environment institutions, changes on the labour market and unemployment, reduces to the statement that the region analysed adapts very slowly to systemic transformations.

The Suwałki voivodship must still be classified as one of the poorly developed regions threatened with petrification of the backwardness syndrome.

In connection with the above it is necessary to consider the ways of overcoming the impending disadvantageous tendencies in the structure of economy, and to select the areas to be supported in order to initiate - if not to altogether implement - the distinct positive changes.

One of such factors of development could, in particular, be the location of the region close to the boundary and the possibility of taking advantage of this location. The advantage is related, first of all, to the existence of a potentially enormous sales market in the East, this fact being perceived both in Poland and in the West. Thus, the border areas may be the perfect location for the domestic and foreign investors who are orientated at the eastern markets. This kind of development might be significantly enhanced by the planned Special Economic Zone Suwałki-Elk-Goldap, within which investors are granted special preferences.

Another strong point of the Suwałki voivodship is constituted by the natural conditions, which can be turned into a bargaining leverage for acquisition of a sui generis ecological rent. The untouched nature constitutes the capital whose value grows from day to day.

The possibility of tourist development opens new chances for growth within the sector III, i.e. the service sector. This can become the fundamental manner of fighting back unemployment due to the expansion of the non-agricultural and non-industrial labour market. The multi-functional development of rural areas, being the future-oriented direction of transformations, should be conducive for this kind of positive changes.

Another developmental opportunity is constituted by the food processing industry founded upon the powerful local raw material base, and by agriculture itself, especially within the potentialities of development towards profitable commercialized farming and production of natural health food.

REFERENCES

1. *Rozwój regionalny Polski 1990-1995. Raport diagnostyczny. (Regional development of Poland 1990-1995. The diagnostic report)*. Zespół Zadaniowy ds. Rozwoju Regionalnego w Polsce przy URM, Warszawa, 1996.
2. Pyszkowski A., 1996, *Regionalne aspekty polskiej transformacji (Regional aspects of Polish transformation)*. In: *Gospodarka Polski w okresie transformacji 1995r.* IRiSS, Warszawa.
3. Sadowska-Snarska C., 1994, *Rozwój instytucji otoczenia biznesu na obszarze Makroregionu Północno-Wschodniego (The development of the business environment institutions within the area of the North-Eastern Macregion)*. CUP BPR Białystok, Białystok, (mimeograph).
4. *Koncepcja zmian strukturalnych gospodarki regionu suwalskiego (The concept of structural changes in the economy of Suwałki region)*. 1995, Instytut Badawczo-Doradczy S.A. "Zmiany", Warszawa.

PECULIARITIES OF THE DEVELOPMENT OF POPULATION AND SETTLEMENTS IN THE LITHUANIAN-POLISH BORDER REGION AND PROSPECTS FOR DEMOGRAPHIC POTENTIAL

Algirdas STANAITIS

Vilnius Pedagogical University

In any complex definition of a territory the description of population and settlements is of paramount importance. This is so because the functioning of all administrative and economic structures serves the purpose of meeting the economic and cultural requirements of the population. For this reason, the material-cultural condition of the population and the character of settlements reveal the level of economic development of a territory and allow to compare it with other territories.

The Lithuanian-Polish border region is interesting and important in many aspects. It has a common past, similar traditions and customs, a comparatively modern and resembling system of settlements, similar economic problems. The Polish and Lithuanian part of the border region have also much in common from the demographical point of view which is true not only with regard to the past but to present days as well.

Speaking about the Lithuanian-Polish border region we have in mind not the projected Euroregion „Neman” (Nemunas, Niemen) which would include larger and smaller areas of four states (Lithuania-Poland-Belarus-Russia) but a by far smaller area.

The notion of Lithuanian-Polish border zone should not include large Polish and Lithuanian territories (Table 1) represented by Alytus and Marijampolė districts in Lithuania and Suwałki in Poland. In Lithuania such a territory would almost take 10 thous. km², i.e. 15.1% of the total area of the state. The Alytus, Varena and Šakiai districts which have no direct links with Poland would find themselves included into the border region.

At the beginning of 1966 the number of population in the Alytus and Marijampolė districts amounted to 401.2 thous. people [12], i.e., 10.8%

of the total population of Lithuania. Such a percentage on the scale of a state also exceeds the notion of a border region.

The Suwałki district is similar in size and population. Its area takes 10.5 thous. km², and the population amounted in 1992 to 480.1 thous. people [2]. The density of population and the level of urbanization are almost the same in both regions. The density of population in the Suwałki district is 45.8 p/km², whereas, in the Alytus and Marijampolė districts - 40.6 p/km² (Alytus district - 33.3, Marijampolė - 44.5 p/km²). The percentage of urban dwellers on both sides of the border is similar - 55.9%.

Table 1

The size and number of population of the Lithuanian-Polish border zone in 1996

District	Area		Number of population	
	km ²	% from the total area of Lithuania	Thous.	% from the total population of Lithuania
Lazdijai	1 542	2.36	31.1	0.8
Marijampolė	1 544	2.36	103.1	2.8
Vilkaviškis	1 286	1.97	53.2	1.4
Total	4 371	6.7	187.4	5.0
Alytus region	5 425	8.3	202.6	5.5
Marijampolė region	4 463	6.8	198.6	5.3
Both regions	9 888	15.1	401.2	10.8

The described territory is too large for the notion of a border region. Let it represent the future „Neman” Euroregion. The Lithuanian-Polish border region will be discussed within a smaller area.

The principal criteria in distinguishing a border zone are: neighbourhood and commonness of historical development. Three districts directly border with Poland: Lazdijai, Marijampolė and Vilkaviškis. Therefore, there are good reasons to include these three districts into the border region, notwithstanding that some parts of these districts (c.g. Marijampolė) are rather remote (50 km) from the border.

Beside the three mentioned districts two towns of republican rank Druskininkai and Alytus - are also important for co-operation in the border region. Even now these towns keep close relations with Poland: Druskininkai

as an important and convenient health-resort and recreation site, Alytus as an industrial, administrative and service centre.

On the part of Poland it is also expedient to include into the border region a smaller territory than the Suwałki district. We can only support prof. P. Eberhardt's proposal [3] to include into the Polish-Lithuanian border zone only the eastern part of Suwałki voivodship. It includes 3 towns Suwałki, Augustów, Sejny and 19 rural communities. The area of this territory is 3 888 km² and its population in 1993 amounted to 181.0 thous. people.

In Lithuania the territory of the three mentioned districts (Lazdijai, Marijampolė and Vilkaviškis) takes 4.4 thous. km² (Table 1) thus making 6.7% of the total area of Lithuania. The areas taken by Lazdijai and Marijampolė districts are almost equal making 1.5 thous. km² each, whereas, the area of Vilkaviškis district is by almost 300 km² smaller. The population of these districts made in the beginning of 1996 187.4 thous. persons, i.e., 5.0% of the total population. More than a half of this population lives in the Marijampolė district including 52.0 thous. inhabitants of Marijampolė itself. The smallest number of people lives in the Lazdijai district - 31.1 thous.

Thus, the territories on both sides of the border are almost identical both by size and population. They can be therefore analyzed as the Lithuanian-Polish border zone.

The described border region includes the areas inhabited by the Jotvingiai (Balts) tribe in the historical past. This is proved by the surviving of Jotvingiai burials and hillforts on both sides of the border. After several decades of struggle at the end of the 13th century the land of Jotvingiai was conquered by crusaders and became almost uninhabited [10].

Only after the glorious Grunwald (Žalgiris) this waste land was started to be reinhabited. Thus, the existing settlements - towns and villages - are comparatively young. Their history reaches only 400-500 and less years back.

After the Lublin union (1569) the coexistence in one state strongly influenced not only the political-economic life but also cultural and national-demographic development of these territories. In the 19th century, especially in its second half, Sejny (Seinai), Suwałki (Suvalkai) and Marijampolė (Mariampol) were among the most important centres of Lithuanian culture. Seinai had a religious seminary and issued journals. Many Lithuanians studied at the boarding-schools of Suwałki and Marijampolė. The cultural life in these towns was active.

The situation changed after World War I. In relation to this territory a military conflict occurred between Lithuania and Poland. As a result of this the territory was divided and the border has survived to this day.

After the limitation of the border some tens of Lithuanian villages remained on the Polish side of the border. Even today a greater part of population in these villages is composed of Lithuanians. Their fate was difficult; especially in the years of World War II when Lithuanians were deported by Germans from their native land.

After World War II the Lithuanians of Sejny district lived behind the "iron curtain" separated from their relatives living a few hundred meters away on the Lithuanian side. Only after the collapse of the communist system and the restoration of Lithuania's self-dependence (1990) there occurred favourable conditions for communication for Lithuanians on both sides of the border.

After World War II the economic and cultural development of Polish and Lithuanian parts of the border region remained different. This was also true in the case of the development of population and network of settlements. On both sides of the border the number of rural population decreased, cities expanded, urbanization was rather intensive. However, the reasons for this were different. In Lithuania the number of rural population decreased as a result of forced collectivization, intensive reclamation work, destruction of individual farmsteads. In Poland the individual forms survived. However, due to the lack of working places rural inhabitants moved to nearest towns or even to other regions.

The Lithuanian-Polish border region represents the areas of constant depopulation of rural areas. It is evident from the changes of total and rural population and its density in the 20th century (Table 2). During 100 years the highest decrease of total density of population was characteristic for Lazdijai, Seinai and Vilkaviškis districts - 10.0-182 p/km² (Fig. 1).

However, an appreciable increase of population administrative centres determined the fact that in the Marijampolė and Suwałki districts the total value of the density of population also increased - 13.5-16.6 p/km² (Table 2). The expanded Augustów town compensated for the loss of rural population and the total density of population in the 20th century actually remained the same [2, 12, 13].

The total density of population in the border region has changed only slightly during the 20th century - decreased by 1.9 p/km². However, the number of population in towns and villages changed in different directions. The population of village dwellers kept decreasing, the population of town dwellers - kept increasing. The density of rural population in different localities of the border region decreased unevenly (Table 2). On Lithuania's territory the density of rural population decreased by over a half, whereas, in the Polish territory - by one third (Table 2, Fig. 2).

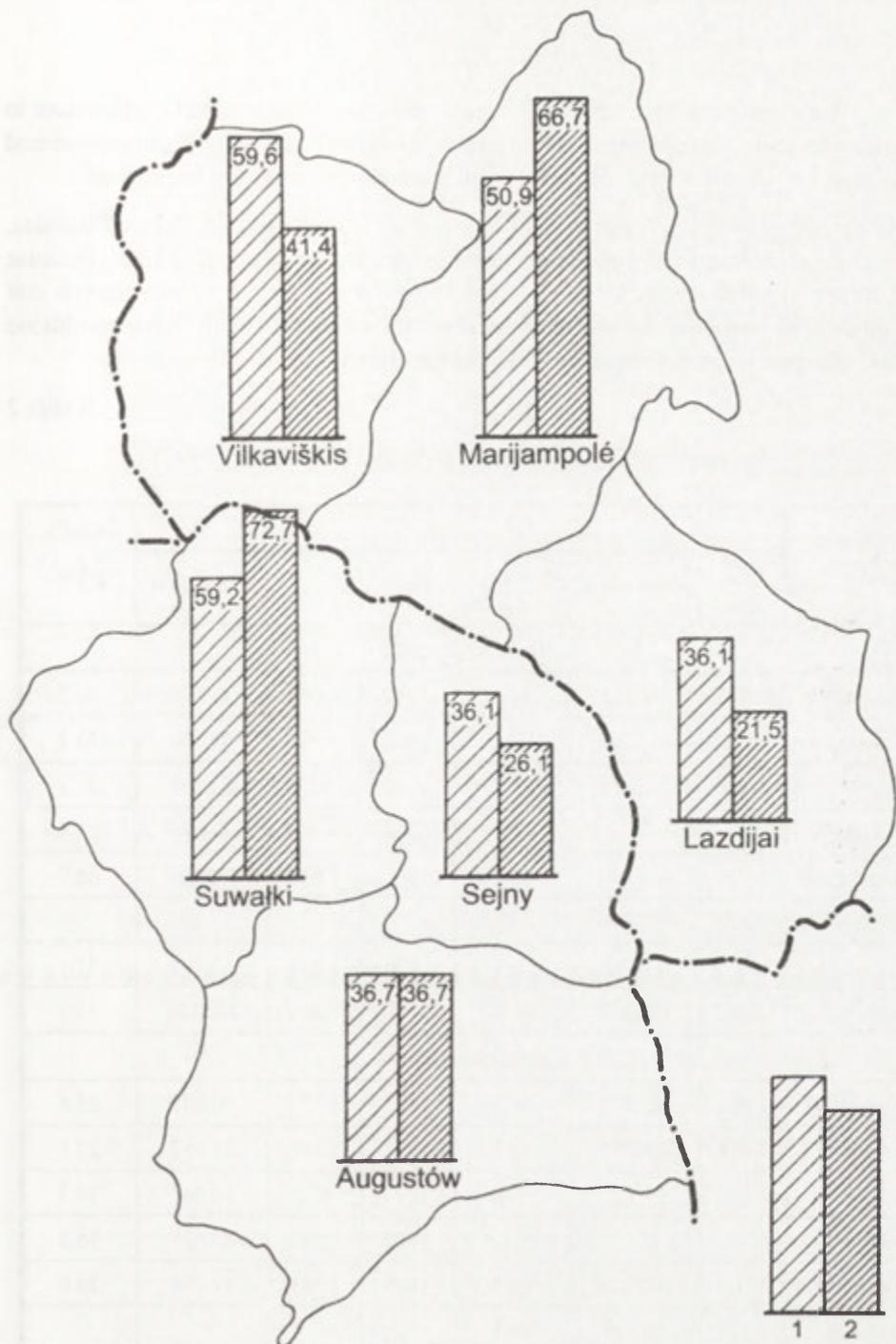


Fig. 1. Total density of population in the border region - p/km²:
 1 - 1897; 2 - 1992 in Poland and 1996 in Lithuania.

The main reason for uneven decrease of rural population were differences in economic-social development. The already mentioned forced collectivization and destruction of individual farmsteads influenced negatively the homestead

life of village people. These processes were not so intensive in Poland. Besides, the natural increment of population in the border region was rather high. Because of a lack of working places many people traditionally moved to other towns and regions. The intensive movement of rural people reveals difficult living conditions and economic underdevelopment of the border region.

Table 2

Number and density of population in 1897-1996 (1992)

District	1897						Density, p/km ²
	Area, km ²	Population	Density, p/km ²	Years	Area	Population	
Total population							
Augustów	2 025	74 320	36.7	1992	1 658	60 496	36.7
Suwałki	1 473	87 205	59.2	1992	1 373	99 870	72.7
Sejny	2 270	81 900	36.1	1992	857	22 393	26.1
Lazdijai				1996	1 542	33 090	21.5
Mariampolė	2 178	109 040	50.1	1996	1 540	103 090	66.7
Kalvarija	1 329	67 681	50.9				
Vilkaviškis	1 270	75 708	59.6	1996	1 286	53 195	41.1
Total	10 545	495 854	47.0		8 260	372 134	45.1
Rural population							
Augustów	1 944	61 577	31.7	1992	1 577	40 407	25.6
Suwałki	1 408	64 557	45.8	1992	1 308	35 957	27.5
Sejny	2 265	78 121	34.45	1992	852	16 449	19.3
Lazdijai				1996	1 542	25 024	16.2
Mariampolė	2 162	100 106	46.3	1996	1 544	37 094	24.0
Kalvarija	1 324	58 399	44.1				
Vilkaviškis	1 258	66 868	53.1	1996	1 286	30 306	23.6
Total	10 361	429 628	41.4		8 109	185 237	22.8

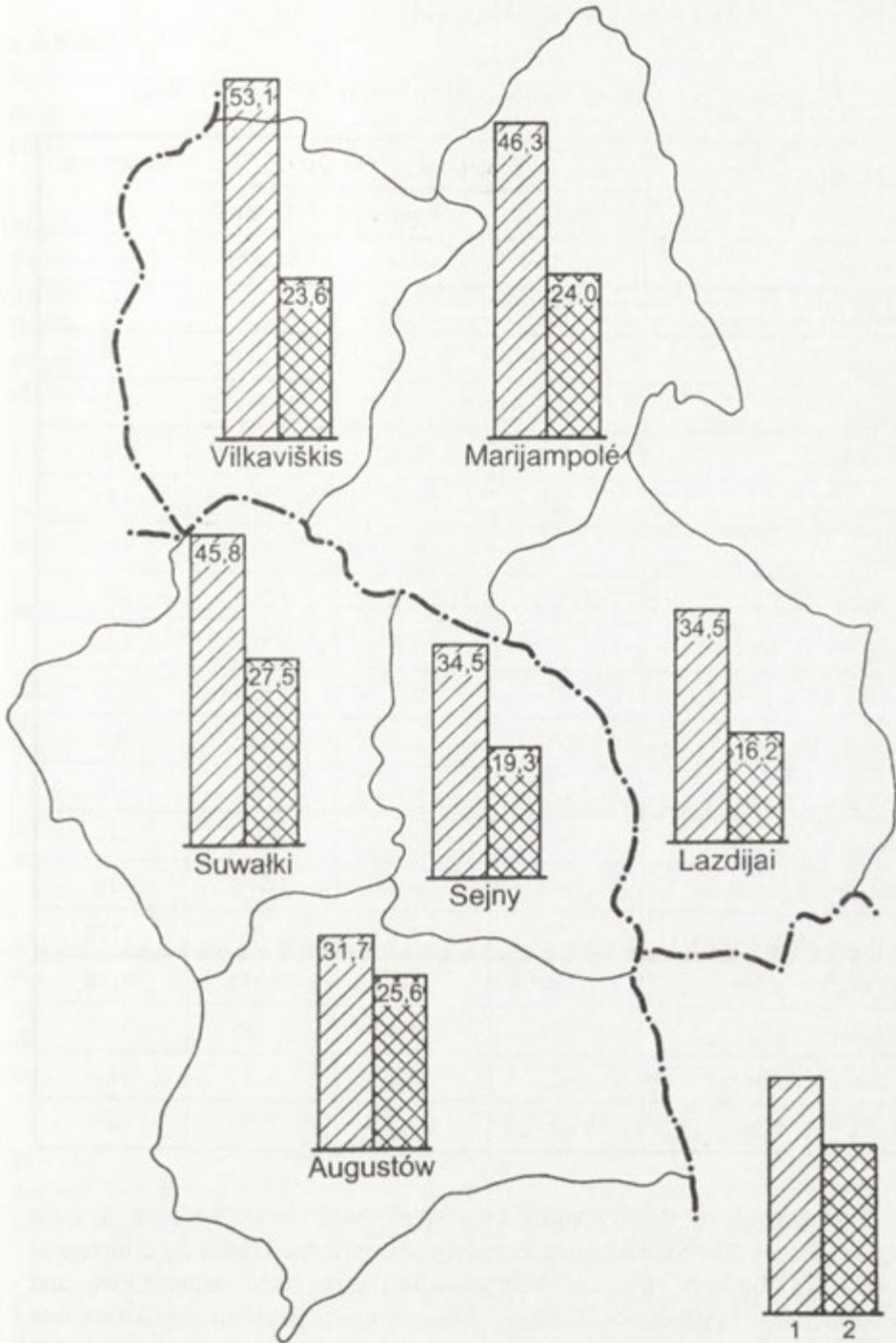


Fig. 2. Density of rural population in the border region - p/km² :
 1 - 1897; 2 - 1992 in Poland and 1996 in Lithuania.

Table 3

Changes of population in some settlements in 1897-1996 (1992)

Settlements	Number of population			Difference, %
	1897	Year	population	
Mariampolė	6 737	1996	51 056	+658
Kalvarija	9 378	1996	5 759	-39
Kybartai	2 707	1996	7 100	+162
Lazdijai	2 538	1996	5 892	+132
Vilkaviškis	5 788	1996	14 276	+147
Veisiejai	1 540	1996	2 174	+41
Virbalis	3 293	1996	1 513	-54
Seirijai	2 664	1996	1 004	-62
Simnas	1 443	1996	2 339	+62
Leipalingis	703	1996	1 824	159
Liubavas	703	1996	349	-63
Vištylis	2 468	1996	610	-75
Obšrutai	537	1996	301	-44
Pilviškiai	2 335	1996	1 675	-29
Augustów (Augustawas)	12 335	1992	29 089	+128
Suwałki (Suwalkai)	22 649	1992	63 913	+188
Sejny (Seinai)	3 778	1992	5 944	+57
Berżniki (Berzninkas)	542	1992	304	-44
Przerośl (Preraslis)	1 690	1992	893	-47

The changes of town population in the border zone represent a quite different picture. The total number of town dwellers in the border zone increased almost thrice (Table 2). However, the number of population in various towns, and boroughs changed differently (Table 3). The greatest increase of population was characteristic for the largest administrative-territorial units - district centres. In Marijampolė it increased by 658%, in Suwałki - by 188%. A two-fold increase of population was registered in Kybartai, Vilkaviškis, Augustów, Lazdijai,

a comparatively negligible - in Veisiejai, Sejny. In such towns as Kalvarija and Virbalis the number of population decreased. Such complicated dynamics of population in various towns was predetermined by a changed geographical situation, administrative functions, political situation, etc.

For similar reasons there were differences in the change of the number of population in larger rural settlements (Table 3). In many of them - Liubavas, Pilviškiai, Obšrutai, Vištytis, etc. - the number of population decreased. This process was especially intensive in the years of World War II after which the number of population never reached the former level. Only in some settlements after the changes in the economic and geographical situation (Leipalingis, Liudvinavas) the number of population increased.

Generalizing the transformations in the number of population during almost 100 years we can state that it has rather decreased than increased, notwithstanding a considerable increase of population in Marijampolė and Suwalki therefore a structural change of population took place - the number of population considerably decreased in villages and increased in modern administrative centres.

We can analyze in more detail the transformation of population and settlements after World War II because there exist sufficient data, from this period. During the 46 years (Table 4) the former trend of development remained the same: decrease of population in villages and increase in towns. However, this trend differed in the territorial and time aspects (Table 4). In general during the mentioned 46 years the number of population in the Lithuanian border area has increased by as little as 9.2%.

The number of rural population in the spoken period decreased by one third. However, the rates in various districts were different. The Lazdijai district lost almost half of its village population, whereas, Vilkaviškis - only 23.1%. These differences were conditioned by soil fertility, geographical situation, rates of development of industrial enterprises and other factors. In this respect the situation was most unfavourable in the Lazdijai region.

The number of village population has been actually decreasing during all postwar years but most intensively - in the 7th and 8th decade. This was related to rapid land reclamation works, moving of individual farmsteads, intensive urbanization.

The increase of town population differed in various regions and towns (Table 4). In general the number of urban population increased by 72.2%. The highest rates were observed in the Lazdijai district, however due to its low number in 1950, in 1996 its population made only 24.4% of the total number in the district.

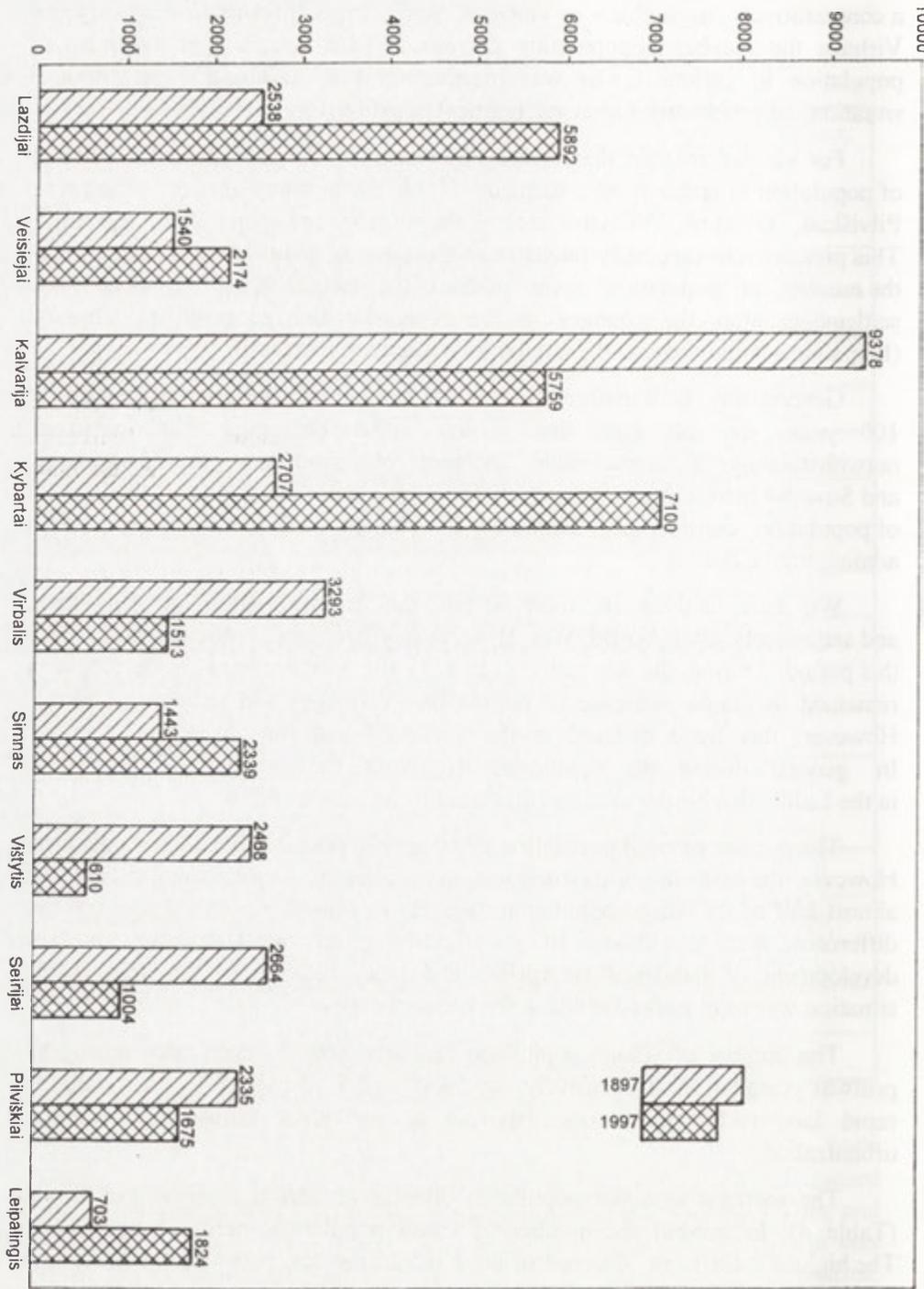


Fig. 3. Number of population in some settlements in 1897 and 1997.

With respect to the towns, the highest rates of population increase during the 46 years were observed in Kazlu Ruda - 290.5%, followed by Vilkaviškis, Marijampolė, Lazdijai (Table 4). The lowest rates were observed in Kalvarija, Virbalis, Kybartai. The increase of urban population was preconditioned by the geographical situation, development of industry, administrative functions, etc.

Table 4

Changes of population in 3 districts in 1950-1996

Lokalities	Number of population, thous.					Changes 1950-1996	
	1950	1960	1980	1990	1996	thous.	%
Lazdijai district	50.3	48.1	37.8	33.2	33.1	-17.2	-34.2
in towns	2.5	4.7	6.5	7.7	8.1	+5.6	+224.0
Lazdijai	2.5	3.2	4.6	5.6	5.9	+3.4	+136.0
Veisiejai	1.2	1.5	1.9	2.1	2.2	+1.0	+83.3
in villages	47.8	43.4	31.3	25.5	25.0	-22.8	-47.7
Marijampolė district	73.0	79.0	93.1	100.6	103.1	+30.1	+41.2
in towns	22.4	28.7	53.6	65.1	66.0	+43.6	+194.6
Marijampolė	15.5	20.4	40.5	51.4	52.0	+36.5	+235.5
Kazlu Ruda	2.1	3.5	6.9	7.9	8.2	+6.1	+290.5
Kalvarija	4.8	4.8	6.2	5.8	5.8	+1.0	+20.8
in villages	50.6	50.3	39.5	35.5	37.1	-13.5	-26.7
Vilkaviškis district	50.1	54.1	52.5	52.5	53.1	+3.0	+6.0
in towns	10.7	12.5	20.7	22.8	22.8	+12.1	+113.1
Vilkaviškis	4.0	5.2	12.3	14.2	14.2	+10.2	+255.0
Kybartai	5.5	6.3	6.8	7.1	7.1	+1.6	+29.1
Virbalis	1.2	1.4	1.6	1.5	1.5	+0.3	+25.0
in villages	39.4	41.2	31.8	29.7	30.3	-9.1	-23.1
Total in 3 districts	173.4	181.2	183.4	186.3	189.3	+15.9	+9.2
Total in towns	35.6	46.3	80.8	95.6	96.9	+61.3	+172.2
Total in villages	137.8	134.9	102.6	90.7	92.4	-45.4	-32.9

A considerable decrease of rural population and moving of farmsteads charged the number and structure of rural settlements. A strong differentiation of population in central settlements was observed. The number of population in many other settlements decreased because it was forbidden to build new houses in them. Tens of small villages disappeared, the number of population in middle-size villages (50-250) decreased. Many of them converted into small (5-30) settlements. The average size of villages considerably decreased (Table 5); especially in the Lazdijai district [1, 6].

The number of large (500 and more people) villages increased. In 1959 there were 6 such villages in the Lazdijai district with 12.4% of rural population, in the Marijampolė district - 2 and 2.7% respectively, in the Vilkaviškis district - 4 and 6.2%. At the beginning of 1966 there were 5 such villages in the Lazdijai district with 19.2% of rural population, in the Marijampolė district - 15 and 30.5%, in the Vilkaviškis district - 9 and 21.1%.

Table 5

Changes of rural population and settlements in 1959-1996

District	1959				1996			
	Population	Density p/km ²	Number of settlements	Average size of villages	Population	Density p/km ²	Number of settlements	Average size of villages
Lazdijai	42 851	27.8	403	106	25 024	16.2	389	64
Marijampolė	49 498	32.1	654	76	37 094	24.0	663	56
Vilkaviškis	40 919	31.8	457	90	30 306	23.6	344	88
Total	133 268	30.5	1 514	88	92 424	21.1	1 396	66

Such a transformation of rural population and settlements lasted till the national revival in 1990. Since 1991 a reverse process set in. The number of urban population stabilized and even decreased in some towns. The number of rural population (especially in the Marijampolė district) and even settlements increased. This can be accounted for by the changes of property right, restitution of land property, deteriorating living conditions in towns, increasing number of unemployed.

However, we think that this process will not last for long. The number of rural population in these districts is rather high (48-75%), whereas, small farms have no good prospects. When farms become larger many rural people will again have to leave for towns. If industry and infrastructure are not developed in the border region its inhabitants will be forced to move to more remote localities.

In view of an economic crisis which is evident today, no increased demographic activity can be predicted for the coming few decades. According to the calculations made at the Department of statistics at the Government of the Republic of Lithuania [11] the number of population in the Alytus and Marijampolė districts by 1995-2015 will have increased by only 1.7%. The dynamics of population in various districts and towns will slightly vary. A somewhat more considerable increase of population is predicted in the Alytus district, whereas, in the Marijampolė district it will remain almost the same (Table 6). There is an opinion that in the Lazdijai and Šakiai districts and Marijampolė and Druskininkai towns the number of population will decrease.

Table 6

Predicted number of population till 2015 in the Alytus and Marijampole districts

District	1995	2015	Changes	
			Thous.	%
Lazdijai	33 112	30 280	-2 832	-8.6
Varena	38 130	39 229	+1 150	+3.0
Alytus	33 083	35 522	+2 439	+7.4
Alytus town	77 302	82 296	+4 994	+6.5
Druskininkai	20 899	20 749	-150	-0.7
Alytus region	202 526	208 076	+6 223	+3.1
Mariampolė	50 472	51 800	+1 328	+2.6
Vilkaviškis	53 253	55 286	+2 033	+3.8
Šakiai	42 362	41 821	-541	-1.3
Mariampolė town	52 166	50 315	-1 851	-3.5
Mariampolė region	198 253	199 322	+1 069	+0.5
Alytus and Mariampolė region	400 779	407 398	+6 619	+1.7

The given predicted values may not be absolutely reliable. However, it is clear that in the nearest decades there will be no demographic activity in the border region. This assumption is proved also by the changes in other demographic processes. Below follows the description of their present state and possible trends of changes.

In all three districts the natural increment of population is negative and makes 2-6‰. An especially bad situation is observed in the Lazdijai district [7]. So far the positive increment is observed only in Alytus, Druskininkai and Marijampolė (5,8‰, 3,1‰ and 4,6‰ respectively in 1994). However, there is a clear tendency of decrease of natural increment in towns as well. Difficult economic situation, living conditions of young families, blurred vision of tomorrow, promises no favourable demographic changes in the nearest future.

The migration situation of population is also discouraging. As a result of difficult living conditions more people move from Alytus, Marijampolė, Druskininkai and other towns than into them. So far the migration saldo among village people is positive but it may soon change. It must be mentioned that among those who leave, the most are young, able-bodied people.

Moving from towns is induced by an increasing number of unemployed. According to official data in 1994 in Alytus there were 2.4 thous., in Marijampolė - 0.9 thous., in Druskininkai - 0.6 thous., in Lazdijai district - 0.7 thous., in Vilkaviškis district - 0.6 thous. of unemployed [7]. The possibility to find a job is negligible. Thus, in 1994 in Alytus employment was given to 92 persons, Marijampolė - 51, Druskininkai -19, Lazdijai district - 18, Vilkaviškis district - 31. The poor possibilities to get a job are illustrated by the number of candidates for one working place. In 1994 there were 48 candidates for one vacancy in Alytus, 84 - in Marijampolė, and still more in other districts [7].

A high number of unemployed people incites delinquency. For this reason in Marijampolė town and Lazdijai district it exceeded (1994) the average value of Lithuania (158 crimes per 10 thous. people).

The decreasing birth rate, increasing number of unemployed and a tendency to move to other places create no conditions for greater demographic activity in the border region. If there is no rise of economy and no new working places are created there will be no positive demographic changes in the nearest few years and even decades.

However, a convenient geographical and geopolitical situation of the territory and transport communication with the West give hope. The building of the highway "Via Baltica", as a new railway line and terminal of commodities create conditions for expansion of infrastructure and creation of new working places. The mentioned undertakings demand large investments and are impossible without foreign support. Anyway, there are certain prospects in this respect. The rise of economy will improve living standards. We may then expect to observe high activation of demographic processes.

CONCLUSIONS

1. The Lithuanian-Polish border region takes 6.7% of Lithuania's territory inhabited by 5.0% of people. In Poland it takes 1.3% of the total area and 37.1% of the Suwałki district area inhabited by respectively 0.5% and 37.7% of people.

2. This border region represents a territory once inhabited by Baltic tribes. It has a common history, similar natural conditions; area and number of population on both sides, a similar system of settlements and very nearing problems.

3. The number of population in the border region has not increased during the 20th century. Only a territorial redistribution took place. The number of rural population decreased, the number of urban population - increased. At present more than a half of the population lives in towns.

4. The number of rural population on the Lithuanian side of the border region decreased at especially high rates after World War II. This was determined not only by a peripheral position of the Lazdijai region but also by forced collectivization, destruction of individual farmsteads, expansion of industry in towns.

5. In the post-war years (1950-1995) the number of population in this territory increased by as little as 9.2%, the number of rural population decreased by 32.9%. The number of urban population increased by 72.2%. During the last 100 years the number of population in this territory has almost remained unchanged.

6. After the national revival (1990) the trends of territorial development of population changed. After the changes in the property right the number of rural population slightly increased and started to decrease in towns. We think this to be a temporary process and in the nearest future the number of village dwellers will start to decrease.

7. It is possible to predict that in the nearest 20 years (1995-2015) the total number of population in the border region will increase by only 1.7%. Thus, we can expect no demographic activity.

8. Such an unfavourable prognosis is proved by the negative increment of population in recent years, negative migration saldo, increasing unemployment, deteriorating age structure of inhabitants and other demographic processes.

It is possible to activate the demographic processes only by improving the economic and living conditions and creating new working places. Such possibilities exist provided that the geographical and geopolitical situation of the border zone are used rationally.

REFERENCES

1. *Centrine Statistikos Valdyba prie Lietuvos TSR Ministru Tarybos*, 1974, Lietuvos TSR kaimo gyvenamosios vietoves 1959 ir 1970 metais, Visasąjunginiu gyventoju surašymu duomenys, Vilnius.
2. *Statystyczna panorama województwa Suwalskiego*, Główny Urząd Statystyczny, Wojewódzki Urząd Statystyczny w Suwałkach, 1993, Warszawa, 24-30 s.
3. Eberhardt P., 1996, *Problematyka demograficzna pogranicza polsko-litewskiego*, I seminarium polsko-litewskie - Wigry, 2.VI. - 9. VI.1996.
4. Kryževičius V., 1981, *Lietuvos privilegijuotieji miestai*, Vilnius, Mokslas, 131-138 p.
5. Kviklys B., 1991, *Seinu apskritis, Suvalku apskritis, Augustavo apskritis*, Musu Lietuva, III t., Mintis, Vilnius.
6. *Pagrindiniai 1989 metu gyventoju surašymo duomenys*, 1990, Lietuvos Valstybinis Statistikos Komitetas, Vilnius, 23-31 p.
7. *Lietuvos statistikos metraštis 1994-1995 metais*, 1995, Lietuvos Statistikos departamentas, Vilnius, 712 p.
8. Miškinis A., 1991, *Lietuvos urbanistika: istorija, dabartis, ateitis*, Mintis, Vilnius, 624 p.
9. Sieminski J., 1996, *Problemy zagospodarowania przestrzennego obszarów przygranicznych Polsko-Litewskich*, I seminarium polsko-litewskie - Wigry 2.VI- 9.VI.1996.
10. Stanaitis A., 1995, *Suvalku krašto lietuviai ir ju problemos. Iš Suvalku krašto praeities ir dabarties*, Punksas, 32-41 p.
11. *Lietuvos Respublikos gyventoju skaičius bei struktūros prognozės iki 2015 metų*, 1995, Statistikos departamentas prie Lietuvos Respublikos Vyriausybės, Vilnius.

12. *Gyventojų skaičius apskrityse, miestuose ir rajonuose 1996 metų pradžioje*, 1996, Statistikos departamentas prie Lietuvos Respublikos Vyriausybės, Vilnius, 4-7 p.
13. *Pervaja Vseobščaja Perepis Naselenija Rosijskoj Imperi 1897, Suvalskaja gubernija*, S. Peterburg, 1904.
14. *Itogi Vsesojuznoj perepisi naselenija 1970 goda po Litovskoj SSR*, 1971, Centralnoe Statističeskoe Upravlenije pri Sovete Ministrov Litovskoj SSR, Vilnius, I t., 27-38 s.

DEMOGRAPHIC ISSUES CONCERNING THE POLISH-LITHUANIAN BORDERLAND¹

Piotr EBERHARDT

Institute of Geography and Spatial Organization
Polish Academy of Sciences
Warszawa

The Republic of Poland has three immediate eastern neighbours: Ukraine, Belarus and Lithuania. The District of Kaliningrad is generally regarded as one of Poland's eastern neighbours, what is not precise however, as this enclave belonging to the Russian Federation is situated on the northern side of the Polish border.

The geographic configuration of the Polish - Lithuanian border is a complex one. Half of the border runs meridionally and the other, western half, along a parallel of latitude. The location of this border results in the fact that the Lithuanian territory extends both on the eastern and on the northern side of the political border with Poland.

In its eastern part (to some extent in the north as well) the land border of Poland extends from the Carpathians in the south to the Wiślana Peninsula in the north. It has 1.245 kms in total, of which the Polish - Lithuanian part is only

¹ At the Institute of Geography and Spatial Organization of the Polish Academy of Sciences, under the leadership of A. Stasiak, a research project was carried out in 1992-1995 on „Foundations of the Development of the Western and Eastern borderland of Poland”. Under the Project, the author has dealt with the demographic problems concerning Polish border regions. He has published several comprehensive papers on this subject in consecutive bulletins of the Research Project, namely: „Population Potential in Border Regions of Poland and the Republics bordering with Poland in the East”. (Bulletin No. 4), „Demographic and Settlement Transformation in the Polish - Russian borderland”. (Bulletin No. 6), „Demographic and Settlement's Transformation in the Polish - Belarussian borderland after World War II.” Bulletin No. 8). This article on issues concerning the Polish - Lithuanian borderland closes the series devoted to demographic issues, and partly to geopolitical ones concerning the eastern borderland of Poland.

102 kms long. It is the shortest of all Polish borders neighbours. One should point out that this part of the border has a longer history than the other parts of the present eastern border, as it was delimited after World War I, and was separating the Republic of Lithuania from the Republic of Poland during the entire period between the Wars. It did not change after World War II, being the border between the Lithuanian SSR and the Polish People's Republic. Following the regaining of independence by Lithuania and other geopolitical transformations in Eastern and Central Europe, it became the border between the sovereign Lithuania and Poland. The border is fully recognized by both independent states. One should bear in mind however, that during the prewar period it was questioned by the Lithuanian authorities. It is therefore worthwhile to remind that it was established as a demarcation line and was delimited by the Entente authorities. The Staff of Marshall Ferdinand Foch dealt with its delimitation. On July 18, 1919 it submitted a draft, which was eventually approved on July 26, 1919 by the Supreme Council of the Entente. The border line received the name „the Foch line”. The demarcation line began at the East Prussian border, South of Wisztyniec District (Vištitis) and north of Wizajny, leaving Livbavas (Lubowo) and Lazdijai (Łoździeje) in Lithuania, and Szypliszki and Puńsk in Poland. Then, it turned from the parallel direction, heading southwards, and ran across the northern part of the Galadus Lake, east of Sejny, and reached the Marycha (Mara) and Igorka rivers, where it changed direction and reached the Neman (Neumunas, Niemen) river. Unlike in its further section (the „Foch Line” that reached the Daugava (Dvina, Dźwina) river, the border delimitation in the region of Suwałki has proved to be a lasting one. The border delimited in 1919, separated the Polish territory from the „Lithuanian” one, and ran across the territory of the former Province of Suwałki, that has belonged since 1815 to the so called Polish Kingdom. According to its designers, it was to separate Polish ethnic regions from the Lithuanian ethnic regions. It was for that reason that the entire district of Vilkoviškis (Wyłkowyszki), Marijampolė (Mariampol), Kalvarija (Kalwaria) and Naumištis (Władysławów) remained on the Lithuanian side of the border. The district of Augustów was on the southern side of the border, as well as the most of that of Suwałki. On the other hand, the district of Sejny (Seinai) was divided, with the larger part of it, including the city of Sejny, in Poland.

Immediately after the delimitation, both countries felt wronged, and questioned the imposed delimitation from the historic, ethnic, economic or strategic perspective. These reservations however were of no political significance, and unlike other demarcation lines delimited after World War I, the border has lasted for over 75 years and it presently divides the territory of the Republic of Lithuania from that of the Republic of Poland.



Fig. 1. The Polish-Lithuanian borderland

The border delimited after World War I has divided areas which for centuries had been one political and economic entity. Because of tense relations between Lithuanian and Polish authorities before World War II (both countries did not even have diplomatic relations till 1938), the new border became a tight line dividing the territory of Lithuania from that of Poland. After World War II, the geopolitical situation changed in this respect that the border was divided the Soviet Union from the subordinated to the Empire, but formally independent Polish People's Republic. From the social and economic perspective, the border was still closed, restricting any opportunities to establish interpersonal relations between both societies.

One should make it explicit that the border delimited in 1919 and conclusively confirmed in 1945 has effectively separated territories of similar physiographic features. Different political and economic conditions have influenced the development of both border regions over the most part of the 20th century. During the prewar period, the Lithuanian population lived in its own national state. Following the loss of independence, it was included in the territory of the USSR, being sovietized and russified. It brought about serious demographic, social and economic results. Lithuanian villages were collectivized. At the same time strong processes of indoctrination were initiated. This was connected with a strong expansion of ideological models, designed to develop the Soviet Man, separated from his national (Lithuanian) and religious (Catholic) roots. The conditions of the Polish borderland were utterly different. Despite the pressure imposed, the land remained in the hands of individual peasants. The Church could act in a relatively normal way. Social and economic life had its own specific nature, significantly different from the Soviet model introduced on the other side of the border. It had specific demographic and social results. Prior to a comparative analysis, presenting demographic issues concerning both borderlands, certain preliminary assumptions should be made, concerning two important issues, i.e. territorial area covered by the research and the precision of the statistic and substantive analysis. In what concerns the use of an appropriate unit for spatial comparison, the problem is rather difficult and controversial. Studies on the delimitation of the Polish - Lithuanian borderland had not been actually undertaken. It is assumed in Poland that the entity to be studied is the entire voivodship of Suwałki. I think the assumption is not justified. The present voivodship of Suwałki is of clearly dualistic nature. It is adhering not only to the Lithuanian border. Between the hamlet of Wizajny and Mazurski Canal, located north-west of Węgorzewo, it borders upon the Kaliningrad District. One can therefore say that the entire western part of the voivodship of Suwałki integrally belongs to the Polish - Russian borderland. These were the areas which made an integral part of East Prussia before World War I and in-between the wars. It therefore seems appropriate to include only this part of

the voivodship of Suwałki in the Polish - Lithuanian borderland, which adjoins to the Lithuanian border. These are the areas which had been a part of the voivodship of Suwałki before World War I, and in-between the wars belonged to Poland, as a part of the voivodship of Białystok (the districts of Suwałki and Augustów). A precise separation of this area is rather difficult, as following a rather illogical reform of the administrative structure in Poland in 1975, the districts (powiats) were abolished, and the basic administrative units became small municipalities (gminas). One should therefore define those cities and municipalities of the voivodship of Suwałki which have continuously belonged to Poland since 1919. These are three cities: Suwałki, Augustów and Sejny, and the area covered by the following municipalities (according to the present administrative structure): Augustów, Bakalarzewo, Bargłów Kościelny, Filipów, Giby, Jeleniewo, Krasnopol, Lipsk, Nowinka, Płaska, Przerośl, Puńsk, Raczki, Rutka-Tartak, Sejny, Suwałki, Sztabin, Szypliszki, Wizajny.

The territory separated in this way, being in fact the area of the Polish present borderland, had the population of 184.900 in 1931, of which 33.900 concentrated in two cities (Suwałki - 21.800 and Augustów - 12.100). During the prewar period, urbanization was at a low level, and only 18.3% of the population inhabited cities and towns. According to the census data of 1960, 145.400 people inhabited the area of the district of Suwałki and that of Augustów, of which 37.100 people (25.5% of the total population) concentrated in three cities, of which 19.900 in Suwałki, 14.700 in Augustów and 2.500 in Sejny. The population growth in the selected area between 1975 and 1993 is presented in the statistical listing below (see Table 1).

According to the latest data, the selected area of the Polish borderland is inhabited by over 180.000 people (as for 31st Dec. 1993). Formally, the area has been known for its significant demographic dynamics. Its population has increased by approximately 30.000 people over the last 20 years. At the same time however, serious structural transformation has occurred there. It has involved two parallel processes: a very rapid growth of urban population, with a concomitant decrease of the population in the rural areas. The percentage share of the urban population was 25.5% in 1975, 43.8% in 1980, 49.6% in 1985, 55.3% in 1993. The large scale of the phenomenon is reflected by the fact that between 1960 and 1993 the share of the urban population increased by 29.8%. At the same time, the population of the rural areas in the area of Suwałki decreased from 108.300 in 1960 to 80.900 in 1993.

Urbanization processes were of a distinctive and specific nature. Almost entire population growth was present in the city of Suwałki alone. As late as in 1960, only 13.6% of the population of the selected area focused on the capital city of the region. Fifteen years later (in 1975), the ratio rose up to 20.2%.

Table 1

Population Changes on the Polish side of the Polish - Lithuanian borderland
in 1975-1993

No.	Towns and Municipalities	Population number				Change 1975-1993
		1975	1980	1985	1993	
1.	Suwałki	30 550	40 662	51 406	64 923	+34 365
2.	Augustów	22 467	24 348	26 881	29 207	+6 740
3.	Sejny	3 543	4 393	4 662	5955	+2 412
I.	Towns Total	56 568	69 403	82 949	100 085	+43 517
1.	Augustów	8 110	7 530	7 126	7 192	-918
2.	Bakalarzew	3 792	3 456	3 226	3 208	-584
3.	Bargłów Kościelny	7 093	6 502	6 318	6 100	-993
4.	Filipów	4 934	4 691	4 536	4 595	-339
5.	Giby	3 228	3 311	3 259	3 086	-142
6.	Jeleniewo	3 988	3 752	3 352	3 117	-871
7.	Krasnopol	4 983	4 811	4 639	4 293	-690
8.	Lipsk	6 292	5 836	4 279	9 750	-2 542
9.	Nowina	3 281	3 122	3 010	2 919	-362
10.	Płaska	3 033	2 851	2 792	2 761	-272
11.	Przerośl	3 609	3 297	3 199	3 129	-480
12.	Puńsk	4 478	4 646	4 638	4 600	+122
13.	Raczki	5 970	6 068	5 716	6 257	+287
14.	Rutka-Tartak ¹			2 612	2 261	+2 261
15.	Sejny.	6 412	5 087	5 287	4 407	-2 005
16.	Suwałki	7 835	8 023	7 000	6 144	-1 691
17.	Sztabin	1 005	3 641	6 206	5 988	-1 017
18.	Szypliszki	5 122	4 626	4 289	4 186	-936
19.	Wizajny	5 456	5 098	2 902	2 955	-2 501
II.	Total Municipalities	94 621	89 048	84 392	80 948	-13 673
III.	Total Borderland	151 189	158 451	167 341	181 033	29 844

¹ The Municipality of Rutka-Tartak has become separated from the municipality of Wizajny

Source: GUS (Central Statistical Office) Year-Books

Following the fact of Suwałki becoming the capital of the voivodship, the processes involving the concentration of the population still

accelerated (25.7% of the total population in 1980; 35.9% in 1993). At the moment, over 1/3 rd of the population of the selected area lives in Suwałki. One may presume that such a rapid growth of one city alone has been a very disadvantageous phenomenon, especially for the fact that it has been a one-sided development. It has involved demographic growth only, with no appropriate development of urban-building functions. The fact of having been granted the status of the capital of the voivodship, has made it possible to have at the disposal resources for housing construction which has concentrated mainly in the very capital of the voivodship. The development has taken place at the expense of the own base. The capital of the voivodship has therefore not even been able to develop its own suburban zone. This is reflected by the decrease of the population of the municipality of Suwałki from 7.835 in 1975 to 6144 in 1993. An excessive population growth in Suwałki, based on its one-sided administrative function, the city in a very difficult position. In the event of its losing the status of the capital of the voivodship, what is very likely, the city shall bear painful consequences of a too rapid population growth. These will probably include mass unemployment, as there are no economic conditions to create new jobs beside the extensive administration of the voivodship. Occurring at the same time, the depopulation processes in the rural areas have brought negative effects to the development of farming and service activity in those areas. Mass migration of young people reaching the „productive” age from the rural areas, has worsened the age structure significantly. In many villages only old people have remained, living from their pensions. Many areas have been devastated, as depopulation processes were not linked with a change of the structure of arable land. The situation as presented above demonstrates that the consequences of a structurally and spatially unbalanced population growth shall affect the conditions for the functioning of the entire Polish borderland. For this reason, the development of co-operation with Lithuanian border regions can become a stimulating factor, inducing new jobs. The eastern part of the voivodship of Suwałki is especially predisposed to intensify economic co-operation, not only with the nearest regions north of the Polish border, but also other, even more remote regions of Lithuania.

For a Polish researcher it is more difficult to define the spatial scope of the Lithuanian borderland, including regions directly adjoining the Polish border. The basis for such a definition can only be the units of the Lithuanian administrative structure. Under the prewar Republic of Lithuania, the country was divided into 24 districts. There were three such districts along the border in the area of Suwałki: Marijampolé, Seinai and Vilkaviškis. During the Soviet period, the regions (raions) were introduced in the number of 44 (not counting regional towns) within the new borders of Lithuania. There are three regions at the Polish border: of Marijampolé - being at the same time the regional town,

of Vilkaiviškis and Lazdijai. One can assume that all these regions put together make a borderland interested in a co-operation with the eastern part of the voivodship of Suwałki. It is an important task to study its demographic characteristics and to apply this knowledge. For this reason, the next statistical listing includes data on the demographic potential of the Lithuanian borderland (see Table 2).

Table 2

Population Changes on the Lithuanian side of the Polish - Lithuanian borderland in 1959-1989

No.	Name of District	Name of Towns	Population number			Change 1959-1989
			1959	1970	1989	
I	Marijampolė	Marijampolė	19 621	28 763	50 887	+31 266
		Kazlu Ruda	3 478	4 397	7 715	+4 237
		Kalvarija	4 698	5 600	5 701	1 003
		Total Towns	27 797	38 760	64 303	+36 506
		Rural Areas	49 698	46 945	35 993	- 13 505
		Total	77 295	85 705	100 296	+23 001
II	Vilaviškis	Vilaviškis	5 072	8 566	13 829	+8 757
		Virbalis	1 429	1 487	1 566	+137
		Kybartai	6 244	6 430	7 064	+820
		Total Towns	12 745	16 483	22 459	+9 714
		Rural Areas	40 919	39 530	29 803	-11 116
		Total	53 664	56 013	52 262	-1 402
III	Lazdijai	Lazdijai	3 109	3 928	5 485	+2 376
		Veisiejai	1 513	1 463	2 079	+566
		Total Towns	4 622	5 391	7 564	+2 942
		Rural Areas	42 851	40 062	25 856	-16 997
		Total	47 473	45 453	33 418	-14 055
IV	Lithuanian Borderland	Towns	45 164	60 634	94 326	+49 162
		Rural Areas	133 268	126 537	91 650	-41 618
		Total	178 432	187 171	185 976	7 544

Source: Itogi wsiesojuznoj pieriepisi nasilenija 1970 goda po Litowskoj SSR. Tom I, Vilnius 1971.

Nacjonalnyj sostaw nasilenija Litowskoj SSR, Vilnius 1990.

Demographic transformation in the Lithuanian borderland has its own individual features, different from those on the Polish side of the border. It was manifested both by the scale of the transformation and by its social and economic conditions. The population of the entire Lithuanian borderland increased significantly during the first studied period (1959-1970), later remained at the same level, with a slight tendency to decline. A characteristic feature were intensive urbanization processes. The share of urban population, being 25.3% in 1959, increased during the thirty years investigation to the level of 50.7%. One can even observe that the pace of urbanization was relatively higher in the Lithuanian than in the Polish borderland. In Lithuania however, the processes were of a more polycentric nature. There were eight cities North of the Polish border, while South of it there were only three. As it was stated above, the entire population growth in the Polish borderland focused on one city only, i.e. in Suwałki. On the other hand, the largest city in the Lithuanian borderland, Marijampolė, although dominant in the demographic sense, was not developing as dynamically as Suwałki. As a final result, the pattern of urban settlement has remained more balanced on the Lithuanian side of the border.

While discussing the Polish borderland, special attention was given to the depopulation processes in the rural areas. It turns out however, that the same processes were even more intensive in the Lithuanian borderland. This was related to the existing farming structure. As a result of the collectivization, large amounts of labour force were released, migrating from Lithuanian villages. The socialization of land resulted also in a concentration of the rural settlements. Dispersed country buildings were liquidated. The abolishment of private ownership of land had also stimulated the migration from villages. All the factors mentioned have influenced the scale of the depopulation processes. One can presume that the decline of kolkhozes and the reestablishment of private ownership of land shall influence a change in demographic trends. We have no relevant, updated statistical data, however.

An interesting demographic issue, being of significant importance for Polish - Lithuanian relations, is the issue concerning the Lithuanian minority in Poland and the Polish minority in Lithuania. It is therefore necessary to examine this issue. One should pay special attention to significant differences in the distribution and the number of Poles in Lithuania and Lithuanians in Poland. The first difference is the one between the numbers of both minorities. The Lithuanian minority in Poland is scarce, of approximately 10.000 people. On the other hand, there are over 250.000 Poles in Lithuania. Greater differences result from the distribution of both minorities. Polish population in Lithuania is concentrated in the region of Vilnius, the region of Šalčininkai and also in the regions of Švenčionys, Trakai and Šyrvintos. These are regions situated far from the present Polish - Lithuanian border. On the other hand, the Lithuanian

minority is concentrated in a small area adherent to the Lithuanian - Polish border, i.e. in the area of the borderland under investigation. For this reason, there is a need to carry out a thorough statistic and geographic analysis concerning the number and spatial distribution of the Lithuanian minority. There are serious difficulties with defining the number of Lithuanians inhabiting Polish border regions. It is the result of a lack of credible statistical materials. Polish postwar censuses did not include the question concerning the language spoken, nationality or religion. Thus, the only source of information, on the basis of which the numbers concerning minorities in Poland are defined, are data collected by local authorities or individual researchers. By definition, these are subjective and estimated. The most comprehensive and thorough, and at the same time up-to-date work on the Lithuanian population in Poland is the study by C. Żołędowski². Information on the issues concerning the Lithuanian minority in Poland shall be quoted after this study. Prior to a presentation of his own estimate, the Author is discussing in detail papers written by other researchers. They indicate slow and methodical assimilation processes, manifesting themselves in a constant shrinkage of those areas where the residents use the Lithuanian language. In the light of the 1921 Polish census data, 5.761 people of Lithuanian nationality inhabited the Suwałki borderland, while in 1931 the number was 6.782. Some researchers were of the opinion that the data was to some extent underestimating the number of Lithuanian minority. They were nevertheless showing the area around Puńsk and that north of Sejny, where Lithuanian population was predominant. Based on the information obtained from the Lithuanian Social and Cultural Society, C. Żołędowski determined villages inhabited by Lithuanian population. As the author puts it: Most of them (villages) are in the municipality of Puńsk. Inhabited entirely or predominantly by people of Lithuanian nationality are the following villages: Buraki, Dziedziule, Kalinowo, Kompocie, Krejwiany, Nowinniki, Ogórki, Oszkinie, Przystawańce, Rejsztokienie, Szlinokiemie, Trakiszki, Trampole, Widugiery, Wilkopedzie, Wojciuliszki, Wojtokiemie, Żwikiele and Puńsk itself, with approximately 100 people of the Polish nationality however. Mixed Polish - Lithuanian villages, with no clear predominance of any nationality, are the following: Buda Zawidugijska, Sejny and Skarkiszki. Lithuanian population also inhabits several villages with a Polish majority. These are: Giłujcze, Pelele, Poluńce, Sankury, Szol'tany and Taurosyzszki. Inhabited entirely or predominantly by Lithuanian population villages in the municipality of Sejny are the following: Burbiszki, Dusznica, Jenorajście, Jedeliszki, Klejwy, Rachelany, Radziucie, Rynkojeziory

² Żołędowski C. - Rozmieszczenie i liczebność mniejszości litewskiej w Polsce (Distribution and Numbers Concerning the Lithuanian Minority in Poland). (in:) Zeszyty Naukowe Instytutu Nauk Politycznych. Wydawnictwo Uniwersytetu Warszawskiego, Warszawa 1992, p. 178-186, No. 17.

and Żegary. Mixed villages, inhabited by similar numbers of Poles and Lithuanians are: Hołny-Mejera, Krasnogruda, Krasnowo, Łumbie, Nowosady and Ogrodniki. According to the same source, there are up to 20% of Lithuanians in Sejny, i.e. less than 1.000 people. The smallest number of Lithuanians is in the municipality of Szypliszki. Two villages of the municipality have Lithuanian majority: Jegliniec and Wojponie. Three other ones, Budzisko, Podwojponie and Sadzawki, have a mixed national composition. Besides, individual families or individuals of Lithuanian nationality live in other places in the territory of those municipalities, and even in that of Wizajny. For example, in the municipality of Szypliszki there are the following villages: Romaniuki, Mikołajówka and

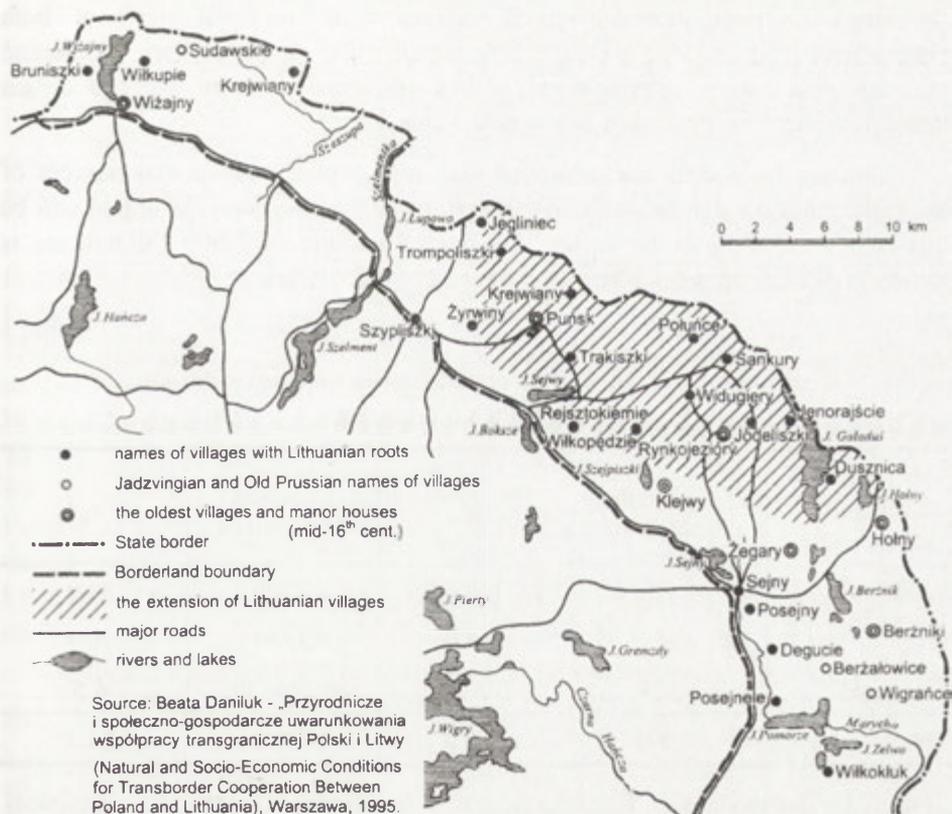


Fig. 2. Lithuanian minority in Poland

Wesołowo. In order to make further calculation simpler, it was assumed that the total number of people of Lithuanian nationality, inhabiting in small numbers or individually in the Polish surrounding is approximately equivalent to that of people of Polish nationality, living in villages with a predominant Lithuanian majority.

Based on statistical data concerning the number of residents of individual village administrations, obtained in municipal offices, one can ascertain that villages inhabited entirely or predominantly by Lithuanians numbered in total 4.788 residents in 1983, of which 3.330 in the municipality of Puńsk, 1.266 in the municipality of Sejny and 172 in the municipality of Szypliszki. 1.104 people lived in mixed villages, with similar shares of both nationalities, of which 224 in the municipality of Puńsk, 622 in the municipality of Sejny and 258 in the municipality of Szypliszki. Finally, villages with a Polish majority and a significant Lithuanian minority (in the municipality of Puńsk exclusively) were inhabited by 707 people. Selecting 0.5 as the coefficient of the share of the Lithuanian population in mixed villages with an equal share of both nationalities and 0.33 in relation to villages with a significant Lithuanian minority, and adding approximately 1.000 residents of Sejny, we can obtain the approximate list presented below (see Table 3).

The presented data are estimated and approximate. The actual number of the Lithuanian population in the north-eastern part of the Suwałki region can be different. According to the author, the quoted number of 6.600 Lithuanians is rather overstated because of the used method of calculation.

Table 3

Distribution and Numbers Concerning the Lithuanian Minority
in the Polish borderland

Municipality (Township- Municipality)	Total Number of Residents	%	Of which Lithuanians	%
Puńsk	4.628	100.0	3.700	80.0
Sejny	9.867	100.0	2.600	26.4
Szypliszki	4.584	100.0	approx. 300	6.5
Total	19.079	100.0	6.600	34.7

Source: C. Żołędowski - Rozmieszczenie i liczebność mniejszości litewskiej w Polsce (Distribution and Numbers Concerning the Lithuanian Minority in Poland), p. 185.

According to C. Żołędowski, approximately 6.600 Lithuanians live in the border region. One should also add some indefinite number of Lithuanians in the city of Suwałki. The conclusion of the above is that the number of Lithuanians in Poland is small (according to the quoted author, the number of Lithuanians in Poland does not exceed 9.000 people). Nevertheless, in a small area of the borderland around Puńsk there is still an ethnic Lithuanian region, where people not only declare their Lithuanian nationality, but also use the Lithuanian language.

As it was mentioned above, Poles in Lithuania live in regions situated in the North of the country, in the Lithuanian - Belarussian borderland, in the historic region of Vilnius. On the other hand, at the very border between Lithuania and Poland, the Polish minority is very scarce and becomes rapidly assimilated. According to the Russian census of 1897, there were 8.300 Poles in the district of Kalwaria (Kalvarija), what made it 10.4% of the total population, 2.900 (3.9%) in the district of Wylkowyszki (Vilkaviškis), 3.000 (2.9%) in the district of Mariampol (Marijampolė) and 1.000 (1.3%) in the district of Władysławów (Naumiestis). Totally, in the northern part of the voivodship of Suwałki (not including the district of Sejny) there were 15,200 Poles. The Lithuanian census of 1923 revealed 1,300 Poles (1.3% of the population) in the district of Marijampolė, 600 (0.8%) in the district of Vilkaviškis (Wylkowyszki) and 1.700 (4.4%) in the northern part of the district of Sejny.

The postwar Soviet censuses reflected a gradual decrease of the number of Polish population in the regions next to the border with Poland. The number of Poles in the region of Lazdijai was 766 in 1959, 379 in 1970, 343 in 1979 and 158 in 1989. In the district of Mariampolė it was 564 in 1959, 372 in 1970, 165 in 1979 and 126 in 1989, while there were 269 Poles in the district of Wylkowyszki (Vilkaviškis) in 1959, 204 in 1970, 140 in 1979 and 104 in 1989. The total number of Poles in the entire Lithuanian borderland was 1.599 in 1959, 955 in 1970, 648 in 1979 and 388 in 1989. One can therefore assume that the Polish population on the other side of the border is small and is gradually disappearing. This is why with the exception of Puńsk, which has preserved its Lithuanian character, the political border between Poland and Lithuania is an ethnic one, dividing the Polish population from the Lithuanian one.

One can therefore note that the minority issue is not a significant problem in the very Polish - Lithuanian borderland. It can nevertheless be used both in a positive, and in a negative way, as on the one hand, mutual prejudice can be stimulated, while on the other hand both minorities can become a bridge linking the Polish and the Lithuanian nation - both being close to each other for their history and tradition. Mutual reapprochement and learning about each other should be conducive to the establishment of even more friendly relations between Vilnius and Warsaw.

Information presented in this article, concerning demographic potential, its dynamics and specific ethnic features of regions adhering on both sides of the Lithuanian - Polish border, is an introduction to this important and complex research subject matter. A more accurate substantive analysis requires joint and close co-operation of Lithuanian and Polish geographers and demographers.

ETHNIC CHARACTERISTICS OF THE NORTH-EASTERN BORDERLAND OF LITHUANIA

Mariusz KOWALSKI

Institute of Geography and Spatial Organization
Polish Academy of Sciences
Warszawa

The literature on ethnic issues concerning Lithuania pays much attention to the regions of Vilnius and Šalčininkai, where the Polish minority prevails, and the Russian minority is also large. In this article, I would like to emphasize some important ethnic issues concerning the north-eastern borderland of Lithuania (the district of Ignalina and Zarasai), where areas with prevailing numbers of Poles and Russians are also present (see Table 1 and Fig. 1 and 2).

CHARACTERISTICS OF THE NORTH-EASTERN BORDERLAND OF LITHUANIA (THE REGIONS OF ZARASAI AND IGNALINA)

The main factors which influence the characteristics of the borderland of our interest from the perspective of socio-ethnic issues are the following:

- the border with Latvia and Belarus,
- numerous Polish and Russian minorities
- large centres of the Polish minority on the Latvian and Belarussian side of the border (the region of Braslaw in Belaruss and Dyneburg in Latvia),
- peripheral location in relation to the administrative centre of the country (unlike the Vilnius area),
- the location of the area; far from the polish border,
- the lack of state borders till 1991 (except for the period of 1921-1940),
- the fact that from 1921 till 1939 the region was a part of the Polish-Lithuanian borderland (the border was called in question by Lithuania, what, considering tense relations between both countries, resulted in social repercussions),

- the fact that the region, presently divided by Lithuanian, Latvian and Belarussian state borders, from 16th century till the year 1921 had always belonged to one political entity (the Polish Republic, the Russian Empire), while the areas situated at present on both sides of the Lithuanian-Belarussian border had belonged to the same district (powiat) of Zarasai (Jeziorosy).

The area of our interest is the Lithuanian - Belarussian - Latvian borderland in the spatial meaning. From the cultural perspective it is a Lithuanian - Belarussian - Polish - Russian - Latvian borderland which is a result of the stormy history of the region. This raises many questions concerning the reaction of the local population to such complicated cultural conditions (social, political, linguistic implications) which we intend to study in the spatial aspect. Problems of another nature add to the above. For example: the presence of a nuclear power plant and its impact on social life.

HISTORIC CONDITIONS

In the political sense the area of our interest has been a borderland for a long time now. It is here where the border between the Grand Duchy of Lithuania, Polock and the Teutonic Knights' State had run-which later on had become the border between the Grand Duchy of Lithuania and the Teutonic Knights' State. Later still (since 1551) only internal borders of the Polish-Lithuanian Commonwealth had run here (i.e. between the Grand Duchy of Lithuania and the Duchy of Kurland); and even later - the border between provinces of the Russian Empire.

The twentieth century delimitation of state territories, relating to the long-lasting political and cultural traditions was of a new quality however, as it concerned national states established in the region as a result of the nineteenth century national revolution. In 1921 a Lithuanian minority remained on the Polish side of the border, while on the Lithuanian side Polish and Russian minorities subsisted. On the Latvian side of the border, beside the Latvians, there were also numerous Poles and Russians. The readjustment of the frontiers of 1940 practically liquidated the Lithuanias minority behind the Lithuanian eastern border. On the other hand, it increased the number of Poles in Lithuania. Despite the postwar repatriation and the ongoing assimilation process, the Polish minority remained in the north-eastern corner of Lithuania, also in those regions which had belonged to Lithuania before 1939. A Polish minority also remained behind the eastern border of Lithuania. Thus, there is a rather coherent Polish region on both sides of the Lithuanian-Belarussian border. It has not always been the case, though.

The area of the present north-eastern Lithuanian borderland has been politically differentiated for a long time. On the other hand, it remained ethnically homogenous for a long time. Since the Middle Ages, at least, it was populated by Baltic tribes - the ancestors of the present Lithuanians. The advantage of the Lithuanian element is testified by the clearly Lithuanian toponymy of the region. The Lithuanian-Slavic ethnic borderland was originally located much further to the East. The language and cultural differentiation of the population in the region mentioned had begun not earlier than under the Polish-Lithuanian union. The nobles and a part of the townspeople became polonized. It was a long-lasting and gradual process. The first to adopt the Polish language and customs was the aristocracy. The middle nobility was included in the process slightly later. The last to Polonize was the yeomanry, which remained under the influence of both cultures until the time when modern nations - the Polish and the Lithuanian one began to emerge, i.e. till mid-19th century. During that time however, the fundamental linguistic divisions corresponded with the social ones. The nobles spoke, or tried to speak Polish, while the peasants were faithful to the language of their ancestors. That linguistic and ethnic structure was enriched by a relatively large group of Russian speaking Orthodox confessors of the old rite, who had settled there while fleeing from persecution in Russia, and by the Jews who had established their communities in the few towns of the region. The incorporation of the region to Russia resulted in an influx of the Russian population. The process was not very extensive however (it involved officials, teachers, the military and estate owners). A real ethnic revolution in the region took place together with the transformation of social relations, what meant an establishment of a new society in this part of Europe. One could call the process a national revolution as well. On the one hand, the Lithuanian national renaissance began. Only a small number of the earlier polonized nobles however had joined in the process.

On the other hand, a powerful influence of the Polish culture has not ceased to exist in the region. This is the reason why together with the national consciousness sinking into the minds of broad groups of people, a process of polonization of Lithuanian villages began. It was nothing else but a continuation of the process of forcing out the Lithuanian language by the Slavic element.

In an earlier period, a process of language belarussification of Lithuanian, catholic peasants had been observed. The process was not very wide-spread in the region of our interest, however. The period that followed witnessed polonization of Belarussian villages, which had originally been Lithuanian villages belarussified earlier in the history. Further polonization had become easier by the fact that the population of that area was of catholic confession. The polonization only concerned the national consciousness, as the population often continued to use Belarussian dialects in everyday life.

On the turn of the 19th and 20th century the Lithuanian speaking population in the region of our interest gave up the language of its ancestors in favour of the Polish language. The process was very rapid and occurred during the lifetime of one generation. In this way a coherent area inhabited by the Polish speaking population which has at the same time adopted Polish national consciousness was established. It was a result of the presence of Polish culture in the region during several centuries and of a significant role played by social strata representing this culture. It was a spontaneous process, occurring under extreme conditions when any Polish influence was subdued by the Russian authorities. The process was present along the entire border between Lithuanian and Belarussian ethnic regions. The presence of large cities - centres of Polish culture Wilno (Vilnius), Grodno (Grodna), Kowno (Kaunas) and Dyneburg (Daugavpils) - could speed up the process. In their vicinity the main concentration of Poles speaking Polish in every day life developed.

„In this way social and economic processes, and democratic trends of the second half of the last century brought about two utterly different results in the ethnic Lithuania. In the middle of the coherent Lithuanian territory, a country population becoming independent, with hunger for education, is creating its own, more numerous than ever before Lithuanian intelligentsia, pushing Lithuanian Renaissance into a new track. The same factors caused mass inclination of the Lithuanian people in the Belarussian border region to the Polish culture, as a result of which the Polish language replaced the Belarussian over the large areas, under the process of the denationalization of Lithuanian villages” (H. Turska, 1982, p. 57).

The process was in fact completed before the rebirth of the Polish and Lithuanian statehood. The institutions of both countries could only to a small degree influence the people's choice of political options.

In the region of our interest Polish population emerged mainly because of the direct polonization of the Lithuanian - speaking population. This distinguished local Poles from those living further eastwards (in the territory of the present Belarus), using on a daily basis the so called simple language - a Russian dialect regarded as a popular dialect of the Belarussian language. The border dividing both groups of Polish population ran approximately along the present Lithuanian - Belarussian border. West of that border the so called Smolwin isle of the Polish language had emerged, similar to the region situated north-east of Vilnius.

The material presented above demonstrates that both groups, the Lithuanians and the Poles are the autochthon population of that region, deriving from the same root. It was as late as at the end of the 19th century that social processes led to their differentiation from the national and linguistic point of view. The influx of settlers from the Polish ethnic zone, often regarded as

the reason for the establishment of the Polish national zone in Lithuania, was in fact very small, not to say insignificant. Both the nobles and peasants were of local descent. The Polish townspeople had some ethnically foreign blood in their veins, not only Polish, but also Ruthenian, German, and even Scottish. The group was rather scarce, though. A separate group were Jews, during the nineteenth century falling usually into russification.

In the region under investigation it was not the descent, but the choice of the national option and the spoken language that determined the nationality.

The second lithuanization of the already polonized population could not begin before the establishment of the Lithuanian state. It concerned a group of people, not large in the twenties and the thirties, related to both cultures, which did not make the final choice however, as to the culture they choose. The important thing was that the Lithuanian language became the official one, and the „Lithuanianism” was something officially promoted in the eyes of the simple people. Additionally, it was backed by the entire Lithuanian State machinery. Under these circumstances, also the progeny of mixed couples accepted the Lithuanian national option in most of the cases. The processes were similar, but on the Polish side they developed in the opposite direction. Here, the circumstances in a similar cultural context, were strengthening the Polish option. But it was only of „cosmetic” significance. The process of creation of the nation was already completed and not much could be changed. It is testified by the fact that the Polish minority still remains in the region of Zarasai which has never been a part of the Polish State. It is also confirmed by the fact of the existence of the Lithuanian minority, which remained in Poland, especially the one still living today within Polish borders, in the area of Puńsk, separated for almost 70 years by a very tight frontier from the rest of the Lithuanian ethnic territory. Clearly, both regions could not be nationally preserved through the influence of the institutions of the national State. It is possible that the geographic proximity of the national State and ethnic territory was of great significance for the preservation of the options chosen prior to that time. The ethnic isles - the Polish one in the area of Kaunas and the Lithuanian one in the area of Lida ceased to exist in the real terms.

Following the arrival of the Soviet authorities, the russification process increased, both in the regions belonging so far to Lithuania and those that had belonged till 1939 to Poland. The postwar emigration of a part of the Polish population, including mainly its higher strata (the intelligentsia), had a great influence on the development of ethnic relations. It has significantly weakened the Polish cultural potential. From that moment on two options - the Lithuanian and the Soviet one (backed by the Russian language and literature) - competed for the influence among the population. The Soviet one had significant influence mainly upon the Polish population. The processes were facilitated by the

similarity of the languages (reinforced by Belarussian influence) and the lack of educated strata in local society. Poles became more dependent on the Soviet system than Lithuanians. The Polish - Lithuanian antagonism stimulated at the end of the 19th century by the struggle for influence among local population also played a role, being an additional reason, pushing the Poles into the hands of the Russian communists. The russification was also supported by the influx of Russians and settlers from Belarus: Belarussians and Poles speaking the so called simple language. They reinforced what was in the possession of the Russians, being till then mainly settlements of the confessors of the Orthodox old rite. The construction of the „Ignalina” nuclear power plant became of special significance for this part of Lithuania. As a result, the city of Visaginas, servicing the power plant, being of clearly Russian nature, was established in the Polish - Lithuanian ethnic borderland. The fact of greatest significance was that the city's thirty thousand population has dominated the entire borderland.

All those processes contributed to the fact that the borderland ceased to be a Lithuanian - Polish or a Lithuanian - Belarussian - Latvian. It became a Lithuanian - Russian, or a Lithuanian - Soviet borderland, where the Polish component lost its former significance.

In order to demonstrate how great the impact of the construction of the „Ignalina” power plant was on the ethnic structure of the region, we can point out the manipulation of not taking into account the city of Visaginas in the statistical data for 1989. Owing to the above, the percentage of the Russian population decreases from 39.30 to 10.26 and that of the Lithuanians rises from 39.24 to 76.09 in the Ignalina district in 1989. While considering the entire region consisting of both districts under investigation (of Ignalina and of Zarasai), one should bear in mind that Visaginas is located on the border between both districts, and has equally strong impact on both administrative units, and that the percentage of the Russians decreases from 33.86 to 15.64, and that of Lithuanians rises from 48.32 to 72.74 (see Table 2). At the same time, the quantitative difference between the Russians and the Poles decreases. One should note that Visaginas is not a part of the Ignalina district any more, as it has been granted the status of a separat city. This has not changed the fact however of the existence of the Russian enclave in the north-eastern lithuanian borderland.

During the Soviet period, both the Poles and the Lithuanians could feel underprivileged. For that reason the distance between both populations was reduced. Together with the proces of russification ran the process of the lithuanization of the Polish population. Because of different customs, local Poles kept distance towards the Russians and Belarussians, and even towards the Poles who had immigrated from Belarus. At the moment, under the circumstances shared by minority groups, the distance has become shorter, while becoming longer in relation to the Lithuanians. The lithuanization of

the country has resulted in a renewal of the Polish - Lithuanian conflict, extinguished during the postwar period (the syndrome of a jointly shared situation had been subduing the conflict).

At the same time, one should bear in mind that specific cultural characteristics of the borderland, widely differentiated by the languages, cultures and religions, had also shaped a model of peaceful coexistence and tolerance, which is still being continued in that area. The differences existing in the region of our interest were leveled down in a negative sense by the communist „uravnilovka” (equalization) which was to develop the Soviet Man, while in the positive sense, the situation has stimulated in people from various circles the feeling of solidarity under jointly shared circumstances. It was only the recent changes that have aggravated the Polish - Lithuanian relations, and have made the Polish - Russian - Belarussian links closer. Together with the uravnilovka, the solidarity vanished. The only more significant solidarity now is that among minorities.

THE RESEARCH OBJECTIVE

The scope of all the transformations and present relations among various ethnic groups shall be the subject of field research to be undertaken by the author as early as in the Summer of 1996. Its foundation will be observation and interviews with the local people, representatives of local organizations and institutions. The research should precisely determine the hitherto order of ethnic relations and factor causing their changes.

Primarily the research shall include the municipalities of: Turmantas and Rimse. It is an area with a large percentage of Polish population. In the rural areas of the municipality of Turmantas they make 45.6% (a relative majority). In the town of Turmantas itself they are slightly less numerous (approx. 35%) - holding second position after the Russians. Similarly, in the municipality of Rimse the Poles make a high percentage in rural areas (54.9%). Included are also the municipalities of: Zarasai (7.3%), Dukstas (6.3%) and N. Daugeliskis (12.5%). The municipality of Dysna, with a large percentage of Poles (11.4%) is situated however, far from those mentioned above, which make a coherent complex. The area covered by these municipalities belonged to the powiat (district) of Jeziorosy (Zarasai) before 1914. Beside the Lithuanians and the Poles, they are inhabited by numerous Russians and Belarussians. They all remain under the influence of the largest centre in the region which is the city of Visaginas, dominated by a large number of Russians (65%) and the Russian - speaking population (approx. 90%). They are therefore linked by something common to them, and can be treated as a whole.

An interesting problem is the presence of the nuclear power plant. Its establishment has modified the former pattern of settlement. Several hamlets have disappeared, other ones, for the proximity of the power plant, have become unattractive, and new housing estates related to the operation of the power plant were established. Problems of environmental nature have emerged, affecting the lives of the local residents. Ethnic relations have changed considerably. This problem matter should also be diagnosed.

The remaining municipalities in two border districts of Ignalina and Zarasai shall not be included in the planned study because of their homogenous, Lithuanian nature. On the other hand, it would probably be interesting to make a comparison with the neighbouring Latvian and Belarussian areas.

BIBLIOGRAPHY

- Chlebowczyk J., 1983, *O prawie do bytu małych i młodych narodów (The Right of Small and Young Nations to Exist)*, ŚIN-PWN, Warszawa- Kraków.
- Davies N., 1990 - 1991, *Boże igrzysko. Historia Polski*, t. 1 i 2 (*God's Playground. A History of Poland*, vol. 1 and 2), Znak, Kraków.
- Eberhardt P., 1991, *Przemiany narodowościowe na Litwie w XX wieku (National Transformations in Lithuania in the 20th Century)* [w:/in:] *Przegląd Wschodni*, t./vol. 1/3, 1991.
- Gellner E., 1991, *Narody i nacjonalizm (Nations and Nationalism)*, PIW, Warszawa.
- Kuśmierz J., *Między „Wschodem” a „Zachodem”. Stosunki etniczne na Wileńszczyźnie w wypowiedziach jej mieszkańców (Between the "East" and the „West”. Ethnic Relations in the Region of Vilnius in the Statements of Its Inhabitants)* [w:/in:] *Przegląd Wschodni*, t./vol. 1/3, 1991.
- Latoszek M. (edit.), 1990, *Kaszubi - monografia socjologiczna (The Kashubes - a Sociological Monography)*, Rzeszów.
- Makowski B., 1986, *Litwini w Polsce 1920-1939 (Lithuanians in Poland, 1920-1939)*, PWN, Warszawa.
- Maryński A., 1993, *Litwa, Łotwa, Estonia (Lithuania, Latvia, Estonia)*, PWN, Warszawa
- Mróz L., 1991, *Problemy etniczne w Litwie Wschodniej (Ethnic Problems in Eastern Lithuania)* [w:/in:] *Przegląd Wschodni*, t./vol. 1/3, 1991.

- Sadowski A., 1995, *Pogranicze polsko - białoruskie. Tożsamość mieszkańców (The Polish - Belarussian borderland. The Identity of Its Residents)*, Trans Humana, Białystok.
- Szacki J., 1990, *Wstęp (Foreword)* [w:/in:] Znaniecki F., *Współczesne narody (Contemporary Nations)*, PWN, Warszawa.
- Taylor P. J., 1989, *Political geography: world-economy, nation - state and locality*. Longman Scientific and Technical, Harlow.
- Turska H., 1982, *O powstaniu polskich obszarów językowych na Wileńszczyźnie (The Rise of Polish Language Areas in the Region of Vilnius)* [w:/in:] *Studia nad polszczyzną kresową (Studies on the Polish Language Spoken in the Eastern borderland)*, tom/volume 1, Rieger J., Werenicz W. (edit.), PAN - Ossolineum, Wrocław, Warszawa, Kraków, Gdańsk, Łódź.
- Waldenberg M., 1992, *Kwestie narodowe w Europie Środkowo-wschodniej (National Issues in Central and Eastern Europe)*, PWN, Warszawa.
- Żerańska-Kominek S., 1990, *Muzyka w przemianach tradycji etnicznej Litwinów w Polsce (The Music in the Transformation of the Ethnic Tradition of the Lithuanians in Poland)*, [w:/in:] *Kultura muzyczna mniejszości narodowych w Polsce (Musical Culture of National Minorities in Poland)*, Instytut Gospodarki Przestrzennej UW (The Institute of Spatial Economy, Warsaw University), Warszawa.

Table 1. Ethnic Structure of Municipalities of North-Eastern Lithuania (district of: Ignalina and Zarasai) in 1989

Administrative Units		Total	Lithuanians		Poles		Russians		Belarussians		Other	
Lithuanian name	Polish name	population	Total	%	Total	%	Total	%	Total	%	Total	%
1	2	3	4	5	6	7	8	9	10	11	12	13
Dusetos*	<i>Dusiaty*</i>	1 185	1 056	89,11	12	1,01	103	8,69	3	0,25	11	0,93
Turmantas*	<i>Turmont*</i>	422	52	12,32	142	33,65	191	45,26	32	7,58	5	1,18
Zarasai *	<i>Jeziorosy*</i>	8 916	5 523	61,94	598	6,71	2 570	28,82	88	0,99	137	1,54
Antazave	<i>Antuzów</i>	1 505	1 421	94,42	13	0,86	61	4,05	4	0,27	6	0,40
Antaliepte	<i>Antolepty</i>	1 003	939	93,62	9	0,90	53	5,28	2	0,20	0	0,00
Dusetos	<i>Dusiaty</i>	2 990	2 700	90,30	32	1,07	222	7,42	16	0,54	20	0,67
Deguciai	<i>Degucie</i>	1 393	981	70,42	23	1,65	373	26,78	8	0,57	8	0,57
Zarasai	<i>Jeziorosy</i>	3 039	1 905	62,69	839	27,61	238	7,83	34	1,12	23	0,76
Imbradas	<i>Imbrody</i>	1 355	1 109	81,85	34	2,51	191	14,10	8	0,59	13	0,96
Salakas	<i>Soloki</i>	1 518	1 314	86,56	18	1,19	169	11,13	4	0,26	13	0,86
Suviekas	<i>Suwieki</i>	1 161	831	71,58	26	2,24	286	24,63	4	0,34	14	1,21
Turmantas	<i>Turmont</i>	1 698	283	16,67	774	45,58	535	31,51	76	4,48	30	1,77
District Zarasai		26 185	18 114	69,18	1 920	9,62	5 592	19,06	279	1,07	280	1,07
Dukstas*	<i>Dukszty*</i>	1 193	745	62,45	129	10,81	259	21,71	32	2,68	28	2,35
Ignalina*	<i>Ignalino*</i>	6 872	5 631	81,94	234	3,41	777	11,31	112	1,63	118	1,72

1	2	3	4	5	6	7	8	9	10	11	12	13
Visaginas*	<i>Wisagino*</i>	32 438	2 498	7,70	2 079	6,41	2 0 812	64,16	3 566	10,99	3 483	10,74
Vidiskis	<i>Przyjaźń</i>	1 799	1 528	84,94	78	4,34	141	7,84	30	1,67	22	1,22
Dysna	<i>Dzisna</i>	3 450	1 784	51,71	392	11,36	621	18,00	570	16,52	83	2,41
Dukstas	<i>Dukszty</i>	1 530	1 169	76,41	96	6,27	197	12,88	31	2,03	37	2,42
Ignalina	<i>Ignalino</i>	2 150	1 902	88,47	44	2,05	118	5,49	17	0,79	69	3,21
Linkmenys	<i>Łyngmiany</i>	1 615	1 576	97,59	10	0,62	14	0,87	4	0,25	11	0,68
Kazitiskis	<i>Koziciszki</i>	1 704	1 468	86,15	70	4,11	132	7,75	21	1,23	13	0,76
N. Daugelis	<i>N. Daugieliszki</i>	2 349	1 813	77,18	293	12,47	207	8,81	20	0,85	16	0,68
Mielagenai	<i>Melegiany</i>	2 006	1 815	90,48	100	4,99	60	2,99	24	1,20	7	0,35
Rimse	<i>Rymzany</i>	1 677	559	33,33	920	54,86	133	7,93	43	2,56	22	1,31
Tverecius	<i>Twerecz</i>	1 422	1 138	80,03	63	4,43	189	13,29	22	1,55	10	0,70
District Ignalina		60 205	23 626	39,24	4 508	7,49	23 660	39,30	4 492	7,46	3 919	6,51
Region under Investigation (Ignalina and Zarasai)		86 390	41 740	48,32	6 428	8,14	29 252	33,17	4 771	5,52	4 199	4,86
		Total	Total	%	Total	%	Total	%	Total	%	Total	%
* towns		population	Lithuanians		Poles		Russians		Belarussians		Other	

Źródło: Lietuvos Respublikos Pagrindiniu Tautybiu Gyventojai. Vilnius 1991 s. 42-44

Lietuvos TSR Valstybinis Statistikos Komitetas, 1990

Table 2. Ethnic Structure of Municipalities of North-Eastern Lithuania (district of: Ignalina and Zarasai) in 1989 without residents of Visaginas

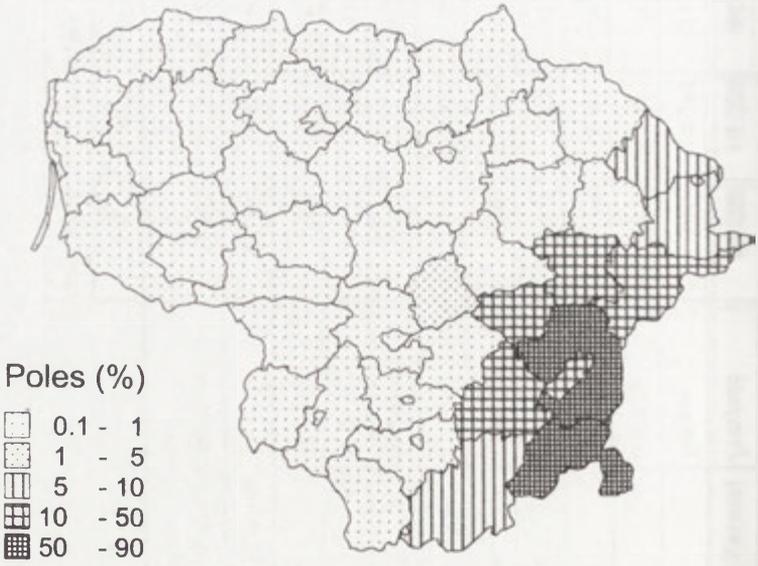
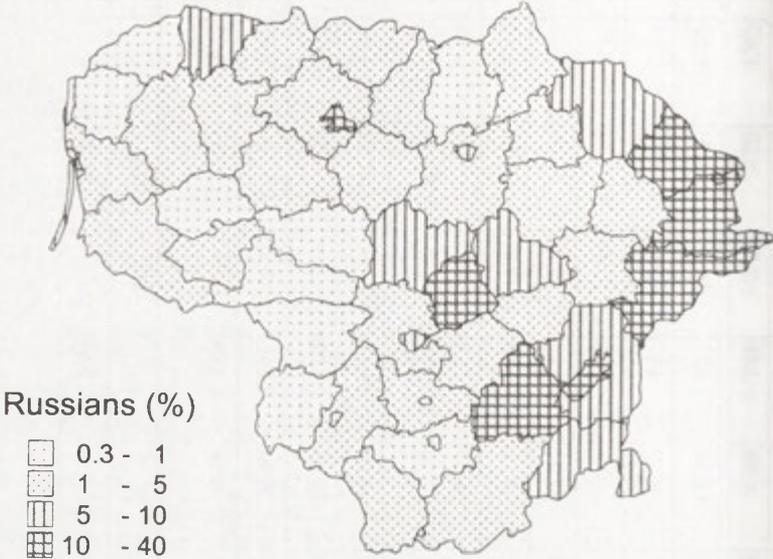
Administrative Units		Total	Lithuanians		Poles		Russians		Belarussians		Other	
Lithuanian name	Polish name	population	Total	%	Total	%	Total	%	Total	%	Total	%
1	2	3	4	5	6	7	8	9	10	11	12	13
Dusetos*	<i>Dusiaty*</i>	1 185	1 056	89,11	12	1,01	103	8,69	3	0,25	11	0,93
Turmantas*	<i>Turmont*</i>	422	52	12,32	142	33,65	191	45,26	32	7,58	5	1,18
Zarasai*	<i>Jeziorosy*</i>	8 916	5 523	61,94	598	6,71	2 570	28,82	88	0,99	137	1,54
Antazave	<i>Antuzów</i>	1 505	1 421	94,42	13	0,86	61	4,05	4	0,27	6	0,40
Antaliepte	<i>Antolepty</i>	1 003	939	93,62	9	0,90	53	5,28	2	0,20	0	0,00
Dusetos	<i>Dusiaty</i>	2 990	2 700	90,30	32	1,07	222	7,42	16	0,54	20	0,67
Deguciai	<i>Degucie</i>	1 393	981	70,42	23	1,65	373	26,78	8	0,57	8	0,57
Zarasai	<i>Jeziorosy</i>	3 039	1 905	62,69	839	27,61	238	7,83	34	1,12	23	0,76
Imbradas	<i>Imbrody</i>	1 355	1 109	81,85	34	2,51	191	14,10	8	0,59	13	0,96
Salakas	<i>Soloki</i>	1 518	1 314	86,56	18	1,19	169	11,13	4	0,26	13	0,86
Suviekas	<i>Suwieki</i>	1 161	831	71,58	26	2,24	286	24,63	4	0,34	14	1,21
Turmantas	<i>Turmont</i>	1 698	283	16,67	774	45,58	535	31,51	76	4,48	30	1,77
District Zarasai		26 185	18 114	69,18	1 920	9,62	5 592	19,06	279	1,07	280	1,07
Dukstas*	<i>Dukszty*</i>	1 193	745	62,45	129	10,81	259	21,71	32	2,68	28	2,35
Ignalina*	<i>Ignalino*</i>	6 872	5 631	81,94	234	3,41	777	11,31	112	1,63	118	1,72

1	2	3	4	5	6	7	8	9	10	11	12	13
Visaginas*	<i>Wisagino*</i>											
Vidiskis	<i>Przyjaźń</i>	1 799	1 528	84,94	78	4,34	141	7,84	30	1,67	22	1,22
Dysna	<i>Dzisna</i>	3 450	1 784	51,71	392	11,36	621	18,00	570	16,52	83	2,41
Dukstas	<i>Dukszty</i>	1 530	1 169	76,41	96	6,27	197	12,88	31	2,03	37	2,42
Ignalina	<i>Ignalino</i>	2 150	1 902	88,47	44	2,05	118	5,49	17	0,79	69	3,21
Linkmenys	<i>Łyngmiany</i>	1 615	1 576	97,59	10	0,62	14	0,87	4	0,25	11	0,68
Kazitiskis	<i>Koziciszki</i>	1 704	1 468	86,15	70	4,11	132	7,75	21	1,23	13	0,76
N. Daugeliskis	<i>N. Daugieliszki</i>	2 349	1 813	77,18	293	12,47	207	8,81	20	0,85	16	0,68
Mielagenai	<i>Melegiany</i>	2 006	1 815	90,48	100	4,99	60	2,99	24	1,20	7	0,35
Rimse	<i>Rymszany</i>	1 677	559	33,33	920	54,86	133	7,93	43	2,56	22	1,31
Tverecius	<i>Twerecz</i>	1 422	1 138	80,03	63	4,43	189	13,29	22	1,55	10	0,70
District Ignalina		27 767	21 128	76.09	2 429	8.75	2 848	10.26	926	3.33	436	1.57
Region under Investigation (Ignalina and Zarasai)		53 952	39 242	72.74	4 349	8.06	8 440	15.64	1 205	2.23	716	1.33
		Total	Total	%	Total	%	Total	%	Total	%	Total	%
* towns		population	Lithuanians		Poles		Russians		Belarussians		Other	

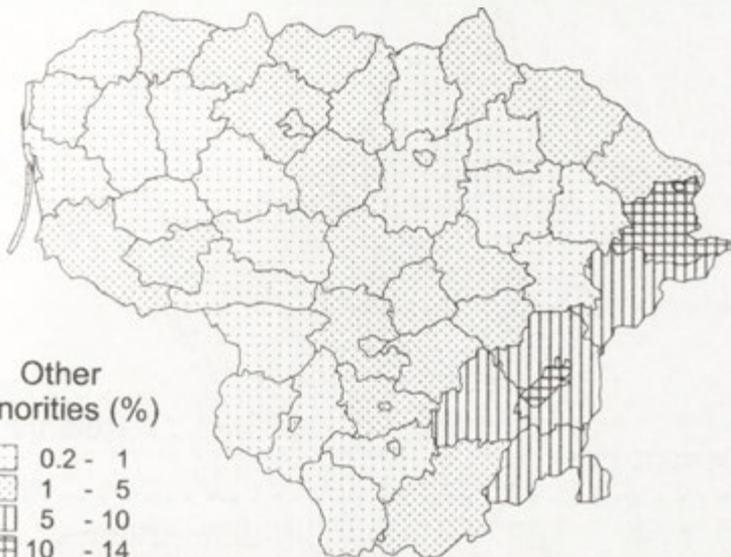
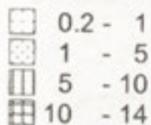
Źródło: Lietuvos Respublikos Pagrindiniu Tautybiu Gyventojai. Vilnius 1991 s. 42-44

Lietuvos TSR Valstybinis Statistikos Komitetas, 1990

Fig 1. Percentage share of national minorities in the population of Lithuania, broken by districts (1989)



Other minorities (%)



All minorities (%)

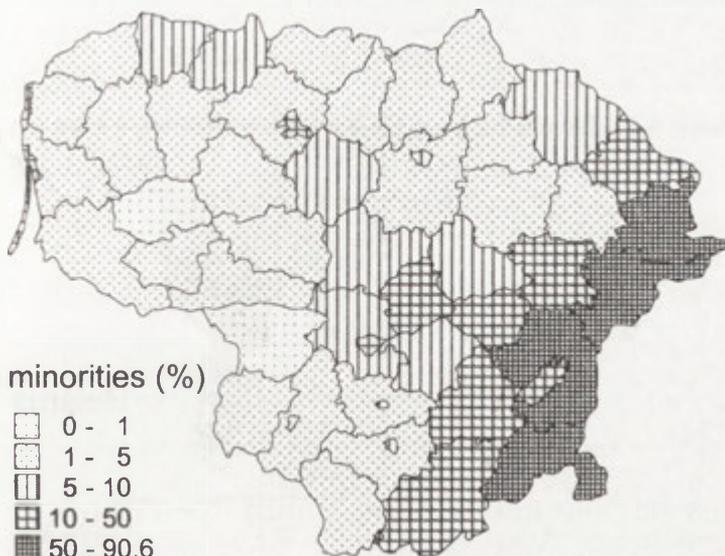
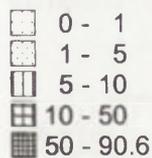
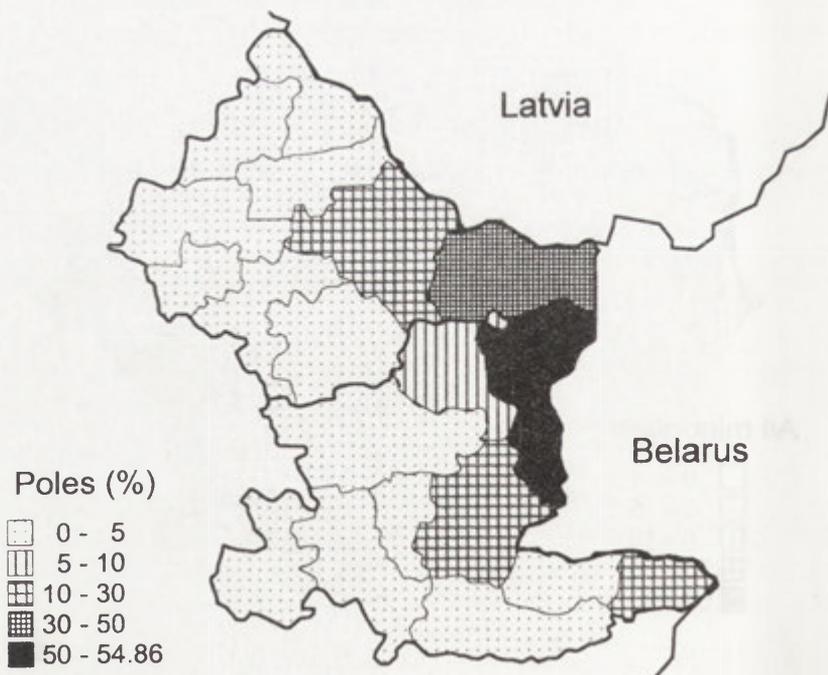
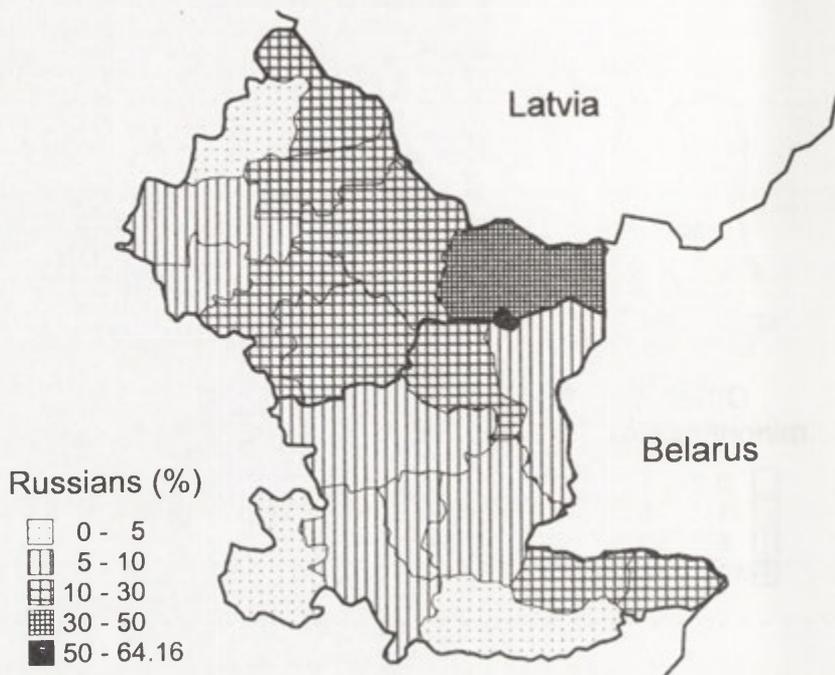
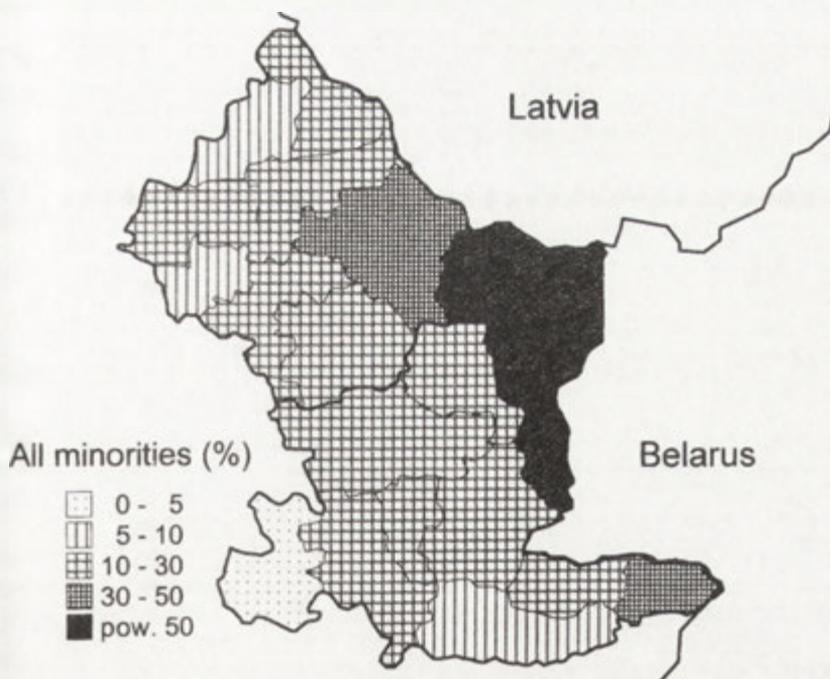
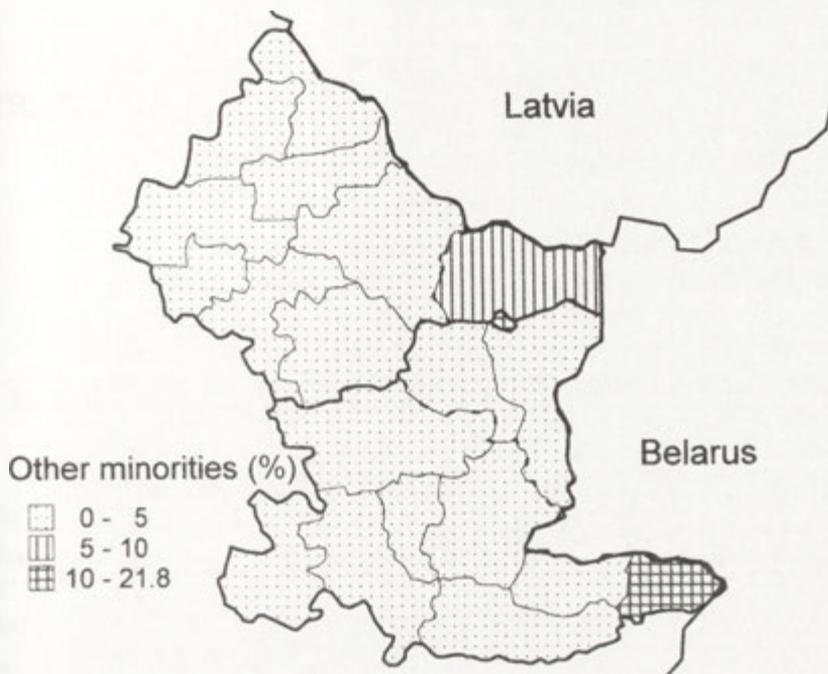


Fig 2. Percentage share of national minorities in the population of the districts of:
Ignalina and Zarasai (1989)







0 1 2 3 4 5 6 7 8 9 10

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10



0 1 2 3 4 5 6 7 8 9 10

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

TRANSPORTATION INFRASTRUCTURE IN LITHUANIA

Julius CHRISTAUSKAS
Vilnius Technical University

1. THE POSITION OF TRANSPORT IN THE LITHUANIAN ECONOMY

At present about 6% of working people are involved in transport activities. The share of transport in the Gross National Product (GNP) increased from 6% in 1991 to 9% in 1995. Along with the growth of the role of transit in transport, this share will increase to 12-4% in the years 1998-2000.

With the assessment of the fact that the growth of the State economy is directly influenced by the development level of the infrastructure sectors, transport has been developed as a priority branch of the economy [1].

The national programme of transport development in Lithuania is focussed on following main areas:

- integration with the European transport network and European market of transport services, using the convenient geopolitical situation of Lithuania regarding it's international, transit and tourism relations;
- acceleration of the legal harmonisation process in line with the legal structure of EU regulating transport activities emphasizing in particular the liberalization of transport markets, environmental protection, infrastructure and the technical standards of transport vehicles;
- active involvement of the State with the aim to ensure stability of the functioning strategical objects of transport, their reconstruction and development with assignment of necessary investment resources;
- demonopolization and privatization of public entities providing commercial transport services, encouragement of private capital investments in the sector of transport. The lithuanian transport system covers the following means of transport:

1) Motor; 2) Railway; 3) Maritime; 4) River; 5) Air;.

Of course, the main transport for passengers and for goods was, is and will be - Motor transport. Certainly, Motor transport requires better roads and motorways. In the future a certain development of Air and Sea transport is planned, but not of River transport.

2. ROAD NETWORK

Main roads in Lithuania link Vilnius, the capital of the country, with Lithuania's largest towns and with the centres of districts, which amount to 10 in Lithuania. Our internal roads have continuations to Russia, Poland, Belarus and Latvia. We can reach the countries of east-central Europe, Scandinavia, Russia, Ukraine, etc. and the western areas of the Baltic sea (Fig. 1).

The network of roads in Lithuania consists of about 55 thousand km, however, the main roads that are state run roads, have exceeded 21 thousand kilometres. Highway building engineers had celebrated in autumn 1995. The 25th anniversary of building the 100 km long 4-lane highway for fast traffic from Vilnius to Kaunas. It was the first main road of such type in Lithuania.

As of January 1, 1996, the length of highway network amounted to 21.121 km.

It can be divided as follows by importance (Table 1):

- main trunk highways - 1.454 km - 7%,
- national highways - 3.419 km - 16%,
- regional (district) roads - 16.248 km - 77%.

By type of pavement, it can be classified as below (Table 1):

- cement concrete (c.c.) - 86 km - 0.4 % ,
- asphalt concrete (a. c.) - 2.522 km - 12.0 % ,
- black surface (b. p.) - 8.058 km - 38.0% ,
- gravel surface (gr. p.) - 10.432 km - 10.455 km - 49.6 %.
- stone pavement (s. p.) - 23 km

At present the density of public roads in Lithuania is 323.5 km/1000 sq km of the territory and it is one of the highest indices among the former USSR republics.

There are more than 400 km of motorways in Lithuania. The first motorway Vilnius - Kaunas was built in 1970; the second - Vilnius - Ukmerge in 1980; Kaunas - Klaipeda was built in 1987 (212 km) and Vilnius - Panevezys (170 km). The only highway with cement concrete pavement Vilnius - Utena (86 km) was built in 1988.

Fig. 1. Lithuanian highway network

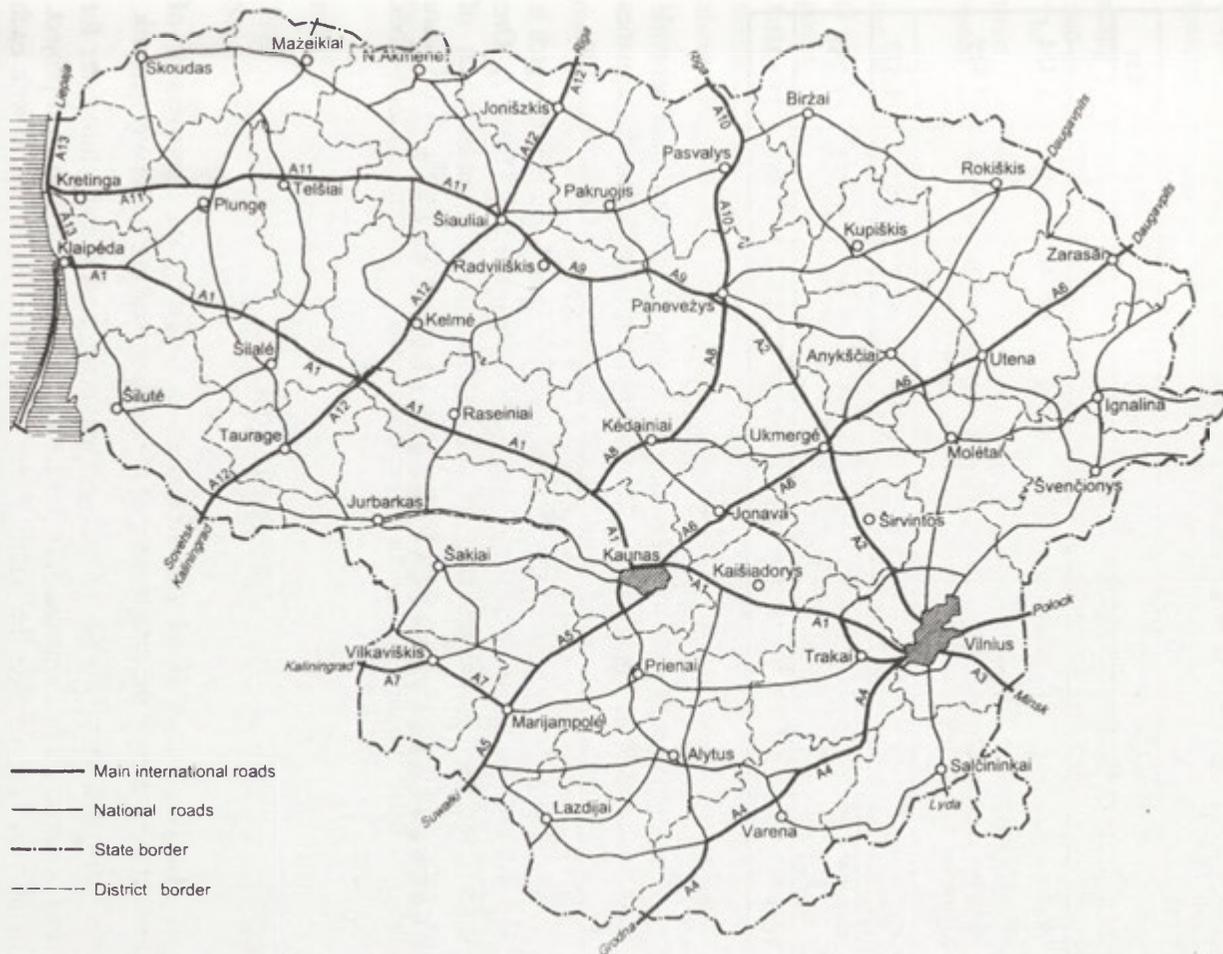


Table 1

The network of the State roads in Lithuania on 1996.01.01

Name of the road	Cement concrete c/c	Asphalt concrete a/c	Black surface b.p	Improved pavement l.p.		Gravel roads gr.r	Total
	km	km	km	km	%	km	km
	1	2	3	1-3		4	1-5
Main trunk highways	12	930	12	1 454	100.00	0	1 454
National highways	12	940	2 312	3 352	97.25	94	3 419
Total (1-2)	85	1 870	2 824	4 789	98.28	94	4 873
Regional roads (3)	1	652	5 234	5 887	36.23	10 361	16 248
Total (1-3)	86	2 522	8 058	10 666	50.50	10 455	21 121

The Lithuanian Road Administration takes care of the main road network. The Lithuanian Road Administration is an independent organization, the activities of which can to some extent be coordinated by the Ministry of Communication.

Each of the 10 districts of Lithuania has an own State Road Board, which is responsible for maintaining and repairing roads in their territory (Table 2). One State Company "Automagistrale" is responsible only for maintenance of the largest part of the main road from Vilnius to Klaipeda. Beside them, there about 20 Road Building firms with full independence, i.e. working as joint-stock companies.

3. FUTURE ROADS

The Lithuanian Road Administration is focussing on improvement of present roads and on the maintenance of the existing road and motorway network.

VIA BALTICA - is one of the most important present and future tasks for road constructors in Lithuania. VIA BALTICA is an international road project. Its purpose is to connect the central areas of the three Baltic States with each other, as well as with Finland and Western Europe. In the North, VIA BALTICA continues via ferry line to Helsinki, as well as reaches the road systems serving

the St. Petersburg area in Russia. In the South, the road will join with Poland to Western Europe. The total length of the road is 649 km, in Lithuania - 274 km. The new VIA BALTICA route will stimulate the development of international economic relations and tourism industry, as well as economical and public cooperation between the border territories. It has been estimated, that motor tourism would grow to 300.000 vehicles annually.

In order to open the Via Baltica route to international traffic, all cities and major urban areas must be provided with bypasses, all crossings with the railway and cross-roads with a high volume of traffic will be arranged at different levels. The road sections where the anticipated volume of traffic exceeds 6000 ADT must be provided with 4-lanes, low volume areas with 2 lanes. The designed speed at bypasses is 100 km/h, on the other sections 100-120 km/h.

The success of constructing VIA BALTICA depends on financial support of the World Bank, EU etc. The reconstruction programme for the next 5 years (1.stage of the project) prepared by a special working group, consisted of governmental and financial institutions from Finland, Sweden, Baltic States, Poland and the EU designed 172.5 million USD for investment in the Baltic States and Poland. It is expected that until the year 2000 Lithuania will receive about 70 million USD, 25 million is achieved from the European Development Bank and 16 million USD from the Lithuanian Road fund is planned.

In the East - West transport corridor (Minsk - Vilnius - Kaunas - Klaipeda) during the period 1996 - 2002 the following work is foreseen:

- reconstruction and strengthening of existing pavements (170 km);
- providing cities with bypasses (44 km)

The value of this work is about 36 million USD [1]. For 20 million credits from WB are planned.

The dynamics of financial assignments for highways varies as follows (in million Litas):

1988 - 780, 1989 - 726, 1990 - 708, 1991 - 518, 1992 - 394, 1993 - 201 (8% of State budget expenses), 1994 - 125, 1995 - 139 and 220 for 1996 is planned.

Table 2

Distribution of state road network between district (km)

Name of district	Main trunk highways					National highways						Regional roads						Total network
	Total	c/c	a/c	b.p	s.p	Total	c/c	a/c	b.p	s.p	gr r	Total	c/c	a/c	b.p	s.p	gr r	
Alytus	95.0	—	38.5	56.5	—	289.3	—	109.5	179.8	—	—	1 083.2	—	5.1	549.4	0.4	528.3	1 467.5
Kaunas	122.3	—	86.6	35.7	—	389.5	—	151.8	213.9	—	23.8	2 126.2	—	151.5	746.2	0.3	1 228.6	2 638.4
Klaipėda	133.5	—	97.8	35.7	—	288.9	—	94.8	194.1	—	—	1 703.0	0.2	100.4	554.5	12.8	1 035.1	2 125.4
Mariampolė	101.2	—	39.2	62.0	—	211.7	—	34.3	177.4	—	—	1 209.5	—	49.4	397.6	—	762.5	1 522.4
Panevėžys	143.6	—	42.2	101.4	—	261.0	—	155.2	198.1	—	7.7	1 934.7	—	58.8	576.6	—	1 299.3	2 439.3
Šiauliai	204.2	—	144.0	60.2	—	438.6	—	76.7	313.4	—	48.5	2 118.4	—	36.4	544.1	—	1 537.9	2 761.2
Tauragė	108.5	—	80.3	28.2	—	223.9	—	84.5	139.4	—	—	926.1	—	49.1	206.7	—	670.3	1 258.5
Telšiai	67.2	—	19.1	48.1	—	250.8	—	54.8	196.0	—	—	992.2	—	31.4	324.9	—	635.9	1 310.2
Utena	102.8	—	37.7	65.0	0.1	458.4	48.9	30.1	377.9	—	1.5	1 917.6	1.2	20.6	539.4	0.5	1 355.9	2 478.8
Vilnius	87.8	12.1	56.1	19.5	0.1	506.6	23.7	148.6	322.1	4.8	7.4	2 236.5	—	149.4	794.5	4.2	1 288.4	2 830.9
Automagistralė	288.2	—	288.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	288.2
	1 454.3	12.1	929.7	512.3	0.2	3 418.7	72.6	940.3	2 312.1	4.8	88.9	16 247.8	1.4	652.1	5 233.9	18.2	10 342.2	21 120.8

4. OBSTACLES TO MORE EFFICIENT LITHUANIAN-POLISH TRANS-BORDER COOPERATION

Two highways which cross the border with Poland function at present: Kalvarija Budzisko (for all types of transport, including heavy trucks) and Lazdijai - Ogrodniki (for passengers).

All these roads contain solid pavement and almost half of them (47.4%) are paved with asphalt concrete.

A special international Lithuanian - Polish commission negotiated the possibilities to open two new border crossing facilities in September, 1996. One of them is planned in Vilkaviškis region - Varteliai and the another in Lazdijai region - Kapčiamiestis. The opening of the first facility seems more feasible; due to the already existing road there, which can be widened, and the construction of its pavement can be strengthened. The other facility in Kapčiamiestis will unlikely be developed from the view point of the Lithuanian highway administration, because no road exists there and in addition to this there is a landscape protection zone there.

There are many problems hindering the efficient cooperation between two national border regions, due to frequent changes of custom rules, absence of free economic zones on the Lithuanian side, absence of agreements between the municipalities and between enterprises in these neighbouring regions on both sides of the border. The problems are also due to the lack of modern equipment for custom inspection and control, lack of modern communication equipment which limits the exchange of necessary information, underdeveloped infrastructure in the vicinity of border crossing absence of special custom laboratories, bad state of the roads near the border (Table 3). On the Polish side a free economic zone is being established this year around 3 cities in the territory of about 300 ha: 180 ha in Suwalki, 60 ha in Elk and 60 ha in Goldap (close to the border with the Russian Federation). It is planned that the investors who invest more than 300 thousand ECU in these zones will be exempted from paying profit tax within the first 10 years and will pay 50 % of the tax within 10 subsequent years.

In Eastern Europe's recent history borders served mainly as barriers. Theoretically, border crossings, from the viewpoint of international trade, can be classified into three clusters [5]:

- Border - barrier;
- Border - filter;
- Border - contact zone

Table 3

Classification of obstacles to international trade [5]

Name of cluster	Classification of obstacles			
Border - crossings	Geo - political	Economic	Technical	Social and cultural
Border - barriers	Different systems	Different economic system	Different standards for infrastructure Fleet and navigation systems	Income level
Border - filters	Different communities and alliances	Different economic alliances	Different level of operating and logistics management	Social security level
Border - contact zone	Different laws and regulations Unstable political system Geographical barriers	Different levels of privatisation Level of GNP Price level Ineffective money transaction	Different infrastructure service levels Different levels of EDI Different professional levels of personnel	Language and other cultural barriers

In the case of "border - barriers", breakdown and recomposition of shipments can be observed, sometimes with the issuance of new documents necessary. In the case of "border - filters", different legal, fiscal and custom systems require special operations. It results in difficulties for transportation operators. Finally, there is the "border - contact zone" - which is a real challenge.

A preliminary criterion to be met in a pan-European context is that waiting times at borders should not exceed:

- 15 minutes for passenger cars;
- 20 minutes for coaches and trains;
- 60 minutes for freight vehicles.

Unfortunately, the new borders between the Baltic States, Poland and Russia are obstacles. They still act as barriers with long waiting times and many risks. A new logistic management and operating system is necessary at these borders (Table 3)

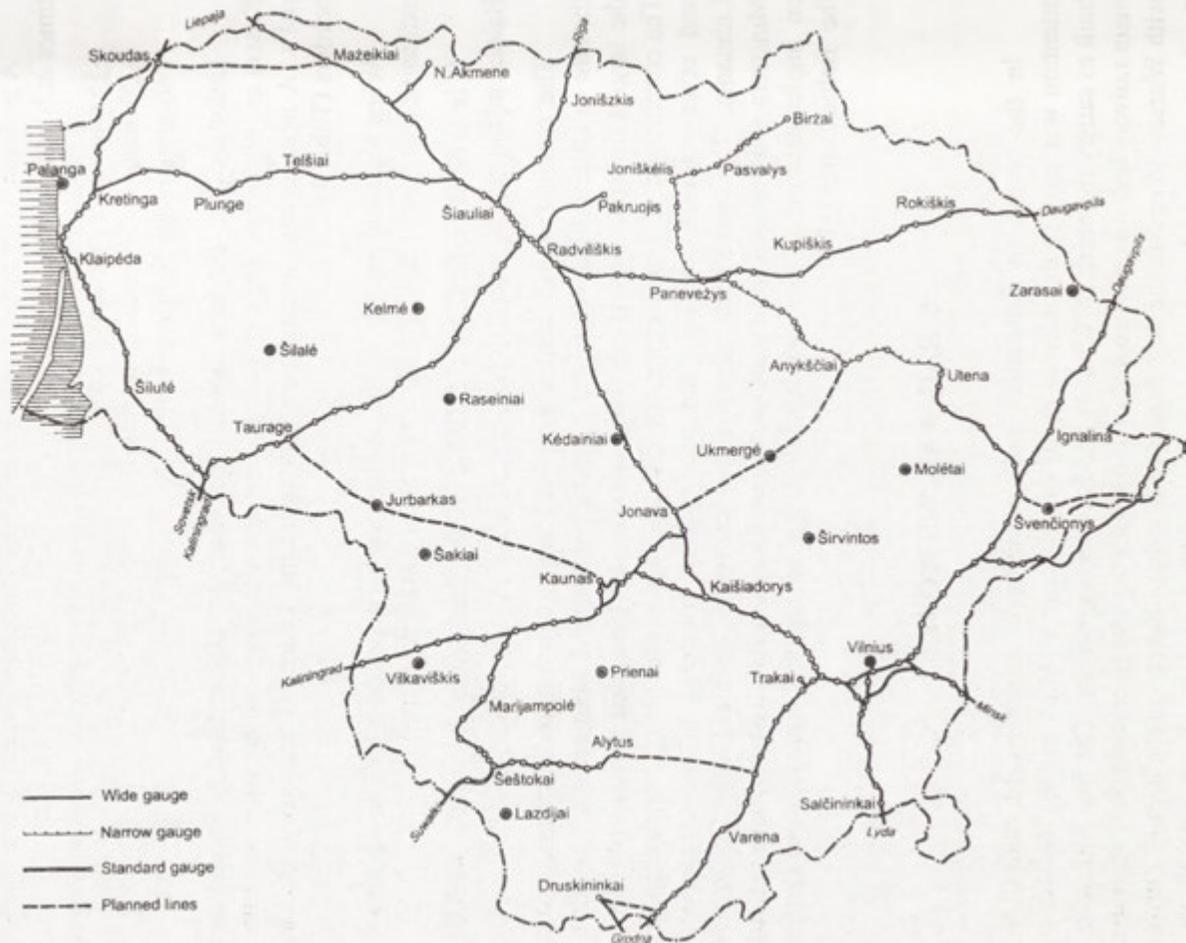
When technical aspects of the border region cooperation will be set a more extensive economical and cultural cooperation can be developed.

It is very important for the Baltic States that Baltic ferry links and Via Baltica inland operate adequately.

The national transit commission was set up in Lithuania recently with the aim to ensure the development of transit services. It comprises the heads of the largest transport enterprises and authorities of interested public institutions. The commission will be looking for effective legal, economical, organizational and other solutions to solve the problems of transport in the territory of Lithuania. The agreements between the structures of the Baltic Council of Ministers and between the Transport ministries of the Baltic States were reached on implementation of the coordinated policy of regional transit promotion in the Baltic States [1].

5. RAILWAY NETWORK

In the course of Lithuanian railway network establishment, almost no attention was paid to the internal needs of the country. Main railway lines were built to satisfy the needs of Western and Eastern neighbours. The first Lithuanian main railway line was constructed in 1863 with the aim to connect St. Petersburg with Warsaw to ensure the domination of Russia in Europe in the area of railway construction. Several years later, Germany linked up Königsberg with Kaunas with the view to develop a convenient line via Lithuania into the heart of Russia. Striving to develop better communication with the Baltic sea ports, Liepāja -



<http://rcin.org.pl>

Fig. 2. Lithuanian railway system

Mažeikiai - Šiauliai - Kaišiadorys railway was built on a joint initiative of Russia and Germany [2]. Later, Northern railway from Liepāja - Mažeikiai through - Šiauliai and Panevėžys to Daugavpils was built. Daugavpils was a well developed railway centre at that time. Germany initiated the building of a railway main line from Königsberg via Šiauliai Klaipėda - Skuodas to Liepāja. In the city of Pajūriai the branch line Tauragė Šiauliai - Riga was connected with the main line mentioned above. Thus, the Lithuanian railway network was created. Several railway lines: Kazlu Rūda - Šeštokai, Šeštokai - Alytus and Švenčionys - Utena were built for meeting the internal needs of the State. It made it possible to consider the connection of network into a circular scheme and the improvement of the internal national traffic (Fig. 2).

Lithuanian railway network has rails of three types (Table 4):

- longest railway lines according to Russian standard (1520 mm wide) are 1.851 km long;
- shortest railway lines according to European standard (1435 mm wide) is only 22 km long and it goes from Lithuanian - Polish border to Šeštokai;
- narrow internal railway lines (750 mm wide) 169 km long are dismantled within last the 10 years as profitless.

46 % of the transport takes place by railway. The domination of railway transport in Lithuania is currently limited by an insufficient speed of the trains, which makes just 60-100 km/h. For example, 38.4 million tons of loads (i.e. 11.03 billion tons/km) were transported by railway in 1993. This amount can be classified as follows: 13.0 million tons of transit transportation; 25.1 million of passengers' transportation (i.e. 2.74 billion pass/km). From passengers' transportation, 14.8 million were transported by local lines (through Vilnius, Kaunas and Šiauliai railway centers). The transportation of the loads is most stable in the following directions: Šumskas - Vilnius - Šiauliai - Klaipėda and Šumskas - Vilnius Kaunas - Kybartai. The first line to West European countries was the transport corridor Šeštokai - Suwałki. It was opened for passengers in July 1992 and for loads in the beginning of 1994 [4].

The measures to develop Lithuanian railway transport planned for the nearest future include:

1. Increase of the trains' speed to 140 -160 km/h, on some lines reaching up to 250 - 300 km/h.

2. Development of an international North - South line:

a) I-st stage - reconstruction of the electric railway network according to the European width of the railways from the Lithuanian - Polish border to Kaunas;

Table 4

Main lines of Lithuania railway network [3]

No	Mane of railway line	Lenght, km	Category	Remarks
1.	Kena - Kybartai	227.0	1	2 ways
2.	Turmantas - Naujoi Vilnia	139.6	1	2 ways
3.	Kaišiadorys - Mežeikiai	223.3	1	2 ways
4.	Lentvaris	108.9	1	2 ways
5.	Porečje - Druskininkai	18.2	1	
6.	Radviliškis - Šapeliai	168.0	1	
7.	Stasylos - Vilnius	42.7	1	
8.	Kazlu Rūda - Šeštokai - Border	78.7	3	
9.	Šeštokai - Alytus	45.1	3	
10.	Adutiškis - Pabrade	71.0	3	
11.	Adutiškis - Dižiasalis	22.2	3	
12.	Švenčioneliai - Utena	49.0	3	
13.	Pagegiai - Radviliškis	137.5	2	
14.	Kužiai - Kretinga	126.0	1	
15.	Radviliškis - Petrašiunai	44.0	3	
16.	Pegegiai - Skuodas	161.5	2	
17.	Akmene - N. Akmene	21.1	4	
18.	Border of Latvia - Šiauliai	59.4	1	
19.	Palemonas - Gaižiunai	26.0	2	
20.	Renge - Mažeikiai - Priekule	45.7	2	

Perspective lines to be built in future

1.	Alytus - Valkininkai - Varena			
2.	Kaunas - Jurbarkas - Taurage			
3.	Utena - Penevežys			
4.	Jonava - Anykščiai			
5.	Mažeikiai - Skuodas			
6.	Kabeliai - Druskininkai			
7.	Švenčioneliai - Adutiškis			

b) II-nd stage - reconstruction of the electric railway network according to the European width of the railways from Kaunas to Riga and Tallin with two branches: from Kaunas to Vilnius and from Tallin to St. Petersburg.

3. Development of local lines:

- a) construction of a new line - Alytus - Valkininkai - Varena and connecting it with Vilnius;
- b) building of the line Kaunas - Jurbarkas - Taurage and connecting it with Klaipeda;
- c) reconstruction of Utena - Panevezys line.

6. SEA TRANSPORT

The seaport of Klaipeda is the center of communication in the East - West corridor. It connects sea lines with transport communications in the East - West direction. This port ranks as fifth in respect the volume of goods reloading in the Baltic sea region. More than 14.5 million tons were reloaded in 1994 and 12.7 million tons of loads (10.1 million tons export, 2.6 million tons - import) in 1995.

About 65% of the trade circulation in Klaipeda falls to the trade between the states of the Baltic sea region. About 85% of loads to/from seaport are transported by railway, the rest - by highway. Within the structure of export - import, more than 70 % of loads are transit goods belonging to the freighters of Russia, Germany, Netherlands, G. Britain, Belarus, Sweden, Denmark, Ukraine; Kazakstan, China; and other states. The need for transportation of the trailers, containers, and cars by ferries and ships of Ro-Ro type rises rapidly. The transported quantities made 56.4 thousand in 1993, 77 thousand in 1994 and 101.6 thousand in 1995. More than 62 % of these quantities are transported by ferry lines Klaipeda - Kiel and Klaipeda - Mukran.

The infrastructure of Klaipeda seaport is gradually adapted for passengers' transportation as well. In 1994 more than 54 thousand passengers travelled by ferries and in 1995 - 58.2 thousand passengers (95% of these amounts were transported by ferry lines). The foreseen directions of Klaipeda seaport infrastructure improvement are as follows:

- Construction of a terminal for containers
- Improvement of existing ferries and development of a Ro-Ro terminal; Installation of a terminal for bulk loads.
- Reconstruction of railways in the seaport.

- Reconstruction of embankments and deepening of seaport aquatory.
- Reconstruction of sea port gates' infrastructure.

The total value of all these investments amounts to about 161 million USD [1].

7. AIR TRANSPORT

Upon the change of trade and business relations, the reorientation of air transport in Lithuania towards the Western market was quite fast. In 1995 almost 210 thousand passengers were transported by 27 regular flights of two Lithuanian airlines. The network of flights is gradually expanded. As a result of this, the flights of Lithuanian and foreign airlines from Lithuanian airports have destinations in 21 European airports. The majority (80%) of passengers uses the main airport in Vilnius, the new passengers' terminal which was built recently. The reconstruction of the track lights' system and the reinforcement of the pavement of both plane standing grounds and the take-off/landing track is planned. The improvement of this infrastructure would require about 10 million ECU [1].

BIBLIOGRAPHY

1. Gradauskas R., 1996, *The activities and perspectives of the transport sector in Lithuania. Roads and railways*. Proceedings of the 2nd International Conference "Civil engineering and Environment" which was held in Vilnius on September 26-27, 1996. "Technika", Vilnius, p. 18-25 (in Lithuanian).
2. Sakalauskas K., 1994, *Reconstruction of Lithuanian railway networks. Roads and Railways*. Proceedings of the International Conference "Civil Engineering and Environment", which was held in Vilnius on September 22-23, 1994, „Technika", Vilnius, p. 130-134 (in Lithuanian).
3. Laurinavičius A., Podagelis I., 1994, *Automatized railway data bank. Roads and Railways*. Proceedings of the International Conference "Civil Engineering and Environment", which was held in Vilnius on September 22 - 23, 1994, "Technika", Vilnius, p. 105-108 (in Lithuanian).
4. Rudzikas A., 1994, *Perspectives of railway development in Europe and Lithuania. Roads and railways*. Proceedings of the International Conference "Civil Engineering and Environment", which was held in Vilnius on September 22-23, 1994, "Technika", Vilnius, p. 124-129 (in Lithuanian).

5. Himanen V., Segercrantz W., 1994, *Problems in infrastructure integration in North-Eastern Europe*. Proceedings of International Conference "Civil Engineering and Environment", which was held in Vilnius on September 22 - 23, 1994, "Technika" Vilnius, p. 45-55.

TRANSPORT LINKS BETWEEN POLAND AND LITHUANIA - PRESENT STATE, USE, PROSPECTS

Tomasz KOMORNICKI

Institute of Geography and Spatial Organization
Polish Academy of Sciences
Warszawa

In the evaluation of the state of transborder transport links four basic elements should be taken into consideration:

- transborder transport infrastructure (railways and roads),
- the degree to which the infrastructure is used, reflected by the existence of rail and road checkpoints,
- the degree to which the infrastructure is loaded, reflected by the amount and by the structure of transborder traffic of people and vehicles,
- regular passenger lines between neighbouring countries.

This paper shall present one after another the elements mentioned above in relation to the Polish - Lithuanian border. Furthermore an effort shall also be made to determine the conditions concerning a further increase of the transborder traffic and the most important tasks of the legal and capital investment nature, facing the Polish and Lithuanian authorities today, and involving an improvement of the status of mutual transport links.

1. TRANS-BORDER TRANSPORT INFRASTRUCTURE AND THE DEGREE TO WHICH IT IS BEING USED

According to a military 1:200,000 topographic map, in the beginning of the nineties Poland and Lithuania were linked by only 3 surfaced roads. A list of these roads is presented in Table 1. Thus, there was one road per every 34.1 km of the joint border, which is one of the worst ratios in comparison with other Polish frontiers. The present Polish - Lithuanian border has been present in the landscape since World War I. Consequently, it had been delimited before the development of a modern road network. On the other hand, in the time of the communist Poland, when transborder traffic was very limited, there was no

need to develop roads, perpendicular to the frontier. Additionally, the accomplishment of any capital project was subject to the military policy of the former Warsaw Pact. The Polish - Lithuanian border is also crossed by one railway (Suwałki - Kaunas).

Table 1

Surfaced Roads Crossing the Polish - Lithuanian Border

Border Towns	Route	Condition ¹	Checkpoint's Status	
			present ²	planned ²
1. Budziska/Kalwarija	Warszawa-Kaunas-Tallin	3/3	ga.p-c	*ga.p.
2. Ogrodniki/Lazdijai	Sejny-Alytus	3/3	ga.p-c	*ga.p.
3. Berżniki/Subačie	Sejny-Kapčiamiestis	3/3	—	*ga.p.

¹ Type of road on Polish/Lithuanian side: 1 - dual carriageway or motorway, 2 - main road, 2 - secondary road

² Types of traffic admitted at the checkpoint: ga - of general access, p - passenger (people), c - cargo; (* - checkpoints listed in the Polish - Lithuanian Agreement on Checkpoints)

Sources: - Topographic maps, 1:200.000; WZKart, sheets: Suwałki, Sejny, Grodno
 - Monitor Polski No. 20/1991
 - Kazimierz Fiedorowicz, 1992
 - Teofil Lijewski, 1993

The measure of use of the transborder roads is the number of generally accessible road checkpoints. There are two such checkpoints on the Polish - Lithuanian border now (Budziska and Ogrodniki). The degree to which surfaced roads are used in that area is therefore one of the highest in Poland (66.6%). The checkpoint at Ogrodniki was first to be open in the eighties, established on the basis of an earlier checkpoint for the so called simplified traffic. The checkpoint at Budziska is one of the most modern in Poland. The construction was completed in 1995. It took over most of the cargo traffic, and beginning from 1995, it has been servicing also cars and buses. At the same time, lorry traffic was limited (only those of the load capacity of up to 3.5 tons). It is planned to open more local checkpoints. According to elaborations done by the Central Office of Planning, these would include the following: at Wizajny (for tourists, to service the Romnicka Forest and the Vištyneckoe Lake; there is no road there), at Widugiery (an unimproved road between Suwałki and Lazdijai), at Bereżniki (the road between Sejny and Kapčiamiestis-; for tourists).

2. THE LOAD EXERCISED ON THE EXISTING TRANSPORT INFRASTRUCTURE

The late eighties and early nineties were a period of an extremely dynamic development of transborder traffic between Poland and Lithuania, including both people and vehicles (see Tables 2-4). The traffic involving people reached its peak in 1993, when over 3.5 million people going in both directions crossed the border between the two countries. In 1994, the intensity of traffic decreased, down to 2.76 million (see Table 2). And in 1995 it remained constant. The main reason for this decrease of traffic was an increase of prices of consumer products in Lithuania and the resulting decrease of profitability of the petty "tourist" trade. Trips to Poland in order to resell cheap, low quality products, were replaced by shopping trips. People active in this trade were gradually "civilizing" their activity (by using cars, later vans, and finally by importing goods through official, international trade). This was another reason for the decrease of the number of border crossings. It is confirmed by data concerning car traffic. The number of car border crossings increased again in 1995 (see Table 3), after the decline recorded in 1994.

Table 2

Passenger Traffic Crossing the Polish - Lithuanian Border in 1980, 1990-1995

Checkpoints	Passenger Traffic in Both Directions*						
	1980	1990	1991	1992	1993	1994	1995
Railway:							
Trakiszkki	0	0	0	138 366	716 589	421 475	115 606
Road:							
Budziska	0	0	0	2 390	24 002	136 408	417 011
Ogrodniki	4 575	995 544	1 643 504	2 063 006	2 808 339	2 202 906	2 226 992
Road, Total	4 575	995 544	1 643 504	2 065 396	2 832 341	2 339 314	2 644 003
Total	4 575	995 544	1 643 504	2 203 762	3 548 930	2 760 789	2 759 609

* The Table is taking into account only the "passport" traffic, without the simplified traffic and the so called service personnel of vehicles (among others, train crews).

Source: Own elaboration on the basis of the Border Guard materials.

Table 3

Car Traffic Crossing the Polish - Lithuanian Border
in 1993 - 1995

Checkpoints	1993			1994			1995		
	to Poland	from Poland	% vehicl. With Polish No. Plates	to Poland	from Poland	% vehicl. With Polish No. Plates	to Poland	from Poland	% vehicl. With Polish No. Plates
Budziska	47	69	52.6	590	701	39.2	40 199	38 154	16.9
Ogrodniki	494 163	544 344	32.7	316 712	396 297	22.2	331 036	371 004	23.0
TOTAL	494 210	544 413	32.7	317 302	396 998	22.2	371 235	409 158	22.4

Source: Own elaboration on the basis of the Border Guard materials.

Table 4

Traffic of Lorries Crossing the Polish - Lithuanian Border
in 1993 - 1995

Checkpoints	Trans-border Traffic			% of vehicles with	% share of traffic crossing Lithuanian	% share of traffic crossing Lithuanian
	1993	1994	1995	Polish No. plates	border in 1995	border in 1995
Budziska	16 586	96 926	180 450	14.5	85.0	6.5
Ogrodniki	70 209	60 363	31 836	20.2	15.0	1.1
TOTAL	88 795	157 291	212 286	15.3	100.0	7.6

It is also characteristic that the decrease of traffic intensity mentioned above did not concern the number of lorries crossing the border. In 1995, 212,300 lorries crossed the Polish - Lithuanian border (see Table 4), what made 7.6% of the total traffic of those vehicles across all Polish borders. Vehicles from the Baltic States prevailed (also those from Finland), being in transit to Western Europe in most of the cases. Polish lorries made only 15.3% of the total number of vehicles. At the same time, the opening of a checkpoint at Budziska led to a significant release of that of Ogrodniki and a decrease of queues at the checkpoints. The new phenomenon, which hindered the efficient operation of the frontier services, was mass import of cars from Western Europe (Germany, Belgium, the Netherlands), making transit through Poland. The scope of the phenomenon can be demonstrated by the surplus of cars crossing the border

from Poland to Lithuania, as compared to the number of those passing the border in the opposite direction. The surplus was 50 thousand in 1993 and as much as 80 thousand in 1994. It decreased however to 38 thousand in 1995 (see Table 3).

3. REGULAR PASSENGER TRANSPORT LINES

The dynamic development of Polish - Lithuanian bus lines, observed since recently, is specially worth notice. The analysis of their development can be of significant cognitive value, as the network of bus lines is naturally much more flexible than that of rail or air lines. By the same token, it is the best illustration of the present demand for transborder passenger transport services.

The main reason for such an unusual development of international bus lines was the gap in the supply of inexpensive passenger services, following a drastic increase of prices of rail tickets in the beginning of the nineties. This converged with the political opening of the border and the increase of petty open air trade.

After April, 1994, Poland and Lithuania have been connected by 33 regular bus lines providing 246 round-trips a week. A higher frequency has been recorded only between Poland and its three neighbours: Belarus, Ukraine and Germany. To compare 291 buses weekly were leaving for Germany, and only 67 for the Czech Republic.

The largest number of lines within Lithuania reach Vilnius (19 lines and 140 runs) and border places (Alytus, Lazdijai, Druskininkai). Besides, three lines end up in Kaunas, one in, Šiauliai, one in Trakai and one in Panevežys. The largest junctions of bus transport lines to Lithuania in Poland are Suwałki (7 lines, 63 runs per week), Białystok (5 lines, 35 runs) and Warsaw (4 lines, 28 runs). The lines with destinations in Lithuania begin in 15 Polish cities (including such remote places as Łódź, Poznań and Gdańsk).

In 1992, after 70 years, the rail connection between Suwałki and Kaunas was resumed with the checkpoint at Trakiszki. Owing to the difference in gauge between rails in both countries, Polish trains reach as far as the Šestokai station only. They are linked with the train going further to Tallinn, however. At the moment, two pairs of trains use the Trakiszki checkpoint daily: the fast train: Warsaw-Šestokai and the slow of Suwałki-Šestokai. The fact of launching the connections through Trakiszki has not resulted however in the railways' taking over a significant portion of the passenger traffic between Poland and Lithuania. On the other hand, during the peak year of 1993, 20.1% of those traveling directly to Lithuania used trains (Trakiszki only). The share dropped radically to 4.2% in 1995 (see Table 2). At the same time, rail transport between

Warszawa and Vilnius is still making transit through Belarus (the checkpoint of Kuźnica Białostocka). Two daily trains provide transportation to the capital city of Lithuania on that route (the train: Warsaw - Vilnius, and the transit train between Berlin and Sankt Petersburg). It is difficult to assess the amount of traffic going to Lithuania through Kuźnica. It is becoming gradually restricted because of the necessity of going through the passport and customs clearance twice. Several reasons have contributed to the decrease of the role played by the rail transport. Among these are the following:

- a significant increase of rail ticket prices,
- competition by cheap and extended bus lines,
- an increase of the number of motor vehicles in Lithuania,
- a slow change of the financial status of people involved in transborder trade (an ever increasing participation of more affluent people, who more and more often have their own cars).

During the Summer of 1995, there were 9 regular round-trip air connections between Warsaw and Vilnius (5 by the Polish LOT and 4 by Lithuanian Airlines). Despite rather expensive tickets, a large proportion of seats in the airplanes have been booked and occupied. The reason is that both airlines use relatively small planes. At the same time, businessmen and civil servants of various levels who travel from Poland to Lithuania are afraid to risk queuing up in a line of cars at the checkpoint. Thus, despite the fact that the distance between the two cities is rather short, they choose travelling by air.

It is the ambition of the Polish Airlines LOT to take over (through the Warsaw Okęcie Airport) the largest possible number of transit passengers going from Lithuania to the countries of Western Europe and North America. Efforts are made to adjust the arrival times of flights from Vilnius to Warsaw at earlier hours than departure times of trans-Atlantic flights. According to the estimates, approximately 25% of LOT's eastern flights (to all of the countries of the former USSR) are used by transit passengers.

4. THE PROSPECTS FOR THE DEVELOPMENT OF TRANSPORT LINKS

There are many indicators showing that the present pause in the increase of the number of people crossing the border is of transitional nature, and that we shall witness a further increase of the number of passengers and of cargo traffic through the Polish - Lithuanian border (the data concerning the amount of the traffic in 1995 indicates that). The future increase and its scale depend

however on a series of political, economic and social factors, including the following ones:

- overall economic situation in Poland and Lithuania, being a prerequisite for the development of bilateral exchange of goods,
- the status of mutual economic relations between Lithuania and Western Europe (especially with Germany), being a prerequisite for the increase of transit transport,
- economic conditions on both sides of the border, displayed by a differentiation of prices of consumer products and average salaries (as quoted in US dollars), being a prerequisite for the profitability of the petty „tourism” trade,
- Lithuanian and Polish customs policy, affecting both the development of the exchange of goods in the macro scale and the intensity of the „tourism” trade,
- development of the tourism base on both sides of the border, being a prerequisite for the development of a genuine transborder tourism,
- the condition and the capacity of the transborder transport infrastructure, being a prerequisite for the technical capacity to increase the traffic of people and vehicles.

As compared with all the remaining borders of Poland, the Lithuanian one is of a specific nature. In the context of the planned development of mutual transport links, it is reflected by:

- a short length of the border,
- location in an environmentally valuable area, and at the same time attractive for tourism
- the fact that it is the only section of the border of the Baltic States with a country other than Russia and Belarus - which is becoming integrated with Russia,
- a relatively extensive use of the existing transborder surfaced roads, which means that any further increase of the number of checkpoints shall require new road construction.

Under the circumstances, the most important tasks facing both central and local governments in Poland and Lithuania are the following:

1. The improvement of the existing transborder railway, what requires (among other things):

- extending sections of railways of European gauge within Lithuania (e.g. to Kaunas) and those of East European gauge in Poland (e.g. to Suwałki);

- modernizing station buildings at the border stations;

- lowering the prices of rail tickets and liquidating the „financial barrier” related to the fact that it costs more to make the same number of kilometres in those cases when the route crosses the state border.

2. The construction of a modern main road (the so called Via Baltica; it is assumed that in Poland this will be an express way), which would use the already existing checkpoint at Budziska. The first stage of the Project would involve the construction of ring roads for Suwałki, Augustów and Białystok in Poland, and Kalvarija and Marijampolė in Lithuania.

3. The construction and opening of a maximum number of local checkpoints, beginning with Berezniki and Widugiery.

4. The opening of checkpoints for tourists - pedestrians and cyclists - in the area of the Augustowski Forest and Wizajny, and possibly a checkpoint for tourists on yachts and kayaks on the Gaładuś lake.

5. The improvement of the organization of work of border services in both countries, including, among other things:

- spatial and organizational separation of the cargo and passenger traffic,
- increase of the number of officers,
- abolishment of the obligation of stamping every single passport.

It is very important to properly coordinate all activities to be taken up on both sides of the border. It is not only important to agree on the locations for the future checkpoints and roads, but also to determine the list of highest priority tasks and the sequence of their implementation.

BIBLIOGRAPHY:

1. Fiedorowicz K., 1992, *Międzynarodowe powiązania transportowe Polski, stan i perspektywy (Poland's International Transport Links; the Present State and Prospects for Future)*, Instytut Turystyki (Institute of Tourism), Warszawa.
2. Komornicki T., 1992, *Ruch osobowy na polskich przejściach granicznych - analiza zmian 1980 - 1991 (Passenger Traffic on Polish Checkpoints - an Analysis of Changes of 1980 - 1991)*, Geografia w szkole No.5/1992.

3. Komornicki T., 1994, *Międzynarodowe regularne połączenia autobusowe pomiędzy Polską i pozostałymi krajami Europy (International Regular Buss Lines Between Poland and Other Countries of Europe)*, Bulletin No. 5 of the Programme "Podstawy rozwoju zachodnich i wschodnich obszarów przygranicznych Polski" ("Development of Poland's Eastern and Western Border Regions"), IGiPZ PAN, Warszawa.
4. Komornicki T., 1995, *Transgraniczna infrastruktura transportowa Polski (Transborder Transport Infrastructure in Poland)*, Przegląd Geograficzny (Geographical Review), vol. LXVII/1-2, Warszawa, p. 45-53.
5. Lijewski T., 1993, *Infrastruktura transportu wschodniego pogranicza Polski (Transport Infrastructure of the Polish Eastern Borderland)*, Bulletin No. 2 of the Programme "Podstawy rozwoju zachodnich i wschodnich obszarów przygranicznych Polski" ("Development of Poland's Eastern and Western Border Regions"), IGiPZ PAN, Warszawa.
6. Lijewski T., 1994, *Infrastruktura komunikacyjna Polski wobec zmian politycznych i gospodarczych w Europie Środkowej i Wschodniej (Poland's Transport Infrastructure under Political and Economic Transformation in Central and Eastern Europe)*, Zeszyty IGiPZ PAN, No. 23, Warszawa.
7. *Sięciowy Rozkład Jazdy Pociągów PKP 1996/97 (Network Time-Table of the PKP [Polish State Railways] Trains, 1996/97)*, Kolejowa Oficyna Wydawnicza (Railway Publishing House), Warszawa, 1996.
8. *Zarządzenie Ministra Spraw Wewnętrznych z dnia 15.12.1994 w sprawie ogłoszenia przejść granicznych, rodzaju ruchu dozwolonego przez te przejścia oraz czasu ich otwarcia (Ordinance of the Minister of Internal Affairs of 15th Dec., 1994 on the announcement concerning the checkpoints, the type of traffic allowed to cross at those checkpoints and the dates of their inauguration)*; Monitor Polski No. 69/1994, poz./item 617.

ENVIRONMENTAL FACTORS OF THE LITHUANIAN - POLISH BORDER REGION. POSSIBILITIES OF THEIR USE

Julius TAMINSKAS
Institute of Geography
Vilnius

INTRODUCTION

Administrative boundaries and State borders artificially dismember natural objects and their complexes hampering the course of natural processes and even the development of territories. Additionally these borders create obstacles for investigation of the territory, its nature use and protection.

The frontier regime in the Lithuanian - Polish border zone in the Soviet years has prevented the investigation of natural and social resources and their efficient use. Almost 5 km of frontier zone was closed for free access and investigations: In order to carry out scientific research in this territory it was necessary to receive a permission from special services. The publication of data obtained was also limited. The cartographic materials were held top secret. The attempts of investigation aimed at solving the problems of the border zone, were identified as criminal undertakings on behalf of some other state.

After the collapse of communist power and the restoration of State self-dependence of Lithuania and Poland the attitude towards the border zone has changed. There occurred an opportunity to use cartographic and other materials. In the course of development of democratic processes and the strengthening of the idea of a Euroregion, the obstacles and limitations in the border zone gradually disappear. As the border zone becomes more open the economical and social relations between individual Poles and Lithuanians as also between enterprises and communities become closer. This incites a new attitude towards the region as a uniform geographical unit. Physical and geographical conditions become important in solving urgent social, economic problems, as well as problems of nature use.

Investigations of natural objects and complexes separated by administrative boundaries may be carried out on a global, regional and local level. The length of

the Lithuanian-Polish border is hardly 102 km. Therefore, it is not expedient to speak here about the global aspects but to limit oneself to regional and local aspects of the commonness of the territory. However, it is obvious that solving many local problems demands special and more detailed investigations of the territory and related problems. This would expand the volume of present work and require high financial and time expenses. For this reason this work was confined to the investigation of regional commonness of physical geographical problems touching only upon certain problems of paramount importance.

The physical geographical commonness of the territory may be investigated in different aspects, however, due to space limits of this work we shall discuss only some most general physical geographical traits consolidating the territory. The major part of information refers only to the territory of Lithuania.

RELIEF

The relief of the region is investigated within the framework of a special Lithuanian-Polish research program (regional program of Jotvingiai tract). According to this program a geomorphological mapping of the territory was done in 1994-1995.

The physical geographical zonation of Lithuania allows to distinguish in the border zone three regions: South Lithuanian upland (Dzukija and Suduva), Nemunas middle-course and Neris lower-course plateau, South-east plain (Merkys - Katra - Baltoji Ančia). The South Lithuanian upland is comprised of many morainic arcs, high interlobe morainic tracts and separating lobe depressions. The surface of Nemunas middle-course and Neris lower-course plateau (south-east of Marijampole and north of Lazdijai regions) was formed by glacier tongues. Their depressions partitioned by tracts of edge moraines and filled up with limnoglacial sediments were crosscutted by large Lithuanian rivers taking their source in periglacial basins. The Southeast plain (southern part of Lazdijai region) includes two deep depressions left by glacier lobes and filled up with sand (A. Basalykas, 1965). The three mentioned geomorphological regions are included into the Lithuanian-Polish border zone. Besides, we can distinguish the subregion of Suduva upland including Vištytis - Gražiškiai hilly morainic plain, Iubavas - Kalvarija fluvioglacial and limnoglacial depression, Rudamina, Sangruda and Trakenai morainic uplands, Lazdijai fluvioglacial depression, Veisiejai hilly morainic upland, Miroslavas and Verstamina ridged uplands. In the southern part of the region we can distinguish the subregion of Merkys lower-course plain with Leipalingis and Kapčiemis fluvioglacial plains. The south east part of the border region includes the subregion of Nemunas middle-course plateau with the Daukšiai - Šilavotas complex of abraded morainic

ridges and boggy depressions, Simnas - Balbieriškis limnoglacial plain, Šeštokai, Meteliai and Alytus abraded morainic plateaus and Rubikiai - Moletai hilly morainic upland.

The 6° - 12° relief inclinations and average height differences of 12-16 m in the northern and central parts and 4-8 m in the south-east prevail in the region. Larger height differences can be found on the Polish territory. The highest point of the region (Lithuanian territory) is represented by the 282 m high Pavištytis mount. The prevailing height of relief in the south-west of the region is 100-150 m, in the central part 150-200 m and in the north-east - 250-280 m.

CLIMATE

There is no evidence about special microclimate investigations in the border zone. The information about climatic studies of the region (on Lithuanian's part) is obtained from the closest meteorological stations in Lazdijai, Kybartai and Varena. Some special information (radiation measurements) is obtained by generalizing the data provided by a more distant Kaunas meteorological station.

The considered region is often effected by humid marine air masses. However, the continental polar (of middle latitude) and arctic weather is also rather frequent. Warmer tropical air masses are rare. They influence the weather only in 2% of cases. The border zone receives yearly from 84 to 90 kcal/cm² of radiation energy including the heat which comes in the form of dispersed radiation. Due to high convexity and turbulence of the atmosphere the cloudiness over the territory has increased. For this reason the values of radiation in the studied region are lower than in the western and central part of Lithuania. These differences are especially distinctive in autumn and spring. In winter and summer the differences of radiation vary throughout the year in the following way: spring - 35%, summer - 4.5%, autumn - 14%, winter - 6%.

Among most important meteorological elements characterizing the regional climate we can mention the air temperature (Table 1). The average temperature of the coldest month (January) is 4.0° C, of the warmest (July) 18.0° C. The average long-term date of first frosts in the border region is 30.09, the last date of spring - 10.05. The average minimum of absolute air temperature makes -24.0° C, whereas, the absolute minimum of air temperature makes -36.0° C. The average day temperature is below 0° C on the 25th of November, above 0° C - on the 20th of March.

The annual sum of air temperature above 10° C in the border zone makes from 2100 to 2200. The average of the absolute minimum of temperature makes from -2.3° C to -24° C.

Table 1

Average long - term monthly temperature

Meteor. Station	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Year
Kybartai	31	36	29	42	50	67	94	80	62	49	52	42	624
Varena	35	33	34	48	62	77	91	82	58	53	54	43	670

Another important meteorological index is the amount of precipitation (Table 2). The largest amount of precipitation was recorded in July - August (from 80 to 100 mm), smallest - in February - March (from 20 to 40 mm). The average long-term date of snow crust formation the is 30.12, the date of its disappearance - 10.03. The maximal thickness of snow cover makes 2.5 cm. The number of foggy days in summer sometimes reaches 10, in winter - 20.

Table 2

Average long-term monthly amount of precipitation

Meteor. Station	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Year
Kybartai	31	36	29	42	50	67	94	80	62	49	52	42	624
Varena	35	33	34	48	62	77	91	82	58	53	54	43	670

Air pollution and advective movements of the air in the border zone depend on the recurrence and strength of winds from different directions. The SW and W winds become more frequent in autumn and winter months. In the summer mouths the W and NW winds prevail.

On the Lithuanian climatic map the border zone is included into the Suduva subregion of the south-east upland region. It is characterized by strengthening of turbulent circulation and thermal convection in a strongly dissected locality and occurrence of powerful thermal inversions in winter.

In the last years the changes of annual distribution of precipitation and dates of climatic seasons were surveyed. The surveyance is carried out over the whole Lithuanian territory and this is, presumably, connected with global changes of climate.

Table 3

Recurrence of winds and calm % (Kybartai meteorological station)

Month	N	NE	E	SE	S	SW	W	NW	Calm
I	4	6	14	15	13	27	15	6	7
II	5	7	16	16	11	21	17	7	6
III	5	8	18	14	11	20	17	7	6
IV	9	9	12	10	12	17	18	13	6
V	9	12	14	10	8	14	19	14	8
VI	9	10	10	8	7	16	24	16	8
VII	6	7	9	6	8	22	26	16	9
VIII	6	9	9	7	10	23	24	12	11
IX	5	4	8	8	13	28	25	9	8
X	5	4	11	11	12	29	20	8	7
XI	4	5	12	16	13	30	15	5	4
XII	4	5	11	12	13	32	17	6	6
Years	6	7	12	11	11	23	20	10	7

HYDROGRAPHY

The administrative districts of the border zone appreciably differ according to the number of water bodies and degree of anthropogenization. The largest area taken by water bodies was recorded in the Lazdijai district - 7.4% of the total area of the district. The smallest - in the Vilkaviškis district - 1.9% (Table 4). Strongest anthropogenic changes of hydrographic network are characteristic for the Vilkaviškis district - 61% of land are drained, bogs take only 1.71% of the lands, ponds - as little as 0.37%. The lowest degree of anthropogenization is characteristic for Varena and Lazdijai districts. Only 10.3% of lands are drained in the Varena district. Bogs in this district take 4.4%, and only 0.03% of the lands are irrigated. The farming lands in this district take 21.2% of the area (total in Lithuania - 60.1%). In the Lazdijai district the farming lands take 54.8%, 16.4% of lands are drained, 0.03% - irrigated. 7.4% of land in this region is occupied by water bodies, 3.6% - bogs.

Table 4

The area occupied by water bodies and drained lands

District	Total area, ha	Water bodies, ha	Water bodies, %	Bogs, %	Irrigated lands, %	Ponds, %	Land, drained before 1996, %
Alytus	140 990.14	7 408.9	5.3	7.3	0.06	0.06	30.5
Lazdijai	154 152.40	11 459.36	7.4	3.6	—	—	16.4
Varena	241 751.20	5 192.85	2.1	4.4	0.03	0.07	10.3
Marijampolė	154 380.60	3 758.91	2.4	3.3	0.03	0.12	53.4
Vilkaviškis	128 566.20	2 41.15	1.9	1.7	—	0.37	61.0
Total in Lithuania	6 530.1x10 ³	293.9x10 ³	4.0	2.3	0.14	0.17	46.6

In the Lazdijai region lakes occupy one of the largest parts of the total area in Lithuania. Beside the large Dovine catchment lakes we can find there some bigger lakes - Ančia, Veisiejis, Seirijis, Galadusis (Galadus), Galstas etc. The least number of lakes of the mentioned region is found in the Vilkaviškis district. Beside the big Vištytis lake it has some small lakes. The border region is included in the three basins of Baltic sea tributaries - Wisła (Vistula), Nemunas (Niemen, Neman), Pregola. The right tributary - Biebrza river - of the right tributary of Wisła - Narew (Narevas) belongs to the Wisła catchment. The whole catchment of Wisła belongs to Poland. The catchment of Nemunas includes catchments of Šešupe (Szeszupa) and Czarna Hańcza (Juodoji Ančia). The length of the river is 142 km, the area of its basin - 1906 km². The upper reaches of Šešupe are situated in Poland (the area of the catchment on the Polish territory makes 175 km²). 27.1 km from its source Šešupe enters the Lithuanian territory. Still 157.5 km further this river approaches the Lithuanian-Russian border (Kaliningrad district) and flows along the border for 41 km. Still further it enters the territory of Kaliningrad district. Czarna Hańcza takes its source in the Polish territory. The Lithuanian territory makes only a small part of Mara (Marycha) - the left tributary of the catchment. The lower reaches of Czarna Hańcza and its mouth are situated in Belarus. The Pregola catchment in the border zone includes its left tributary Krasnaja (Rominte). The upper reaches of this river and its tributaries are in the Polish territory, lower reaches - in Kaliningrad district. Only a small part of Pissa upper reaches (Pregola tributary) belong to Lithuania.

The catchments of Pregola, Nemunas and Wisła are joined by canals. The Pregola and Wisła catchments are linked by the Mazurski canal, Nemunas

and Wisła - Augustowski canal. These canals create theoretical premises for development of the network of water roads in the catchments of three larger tributaries of the Baltic sea. However, this problem is technically complicated and expensive. On the other hand, such network of water roads would include the territories of four states (Lithuania, Poland, Belarus, Russia).

After 1795 the Wisła mouth was annexed to Prussia. Seeking that it was possible to reach the Baltic sea from Wisła going round Prussia it was decided to dig a canal. The work was started only in 1824, finished - in 1839. The canal joining the Nemunas and Wisła basins was called after the name of king August (Augustowski). The length of Augustowski road is from Biebrza till Nemunas - 102.2 km: in the Wisła catchment 51.2 km, watershed - 9.4 km, in the Nemunas catchment - 41.6 km. The water road includes 13.5 km of Netta (Nete) river bed, 23.5 km of a newly dug canal in the Netta valley, 23.5 km of Czarna Hańcza bed and 6.4 km of canal dug between the Czarna Hańcza and Nemunas. This sector was dug in order to shorten the 21.5 km long Baltoji Ančia (Biała Hańcza) meander. Other sectors of this water road (37 km) go through lakes and canals between them. The highest point of the mentioned canal is situated near the Czarny Bród (Juodoji Brasta) village. The altitude of the watershed is 126 m above sea level (S. Kolupaila, 1934).

The Pregola and Wisła catchments are joined by abundance of picturesque lakes, environment antropogenized, an environment antropogenized only to a small extent and unique natural and cultural monuments. Many tourists routes go through Polish rivers, lakes and channels. Elements of tourism infrastructure accumulate along them. A different situation can be observed in the territory of Lithuania. The main tourist routes used to lead farther from the border. This tradition is still alive. There are no new routes of water tourism linking Poland and Lithuania. The lack of such routes was predetermined by several reasons:

1. Legislative problems occurring in places where water routes cross the border.
2. Historical tradition which has not left common routes.
3. Complexity of hydrographic network in the border zone.
4. Absence of water tourism infrastructure in the border zone.

Legislative questions of crossing the border represent a prerogative of international agreements. The existing transnational agreement strictly regulates the manner and order of crossing the border. Such sites are in most cases situated far from the touristic water routes. At present there are two control posts on roads and one railway control posts Lazdijai-Ogrodniki, Kalvarija-Budzisko and Šeštokai-Suwalki. The sites of these control posts are not suitable for water tourists. Besides, it is not allowed there to cross the border on individual implements of water tourism. However, the control posts suitable for water

tourism could be located only if common routes of water tourism were discussed earlier. The tradition which formed the water routes of tourism requires an analysis of the common history, however, this is not the goal of the present work. It is only worth mentioning that a complicated frontier regime of 1920-1992 has prevented the creation of common systems of communication and infrastructure. The only link joining the existing water routes in the Lithuanian and Polish territory is the Augustowski Canal. However, this road goes through the territory of Belarus and does not have many functioning lock-gates. Looking for new ways of joining the Lithuanian and Polish water routes we encounter certain difficulties:

1. The Polish water routes of tourism closest to the border zone are situated in the Czarna Hańcza catchment. The sector of Nemunas which links these two basins belongs to Belarus.

2. In the Lithuanian and Polish territories only the small upper reaches of Šešupe and Baltoji Ančia belong to the catchments of the same river. The Mara (Czarna Hańcza catchment) river sector in the Lithuanian territory is not connected with any other hydrographic net.

3. The water routes of tourism closest to the border are not connected by easily passable roads. There are no control posts in these routes and no infrastructure of water transportation implements.

The water route closest to the border in the Polish territory ends in the Berźniki village. The distance between this village and the border is about 3 km. On the other side of the border at a distance of 4 km the Veisiejai lake is situated. In this sector it is the water route closest to the border. These two sites are connected by a road out of order which leads through the Pazapsiai village. By this road the distance between the two mentioned water routes is 10 km. However, the road sector which is closest to the border is not repaired and there is no control post. The nearest control post is in Lazdijai. By the road crossing the Lazdijai control post the distance between Berźniki and Veisiejai lake would be 28 km. However, even this road has sectors which are impassable in certain seasons. By better roads the distance between these localities would make 40 km. Another road linking these routes could go from the Mara river to Juodasis Kauknoris lake. If you drew a straight line between these water bodies the distance would be 2 km. However, at present there are no suitable roads between them. The nearest road is Berźniki - Kapčiamiestis but the sector which is closest to the border is not exploited. Besides, there is no control post. If this road was repaired and a control post established, the Berźniki village and Juodasis Kauknoris would be connected by a 9 km long road of good quality. This road and the control post could become the main link between the routes of ecotourism. This road would lead along picturesque lakes and forest tracts almost

untouched by human activity. This is the most prospective border sector connecting the touristic routes. Another sector which could link the routes of water tourism in Poland and Lithuania is situated between Holny Wolmera and Kučiunai settlements. However, this would be an entirely new route. This route would start near the Žegary village (6 km Beržniki water route). It would go from the Gaładuś (Galadusis) lake to Hołny (Alnas) lake through the linking channel. From the Hołny (Alnas) lake through the Holnianka (Alna) river till the Zapsis lake. In this sector the Holnianka (Alna) stream crosses the Lithuanian - Polish border. The Zapsis lake is the beginning of the touristic water route leading to the Baltoji Ančia lake. Further the route links the Zapsis lake and Veisiejų lake through the Zapse stream. The fitness of the channel between the Gaładuś and Hołny lakes and - Holnianka stream is not sufficiently investigated for water tourism. The Holnianka (Alna) stream crosses the border 5 km in the south from the Lazdijai control post. Therefore, having coordinated it with the institutions regulating the frontier regime it would be best to create the possibility for water tourists to cross the border in the mentioned site.

SOILS

A greater part of the border region is composed of light loam and gravel, light loam and sandy loam, light loam and fine sand. Fine sand is spread only in the wooded southern part of the region. As for soils - podzol weakly podzolized soils prevail. In the Marijampole and Lazdijai districts also small areas of bog soils may often be found.

The soil - generating rocks in the larger part of the region are of glacial origin and composed of loam with sand and loam with sandy loam. In the southern part of the region fluvio-glacial and old alluvial rocks composed of sand can be found. In the north east there is a small area with limnological loams and clays.

In the southern wooded territory the soils are not resistant to erosion but large forest tracts slow down the processes of erosion. Only in the open areas among forests weak and intermediate wind erosion can be observed. In the central part of the region as well as in its east and north there are solitary areas, 45% of which are effected by surface erosion. In general the areas with weak erosion prevail (up to 15%).

According to Lithuania's soil map the studied region includes two soil regions. The larger one includes the Vakarų Aukštaičių plateau with glacial rocks and the smaller one - the Southeast plain with fluvio-glacial and old alluvial formations.

The destruction of forest tracts in the southern part of the region could intensify the wind erosion. Changes in land use and management in the central, eastern and northern part of the region would reduce the area of cultivated lands. This, in its turn, would slow down the surface erosion.

GEOLOGY

A geological survey (sc. 1:200000) is made of the border zone and hydrogeology of the region is investigated within the framework of a special Lithuanian-Polish research program (regional program of Jotvingiai tract). According to this program a geological and geomorphological mapping, radioecological mapping geochemical and ecogeological mapping of Quaternary rocks was done in 1994-1995.

The column of Pre-quaternary sedimentary rocks is composed of paleogene deposits. They are bedded in the depth of 90-170 m under the Quaternary deposits. The deposits are composed of glauconite-bearing terrigenous rock (sands, sandstone, aleurites) with carbonaceous (limestone, marl and silicium) rock interlayers. The largest thickness makes 56 m. The thickness of Quaternary rocks is composed of Pomeranian stage rocks of the upper Pleistocene. In the southern part of the region the sediments are represented by sandy formations, whereas in the eastern and northern part - gravel formations.

The Quaternary rocks of the region contain natural resources of clay, gravel, sand and carbonaceous sapropel. The resources of clay, gravel and sand vary from 10 to 50 million m³. These resources are little exploited. In 1990 up to 0.5 million tons of clay, gravel and sand were extracted in the border zone. Peat fields take from 1 to 25% of the territory. There are traces of bog iron-ore (limonite) smelting. The Marijampole and Lazdijai region have sources of fresh-water lime-stone and anhydrite. The crystalline basement Varena region contains a large iron bed. This ore contains 80-90% of magnetite and 47-62% of iron. Beside magnetite it also contains certain amounts of sulphide (pirite, chalkopirite) and non-metallic minerals (serpentine, chalkopirite, calcium, chlorite). The crystalline basement of the region has traces of other metals - copper, molybdenum. Increased concentrations of circonium, silver, vanadium, chromium, cobalt, phosphorus, lead and radioactive metals were also observed.

South-east Lithuania is the region richest in metallic resources. However, due to high costs of exploitation and pursuing the purpose of nature protection their exploitation hasn't been started. On the other hand, the exploration of metallic resources has not been completed. The exploitation of natural resources

of Quaternary rocks has decreased in the last years. This was preconditioned by a reduced capacity of building trade.

PLANTS

The forests of the border zone were also investigated within the framework of the special Lithuanian - Polish research program - Jotvingiai tract. The main task was substantiation and investigation of „The Green lungs of Europe”

According to floristic phytocenological zonation the larger part of the border region is included into the province of Baltic white spruce forest. Only the southern part of it belongs to the province of Central European the monophylous pine and pine-oak forests. In the larger part of the region the natural vegetation cover is replaced by cultural plants. Only in the southern part the vegetation has change insignificantly. In the northern part (Vilkaviškis and Marijampolė districts) the broad-leaved forests were replaced by farming lands. In the central and eastern part broad-leaved and coniferous forests are also replaced by farming lands. The southern part of the region is occupied by green-moss pine forests. These forests abound in mushrooms. There are yields reaching 100 kg/ha. In the central and northern part large tracts of farming lands with small groves prevail.

WILD LIFE

According to the zoogeographical map of Lithuania the border region includes two regions: Suduva and Dainava sandy plains. The Suduva region takes the largest part of the studied area. Elements of mild climate fauna prevail there : butterflies (*Ocneria dispar*, *Pseudopanthera macularia*, *Calocala electa*), swans (*Cygnus olor*), buntings (*Emberiza calandra*), etc. The southern part of the area is represented by the Dainava sandy plain region. It is characterized by the elements of fauna of Central Europe: butterflies (*Nemobius lucina*, *Strymon spini*, *Glaucopsyche alexis*, *Pyrgus serratalae*, *Endrosa kuhlweirii*, *Satyrus statilinus*), etc. The Suduva zoogeographical region is attributed to the regions of young morainic landscape with prevailing West European wild life. The Dainava sandy plain is attributed to the regions of outwash plain and old morainic landscape with steppe and taiga wild life.

The border region stands out for its large numbers of beavers and musk-rats (30 - 60 / 10,000 ha) and black storks (10 - 20 / 10,000 ha). This is the main nesting place of swans and other water and bog birds as well as the wintering place for ducks and other water birds. The region is the habitat of rare and almost

extinguished animals: *Emys orbicularis*, *Aythya nyroca*, *Streptopelia decaocto*, *Remiz pendulinus*, etc.

The Vilkaviškis district is the richest one in hunt animals (elks, boars, hares, deer, roes, beavers, foxes, etc.). The smallest number of hunt animals is observed in the Lazdijai district. The resources of hunt animals have reduced during the last few years. It is especially visible in the case of elks, boars, roes. Only the number of hares increased.

CONCLUSIONS

The changes of relief in the region were to a large extent predetermined by land reclamation work carried out in the 6th - 9th decade. Especially the network of small streams and watershed areas has been changed. Most intensive land reclamation was carried out in the Vilkaviškis region. 83.3% of lands were drained there and the inhabitants of individual farmsteads moved to newly built settlements. The least changes of relief and hydrographical network took place in the southern part of the region (Verena and Lazdijai districts). There are no anthropogenic factors now which change or could change the relief in the nearest future. Some local changes of relief may occur while installing the new communication lines.

A larger part of the region is occupied by fertile soils containing glacial rocks. The northern and north-eastern parts of the region represent the areas of intensive agriculture. The wooded southern part is occupied by fluvioglacial land and old alluvial formations with poor soils. The mentioned parts represent the areas of extensive agriculture and intensive silviculture with high recreational potential. The extinction of forest tracts while changing the land use and management might strengthen the wind erosion. However, the changes in land use and management should reduce the tracts of ploughed areas. This could slow down the surface erosion.

The south-east of the studied region is the richest Lithuanian area abounding in mushrooms, medicinal herbs and berries. The central and northern part of the region abound in large farming lands with small groves. The development of tourism and border zone infrastructure might disturb the natural habitats of medicinal herbs and mushrooms. On the other hand, as a result of economic difficulties gathering mushrooms and picking berries have intensified in the last years. This represents a serious hazard for moss cover and reduces the habitats of mushrooms and other forest plants.

Economic difficulties led to the extinction of a large number of hunt animals (elks, roes, boars). The expansion of infrastructure in the region may reduce the population of rare animals and decrease the biodiversity of the region.

The South-eastern Lithuania is rich in metallic natural resources but high costs of exploitation and purposes of nature protection have prevented from starting the exploitation. On the other hand the exploration of metallic natural resources has not been finished. The exploitation of natural resources from Quarternary rocks has decreased in the last years. This was predetermined by a reduced potential of building trade. The exploitation of natural resources in the south-east of the studied region may disturb the ecological equilibrium and reduce the recreational potential of the territory.

The Augustowski and Mazurski canals connecting the Pregola, Nemunas and Wisła rivers create preconditions for the development of a water road network in the basins of three large Baltic sea tributaries. However, the realization of this project is technically complicated and expensive. On the other hand, such a water road system would link the territories of four states (Lithuania, Poland, Russia and Belarus). At present this idea is not popular and may serve as a future vision.

The southern and south-eastern part of the region is characterized by an abundance of picturesque lakes, an anthropogenically little effected hydrographic network, a high level of woodedness. It has many unique preservable natural objects and complexes as well as protected territories (Veisiejai and Meteliai regional parks, Wigierski National Park [Wigierski Park Norodowy], Krakinio, Vilko, Kuzapiške, Kukle, Lempis, Pomorze, Bagdo, Studziany-Las and other nature reserves). According to the level of land culturalization, natural values and cultural heritage, this part of Lithuania strongly differs from the northern and central parts. The area of farming lands is rather small, there are no large industrial objects and no intensive exploitation of natural resources. The recreational potential of the territory is very high. It would be rational to include this region into the European network of protectable territories. If the lakes of Mazury (the Mazury Lake District) were connected with lakes of Wigry, Baltoji Ančia and Dovine basins they would together with the surrounding forest tracts (Augustowski wood, Kapčiamiestis wood, Dainava wood, Gudai wood) and other natural monuments, represent a territory worth being preserved and fit for recreation. It would be possible to create a nature protection - recreation area: Gdańsk - Olsztyn - Elk - Augustów - Druskininkai - Trakai - Vilnius - Ignalina - Zarasai - Daugavpils - Rzekne - Aluksne - Voru - Tartu - Mustvee - Sillamäe. This area would join several most picturesque and anthropogenically least effected territories of the Baltic states.

REFERNCES

1. Basalykas, A., 1965, *Lietuvos TSR fizine geografija*, lit. Mintis, Vilnius.
2. Kolupaila, S., 1934, *Augustavo vandens kelias*. Lietuviška enciklopedija t. 2, Spaudos fondas, Kaunas.
3. *Lietuvos geologija*, 1994, Mokslo ir enciklopediju leidykla, Vilnius.
4. *Lietuvos požemines hidrosferos monitoringas*, 1994, Lietuvos geologijos tarnybos informacinis biuletenis, Vilnius.
5. *Lietuvos TSR fizine geografija*, 1958, VPMLL, Vilnius.
6. *Lietuvos TSR atlasas*, 1981, VGKV, Maskva.
7. *Lietuvos TSR vandens turistu kelias*, 1982, Mintis, Vilnius.
8. *Nauczno-prikladnoj spravocznik po klimatu SSSR*, 1989, Mnogoletnije.

**LEGALLY PROTECTED AREAS
OF POLISH EASTERN BORDER VOIVODSHIPS
(WITH PARTICULAR CONSIDERATION
OF THE POLISH - LITHUANIAN
BORDER REGION)**

BOŻENA DEGÓRSKA

Institute of Geography and Spatial Organization
Polish Academy of Sciences
Warszawa

I. INTRODUCTION

The legally protected areas in Poland encompass the surface of 80.8 thousand sq. km, equivalent to 26% of the total surface of the country (figures as of December 31st, 1994).

The basic forms of legal protection of nature include national parks, nature reserves, landscape parks, areas of protected landscape, protection of plant and animal species, and in the framework of special purpose protection - ecological surfaces, documentation plots, nature and landscape complexes, as well as monuments of nature.

Polish law on nature protection of October 16th, 1991, defines as the primary goals of protection:

- preservation of ecological processes and the stability of ecosystems,
- preservation of species differentiation,
- preservation of geological heritage,
- securing the continuity of existence of species and ecosystems,
- formation of a proper adequate attitude of men towards nature,
- restoration of nature resources and elements.

The strategy of nature protection in Poland accounts for international stipulations through active participation in international organizations and programs, with the most important among them being:

- International Union of Nature Protection (IUCN),
- World Wildlife Fund (WWF),

- International Council for Bird Protection (ICBP),
- Man and Biosphere programme of UNESCO,
- programme of biodiversity protection.

In the Polish system of protected areas it is assumed that the most important, and simultaneously the most effective, protection form is constituted by national parks, followed by landscape parks and areas of protected landscape, and then by small area objects, like nature reserves. The definitions of individual forms of protection are provided below (Dz. U. - Legal Journal - no. 114):

National park - encompasses a protected area distinguished by its special scientific, natural, social, cultural and educational qualities, with the surface of at least 1 000 hectares. The nature of a national park is protected together with the specific features of landscape. All kinds of activities are subordinated to nature protection, which has the highest priority. The superior objective set for a national park is cognition and preservation of the totality of natural systems within the given area, along with the conditions of their functioning, as well as restoration of the deformed and disappearing links of the native nature.

The establishment of a national park takes place through the decree of the Council of Ministers.

Nature reserve - is constituted by the area within which ecosystems exist, as well as definite species of plants and animals, and/or elements of the inanimate nature either preserved in their natural state or only slightly deformed, having essential value because of their scientific, biological, cultural or landscape characteristics. An area becomes a nature reserve by the order of the Minister of Nature Protection, Natural Resources and Forestry.

Landscape park - is constituted by the area protected because of its biological, historical and cultural values, and its purpose is to preserve, popularize and disseminate these values in conditions of conduct of rational economy. Arable and forest land, as well as other types of land assets which are located within the area of landscape parks remain in the economic use. A landscape park is established through the order of a province governor.

Area of protected landscape encompasses the land surface of interesting landscape with various types of ecosystems. The way in which such an area is being developed should ensure the state of a relative ecological equilibrium of natural systems. This kind of protection form is introduced through the order of a province governor or a motion of the communal council.

Area of ecological use is constituted by the protection worth remnants of the ecosystems having significance for the preservation of the unique genetic resources and environment types, such as natural water reservoirs, field

and forest ponds, forest groves and bushes, bogs, moors, dunes, patches of non-utilized vegetation, old river beds, rock outcrops, cliffs, etc. The establishment of this protection form takes place through the order of the province governor or through a motion of the communal council.

Documentation plots are these places, which are important from the scientific or didactic viewpoint, and where definite geological formations, concentrations of fossils or of mineral objects, as well as fragments of the exploited and abandoned surface and underground excavations are located. This protection form is also being introduced through the order of a province governor or a motion of the communal council.

Nature-and-landscape compounds are being delimited for the purpose of protection of the particularly valuable fragments of natural or cultural landscape and the preservation of its esthetic qualities. As in the preceding cases these entities are established through the order of a province governor or a motion of the communal council.

Monuments of nature are single objects of animate or inanimate nature, or their clusters, having particular scientific, cultural, historical and traditional or landscape value, and featuring individual characteristics which distinguish them from other objects. These objects include trees and bushes of old age and big dimensions, of both indigenous and alien origin, sources, waterfalls, other water bodies, rocks, gullies, boulders, caves. An object is deemed a monument of nature through the order of a province governor or through a motion of the communal council.

Protection of species is aimed at preservation of species and genetic variety and at conservation of plants and animals appearing in the wilds. This concerns especially rare species and those threatened with extinction. The protection of species is introduced through the decree of the Minister of Environmental Protection, Natural Resources and Forestry, the order of a province governor or a motion of the communal council.

The areas legally protected, and especially national and landscape parks, are unevenly distributed over the country. The smallest number of these objects is encountered on the Central Polish Lowlands. On the other hand, an important number of national and landscape parks are located in the nine border voivodships of the "eastern wall" (see Fig.1). The legally protected areas are located in voivodships of Elbląg, Olsztyn, Suwałki, Białystok, Biała Podlaska, Chełm, Zamość, Przemyśl and Krosno, and take altogether approximately 40% of the surface of these voivodships, which constitutes 32% of the total surface of protected areas in Poland (Table 1).

Table 1

Protected areas in border provinces of the „eastern wall” in the years 1990-1994 (after Ochrona Środowiska, GUS, 1991, 1992, 1993, 1994, 1995, and Dziennik Urzędowy Wojewody Suwalskiego, no. 17, of July 15th, 1991)

Voivodship	Year	Share in % of voivodships	NPs in ha	NRs in ha	LPs in ha	APLs in ha	EIs in ha	DPs in ha	NLCs in ha
1	2	3	4	5	6	7	8	9	10
Biała Podlaska	1990	10.5		845		55 292			
	1991	10.5		845		55 292			
	1992	10.5		845		55 292			
	1993	10.5		845		55 292			
	1994	8.1		845	30 904	11 300	5		2
Białystok	1990	46.3	5 317	6 136	94 009	360 317			
	1991	46.5	5 348	6 136	95 362	360 317			
	1992	46.5	5 348	6 136	95 362	360 317			
	1993	35.1	11 396	6 136	92 160	243 535			
	1994	35.1	11 396	6 136	92 160	243 535			
Chelm	1990	31.3	4 711	1 309	33 734	81 400			
	1991	31.9	4 711	3 627	33 734	81 400			
	1992	31.9	4 714	3 627	33 734	81 400			

1	2	3	4	5	6	7	8	9	10
	1993	32.1	4 714	3 593	33 734	81 400	518		
	1994	32.7	9 437	2 125	32 913	81 400	518		
Elbląg	1990	22.0		6 163	13 923	114 465			
	1991	27.5		6 691	17 880	143 535			
	1992	26.7		6 691	17 880	138 511			
	1993	26.7		6 691	25 854	130 224			
	1994	26.7		6 691	25 854	130 224			
Krosno	1990	31.7	16 233	1 631		162 785			
	1991	74.7	27 064	1 639		396 959			
	1992	99.1	27 064	1 639	139 286	396 959			
	1993	100.0	27 064	1 639	151 709	396 959			
	1994	74.1	27 064	3 251	151 709	245 250			
Olsztyn	1990	1.9		9 051	14 090				
	1991	1.9		9 369	14 090				
	1992	39.1		9 369	14 090	458 590			
	1993	40.7		9 372	33 925	458 590	560	2	
	1994	41.4		9 372	41 707	458 590	792	2	
Przemysł	1990	49.8		31	23 912	196 802			
	1991	49.8		172	85 774	134 940			

1	2	3	4	5	6	7	8	9	10
	1992	49.8		172	85 774	134 940			
	1993	49.8		172	85 774	134 940	25		
	1994	49.8		172	85 774	134 940	51		
Suwałki	1990	62.8	14 956	15 311	41 810	587 050			
	1991	62.8	14 956	15 311	41 810	587 050			
	1992	62.8	14 956	15 274	41 810	587 050			
	1993	63.6	22 716	15 274	41 810	587 050	706		
	1994	63.7	22 716	15 274	41 810	587 050	1 065		
Zamość	1990	5.5	6 859	833	30 695				
	1991	9.1	7 905	918	55 043				
	1992	9.1	7 905	918	55 043				
	1993	9.9	7 886	918	60 278		27		
	1994	9.9	7 886	918	60 278		23		

Abbreviations:

NPs - National Parks, NRs - Nature Reserves, LPs - Landscape Parks, APLs - Areas of Protected Landscape, Els - Ecological Lands, DPs - Documentation Plots, NLCs - Nature and Landscape Compounds

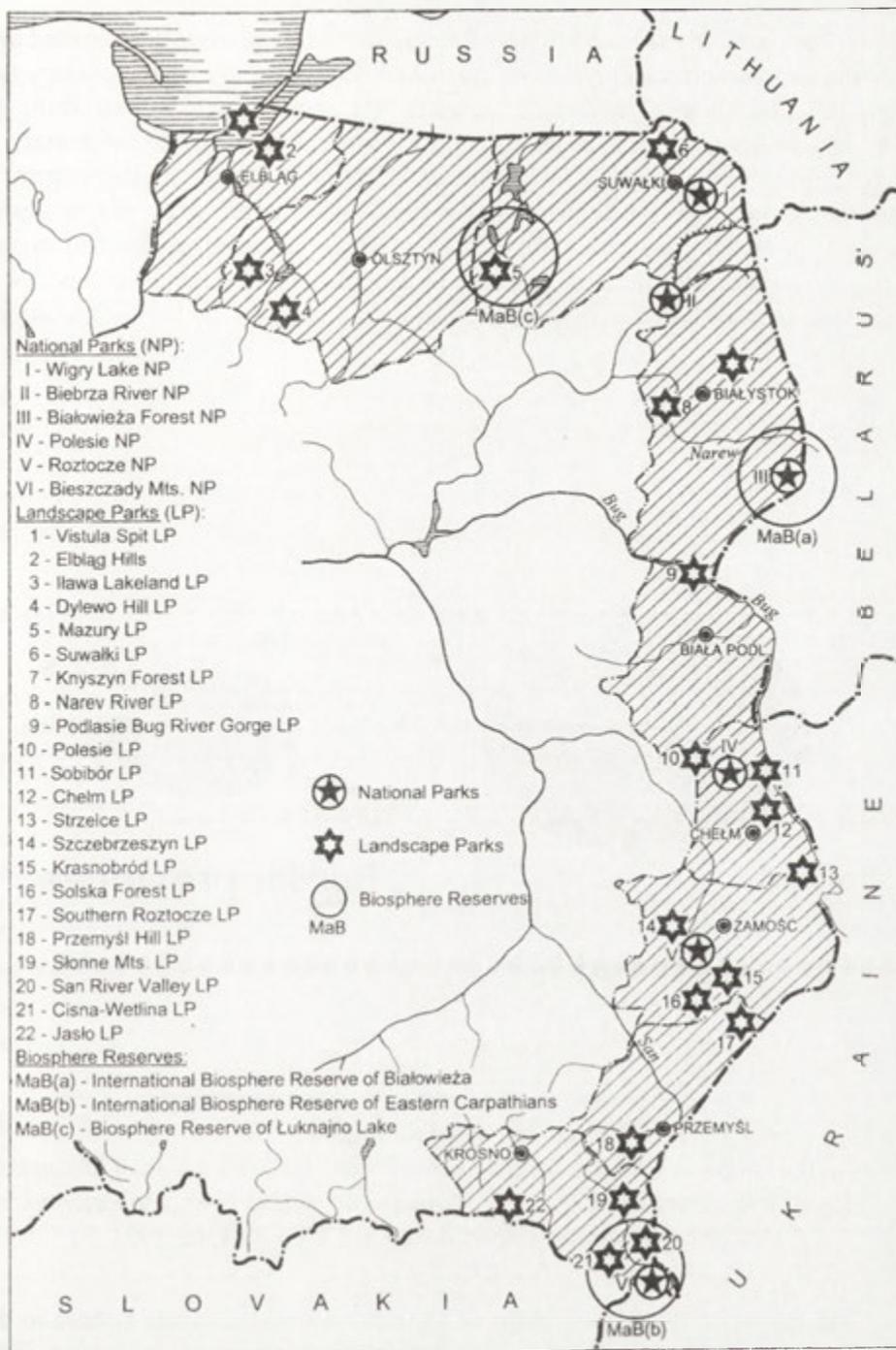


Fig. 1. National and landscape parks in border voivodships of „The Eastern Wall” (as of December 31st, 1994).

The share of particular forms of nature protection in the total protected area of the eastern voivodships is very much like on the average in the country (see Fig. 2). The biggest difference concerns the share of *ecological land*: (in the eastern border zone accounting for 0.1% of surface, while on the average in the country - for 0.01%). Two protection forms dominate in the system of protected areas of the eastern border zone, namely the *areas of protected landscape* (73%) and *landscape parks* (22%). National parks and nature reserves, which constitute the essential protection form in Poland, occupy 5% of the total protected surface of the eastern voivodships (*national parks*: 3%, *nature reserves*: 2%).

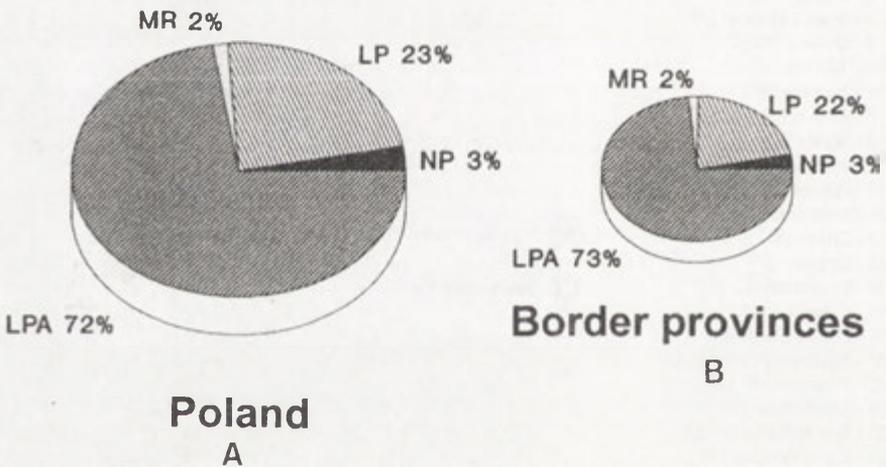


Fig. 2. Protected areas according to forms of protection:

A - in Poland as a whole,

B - in the border voivodships of the "Eastern wall" (above 1%); as of December 31st, 1994. According to *Ochrona Środowiska*, GUS, 1995, and *Dziennik Urzędowy Wojewody Suwalskiego*, no. 17, July 15th, 1991.

In the majority of voivodships of the eastern wall the greatest share in the total protected surface is taken by the areas of protected landscape. This protection form takes more than 50% of the respective surface in the voivodship of Suwałki (88%), Białystok (69%), Chełm (64%), Przemyśl (61%), Krosno

(59%) and Olsztyn (52%). The highest share of landscape parks is observed in Zamość (87%) and Biała Podlaska (72%) voivodships. National parks have the highest share within the protected areas of Zamość voivodship (11%) - Table 1.

II. NATIONAL PARKS

There are five national parks located in their entirety within the area of the eastern border voivodships. These are the National Parks of: Białowieża Forest, Bieszczady Mts., Polesie, Roztocze and Wigry Lake and the north-eastern part of the Biebrza National Park (some 23% of the total surface of this park) - according to the state at the end of December 1994. The total surface of national parks in the eastern voivodships is 78.499 hectares, equivalent to 32% of the whole surface of national parks in Poland and 1.2% of the total surface of the eastern border voivodships.¹

Until the end of December 1994 the following national parks were established within the area of the eastern border voivodships:²

Białowieża Forest National Park - established on August 11, 1932, as the "National Park in Białowieża" and reestablished in 1947. It is located in the eastern part of Podlasie-Belarus Lowlands, in the natural forest section of Białowieża Forest. The surface of the Park is 5.348 hectares. Strict protection is applied to 4.747 hectares, i.e. to 89% of the whole park. The woods protected are primarily of natural origin, and a part of them has the character of a primeval forest. In 1977 UNESCO recognized the Park as a world biosphere reserve, and in 1979 as the only World Heritage object located in Poland. In 1992 the borders of this entity were extended across the border with Belarus' to encompass the adjacent part of the Belarusian national park of "Białowieża Forest", also under strict protection. In this manner the first European transboundary World Heritage object was established.

Bieszczady Mts. National Park was created on August 4, 1973. The surface of the park is 27,064 hectares and it encompasses the highest part of Western Bieszczady Mts. Strict protection is extended over 18.551 hectares (68%), with 16.555 hectares covered with forest, and the remaining areas being primarily ridge pastures. In 1992 the Park was put on the UNESCO list of the

¹ On January 1st, 1995, Magura National Park was established. Due to the lack of adequate statistical data this park was not accounted for in the analysis here presented.

² The parks were characterized on the basis of the reports by Lubczyński (1995), Walczak, Lubelska, Radziejowski and Smogorzewska (1993), and *Ochrona Środowiska* (1995).

MAB world reserves and was included in the International Biosphere Reserve of "Eastern Carpathians", along with the Landscape Park of San River Valley and Cisna-Wetlina Landscape Park on the Polish side, the nationally protected area of "Eastern Carpathians" on the Slovak side, and the reserve "Struzhitsa" on the Ukrainian side.

Roztocze National Park was established on May 10, 1974. It is located in the natural forest section of Roztocze within Małopolska (Little Poland) subregion. The surface of the Park is 7.886 hectares. Strict protection applies to 806 hectares (10%), with forest occupying 784 hectares.

Wigry Lake National Park was created on January 1, 1989. It is located in the Mazury-Podlasie subregion, in the north-eastern part of the Masury Lake District section and the northern part of the Augustowski Forest section. The surface of the Park is 15,113 hectares. Strict control applies to 1.343 hectares (9%), with 1074 hectares of forests and 268 hectares of water surface.

Polesie National Park was established on May 1, 1990. It is located in the Mazowsze-Podlasie subregion, in the central part of Polesie Lubelskie section, within the Łęczna-Włodawa Lake District. Total surface of the park is 9.648 hectares. Strict protection is extended over 428 hectares (4%) with 109 hectares of forest land. This particular park constitutes one of the few remaining in Europe natural peat-and-bog areas.

In all the national parks located in the eastern border zone forest land dominates (see Fig. 3). Three national parks: Roztocze, Białowieża and Bieszczady have a typical forest character. Forested areas account for approximately 90% of the surface of these parks. Within the woods which are administered by the parks, but are subject to only partial protection, the reserve-oriented forest economy is being conducted, encompassing nurseries, cultivation and breeding, as well as protection itself. Wood economy is conducted within the national parks in the framework of the cultivation and breeding activities (clearing, extirpation, reconstruction of tree stands) and protective measures (removal of the active deadwood, sanitary fellings). In five national parks altogether in 1994 the total of 46 thousand cu m of wood was produced (28% of all wood produced in all the Polish national parks), with the following biggest contributions: 17.6 thousand cu.m from Bieszczady Mts. National Park and 16.9 thousand cu.m from Roztocze National Park. This puts the two national parks on, respectively, the second and the third rank among the national parks in Poland. On the other hand, in Białowieża Forest National Park the smallest volume of wood was produced (0.3 thousand cu.m), this being related to the fact that 98% of the forest surface in this park is subject to strict protection, which forbids any kind of economic activity.

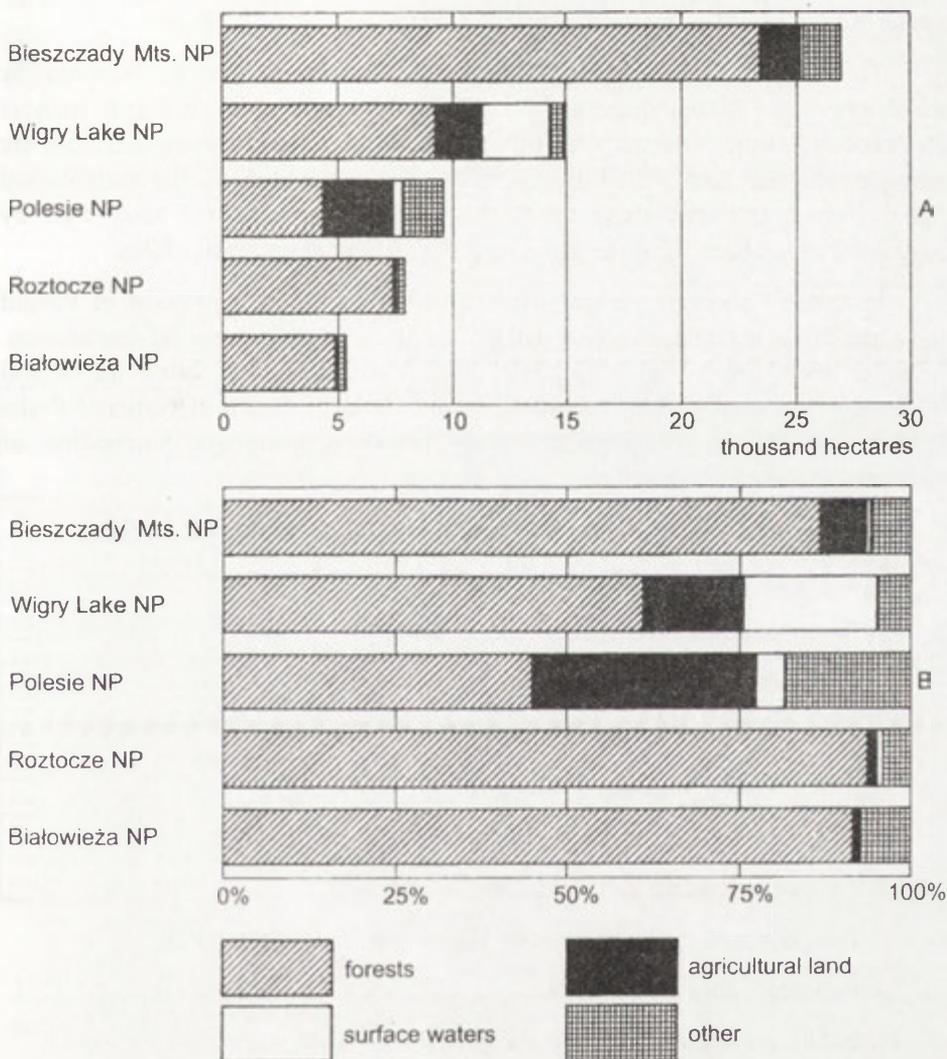


Fig. 3. National Parks according to land use categories,
 A - magnitudes
 B - percentage shares (as of December 31st, after GUS, 1995)

Quite high shares of agricultural land characterize Polesie National Park (45%) and Wigry Lake National Park (15%). The agricultural land administered by the parks is not meant for proper agricultural production, and the activities conducted are of primarily protective nature. Still, the land belonging to private farmers is being used for agricultural production. The administration of the park is entitled to execute supervision of the use of this land in accordance with its purpose. Among the parks here considered the problems related to private land ownership appeared primarily within the Wigry Lake National Park.

The highest share of surface water bodies is, of course, featured by the Wigry Lake National Park (19%), a much lower one, but still high is observed in Polesie National Park (4%). In both these parks fishing activities are being conducted. Until 1993 this activity was conducted by the state-owned fishing farms, and after these farms collapsed, the activity was taken over by the parks, which became at the same time the owners of respective lakes.

In spite of an improvement in the state of natural environment in Poland there are still many factors active which contribute to environmental degradation. Most of them are of anthropogenic origin, and they also lower the natural qualities of national parks. According to the National Board of National Parks (Lubczyński, 1995) the greatest threats for the appropriate functioning of the parks analysed are posed by:

1. Long distance air pollution transport (Bieszczady and Polesie NPs),
2. Local air pollution (Białowieża NP),
3. Water pollution (Wigry and Bieszczady NP),
4. Contruction of water reservoirs (Białowieża NP),
5. Water balance hazard (Polesie NP),
6. Threat from municipal economy (Wigry NP),
7. Unauthorized construction activities (Wigry NP),
8. Excessive tourism and recreation (Wigry NP),
9. Poaching and thefts (Roztocze, Wigry and Białowieża NPs),
10. Farming (Wigry NP),
11. External ownership of land (Wigry NP),
12. Overabundance of animals (in all the national parks mentioned above).

III. NATURE RESERVES

Nature reserves exist in all the voivodships of the "Eastern wall", but their number per voivodship ranges from 7 in Przemyśl voivodship to 47 in Suwałki voivodship. The total area of nature reserves located in the eastern voivodships amounts to 44.784 hectares (0.7% of the total surface of eastern provinces). This is equivalent to 38% of the national total for nature reserves and to 1.7% of the surface of protected areas in the eastern border zone. The greatest surfaces under nature reserves exist in Suwałki voivodship (15.274 hectares), in Olsztyn voivodship (9.372 hectares), in Elbląg voivodship (6.691 hectares) and in Białystok voivodship (6.136 hectares), while the smallest surface - in Przemyśl voivodship (172 hectares).

Table 2.

Nature reserves in the eastern border voivodships
(as December 31 st, 1994, according to Ochrona Środowiska, GUS, 1995)

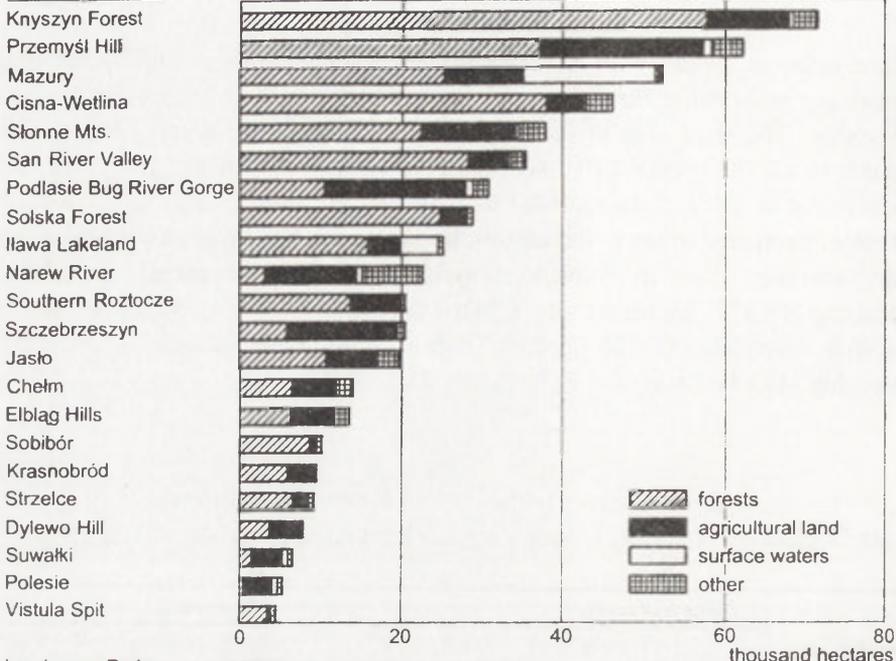
Voivodships	Number of reserves		Surface of reserves		
	Total	Strict reserves	total	Strict reserves	
			in hectares	in hectares	in % of reserve surface
Biała Podlaska	13		845		
Białystok	37	2	6 136	541	8.8
ChelĹm	15	2	2 125	52	2.4
Elbląg	22		6 691	75	1.1
Krosno	26	1	3 251	2	0.1
Olsztyn	42	4	9 372	110	1.1
Przemyśl	7	1	172	0.1	0.06
Suwałki	47	6	15 274	286	1.9
Zamość	18	3	918	70	7.6
Eastern voivodships in total	227	19	44 784	1 136	2.5

Out of the total number of 227 nature reserves strict protection is applied in 19 entities to the surface of 1.136 hectares, which constitutes 2.5% of the total surface of nature reserves in the eastern voivodships (Table 2).

IV. LANDSCAPE PARKS

There were 22 landscape parks within the area of the eastern border voivodships at the end of December 1994. Their surface, within the boundaries of

Landscape Parks:



Landscape Parks:

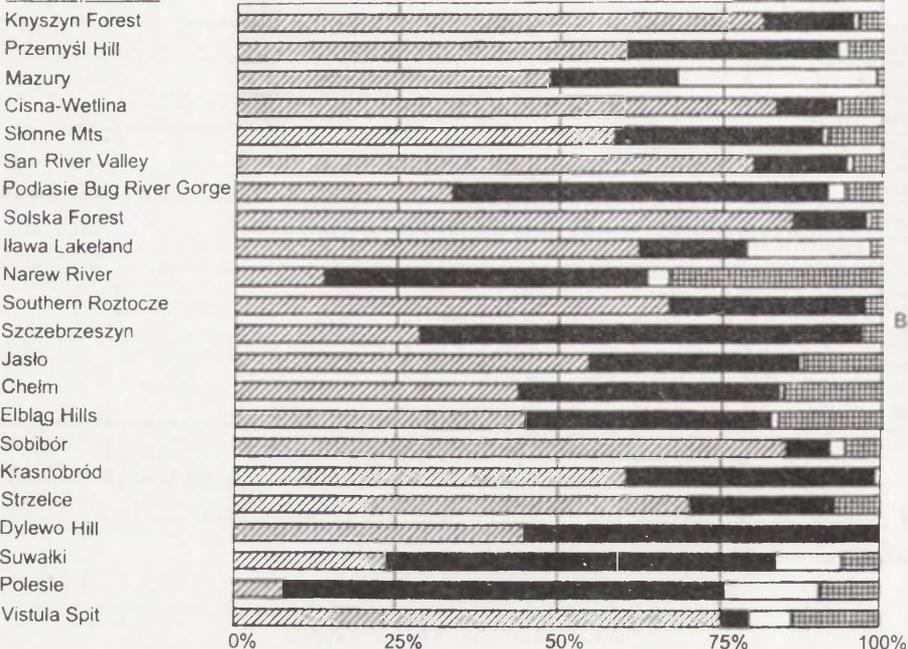


Fig. 4. National Parks according to land use categories,
 A - magnitudes
 B - percentage shares (as of December 31st, according GUS, 1995)

the voivodships considered, amounts to 563.109 hectares, which is equivalent to 30% of the total surface of landscape parks in Poland and 8.6% of the surface of border voivodships. The first Landscape Park established within the eastern zone was Suwałki Landscape Park created in 1976.

The biggest landscape parks (LPs) in the area considered are as follows: LP of Knyszyn Forest (71.245 hectares), LP of Przemyśl Plateau (61.862 hectares) and Mazury LP (52.156 hectares). The landscape parks of smaller surfaces dominate, though. Some 50% of the landscape parks are between 4 thousand and 20 thousand hectares (see Fig. 4. A).

Four landscape parks feature shares of forest areas exceeding 80%, namely the Landscape Park of Solska Forest (86%), Sobibór LP (85%), Cisna-Wetlina LP (83%) and San River Valley LP (80%) - see Fig. 5.B. Less than 25% of forested areas exist in Polesie LP (7%), Narew River LP (13%) and Suwałki LP (23%).

Six out of 22 landscape parks located in the eastern border voivodships have agricultural character. More than 50% of the surface is taken by agricultural land in the following Landscape Parks: Polesie LP (68%), Szczepczyszyn LP (68%), Suwałki LP (60%), "Podlasie Bug River Gorge" (58%), Dylewo Hills LP (54%) and Narew River LP (50%). The lowest share of agricultural land - mere 4% - is observed in the "Vistula Spit" LP.

Let us add that landscape parks, along with nature reserves, were located at the end of December 1994 in all the voivodships of the "Eastern wall" of Poland. They occupied the biggest surface in Krosno voivodship: 152 thousand hectares, i.e. 36% of all the protected areas of this voivodship and 27% of its total area (see Fig. 5.A). The land use structure in the landscape parks of the particular voivodships of the eastern border zone is shown in Fig.5.B. The land located within the boundaries of the landscape parks remains predominantly under the previous forms of use, forests being mainly administered by the State Forests, while agricultural land - mainly by private farmers.

V. AREAS OF PROTECTED LANDSCAPE

Among all the forms of nature protection the largest surfaces - both within the eastern border zone and in general in Poland - are occupied by the areas of protected landscape. At the end of December 1994 their surface was at 18.900 sq.km, i.e. 29% of the total surface of the eastern voivodships, 73% of their protected areas and 32% of the total surface of protected landscape in Poland.

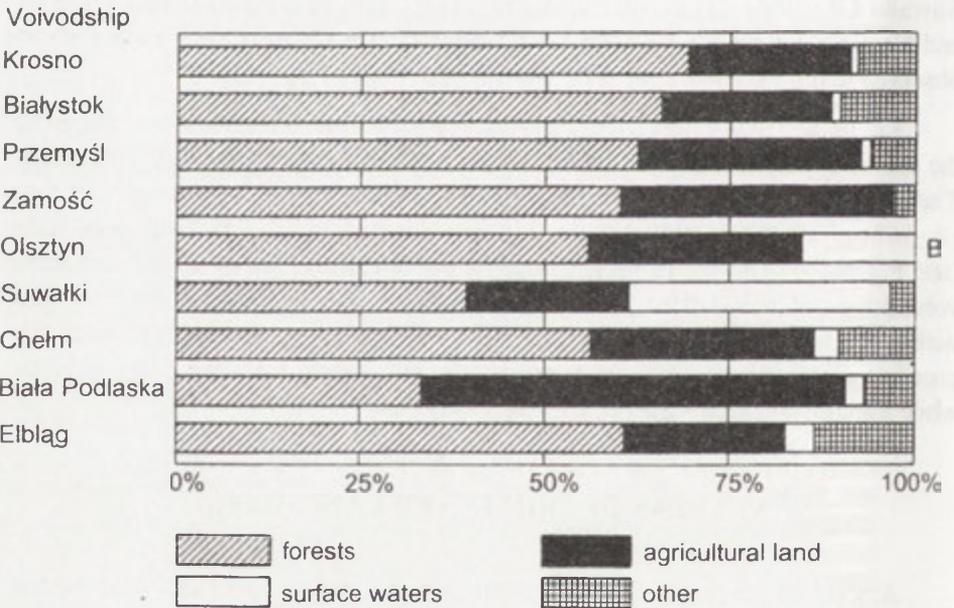
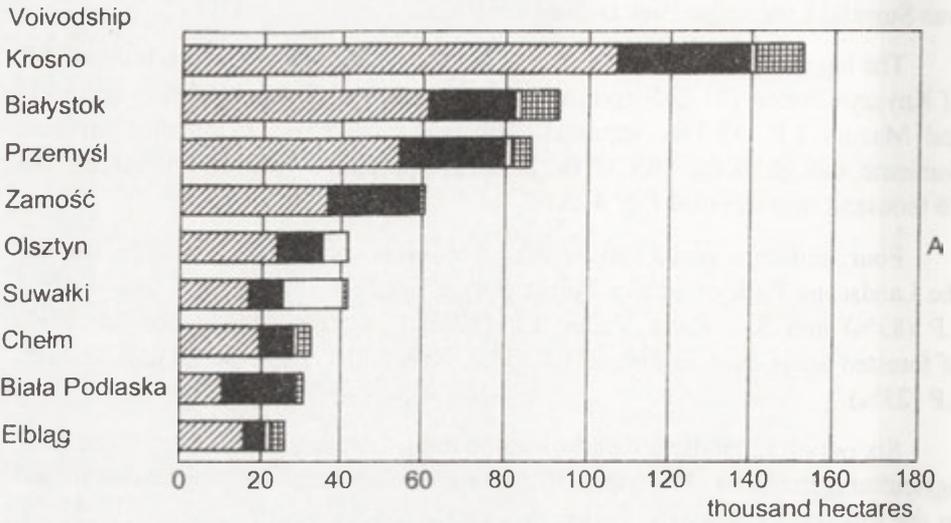


Fig. 5. Landscape parks according to land use categories and voivodships.

A - magnitudes,

B - percentage shares (as of December 31st, 1994, after GUS, 1995).

The areas of protected landscape take the greatest surface shares in Suwałki voivodship (56%) and in Olsztyn voivodship (37%). The only voivodship which does not have this form of protection is Zamość voivodship, though the role of the areas of protected landscape is played there by the buffer zones of landscape parks and of the Roztocze National Park.

Agricultural land dominates in the land use structure of the areas of protected landscape. In Chełm, Biała Podlaska, Olsztyn, Elbląg, Przemyśl, and probably also in Suwałki voivodship, agricultural land constitutes more than 50% of these areas. Forests dominate in two voivodships: Krosno and Białystok, where they constitute approximately 55% of the total surface of areas of protected landscape.

We did not dispose, though, of the data concerning land use in Suwałki voivodship due to the lack of appropriate classification in the Voivodship Office and the lack of data on the category here considered in the yearbooks of the Central Statistical Office (including the Environmental Protection Yearbook), which altogether contributes to an erroneous image of nature protection in Suwałki voivodship.

VI. INDIVIDUAL PROTECTION

The forms of individual nature protection - excepting the protection of species - are represented in the majority of cases by the objects classified as **monuments of nature**. In the eastern border zone there are altogether 3.795 nature monuments, of which 327 in Biała Podlaska, 1.150 in Białystok, 169 in Chełm, 491 in Elbląg, 154 in Krosno, 616 in Olsztyn, 224 in Suwałki, 403 in Przemyśl, and 261 in Zamość voivodships. These monuments are in the majority of cases constituted by individual trees.

Other forms of individual protection are **areas of ecological use**, which occupy in the eastern lands the surface of mere 2.454 hectares, equivalent to 41% of their total surface in the country. Ecological lands were not registered within Białystok, Elbląg and Krosno voivodships. The greatest surface is taken by ecological lands in Suwałki voivodship (1.065 hectares), and this surface constitutes 43% of their total surface in the eastern border zone.

Documentation plots were registered only in Olsztyn voivodship (2 hectares), while **nature and landscape compounds** - only in Biała Podlaska voivodship (2 hectares). We cannot exclude, however, the existence of a greater number of objects subject to individual protection, since the present report does not account for the nature protection forms and objects which could be

established by the communal councils and are not taken into consideration by the Central Statistical Office.

VII. CONCLUDING REMARKS

The Suwałki voivodship, when considered against the background of regions located within the lowlands of Poland, is characterized by an especially high quality of ecological space. This fact finds its reflection in the general surface of protected areas, which accounts for 67% of the voivodship surface. Among the forms of protection the areas of protected landscape dominate (587 thousand hectares), constituting 89% of the protected areas of Suwałki voivodship and 56% of its total surface. Thus, the remaining forms account for just 11% of the protected surfaces, out of which 3% is constituted by national parks, 6% - by landscape parks, and 2% - by nature reserves. It seems that this structure of nature protection is ill fitted to the high ecological qualities of the voivodship.

It should therefore be postulated that high priority be assigned to the nature protection undertakings within the north-eastern Poland aiming at the expansion of the existing and the establishment of new landscape parks, such as: Augustów Forest, Borecka Forest, Pisz Forest, Great Mazury Lakes, and to the enhancement of the protection status of the Mazury Landscape Park through the creation of Mazury National Park.

The direction of the eco-development, which is being promoted, necessitates urgently putting in order municipal economy, also in Suwałki voivodship, because in spite of being located in the functional area of the "Green Lungs of Poland", the problems of waste purification and, more generally, waste economy, are still not fully resolved there. The lack of care with respect to esthetics of landscape and purity of land can be noticed, for instance, in the surroundings of the formerly Cameldolite monastery in Wigry, located within the boundaries of Wigry Lake National Park.

Considering the questions of nature protection and eco-development of the Polish-Lithuanian borderland we should mention a valuable initiative of the Institute of Environmental Protection, namely the establishment of two transboundary protected areas (Rakowski, 1996):

- 1) Augustów-Druskiennikai Transboundary Protected Area (within the Polish-Lithuanian-Belarusian borderland)
- 2) Suwałki-Vistytis Transboundary Protected Area (within the Polish-Lithuanian-Russian borderland).

The attainment of an improvement in the state of natural environment within the borderlands requires a close international co-operation. In case of Suwałki voivodship it is the co-operation between Poland, Lithuania, Belarus and Russia. The Polish-Lithuanian agreement signed in 1992 envisages, in particular:

- co-operation with respect to the border waters (analysis and assessment of the current water quality status; exchange of information on the undertakings carried out with the purpose of improvement or maintenance of water quality);

- registering the sources of environmental hazard within the border zone (especially the emitters of air pollution and of wastewater, the storage places of chemicals, the storage tanks of oil products, the waste dumps).

It is worth emphasizing that in the Treaty between the Republic of Poland and the Republic of Lithuania on friendly relations and neighbourly co-operation, signed on April 26th, 1994, the problems of environmental protection found their reflection in a separate declaration expressed in Article 12, points 1, 2, 3 and 4.

Attention should also be paid to the role of local self-government bodies in the undertakings aimed at eco-development. One of the very valuable initiatives in Suwałki voivodship consisted in the creation of the Association of Communes "Szelmant", in which the so called sustainable and balanced development is promoted. It appears that this direction of development, coupled with the collaboration of the local self-governments is especially important within the areas characterized by high tourist potential of natural environment, and in particular in the areas of national parks.

The present direction of eco-development of the functional area of "Green Lungs of Europe", whose essential element is constituted by Suwałki voivodship, gives hope for the preservation of the natural qualities of this land also for future generations.

REFERENCES

1. Lubczyński L., 1995, *Parki narodowe w Polsce, sprawozdanie roczne 1994 (National parks in Poland. Annual report 1994)*. Krajowy Zarząd Parków Narodowych, Warszawa - Białowieża.
2. *Ochrona Środowiska, 1991 (Nature Protection, 1991)*. GUS, Warszawa.
3. *Ochrona Środowiska, 1992 (Nature Protection, 1992)*. GUS, Warszawa.
4. *Ochrona Środowiska, 1993 (Nature Protection, 1993)*. GUS, Warszawa.
5. *Ochrona Środowiska, 1994 (Nature Protection, 1994)*. GUS, Warszawa.
6. *Ochrona Środowiska, 1995 (Nature Protection, 1995)*. GUS, Warszawa.
7. Rakowski G., 1996, *Transgraniczne obszary chronione (TOCh) na Suwalszczyźnie (Transboundary protected areas - TPA - in Suwałki region)*. Proceedings of the conference "Przyroda bez granic" ("Nature without boundaries").

GEOGRAPHICAL ANALYSIS OF BIOPRODUCTION IN THE LITHUANIAN-POLISH BORDER ZONE

Edikas KRAUČIUNAS
Institute of Geography
Vilnius

INTRODUCTION

After the restoration of self-dependence appreciable structural qualitative changes have been taking place in Lithuania's economy. They are, in the first place, associated with the collapse of socialist economy, the break of former economic relations, the loss of markets in Eastern Europe and the formation of qualitatively new economic relations and links under the conditions of free market.

After World War II both Lithuania and Poland have developed socialist economy. The only difference is that Lithuania was incorporated into the USSR, whereas, Poland managed to preserve its self-dependence. However, the socialist State system was forced upon Poland as well. Considerable differences between Lithuania and Poland developed in the field of agriculture. In Poland private farmsteads survived, whereas, in Lithuania they were destroyed and collective agriculture was introduced. Most agricultural products were exported to other USSR republics. In Poland the reorganization of the socialist economy into free-market economy started soon after 1980, whereas, in Lithuania - ten years later, i.e., in 1990, when self-dependence was restored.

The present article represents a short characterization of the branches of bioproduction economy in the Lithuanian administrative districts which lie along the Lithuanian - Polish frontier (Vilkaviškis, Marijampolė and Lazdijai) :

1. Agriculture
2. Fishery
3. Forestry
4. Hunting economy

These branches of economy are usually territorially preconditioned and depend on natural resources. However, their exploitation depends on social factors: political system, and the level of development and economic policy,

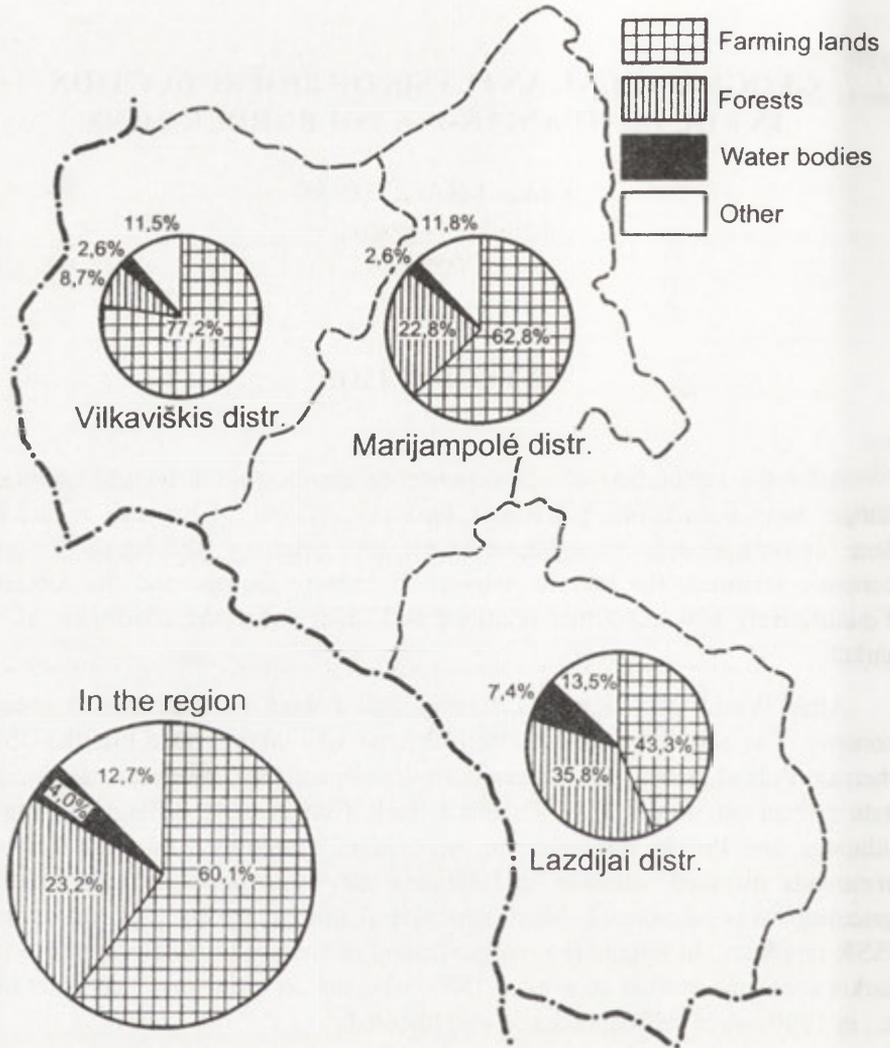


Fig. 1. Composition of the lands in the border region

traditions, etc. The influence of the mentioned factors is especially noticeable in the border regions where under similar natural conditions certain differences in the use of nature can be observed. This is interesting from the scientific point of view. And now, under the conditions of international co-operation, it is not only important to discover economic processes (on the scientific level) but also to coordinate their management taking into consideration the natural peculiarities as well as the demands of the local people.

The administrative districts of Marijampolė, Lazdijai and Vilkaviškis (further on referred to as the border region) take the area of 437.1 thousand ha and make 6.7% of the total territory of Lithuania. According to the distribution of the farming lands these districts are rather different. The Lazdijai district is rather wooded and has many lakes (woodedness - 35.8% (39.2 %)). The surface water bodies take 7.4 % of the total district area. The Vilkaviškis district is the least wooded one (8.7% (10.7 %)) and farming lands take 78.7% of the district area (Fig. 1). (Note: the woodedness was calculated from the total district area and the value obtained somewhat differs from those given by foresters, excluding water bodies and including bushery, (in brackets).

I. AGRICULTURE

I. 1. Natural and social conditions of agriculture

Due to the differences of natural conditions (relief, soil generating rocks) the conditions for agricultural development in the region also vary.

The best conditions are observed in the northern part of Vilkaviškis and the central part of Marijampolė districts where in plains sod-gleyic-podzolized and derno-podzolic-gleyic soils have developed on loams. The value of these lands (within the 100 grades system) ranges between 40 and 60 grades. These are the most fertile lands in Lithuania.

The southern parts of Vilkaviškis and Marijampolė districts and the northern part of Lazdijai district are more hilly. Their largest areas are occupied by derno-podzolic slightly eroded and derno-moderately-podzolic soils on loams. The value of these lands ranges between 30 and 40.

The worst conditions for the development of agriculture are found in the southern part of Lazdijai and northern part of Marijampolė district. The derno-podzolic slightly eroded, derno-podzolic-gleyic and podzolic soils have developed there on sands. The largest areas are occupied by lands of a value 35 grades. As a result of low fertility the largest areas of these territories are occupied by forests.

The social conditions for agricultural development in the region also vary. The Lazdijai district stands out in this respect. It has the smallest number of population the larger part of which (74.4%) lives in villages. The density of total and rural population in the Lazdijai district is also the smallest: 21.5 and 16.2 p/km² respectively. Notwithstanding that the total area of land per capitum in the Lazdijai district is several times larger than in other districts of the region -

4.8 ha (Marijampolė district - 1.5 ha, Vilkaviškis district - 2.4 ha) - the area of arable land per capitum of rural population is the smallest in the region - 2.1 ha (Table 1).

Table 1

The area of farming lands per capitum (1996.01.01)

District	Land area of district, total, ha	Total land area, ha	The area of farming lands, ha				Forests, ha	Surface water bodies, ha
			per capitum		per capitum of rural population			
			total	arable	total	arable		
Lazdijai	154 152.4	4.8	2.1	1.6	2.8	2.1	1.7	0.4
Marijampolė	154 380.6	1.5	0.9	0.8	2.6	2.2	0.3	0.04
Vilkaviškis	128 566.2	2.4	1.7	1.6	3.3	2.8	0.2	0.05
In the region	437 009.2	2.3	1.4	1.2	2.9	2.4	0.5	0.09
In Lithuanian	6 530 072.7	1.8	0.9	0.8	2.9	2.5	0.5	0.07

Both natural and social conditions in the Marijampolė and Vilkaviškis districts are similar. The density of rural population is - 24.0 and 23.6 p/km² respectively. The area of arable land per capitum of rural population in the Vilkaviškis district is 2.8 ha, in the Marijampolė district - 2.2 ha. The difference is predetermined by low woodedness of Vilkaviškis district.

At the beginning of 1996 there were 6543 tractors in the region. 4320 of them belonged to farmers and other individual persons. The area of farming lands and arable lands per tractor was 40.2 ha and 33.7 ha respectively (Table 2). The largest area of arable land per tractor was in the Lazdijai district - 41.3, the smallest - in the Marijampolė district - 30.0 ha. There was a rather large number of horses used for soil cultivation in small farms. At the beginning of the year the number of horses amounted to 6657. Most of them were kept by farmers and other inhabitants.

When the collective farms were liquidated their combine harvesters became the private property of individual farmers. The fleet of combine harvesters has not been renewed. The area of crop fields per combine harvester in the region makes from 125 to 172 ha (data from 1995).

The total population of the region amounts to 188.1 thousands persons including 91.2 thous. or 48.5% living in villages. The average population density is 21.1 p/km².

Table 2

Number of tractors and combine harvesters and the area of farming land per machine, 1995

District	Number of tractors			Number of combine harvesters	Area of crop fields per combine harvesters,ha
		farming lands	arable lands		
Lazdijai	1 266	52.7	41.3	143	125
Marijampolė	2 761	35.1	30.0	251	117
Vilkaviškis	2 516	39.4	34.0	182	172
In the region	6 543	40.2	33.7	576	136
In Lithuanian	82 770	42.4	35.6	6 802	165

The population of the largest town in the region - Marijampolė - totals 52 thous. persons. Marijampolė concentrates the main processing industry of agricultural products: meat, milk and grain processing plants owing to which the agricultural production in the region has grown significantly. The same factories of the specialization in Alytus are also rather influential in the economy of the region.

Marijampolė has a sugar factory. For this reason the neighbouring districts specialize in growing sugar-beet.

1.2. Land management

In 1991 after the restoration of self-dependence in Lithuania the land reform was started. In the process of land privatization considerable changes of land management take place: the formerly collective farms and the Soviet farms are replaced by individual farms. In 1990 93.3% of farming lands in Lithuania belonged to collective and State farms. In 1994 the agricultural companies which replaced them used 41.8% of the total area of farming lands, whereas, at the beginning of 1996 -19.4 %.

As more and more owners take back their land the farms become smaller. About half of those who take back their land register their individual farms. By the beginning of 1996 165.9 thous. inhabitants of Lithuania had obtained land for development of agricultural activity. 70.8 thous. of them have established individual farms. The average size of such farms was 7.8 and 10.1 ha (at the beginning of 1995 - 11.1 ha and 8.5 ha).

The registered private farming lands designed for agricultural activity on the farm made 32.8%, individual plots of lands - 20.9%.

Similar processes were taking place on both sides of the Lithuanian - Polish border. The total number of farming land users at the beginning of 1996 who owned or hired 259.1 thous. ha of farming lands was 60 768 (Table 3).

The largest area of land belonged to farmers: 13685 farmers had 106.4 thous. ha of land or 41.1% of farming lands. The average land area obtained for the purpose of establishing an individual farm was 8.3 ha. Most farmers (about 70%) obtained from 3 to 20 ha of land (Fig. 2; 3).

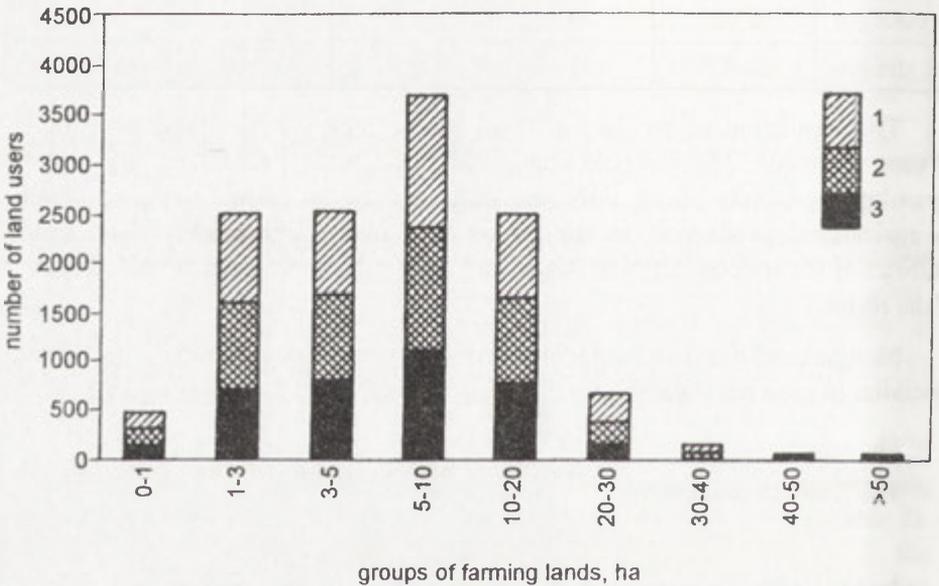


Fig. 2. Grouping according to the number of users of farming lands obtained as a private property or allowed to be obtained for the establishment of an individual farm

1 - Vilkaviškis district; 2 - Marijampolė district; 3 - Lazdijai district

133 agricultural companies rented 66.1 thous. ha of land (25.5%). The average are of land rented by agricultural companies was 486.1 ha. It was by 100 ha larger than the average value in Lithuania. The largest companies were established in the Lazdijai district: 692.1 ha on the average. However, about half of the agricultural companies had released themselves by the middle of the year.

65.8 thous. ha (25.4%) of land belonged to 31 483 people and was used as individual plots up to 3ha.

38.2 thous. ha of farming lands were not possessed, used or rented. They made 2.9% of the total area of farming lands.

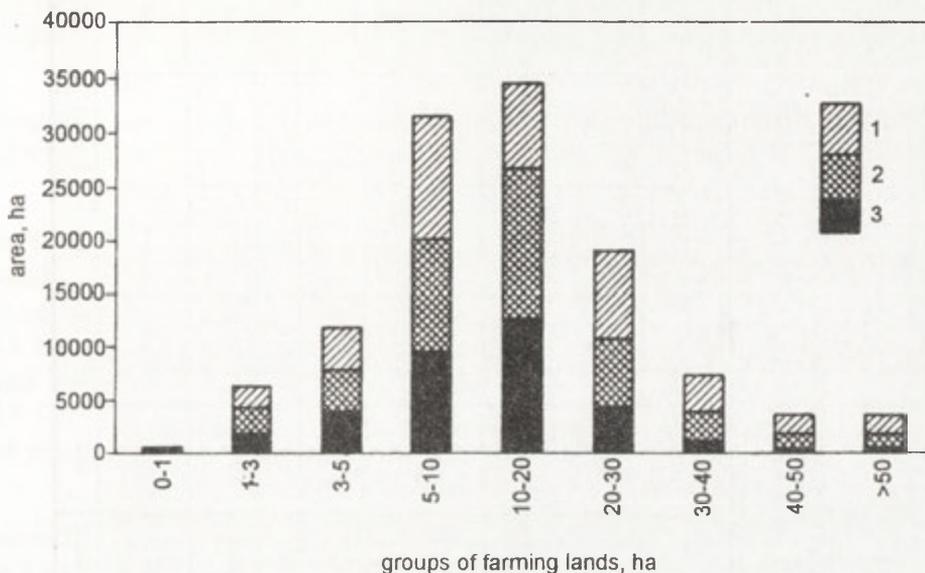


Fig. 3. Grouping according to the total area of farming lands obtained as a private property or allowed to be obtained for the establishment of an individual farm
 1 - Vilkaviškis district; 2 - Marijampolė district; 3 - Lazdijai district

1.3. The structure of crops, yields and fertility

At present about 190 thous. ha of lands in the Lithuanian - Polish border region (1994 -190.8 thous. ha, 1995 -194.9 thous. ha, 1996 -188.8 thous. ha) are occupied by crops. Crops take about 45% of the total land of the region or 72-74% of the total area of farming lands.

The area of land occupied by grain crops has been reducing during the last years. In 1994 they took 89.6 thous. ha (47% of the total land under crops), whereas, in 1996 - 78.6 thous. ha (42%). The grain crop structure includes 50-60% of barley and 20% of wheat. The Lazdijai district is characterized by the smallest areas of wheat - 8-10% of grain crops, whereas rye takes the place of wheat - 20-25% of grain crops.

Users of farming land in the Lithuanian-Polish borders region in 1996.01.01
(I - Lazdijai district, II - Mariampolė, III - Vilkaviškis district, IV - total un the region)

Groups of land users	Numbers of users				Total used area								average farm area, ha
	I	II	III	IV	I		II		III		IV		
					ha	& from the total numbers of users	ha	& from the total numbers of users	ha	& from the total numbers of users	ha	& from the total numbers of users	
Farming land	4 186	4 810	4 689	13 685	29 080.4	44.2	36 654.5	36.4	40 673.2	43.9	106.4	41.1	7.8
Land of agricultural partnerships and enterprises	26	76	34	136	17 993.9	27.3	31 271.8	31.1	16 846.2	18.2	66.1	25.5	486.0
Land of household farms (up to 3 ha)	7 758	11 911	11 814	31 483	15 961.7	24.3	25 031.2	24.9	24 844.2	26.8	65.8	25.4	2.1
Land of state farms	—	9	3	12	—	—	1 704.3	1.7	304.6	0.3	2.1	0.8	175.0
Other juridical and physical bodies	1 120	1 114	1 916	4 150	2 719.6	4.1	5 183.2	5.5	9 708.3	10.4	17.6	6.8	4.2
Land of horticulturist associations	453	6 947	3 902	11 302	55.2	0.1	755.2	0.7	348.9	0.4	1.2	0.4	0.1
Total:	13 543	24 837	22 358	60 768	65 810.6	100	100 600.2	100	92 752.2	100	259.1	100	4.3

Notwithstanding that the area in 1996 occupied by grain crops was almost the same as in 1995 their structure changed: the area of winter crops increased (139% if compared with 1995), whereas, the area of spring crops decreased (78%). This was a decision of the farmers. In earlier years wheat prevailed in farmers' crops (60-80%), whereas, in 1996 wheat occupied about 50% of grain crops.

During the last five years the average yield of grain crops in Lithuania ranged from 17.6 cnt/ha in 1994 to 30.8 cnt/ha in 1991. The average yield of wheat was 20-32 cnt/ha, rye - 15-25 cnt/ha, barley - 17-33 cnt/ha.

The average fertility of the Lithuanian - Polish border region is similar to that of Lithuania (only the yields of rye are somewhat lower). The smallest yields of grain crops were recorded in the Lazdijai district. In 1995 the average yield of grain crops in this district was 13.3 cnt/ha: wheat - 18.5 cnt/ha, rye - 13.1 cnt/ha, barley - 12.5 cnt/ha. The yields of grain crops in the Marijampolė and Vilkaviškis districts are by far larger. In 1995 they were 19.3 cnt/ha and 19.1 cnt/ha respectively. In the Marijampolė district the best yields were those of wheat - 26.4 cnt/ha, Vilkaviškis those of rye - 19.6 cnt/ha (Table 4).

The highest grain yields were recorded in the Vilkaviškis district. In 1995 it provided 64.3 thous. of grain, whereas in Marijampolė district - 54.8 thous., and in Lazdijai district - twice as little - 25.9 thousand.

In 1995 67.9% of the total yield of grain was grown in the individual farms. The individual farms also provided 45.5% of wheat, 55.0% of rye, and 85.1% of barley. The yields of grain crops in private farms are higher. In 1995 the average yield of grain crops in agricultural companies of Lazdijai district was 10.0 cnt/ha, whereas, in private farms - 14.8 cnt/ha. In the Vilkaviškis district - 18.0 cnt/ha and 19.6 cnt/ha respectively. In the Marijampolė agricultural companies the total yield of grain crops was somewhat higher than in private farms. However, this is accounted for by secondary and not main (wheat, rye and barley which occupy 90% of lands under grain crops) cultures.

Potatoes are grown in the area of 7-10 thous. ha. In 1995 the average fertility of potatoes was 128 cnt/ha, whereas in 1994 (bad year) the average yield of potatoes amounted to less than 100 cnt/ha. 99% of potatoes (as it is also in the case of Lithuania) are grown on private farms.

The areas of vegetables have been increasing in the last few years. 98% of the total amount of vegetables grown in the region come from private farms.

Among technical cultures sugar-beet should be mentioned. They take about 3% of the total area under crops in the region. They are mainly grown in the Marijampolė and Vilkaviškis districts occupying 2-3 thous. ha in each

Table 4

The average yield of agricultural crops, 1995 (centners per hectares)

Regions	Grain			Total	Sugar beet	Potatoes
	winter grain		spring barley			
	wheat	rye				
Lazdijai district						
Agricultural partnerships and enterprises	16.9	11.6	6.7	10.0	—	55.5
private and household	19.5	14.5	13.9	14.8	296.0	122.4
private farms	19.6	14.4	13.9	14.6	296.0	126.0
all farms	18.5	13.1	12.5	13.3	296.0	121.6
Mariampolė district						
Agricultural partnerships and enterprises	24.0	17.7	15.3	19.6	274.5	106.2
private and household	32.3	23.1	17.7	19.2	392.1	112.6
private farms	32.5	23.1	22.5	25.2	394.0	149.0
all farms	26.4	18.7	17.2	19.3	308.5	112.5
Vilkaviškis district						
Agricultural partnerships and enterprises	22.3	19.9	12.3	18.0	251.7	105.4
private and household	26.9	19.5	18.6	19.6	339.3	142.3
private farms	30.5	22.3	19.7	22.0	376.0	155.0
all farms	24.4	9.6	17.4	19.1	308.1	142.1
whole region	17.8	24.5	16.2	16.3	308.1	126.0
in Lithuania	18.5	24.4	17.8	16.3	284.1	128.0

of them. These districts belong to the main Lithuanian districts which specialize in sugar-beet cultivation. The average yield of sugar-beets in the region exceeds the average value over Lithuania. In 1995 it was 308.1 cnt/ha and 284.1 cnt/ha respectively. Private farms provided in 1995 58.3% of the total amount of sugar beets grown in the region. In the Lazdijai district sugar beets were grown only in private farms. The yield of sugar beets grown in the private farms of Vilkaviškis and Marijampolė by as many as 12 tons exceeds the yield of sugar beets in agricultural companies (in private farms 394.0 and 376.0 cnt/ha, agricultural

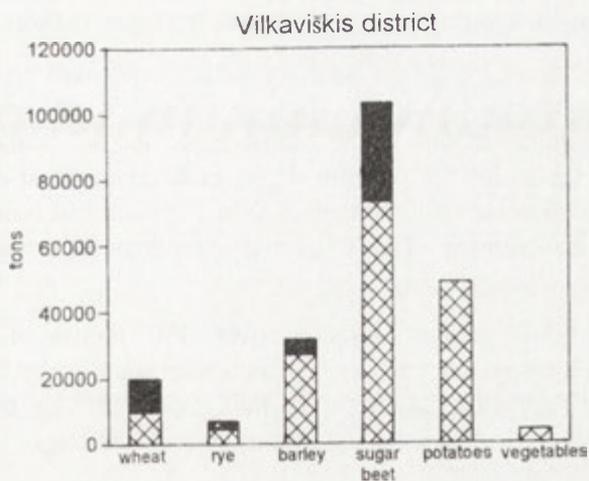
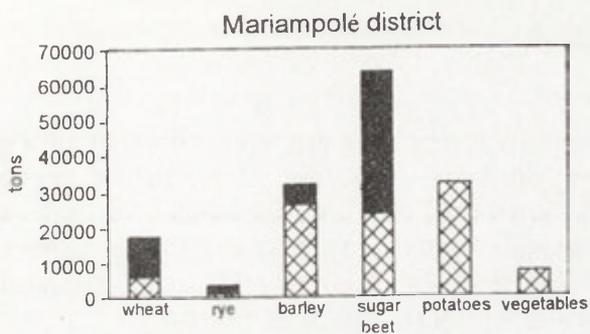
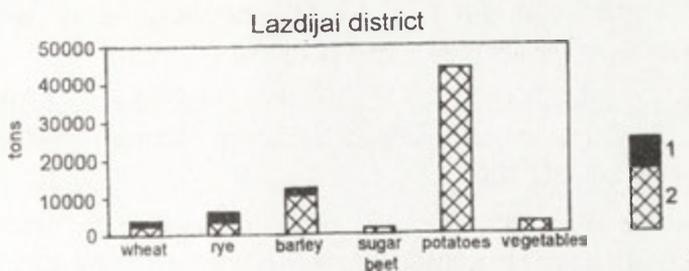


Fig. 4. Total harvest of agricultural crops, 1995

1 - agricultural partnerships and enterprises; 2 - private and household farms

companies - 274.5 and 251.7 cnt/ha). Flax which used to be grown in the Vilkaiviškis district is not grown there at present.

The largest areas of crops are occupied by forage plants - 95 thous. ha or 50% of lands under crops are occupied by forage cultures including perennial grasses and culturalized pastures.

In view that about 70% of cereals grown in Lithuania are used for forage, 12.9% of farming lands are not used, to which grasslands and natural pastures may be added, we may conclude that over 3/4 of regional farming lands are used for growing forage.

1.4. Animal breeding

Lithuania traditionally breeds dairy and meat cattle. Till 1988 about 50 % of dairy and meat products were exported. At present the number of cattle is rapidly decreasing. From 1992 till 1996 the number of cattle in Lithuania decreased two-fold (from 2197 thous. to 1065 thous.). The same can be said about the number of pigs (from 2180 thous. to 1270 thous.). The number of cows decreased from 832 thous. in 1992 to 586 thous. in 1996.

As it was already mentioned, about 3/4 of regional farming lands are used for forage growing all over Lithuania and a similar percentage of farming lands is used for forage. Thus, it is evident that animal breeding remains the main branch of agriculture, though more oriented towards the inner market.

At the beginning of 1996 96 thous. of cattle were kept in the region (9% from the total number in Lithuania). The least number of cattle was recorded in the Lazdijai district -19 thous., in the Marijampolė and Vilkaiviškis districts twice as many - 42 thous. in each of them. Cows make almost half of the cattle stock. The number of animals kept by inhabitants and agricultural companies was almost similar but the number of cows at the individual farmsteads was by 2-3 times higher than in the companies.

In 1995 the border region supplied over 100 thous. of milk, i.e. on the average 2000 kg from one cow. 75% of milk was supplied by farmers and individual persons. The yearly purchase of milk made 550 kg per capitum (the highest value was recorded in the Vilkaiviškis district - 782 kg).

At the beginning of 1996 the stock of pigs included 115.2 thous. Two pig-breeding complexes are still functioning in the Lazdijai and Marijampolė districts.

The stock of poultry makes 350 thous. The great part of it is kept by individuals. There is a poultry farm (Bukta) in the Marijampolė district with the reproduction stock of 4.5 thous. Italian geese.

In 1995 the state purchase of meat in the studied region made over 10 thous. of live weight, i.e. 56 kg of meat per capitum.

2. FISHING ECONOMY

In earlier years pond fishery in Lithuania used to receive state subsidy. The inner market of the country received over 5 thous. of fish per year. Under the conditions of free market fish-breeding depends on the possibilities to see it. In 1995 1.6 thous. tons of fish grown in ponds were sold in Lithuania (1993 - 2.8 thous. tons, 1994 - 1.8 thous. tons). In 1991-1992 many carps from Lithuanian fishing ponds were sold in Poland. However, when in 1993 Poland increased the import duty on fish this business became unprofitable. It was also unprofitable to export fish into the countries of CIS because of the low prices offered.

Pond fishing is cultivated in the studied region only by the stock company "Karpis" in Kazlu Ruda, Marijampolė district. It grows fish in ponds taking the area of 419 ha. In 1994 the catch of fish for sale amounted to 113 tons, in 1995 - 94 tons. The cost of 1 kg fish for sale was 4.3 Lt. In 1995 the company gained the profit of 59 thous. Lt.

In the Lazdijai district pond fishery has not been developed. There are many lakes in this district. In some of them industrial fishing is allowed. There are 9 enterprises in the Lazdijai district which are engaged in industrial fishing. In 1995 they caught about 10 tons of fish. The greater part of fish was caught by two enterprises, namely fishing companies „Metelys” and „Neptunas”. These both enterprises were established when the „Meteliai fishing farm” came apart.

Beside the industrial fishing amateur fishing also takes place in the region. According to the data of the Society of Hunters and Fishers in 1995 about 5 tons of fish were caught in the Lazdijai district and 4 tons in the Marijampolė district by amateur fishers.

3. FORESTRY

The total area of the forests in the Lazdijai, Marijampolė and Vilkaviškis districts makes 101.5 thous. ha. The larger part of forests - 87.3 thous. ha - are included into forest districts which are subordinate to the Ministry of Forestry. The total area of forests rented by forest districts in the mentioned districts is 98.2 thous. ha. The regional forests are managed by Veisiejai, Marijampolė and Kazlu Ruda forest districts. The Veisiejai forest district includes the Lazdijai forests, and the Marijampolė forest district includes the forests of Vilkaviškis and Marijampolė. The Kazlu-Ruda forest district does not border on the Lithuanian-Polish border, therefore, it will not be discussed.

The total area of Veisiejai forest district makes 56.7 thous. ha. It is divided into 12 smaller units. The largest forest tract is represented by the Kapčiamiestis woods which takes the area of 26.9 thous. ha. These woods stretch till Augustavas on the other side of the border. The Veisiejai forest district includes 37 forest tracts. They are predominated by pine forests - 82%. Spruce forests (most in the northern part) take 7% of the area. Most trees are middle-aged. They take 48% of the stands.

The annual timber supplies from the Veisiejai forest district made 57.5 thous. m³. In the last years however many trees were damaged by pests. For this reason in 1995 75.7 thous. m³ were felled.

Secondary forest products, such as berries and mushrooms, play an important role in the Veisiejai forest district. The area of their continuous habitats amounts to 531.2 ha. The exploitation yield makes 37.7 tons per year. The total area of berry plants is 6562 ha. Their exploitation yield - 47.2 tons. The yield of mushrooms reaches 80-100 kg/ha. The buying station in Stalai purchases 6-8 tons of mushrooms per year. In recent years the firms „Varengrybas” and „Hesona” established many buying stations.

On the one hand the abundance of berries and mushrooms increases the recreational value of the territory. On the other hand, this contributes to the forests' devastation. Berries and mushrooms are picked and gathered not only by locals but also by inhabitants of neighbouring districts. To some locals this activity is a seasonal source of income. However, there are people to whom picking berries and gathering mushrooms is the only source of living. The request of July 1996, revealed that during the season (1-2 months) one has the possibility to earn on the average 30-50 Lt. per day.

The Marijampolė forest district manages the territory of 27.0 thous. ha in the Vilkaviškis and Marijampolė districts. It has 10 subdivisions. Spruce forests

prevail - 31.4%, birch forests take 23.8%, alder forests - 20.2% of the total area. Middle-aged stands prevail - 48.7% - 56.8% of stands are productive (I-II degree of quality).

The considered forest district used to supply 54.6 thous. m³ of timber. In 1995 the supplies made 103.4 thous. m³ including 54.3 thous. m³ of decaying spruce. Thus, over a half of timber was composed of spruce. The areas of spruce forests are rapidly diminishing.

Berries and mushrooms do not abound in the Marijampolė forest district. They meet only the local needs.

Concluding we may say that in the Marijampolė and Veisiejai forest districts the average yield of timber used to be 112 thous. m³, in 1995 -178.9 thous. m³. The forest felling increased up to 159%.

4. HUNTING ECONOMY

The hunting economy is managed in Lithuania by the Ministry of Forestry. The hunting quotas and the abundance by the rules is controlled by the Ministry of Nature Protection. The largest hunting areas are rented from owners and managers by hunters' and fishers' circles.

In 1995 these circles have rented in the Lazdijai, Marijampolė and Vilkaviškis districts about 2632 thous. ha of hunting areas (60% of the total territory of the region) including 55 thous. ha of forests (54% of the total area of forests).

Commercial hunting areas designed for professional hunting were in the authority of the Ministry of Forestry: 8.4 thous. ha in the Veisiejai forest district and 2.7 thous. ha in the Marijampolė forest district.

The economically tolerable density of ungulate animals is calculated for every forest district. Such density guarantees the least loss to the forestry and a possibly rational exploitation of hunt animals' populations. The mentioned density is calculated taking into consideration the distribution of stands and supplies of feed. In the Veisiejai forest district the allowed density of following hunt animals is: elks - 1.5 sp./1000 ha, deer - 1.5 sp./1000 ha, roe - 16.4 sp./1000 ha, boar - sp./1000 ha. In the Marijampolė forest district - 3 sp./1000 ha, 4 sp./1000 ha, 9 sp./1000 ha and 5 sp./1000 ha respectively.

According to the records of 1995, there were 108 elks, 565 deer, 3145 roes and 1033 boars in the region.

The number of elks has considerably decreased in recent years. In 1990 in the Lazdijai district alone there were 124 elks. Their hunting rate in 1991-1993 was 40 elks per year on the average and 21 elks since 1994. However, in 1995 the number of elks in the Lazdijai district was hardly 50, whereas their allowed number was 82. In 1995 Elks were not hunted in the Lazdijai district at all.

The number of other ungulates still exceeds the economically tolerable quota but it is gradually reducing. During the cold winter of 1995-1996 the number of roes considerably reduced and for this reason they will not be hunted in 1996-1997.

In 1995 in the areas rented by hunters' and fishers' circles of Lazdijai, Marijampolė and Vilkaviškis districts 48 deer, 352 roes and 313 boars were hunted. In the commercial hunting areas of Veisiejai and Marijampolė districts 69 deer, 381 roes and 424 boars were hunted.

Under the conditions of changing land management, decreasing area of cultivated fields, increasing area of wastelands the number of hares and predators (wolves and foxes) has increased. In 1995 there were 8.6 thous. hares, 17 wolves and 979 foxes in the region. The number of hares and predators increased during the last five years by 2-4 times.

In 1995 the Ministry of Forestry gained 1370 Lt. from the Veisiejai commercial hunting areas, and 28.4 thous. Lt. from the Marijampolė forest district.

Among other hunt animals of the considered region we can mention minor ungulates, predators and fur animals (martens, minks, beavers, musk-rats, lynxes, squirrels) and birds (gees, ducks, heath-cocks, pheasants, partridges, etc.).

REFERENCES

1. *Lietuvos respublikos žemės fondas 1996 m. sausio 1 d.*, 1996. Valstybinė žemėtvarkos ir geodezijos tarnyba prie Žemės ūkio ministerijo, Vilnius.
2. *Lietuvos respublikos žemės ūkis 1994. Agriculture in Lithuania 1994, 1995.* Statistikos departamentas prie Lietuvos respublikos vyriausybes Vilnius.
3. *Lietuvos žemės ūkis, Agriculture of Lithuania.* 1995. Valstybinis leidybos centras Vilnius.
4. *Marijampolės miškrų ūkio organizavimo ir išvystymo projektas 1990-1999 metais*, 1990, Lietuvos miškotvarkos imone Kaunas.

5. *Miškru ūkio įmonių 1995 m. gamybinės veiklos rodikliai*, 1996, Miškų ūkio ministerija, AB "Unksna" Vilnius.
6. *Pasėliai 1996 m. derliu' (pava. sarines sejos duomenys)*, 1996, Statistikos departamentas prie Lietuvos respublikos vyriausybės Vilnius.
7. *Traktoriru, žemes ūkio mašinų skaičius ir energetiniai pajėgumai žemės ūkyje 1995 m.*, 1996, Statistikos departamentas prie Lietuvos respublikos vyriausybės Vilnius.
8. *Ūkininkru ūkių veiklos rodikliai 1995*, 1996, Statistikos departamentas prie Lietuvos respublikos vyriausybės Vilnius.
9. *Veisiejų mšku urėdijos miškotvarkos projektas 1991-2000 m,m*, 1991, Lietuvos miškotvarkos įmonė Kaunas.
10. *Gemes ūkio kultūru pasėliai, derlius ir derlingumas 1995 metais*, 1996, Statistikos departamentas prie Lietuvos respublikos vyriausybės Vilnius.

Geopolitical Studies

1 - Polska granica wschodnia, 1997. - Marcin Rościszewski

2 - The Polish-Lithuanian border region. Research problems and scientific co-operation, 1997.

PL.-ISSN 1429-009X

<http://rcin.org.pl>