

# Changes in Administrative Borders and Their Stability in Lubelskie Region in 1949–2010

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## Abstract

*The article presents the problem of changes in administrative borders in the Lubelskie region throughout the past 60 years, since the end of World War II. In this period Poland experienced four major reforms that transformed the system and structure of administrative division. In five periods between the reforms there were also certain minor changes along the national borders. The analysis of changes was primarily based on cartographic materials presenting the administrative divisions, which allowed for efficient analyses of the border routes. Using the archive maps the authors prepared analytical maps from 8 temporal perspectives. Consequently, synthetic maps presenting all the observed changes in voivodship (Polish: województwo), county (Polish: powiat) and commune (Polish: gmina) borders were drafted. Such materials were the base for preparing the final maps illustrating the stability of the border routes between voivodships, counties and communes. The analyses of the materials allowed number of conclusions to be drawn. Firstly, the borders of Lubelskie Voivodship are relatively stable, particularly the fragments which run along the Vistula and the Bug Rivers. In the case of county borders, their permanence is much lower. At the lowest level of administrative division, variability is the highest, yet the share of permanent borders reaches 40%. Generally, it can be stated that the higher the level of administrative division, the higher the stability of borders. The present article may constitute a basis for further research on the causes and effects of borders between administrative units. Along with the analysis of border permanence, another problem that the authors addressed is the method of linear presentation of object changes. In order to analyse border changes effectively, the authors propose an indirect presentation of border stability by showing the stability of the area marked within these borders. Such a device substitutes the troublesome analysis of overlapping linear structure with an analysis of a clearer image of stability, presented with contour lines.*

## Introduction

Territorial division of a terrain is a device that is used all over the world, regardless of the level of economic and social development or political system. Descriptive and cartographic (delimitation) definition of borders and their marking of the territory (demarking) give the foundations for sharing competences, both at national and regional level. Every administrative division is a sort of regionalisation, which considers a number of various factors, such as geographic, social, economic, political and historical conditions. Characteristic features of regionalisation, which is defined in the aforementioned way, include its hierarchicity and completeness. This implies that the administrative division is multistage (administrative regions are divided into smaller, subordinate territorial units) and covers the territory of the entire country (without exceptions).

The delimited borders have a significant influence on the development of countries and their parts. On the one hand, a border is a type of spatial barrier, which separates different areas, on the other hand, it is the element that binds the enclosed lands, which belong to one territorial unit. In this context, border stability is a very important feature. The reasons for changes in administrative borders may be distinguished. At the level of changes in national borders, their corrections and significant changes are mostly caused by international military conflicts. Changes of internal borders are most frequently (yet not always) made peacefully, even though it is a more complex process in terms of organisation. Internal division depends primarily on the administrative model

that a given country adopts. For instance, in France the division is permanent, with only minor changes since the French Revolution, whereas, after World War II in Poland, there were a few large scale reforms while minor corrections are implemented yearly.

Borders enclose the range of areas which, depending on the level of delimitation constitute more or less distinctive political, social and economic organisms. In this context, borders are the objects of interest for political geography, or more generally, socio-economic geography. The authors of most works on borders, emphasise the fact that frequent changes of borders are not favourable for the development of different spheres of our lives (Suliborski 1994; Bačvarov and Suliborski 2002; Miszczuk 2003). This primarily concerns the border regions as they most often change their territorial status. These changes hinder the development of durable spatial bonds and generate expenses on organisational changes aimed at adapting to new legal and administrative conditions, rather than on local development. Social and psychological conditions are also relevant. Each change of territorial belonging means that the inhabitants of a given territory need some time to get used to the new situation and develop new habits.

Apart from serious social, economic and political effects, border changes generate cartographic and statistical implications, which are frequently marginalised or ignored. For many researchers and analysts, geographers in particular, they are onerous because such situations hinder the ability to contrast changes which are expressed in the basic fields, enclosed in the changing administrative borders (Mościbroda 1999). This leads to serious setbacks in analysing the development of population, social, economic and political phenomena, and consequently the knowledge on socio-economic trends is less precise. Such a situation may result in failures to make optimal decisions, or even in mistaken decisions at all levels of public administration. This contributes to inhibiting the development of the entire country and individual regions.

## 1 The aim and area of interest

The aim of the present work is to define changes in borders of administrative units in Lubelskie region after World War II. Then the authors attempt to define which borders can be considered stable and determine whether the fact of basing borders on characteristic elements of geographic environment, which are available in Lubelskie, influences their permanence. Apart from voivodship<sup>1</sup> borders, the borders at lower administrative levels—counties and communes—have been analysed. At its foundations, the work is limited to define the changes without investigating the causes and effects they generate, because the literature on this topic is quite rich (Dziewoński 1967; Piskozub 1987; Chojnicki and Czyż 1993; Koter 1993; Szul 1993; Zawadzka 1993; Miszczuk 2003). The present article is an attempt to draw attention to the problem of administrative border instability in order to suggest more careful approach to future corrections and their routes. This is significant from the point of view of regional consolidation and local units as well as for efficient management in Lubelskie region (Janicki and Łucjan 2009).

As the work concerns Lubelskie region, it is necessary to define the territorial range of the area. Difficulties in completing the task result from the existence of a few definitions which are contemporarily associated with Lubelskie. One may mention a physio-geographic unit, which is the Lubelska Upland, the pre-partition Lubelskie Voivodship, *gubernia* from the partition period and finally, the Lubelskie Voivodship of the interwar period. In the present work the term Lubelskie region is of dynamic character, and its range changes with the administrative changes of Lubelskie Voivodship. Thus, the term covers the area of Lubelskie Voivodship within the changing borders from 1949–1975 (the same borders functioned in the 1975–1999 period) and contemporary Lubelskie Voivodship, as established in 1999.

## 2 Changes in administrative divisions in Lubelskie region

A country's administrative division splits the territory into smaller units (administrative regions), which are then divided into smaller ones. This hierarchical structure is aimed at facilitating power

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1. [Voivodship—Polish administration region on the NUTS 2 level—Ed.]

execution by central authorities (Bačvarov and Suliborski 2002). Moreover, every form of administrative division should generate the best possible conditions for economic development, respect regional diversity, maintain well-developed spatial relations and local cultural and historical traditions in meeting residents' expectations, which will contribute to reinforcing a country's cohesion (Suliborski 1994). The method of dividing the state into smaller units results from a country's territorial system and influences the division of competences, rather than the route of borders. When defining the administrative areas, a number of legal, administrative, social, economic, historical and geographical conditions are taken into consideration. For this reason, the task is difficult to complete. In the case of Poland the difficulties grow as the abovementioned criteria overlap with historical disturbances related to the loss of independence, imposing foreign patterns of management, border changes and political system. The complexity of a good form of regionalisation is evident in the controversies that arose between 1989 and the introduction of 1999 administrative reform when 26 different concepts of new administrative division fragmented the situation. (Jałowiecki 1996). After the implementation of the reform, the number grew to 54 in 1999 (Miszczuk 2003).

After World War II the interwar administrative division was restored for a short period of time (DzU z 1944 r. nr 2, poz. 8). It was a temporary solution, as the change of Poland's borders was one of the effects of World War II—Poland lost part of the territory in the east and gained the lands in the north and west. In Lubelskie region a few major administrative changes took place as early as in 1945–1950. Tamoszyn commune, which had been part of Lwowskie Voivodship was included in Lubelskie Voivodship on 7 June 1945. Janowski County was dissolved and Kraśnicki County was established (the name and capital city were changed). Yet, the most important administrative event of the period was the decree dated 6 October 1948 which transferred Siedlecki County from Lubelskie Voivodship to Warszawskie Voivodship as of 1 January 1949. The city of Łęczna was also moved from Lubartowski County to Lubelski County.

On 31 December 1949 Lubelskie Voivodship contained: the land at the Bug River, Tamoszyn Commune and the surrounding communes, which currently belong to Ukraine, Krzeszów Commune which neighbours the San River, Huta Krzeszowska (today's Harasiuki Commune) and Zaklików Commune, which belong to Podkarpackie Voivodship and Hołowczyce Commune, today part of Sarmaki Commune (northwards from Biała Podlaska), which is presently part of Mazowieckie Voivodship. On the other hand in 1949–1950 Lubelskie Voivodship did not cover the land westwards from Puławy and the Vistula River (including today's Janowiec Commune) and the entire Rycki County.

Lubelskie Voivodship of that time was divided into one *grodzki* (urban) county (the city of Lublin) and 14 *ziemski* (rural) counties: Bialski, Biłgorajski, Chełmski, Hrubieszowski, Krasnostawski, Kraśnicki, Lubartowski, Lubelski, Łukowski, Puławski, Radzyński, Tomaszowski, Włodawski and Zamojski, which were divided into 239 communes.

In 1950–1954 the most important change was the regulation of the border between Poland and the USSR. On 12 November 1951 Poland gave the north-eastern part of Hrubieszowski County and eastern part of Tomaszowski County, called the "Bug river knee" to the USSR, where geologists had discovered rich deposits of coal (in 1953 coal output reached 15 mln tons). The area that was given to the USSR (upon Poland's request) covered Krystynopol, a significant part of Chorobród Commune (the remaining part was included within Dołhobyczów), and part of Wareż (the name was changed to Hulcze), Bełz (the name was changed in Chłopiatyń), Tamoszyn (the name was changed to Ulhówek), Uhnów (the name was changed to Machnów) and Dołhobyczów communes (Jasiński 2011; Sienkiewicz 2012). Apart from that, there were the villages of Kępa Gostecka and Kępa Solecka (presently again in Lubelskie Voivodship, Łaziska Commune) and the vicinity of Werchrata village (presently, Horyniec-Zdrój in Podkarpackie Voivodship). It was also when Chełm (1951.04.13) and Zamość (1952.07.01) obtained the status of county-cities. The most important changes between the counties was the transfer of Gardzienice village and the vicinity of Krasnostawski County (Rybczewice Commune) to Lubelski County (Piaski Commune). The new commune of Krasienin was also made of Samokłęski and Niemce communes (Lubartów County). The new city of Kraśnik Fabryczny was also established.

A significant change of administrative borders, which was fortunately not implemented, was the correction of the Polish-USSR border, scheduled for November 1952. Poland intended to give the USSR the area of c.a. 1300 km<sup>2</sup> excluded from Tomaszowski and Hrubieszowski counties (including the city of Hrubieszów). The border was to run from Korytnica via Annopol, Podhorce, Werbkowice, Łaszczów, Rzeczyca to Kornie. The plan could not be completed, mainly due to Joseph Stalin's death (Jadczak 2000).

In 1954 Lubelskie Voivodship was still divided into 14 rural counties, yet the number of grodzki (urban) counties increased and included: Bialski, Biłgorajski, Chełmski, Chełm, Hrubieszowski, Krasnostawski, Kraśnicki, Lubartowski, Lubelski, Lublin, Łukowski, Puławski, Radzyński, Tomaszowski, Włodawski, Zamojski and Zamość. Within the counties there were 238 communes (a decrease of one).

In 1954 there were a number of administrative changes in Lubelskie Voivodship. The most important one was the abolition of communes and the establishment of *gromada* (the smallest administrative unit). Gromadas were much smaller by definition—they were developed by dividing former communes (*gmina*) or by selecting the territory from a number of previous communes. Another important change, which considered voivodship borders, was including the land westwards from Puławy and the Vistula (the vicinity of Góra Puławska and Janowiec). Moreover, a number of minor changes were also implemented along the voivodship border (concerning the gromada reform) – such as inclusion of part of former Potok Górny Commune (Biłgorajski County). The largest change concerning counties was the establishment of two new counties on 13 November 1954: Opolsko-Lubelski and Parczewski. Opolsko-Lubelski County was separated from Puławski County, whereas Parczewski County covered parts of Radzyński and Włodawski counties. Among the changes in borders between the existing counties one should mention the transfer of the large Tereszpol Commune from Zamojski to Biłgorajski Commune and the transfer of Ostrów Lubelski and its vicinity from Włodawski County to Lubartów County. Additionally, due to transformation of communes into smaller gromada there were also some minor corrections of county borders.

In 1955 Lubelskie Voivodship was divided into 16 rural counties and 3 grodzki (urban) counties: Bialski, Biłgorajski, Chełmski, Chełm, Hrubieszowski, Krasnostawski, Kraśnicki, Lubartowski, Lubelski, Lublin, Łukowski, Opolsko-Lubelski, Parczewski, Puławski, Radzyński, Tomaszowski, Włodawski, Zamojski and Zamość. Within the counties there were 732 gromadas.

The initial high number of gromadas decreased with time. In 1965 the number fell to 40% of its initial (1955) number and by 1972 by another 60%. Consequently, the number of gromadas in 1972 was higher than the number of communes in 1954 by ca. 25%. The process seems to show that a commune (or an administrative unit that has a similar size to the original commune) is a natural unit of administrative division. Regardless of the initial number of territorial units, their form aims at having the nature of a commune.

Important change at voivodship level concerned the exclusion of a few gromadas around Krzeszów, which were included within Rzeszowskie Voivodship on 1 January 1956, and a few gromadas in Hołowczyce's vicinity which were included within Warszawskie Voivodship. On 1 January 1956 three new counties were established: Bełżycki, Bychawski and Janowski. On 1 January 1958 Radzyński County obtained the city of Kock and its vicinity including Łysobyki (today's Jeziorzany) village and its vicinity, at the expense of Łukowski County and Czemierniki village with its vicinity at the expense of Lubartowski County. The south-western border of Radzyński County was formed on the Rivers Wieprz and Tyśmienica. Another important change was the inclusion of Uścimów (westwards from Ostrów Lubelski) and its vicinity to Parczewski County, at the expense of Włodawski County, which took place on 1 January 1957. Apart from that, there were a number of changes in county borders (including Lublin), especially in the 1957–1961 period.

In 1965 Lubelskie Voivodship was divided into 19 rural counties and 3 grodzki (urban) counties: Bełżycki, Bialski, Biłgorajski, Bychawski, Chełmski, Chełm, Hrubieszowski, Janowski, Krasnostawski, Kraśnicki, Lubartowski, Lubelski, Lublin, Łukowski, Opolsko-Lubelski, Parczewski, Puławski, Radzyński, Tomaszowski, Włodawski, Zamojski and Zamość. Within the counties there were 407 gromadas.

The period between 1 July 1965 and 1 June 1975 was dominated by as many as two fundamental administrative reforms. Firstly, on 1 January 1973 it was decided that gromadas would be abolished and communes will be restored. However, due to the break in functioning of the communes and frequent administrative changes at that time, new administrative borders did not correspond to the borders from before 1954. Additionally, 1 June 1975 was scheduled as the date of introducing the administrative reform that abolished the county level and divided large voivodships into smaller ones. Lubelskie Voivodship was divided into four smaller ones: Lubelskie, Chełmskie, Zamojskie and Białskopodlaskie. Part of the former voivodship was included within Tarnobrzeskie and Siedleckie voivodships. Moreover, a majority of former Rycki county was included within Lubelskie Voivodship and the majority of former Łosicki county within Białskopodlaskie Voivodship. Both counties belonged to Warszawskie Voivodship in the past.

After the 1973 reform the gromadas were transformed into 226 communes. In 1974 the communes which belonged to the large Lubelskie Voivodship were shared between six new voivodships: Lubelskie, Chełmskie, Zamojskie, Białskopodlaskie, Tarnobrzeskie and Siedleckie.

The years 1975–1989 were virtually the period of liquidating some communes, restoring others and establishing new ones. The largest number of changes took place in 1976. Communes Biszcza, Obsza, Tarnawatka, Terespol, Wrzelowiec, Wysokie (Zamojskie) and Zawada were abolished. On 1 January 1982 other ones were restored: Biszcza on 1 October, Obsza and Tarnawatka. In 1984 Terespol commune was restored and other new communes were established: Kamień, Markuszów and Rossosz. Additionally, two urban communes were established: Józefów and Tarnogród. The urban commune of Kraśnik Fabryczny was dissolved and the city was included within Kraśnik. The only change at voivodship level concerned the transfer of a small plot of land from Białskopodlaskie Voivodship (Ulan-Majorat Commune) to Siedleckie Voivodship (Łuków Commune).

Despite significant changes at commune level, there were 227 communes in 1989 (i.e., only one more than in 1975).

In the 1989–1999 period the largest number of administrative changes concerned some urban communes and their merges with rural communes. On 1 February 1991 the following urban communes were abolished: Bełżyce, Józefów, Kazimierz Dolny, Kock, Nałęczów, Ostrów Lubelski, Poniatowa, Tarnogród and Zwierzyniec. On 1 January 1992 other communes were dissolved: Bychawa, Janów Lubelski, Łęczna, Opole Lubelskie, Parczew, Ryki, Stoczek Łukowski (restored on 1 January 1998) and Szczepieszyn. Moreover, on the same day two new rural communes were established: Aleksandrów and Bełżec.

On 1 January 1999 a thorough reform of administrative system was implemented. As a result large voivodships and counties were restored with the new competence of administrative units. In comparison to Lubelskie Voivodship from before 1975, new Lubelskie regained Rycki County (except for Kłoczew Commune, its lands belonged to small Lubelskie Voivodship in 1975–1989) which was restored. On the other hand, two other communes which had been part of old Lubelskie and then Tarnobrzeskie Voivodship were not within the new Lubelskie Voivodship—Zakliów and Harasiuki communes. The restored counties, nearly all which had been in Lubelskie before 1975, except Bełżycki and Bychawski, were re-established (most of their area was in new Lubelski County). Two new counties were established: Świdnicki and Łęczyński. The borders of other new counties reflected the borders of the previous units to a large extent, yet there were a few differences. Grodzki counties were also re-established: Lublin, Chełm and Zamość as well as a new one was created—Biała Podlaska grodzki county.

In 1999 new Lubelskie Voivodship had 20 rural counties and 4 grodzki (urban) counties: Bialski, Biała Podlaska, Biłgorajski, Chełmski, Chełm, Hrubieszowski, Janowski, Krasnostawski, Kraśnicki, Lubartowski, Lubelski, Lublin, Łęczyński, Łukowski, Opolski, Parczewski, Puławski, Radzyński, Rycki, Świdnicki, Tomaszowski, Włodawski, Zamojski and Zamość. The counties were divided into 213 communes.

In the 1999–2010 period, the largest administrative change was the transfer of Rejowiec Commune from Krasnostawski to Chełmski County. At voivodship level, on 1 January 2005 Kępa Gostecka and Kępa Solecka were moved to Lubelskie Voivodship by including them within Łaziska Commune (Opolski County), which formed the voivodship border on the Vistula River along this

area. Moreover, there were a few minor changes in commune borders—the urban communes of Dęblin and Międzyrzec Podlaski and rural commune of Bełżec enlarged their areas.

As in 1999, in 2010 Lubelskie Voivodship was divided into 20 rural counties, 4 grodzki counties and 213 communes.

The above-presented changes in the routes of the borders across the period of 1949–2013 provide a definition of five periods that result from significant reorganisation of spatial structure of the country:

- the 1945–1954 period (large voivodship with counties and communes)
- the 1954–1973 period (large voivodship with counties and gromadas)
- the 1973–1975 period (large voivodship with counties and communes)
- the 1975–1998 period (small voivodships with communes, no counties)
- the 1999–2010 period (large voivodship with counties and communes)

Between the listed periods four major reforms took place: on 1954.09.28—abolishing communes and establishing gromadas, on 1973.01.01—abolishing gromadas and re-establishing communes, on 1973.06.01 abolishing communes and dividing large voivodships into smaller ones, and the fourth of 1999.01.01.

### 3 Administrative border stability in Lubelskie region

The tools that are helpful in defining the changes of borders and the level of their stability include the source materials, such as maps, the legislative acts that define new administrative divisions and scientific publications. Undoubtedly, the most appropriate source for spatial analyses are maps, as they are the basic material used for delimiting and present the information about the route of borders in a comprehensive way. Therefore, the present work is based primarily on maps and considers other sources as supplementary materials. In order to illustrate the route of borders in Lubelskie, the authors decided to use maps from eight temporal perspectives, so that two maps fall into one period between the reforms. The selection was a compromise between capturing the most important changes, and the accessibility and quality of cartographic materials, especially from the beginning of the discussed period. The authors dispensed with analysing the shortest period between 1973 and 1975 because the temporally closest maps from before and after the period duplicated the voivodship, commune or county borders. Consequently, the maps did not bring any new information. The selected maps presented the following territorial divisions:

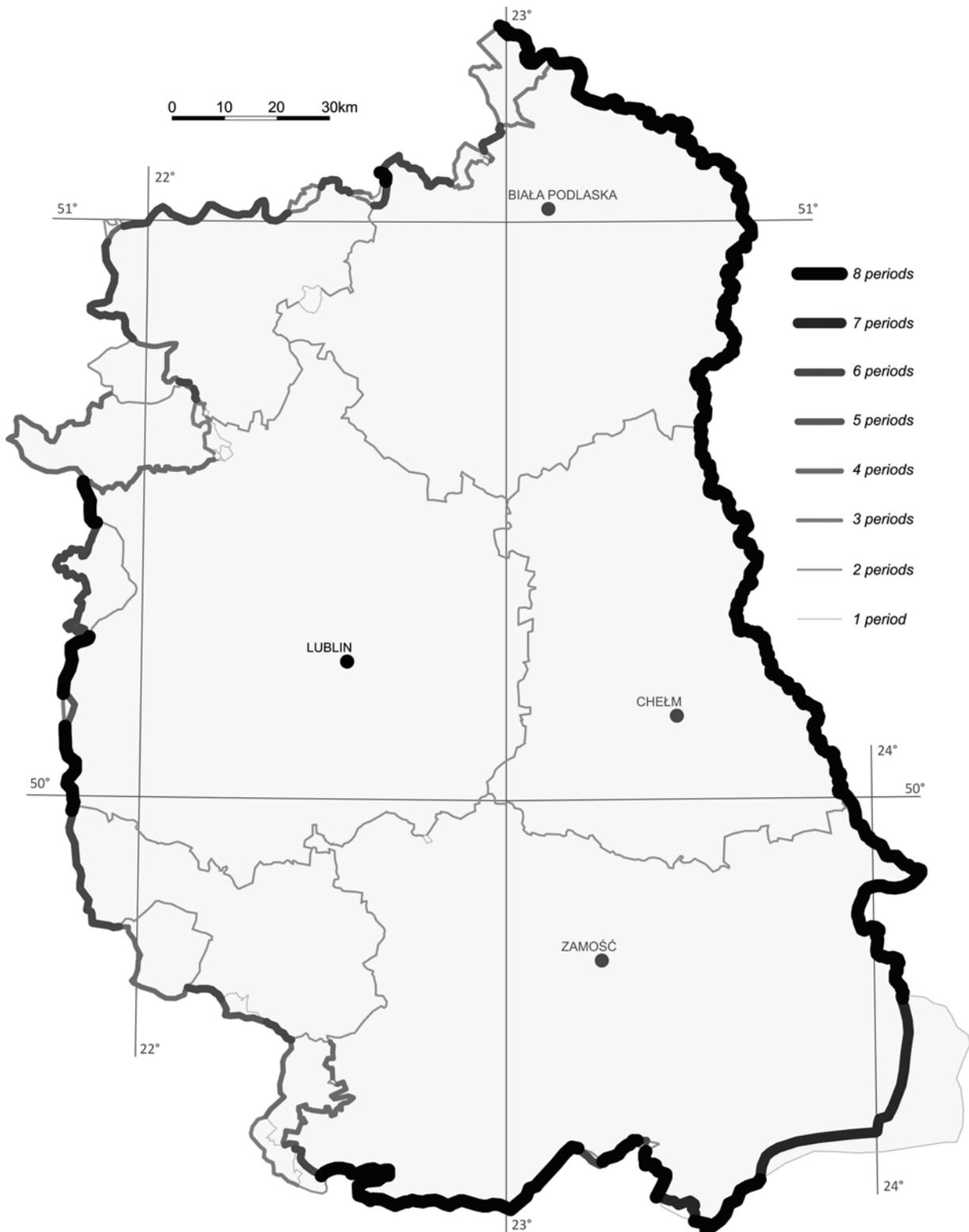
- Poland—administrative map; Polska – mapa administracyjna 1 : 1 000 000, Główny Urząd Pomiarów Kraju, Warszawa 1950. (1949.12.31)
- Lubelskie Voivodship Map; Mapa województwa lubelskiego 1 : 300 000, CUGiK PPWK, Warszawa 1954. (1954.01.01)
- Poland—administrative division; Polska – podział administracyjny 1 : 1 000 000, 1955. (1955.01.01)
- Lubelskie Voivodship Map; Mapa województwa lubelskiego 1 : 300 000, PPWK, Warszawa 1965. (1965.07.01)
- People Republic of Poland—administrative map; Polska Rzeczpospolita Ludowa, mapa administracyjna 1 : 750 000, PPWK, Warszawa, 1975. (1975.06.01)
- People Republic of Poland—administrative map; Polska Rzeczpospolita Ludowa, mapa administracyjna 1 : 750 000, PPWK, Warszawa–Wrocław, 1989 (1989.01.01)

All the maps were rectified to a single equal-area coordinate system in an ArcGIS 10 program with the second order polynomial method. This was digitized to the vector format. It was very important that borders were created in the same cartographic generalization degree. On the basis of the presented materials, the authors drafted maps of border permanence presenting the changes of commune, county and voivodship range. For this purpose, a method of linear signatures was used, where the most stable border was marked with the thickest red line. Due to difficulties in presenting different line thickness, the presentation used different shades of colour with the most stable border marked with the most intensive shade. The largest level of border permanence was recorded when its route repeated in all the temporal perspectives. Analogically, the least stable

borders were the ones that were recorded in only one period. In the case of voivodship border, 8 situations were considered, whereas for counties and communes—6 situations, due to the break in their existence in 1975–1999 period.

The analysis of the map presenting the permanence of the voivodship border in the post-war period (map 1) leads to a conclusion that the most stable borders are the ones founded on the Bug and Vistula Rivers. Neither did the southern border undergo any major changes. The above-mentioned fragments of border, usually based on rivers, are relatively permanent with only short

**Map 1.** Permanence of Lubelskie Voivodship border in 1949–2010 period



elements changing their route (a maximum twice). The north-western border appeared less stable around Łuków and Międzyrzec Podlaski, where at least two corrections took place. The south-western part of the border around Janów Lubelski was characterised by even higher level of changeability. The most frequent changes were recorded for the fragment of border near Zaklików and Krzeszów and in the north fragment in the vicinity of Konstantynów.

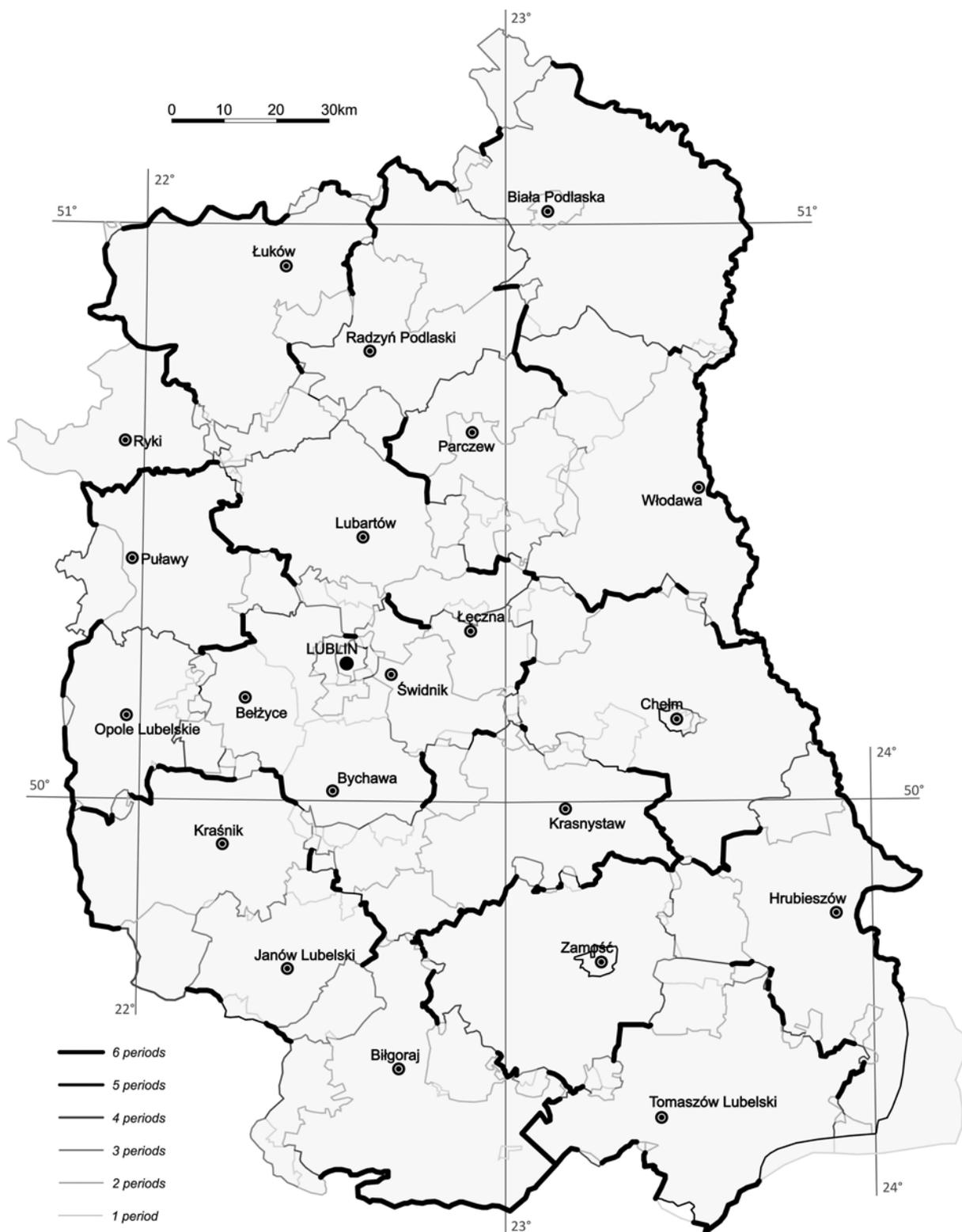
In the entire analysed period, the length of unchanged borders constituted only 25% of the total length. The largest length (ca. 40%) was made of the fragments which existed in only two periods. The comparison of percent indicators leads to the conclusion that the borders of Lubelskie Voivodship were not very stable. Such a result was caused by the fact that in the 1975–1999 period 4 smaller voivodships existed in the territory of the large Lubelskie Voivodship (from before the reform of 1975). Smaller units had different shapes and areas than the original voivodship. Additionally, they “artificially” increased the length of the borders, which influenced their share in the results of the analysis. Considering the above conditions it seems justified to exclude the data concerning the 1975–1999 period. With such a modification of the assumptions, the borders of Lubelskie Voivodship manifest much higher permanence—the length of stable borders exceeds the length of unstable ones.

In the case of counties, three periods of changes can be distinguished up to 1975 (Ćwik and Reder 1977). The first one starts in 1945 and lasts until 1954, when the borders from before 1939 are consolidated. The second one covers the period 1954–1961 and is characterised by significant changes—5 new counties were established. The third one starts in 1961 and ends in 1975, when the borders got stabilised. Presently, the fourth and fifth period can be added. The fourth covers the time when counties did not exist in the period between 1974 and 1999, and the fifth one concerns the counties’ restoration in 1999.

The permanence of county borders is presented in a synthetic map (map 2). The analysis reveals that the longest stable border was the one enclosing Puławski County from the north, which was based on the Wieprz River. Its permanence might be influenced by the fact that before 1975 it was also a voivodship border which originated in pre-war administrative divisions. Equally stable was the border between Krasnystawski and Zamojski counties. Only a few of its fragments were changed. A similar situation occurred on the border between Biłgorajski and Tomaszowski counties, Kraśnicki and Opolski (before 1961 the area was part of Puławski County). Other counties also have unchanged fragments of their borders, yet they are shorter and more scattered.

The largest number of changes in the routes of borders concerned Lubelski County. Immediately after the war the area of the county was dense and its borders resembled the shape from the period of the partition of Poland. After 1956 Bełżycki and Bychawski counties were established. The change was reversed in 1999 by giving the areas back to Lubelski County, but it was also then that Świdnicki and Łęczyński counties were established. Lack of stability is also characteristic for the Lublin county, which expands at the expense of Lubelski County along with the development of the city. A large number of changes in the route of borders were also recorded between the Opolski (sectioned off Puławski County) and Bełżycki (presently, Lubelski County) counties and between Włodawski and Parczewski counties, Lubartowski, Radzyński and Łukowski counties as well as Zamojski, Hrubieszowski and Krasnostawski counties. Analysing the county borders’ permanence in terms of numbers, one can notice that only c.a. 25% of their length are stable fragments. The largest group (30%) are the borders which were unstable and were recorded in only two periods. Concluding, it should be stated that county borders are characterised by a low permanence level over the last 60 years.

Analysing the permanence of commune borders (map 3) one can state that permanent borders are evenly distributed in Lubelskie region. Yet, the areas where the level of permanence is lower or higher than the voivodship average can be shown. The most stable borders are characteristic for Kraśniczyn commune near Krasnystaw. In the case of this commune, no changes were recorded in the analysed periods. Apart from the above-mentioned commune, the most stable borders were recorded in the communes located between Biała Podlaska and Włodawa: Hanna, Podwórze, Sosnówka and Wisznice. Niedźwiada near Lubartów also had stable borders. Relatively stable were also the borders in Żyrzyn and Baranów and the communes in Rycki County. The lowest

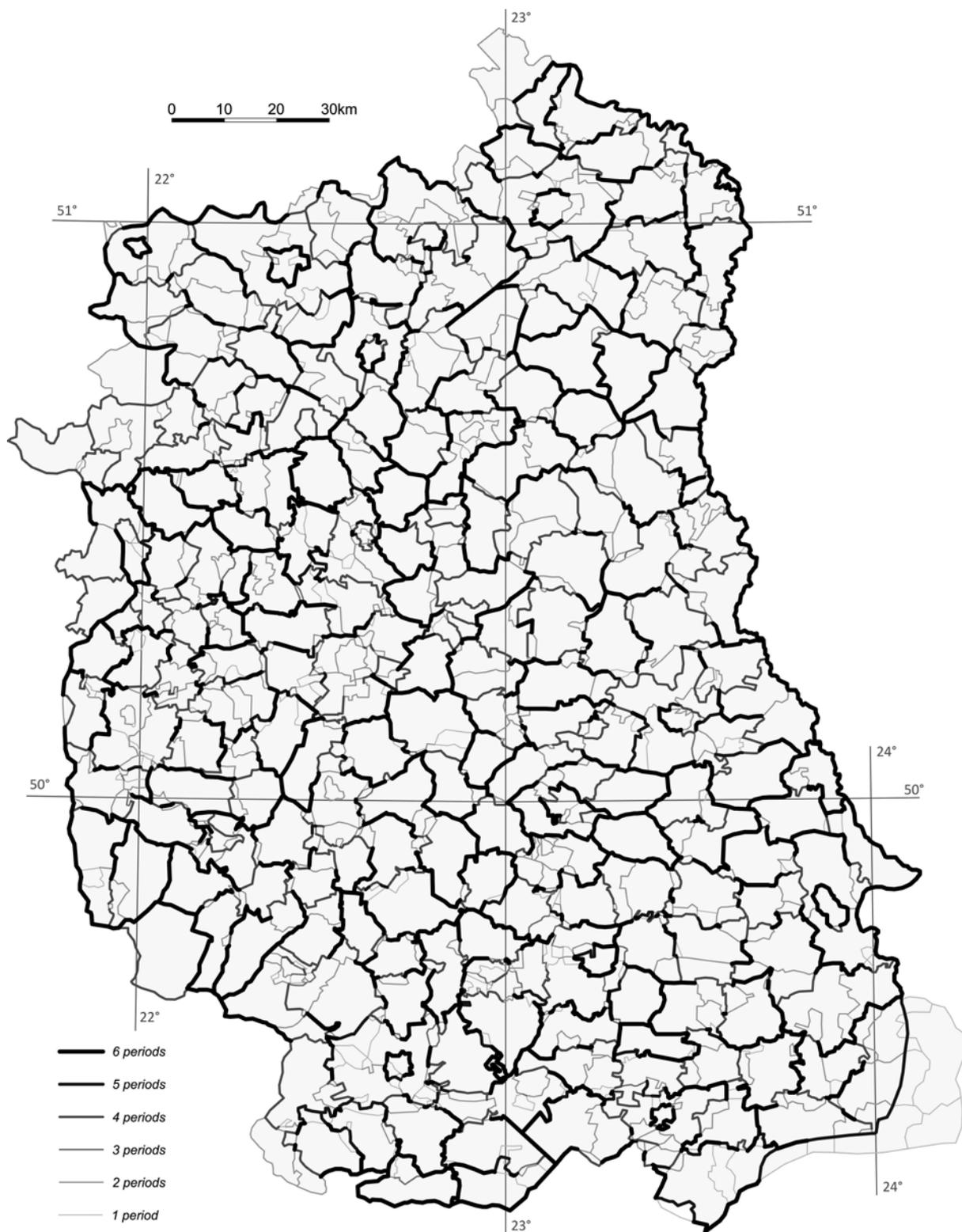
**Map 2.** Permanence of county borders in Lubelskie Voivodship in the 1949–2010 period

permanence was characteristic for the communes in Włodawski County, even though they neighbour a stable area to the north. The commune borders in Biłgorajski, Łukowski, Radzyński, Chełmski, Hrubieszowski, Opolski, Janowski and Zamojski counties also witnessed a number of changes.

Interesting results were obtained after the calculations of all the borders. It appeared that the most permanent fragments constitute only 40% of the border length. The second group, made up of 25% of the total length of borders, are the fragments which were recorded in two of the analysed periods of time. The third group was constituted by 25% of the borders which were represented in

four periods. The results in which three groups cover nearly 90% the total length of county borders prove the irregular character of the changes. The fact should be associated with the restoration of communes in 1973, when the borders were marked anew without continuation of the borders from before the introduction of gromadas in 1956. Generally, it can be concluded that despite the high value of the permanent border indicator (40%), most borders undergo changes.

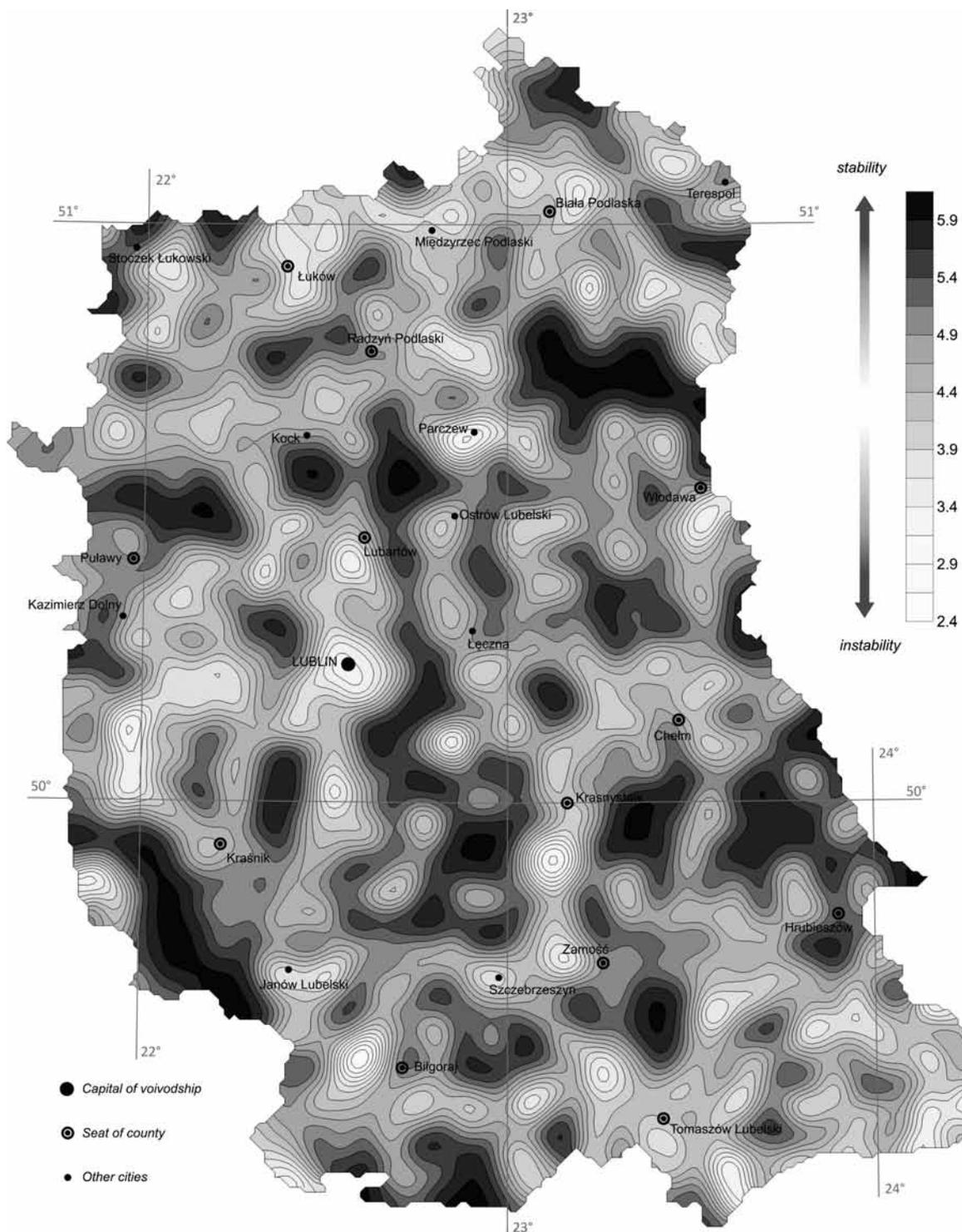
**Map 3.** Permanence of commune borders in Lubelskie Voivodship in the 1949–2010 period



## Conclusions

Between 1949 and 2010 there were four reforms of administrative division of the country. The first ones in 1954 and 1973 concerned the lowest level of administrative division, whereas those from 1975 and 1999 changed the voivodship and county borders. Two reforms involving commune and gromada borders were one of the reasons for future frequent changes in the smallest units. They also influenced the routes of county and voivodship borders. In the case of the reform in 1956, the changes were very serious, including the establishment of completely new administrative units. On the other hand, 1973 brought minor corrections involving the relocation of villages between

**Map 4.** Permanence at the lowest administrative level in Lubelskie Voivodship in the 1949–2010 period



communes. Other reforms of 1975 and 1999 concerned the voivodship and county level without having impact on the route of commune borders.

Despite a number of changes between 1949 and 2010 the changes of Lubelskie Voivodship borders, involving primarily the shrinkage of its area, can be considered as relatively durable. What attracted the authors' attention was the fact that the borders formed on the Vistula and Bug Rivers hardly changed. The southern and north-western borders near Łuków are equally durable. The largest number of changes involved today's Rycki County and in the north near Hołowczyce as well as in the south west (the area of Harasiuki, Krzeszów and Zaklików).

In the case of counties, the situation is less stable than in the voivodship. The largest number of changes were made in 1956–1961, when not only the route of borders was corrected but also new units were established. Instability of this form of administrative division is proven by the fact of their nonexistence between 1975 and 1999.

At the commune level that counts the largest number of units, the occurrence of change is the highest, even though there are cases of permanence in the analysed period. The conducted analyses lead to a conclusion that permanent borders constitute 40% of the total length of commune borders. This fact leads to the conclusion that the commune borders in the voivodship are characterised by high changeability.

Visual analysis of the objects presented in the map is not a simple task. It is particularly evident in the case of their high accumulation on a small surface. Consequently, the cartographic image becomes illegible and the analysis is troublesome. In order to cope with this problem the authors decided to search for an alternative method of cartographic presentation. They used a coloured line method, which generalises the image of changes and valorises the image in terms of the stability of border routes. The stability of border routes correlates with the changeability of the areas enclosed within the borders, so it is possible to show the local tendency map of area stability in the aspect of boundary changes (Map 4). The map was created by determining the number of boundary changes in regular grid polygons ( $2 \times 2$  km), that divide the area. The next stage was discretization of the polygons to point to representation (centroid networks) which were the basis for carrying out interpolation using the Moving Averages method in Surfer 8.

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