

KALININGRAD REGION



CHANGES IN THE CULTURAL LANDSCAPE OF THE KALININGRAD REGION'S PERIPHERY IN THE 19th/20th CENTURIES

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This article considers the development of cultural landscapes on the agricultural periphery of the Kaliningrad region. These territories are analysed in view of historical, geographical, social, economic, and political factors.

Owing to its history, the Kaliningrad region boasts a unique combination of cultural landscape elements. Thus, the genesis and development conditions of the region's cultural landscape are important aspects for the identification of its components — settlement pattern, settlement hierarchy, land use type, transport system, economic ties, etc. It is well known that the key role in the formation of a cultural landscape is played by the level of socioeconomic relations, which affects the landscape type and composition.

Historiography and the study of maps made it possible to identify certain stages of cultural landscape evolution, analyse the course of its historical development, and assess its transformations in different periods. The following types of transformations of cultural landscape elements were identified — settlement planning, changes in the number of settlements, settlement patterns, land use planning and management, amelioration, natural landscape preservation, industrial development, and the development of transport infrastructure.

Key words: cultural landscape, Kaliningrad region, periphery, agricultural landscapes

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Social and economic conditions play an important role in the emergence of cultural landscapes. Under their influence, anthropogenic landscapes undergo significant changes. At different stages of social development, the effect of social, economic, and political factors is not the same. This can be clearly

seen in the case of former East Prussia — the Kaliningrad region, which has experienced dramatic socioeconomic and political changes. An analysis of historical maps and other research methods make it possible to examine key indicators of any cultural landscape and trace the history of its formation.

Studies into the development of cultural landscapes focus on history and evolution and thus they are a matter of historical geography. As V. Yatsunsky stressed, the objective of historical geography is ‘studying and describing the geographical aspect of the historical process’. [22] Out of four lines of research proposed by the author, we are interested in two: the natural landscape of the current era, i. e. the historical physical geography, and population from the perspective of nationality, settlement pattern, and movements within a certain territory.

The term ‘cultural landscape’ has had different interpretations in both Russian and international geography. [19] Out of the variety of definitions found in the Russian literature, that given by Yu. Suahskin is most suitable for analysing the history of the Kaliningrad region’s territory. The definition reads, ‘A cultural landscape is a landscape, where human occupation changes the correlation and interaction between objects and natural phenomenon so that the landscape assumes new, qualitatively different characteristics, as compared to its earlier, natural condition’. [21] There is another interesting definition. It suggests that a cultural landscape is the culture of an ethnic community, which has developed in certain natural and geographical conditions, considered in its entirety, i. e. the environment of the local community. A cultural landscape has six components: natural landscape, local economy, local community, local speech community, local language system, and toponymy. [13]

In European geography, the definition of a cultural landscape has also changed since the works of Otto Schlüter. It has been affected by scholars’ ideas and concepts borrowed from different sciences. Thus, we have chosen a classical textbook definition: ‘A cultural landscape develops under the influences exerted on the initial natural landscapes by groups of people or communities when performing their main — economic and settlement — functions... Regional varieties of a cultural landscape are largely affected by settlement (its type and pattern), economic activities (agriculture, mineral extraction, industry, crafts), and the transport network’. [25]

A key role in the development of a cultural landscape is played by socio-economic relations. If they change, the components and appearance of the landscape go through a transformation. The features of a cultural landscape are affected by a set of factors, the most important being the initial physiographic conditions. Diversity of physiographic conditions contributes to the concentration of population in settlements with the most favourable location. The major physiographic factors include terrain, hydrography, climate, etc. When studying natural factors behind the emergence of a cultural landscape, it is important to consider the building and agricultural land patterns as an integrated whole.

A human settlement becomes the key element in this context. Some principles of a village typology were presented in the works of Soviet scho-

lars — Lyalikov, Pokshishevsky, Sukhov, and others — published in the 1940—60s. They identified six major types of classifications — by size, function, genetic characteristics, planning features, location, and regional varieties. [15] A classification of external settlement forms takes into account, firstly, the prevalence of such forms as dispersed, continuous, and nucleated settlements, secondly, the evenness and unevenness of settlement, the forms of settlement concentrations, and agglomerations. A functional typology takes into account types of human activities and the role of settlements in the territorial organisation of production.

The hierarchical links of any territory's settlement system have pronounced centres of different levels. Centres of the highest level are urban settlements — district and regional centres. As N. N. Bransky stresses, 'cities and the road network provide a framework for everything else'. [1, p. 15] Elements of the second and third level are rural settlements — municipal centres and large multi-functional settlements. Centres of the second level perform economic (storing and primary processing of agricultural produce), commercial (retail), cultural and educational (primary school), social (medical centre), and other functions for the surrounding territory.

A special type of cultural landscapes is the agricultural landscape — a natural landscape transformed through agricultural production. Some local morphological elements of an agricultural landscape are non-agricultural — forests, mires, and water bodies. Being a subordinate element of the agricultural landscape (they occupy up to 30—40 % of its area), they serve as ecological infrastructure and play an important stabilising role in the development of agricultural lands. Agricultural landscapes — a product of collaboration between humans and nature — are natural-anthropogenic formations. Based on natural elements, their structure and functioning are intentionally transformed by human occupation. A modern agricultural landscape is not only a transformed ecosystem, but also a multi-component formation of a certain natural and economic genesis, having distinctive ecological characteristics and phytocoenotic appearance. [20] Interactions between the human being and the landscape have been developing in rural areas over a long time. The effect of an emerging settlement system on the ecological balance of natural factors (landscape type, forest area, groundwater level, condition of water bodies, etc.) depends on the general human impact on the landscape during its formation. Minimum effect is associated with the initial stage of development, when primitive plough farming, hunting, beekeeping, and livestock breeding on natural pastures comprise major human activities. As a rule, human impact increases as settlers of a more developed culture arrive. They strive to reclaim and cultivate larger areas. However, sometimes, opposite processes take place, when the introduction of new forms of land ownership and farming has negative consequences. The cultural landscape devolves and it is gradually reclaimed by nature.

There are few studies into the history of cultural landscape on the Kaliningrad region's territory. However, it is worth mentioning works on the analysis of settlement system in polder areas [2], history of post-war settlement [16], planning structure of settlements, transformation of rural settle-

ments, and territorial organisation. [14] A joint project ‘Post-war changes in the Kaliningrad region based on topographic maps’ carried out in collaboration between the Immanuel Kant Baltic Federal University and the Baltic Aero Geodesy Company gave an opportunity to examine the changes in the landscape of East Prussia/Kaliningrad region using the cartographic method. The project focused on peripheral districts with natural, landscape, economic, and settlement features typical of East Prussia. This study examines changes in the cultural landscape of the Kaliningrad regions through a comparative analysis of modern topographic maps at a scale of 1:25000 and the results of land surveys carried out in Prussia in 1830—65¹, under the supervision of the Chief of the Prussian General Staff, Karl Mueffling (1775—1851). The maps appeared in mass circulation in 1868, their coloured copies are kept in the archives of the Foundation for Prussian Cultural Heritage in Berlin.

The studied territory lies within the Vistula Lagoon, limited by the valleys of the Rivers Pregolya and Golubaya and the Polish border. From the geomorphological perspective, this area is home to almost all types of landscapes found in the Kaliningrad region: lowland (glaciolacustrine, poorly drained plains), raised (moraine plains), and upland (hummocky moraine lacustrine plains). [11] In terms of administrative division, until 1945, this territory included — in part or in whole — the following *Kreise* (districts) — Heiligenbeil, Preußisch Eylau, Friedland (renamed Bartenstein in 1927), and Gerduan. In the Kaliningrad region, these are the territories of the Bagrationovsk, Ladushkin, Mamonovo, and Pravdinsk municipalities and, partly, the Guryevsk and Gvardeysk districts

According to the first documentary sources, this territory was populated by Prussian tribes in the 6th century. In the beginning of the 13th century, Prussians inhabited a large territory to the east and south of their initial settlement area — the Sambian Peninsula. In the existing geomorphological conditions, the key settlement factors were transport accessibility (riverbanks) and the type of human occupation (flood meadows, sandy clays). The Prussian lands of Warmia and Natangia, situated to the south of the River Pregel, were densely populated before the arrival of the Teutonic Order. Prussians avoided the terminal moraine landscapes, opting for colluvium and ground moraine and settling on river and stream banks. In our case, it is the banks of the Rivers Rezvaya (especially, in its upper reaches), Mayskaya, and Prokhladnaya. The oldest settlements in this part of the Kaliningrad region are Kanpossiten, Molowiten, Glamslauken, Pergossen², Dobekarten/Borovoe, Schrombehnen/Moskovskoe, Lewitten/Soldatskoe, and Moddien/Nekrasovo. Some of them are mentioned in documents dating back to 1275 and

¹ This survey was not the first chronologically, but the first performed at a scale of 1 : 25 000. As early as 1796—1802, a land survey of East and West Prussia was conducted under the supervision of Friedrich Schrötter (1743—1815). Its results were published at a scale of 1:150 000 under the title of ‘*Karte von Ost-Preussen nebst Preussisch Lithauen und West-Preussen nebst dem Netzdistrict. Aufgenommen von 1796 bis 1802*’.

² The current name of a settlement is not mentioned, if it does not exist anymore.

1287. Other important centres of Prussian settlement were Trintekaym, Chekhovo/Udirwangye, Vladimirovo/Tharau, Mayskoye/Packerau, and Ostrovnoe/Lieppenick. The Prussian fortress Bichau near the village of Nevskoe occupied a strategic location on a cape at the confluence of the Rivers Mayskaya and Prokhladnaya. [36] The eastern territories of Natangia (today's Pravdinsk district) bordered on the forests of the Wilderness — a 70—100 km wide almost uninhabited area on the border with Lithuania. At the time, the most remarkable forest was Dawer (Dawryn), to the west of Gerduoen (today's Zheleznodorozhny), with the only known Prussian settlement of Karelskoe (Raydekaym). The remnants of this forest survive as the Krestyansky Forest³. The other Prussian settlements — Mulnicken, Kackaym, Paißnick/Kholmpogorye, Wixdelen, and Trausen/Lipnyaki — formed a narrow strip between forests along the Rivers Omet/Zheleznodorozhnaya/Stogovka to the north of Gerduoen. The easternmost Prussian settlement in the Wilderness was Zarechneskoe (Sobrost) on the Stream Belka (Wickerau). [38]

There is little data on the planning of Prussian settlements in the mid-13th century. Prussian society was divided into two estates — peasants and nobles. The latter, being owners of large plots of land, lived on isolated farms. Prussian peasants lived in communities, where the land was the property of all its members. [35] Maps of the early 17th century show that most of former Prussian settlements are wither linear (Bolshoe Isakovo/Lauth), Nadezhdino/Twergaiten, Eythienen) or a 'square-centred' villages. The area of a peasant's land lot was not large — one or to *haken*⁴, sometimes, three. They formed a narrow strip behind houses. [36] In the 13th century, the total population of all eleven lands of Prussia, according to the historian H. Łowmiański, was approximately 170 thousand people. [33]

The conquest of Prussian lands by the German Order, which began in 1224, lasted almost half a century. Prussians were defeated completely in 1283. The Order's fortresses served as strongpoints on the conquered territory. The first castles built in the studied area were Balga (1242) and Brandenburg (1265). After 1325, as the Prussian population was subdued, German settlement spread gradually north-eastward along the valley of the Pregolya via Königsberg to the Sambian Peninsula and eastward to Warmia and Natangia. In the beginning of the 15th century, the movement to the West reached its limit and stopped at the line formed by Polesk/Labiau — Znamsk (Wehlau) — Druzhba (Allenburg) — Krylovo (Nordenburg). Behind this line, the Wilderness began. Until 1422, there was now demarcated border between the two countries that were almost at war. The Wilderness played the role of a border to the satisfaction of both parties. As a rule, the direction of settlement was determined by natural factors — rivers, watersheds, and forest edges. Having inhabited an area, colonists cultivated it for some period (several decades, sometimes longer) and moved forward. As a

³ In 1376, Hans Traupe was granted 120 *Hufen* in the Dawer Forest by the Order for his war services. Later, German colonial settlements of Friedenberga and Rosenberg built in this fief.

⁴ 1 *haken* = 11.81 hectares.

rule, each area had a centre — the most populated or most accessible settlement, which could later develop into a town. For instance, today's Bagrationovsk (Preußisch Eylau) was given a right to hold a fair in 1514 and granted town rights only in 1585.

Colonists of lower estates settled in villages built on the initiative of peasant activists — *lokators*. The Order allocated them a land lot, which they cultivated with their fellow settlers — usually, in groups of 20 people. This number was determined by the area of community land. In such a village, a peasant community had a right to cultivate plots of an area of 2—4 *hufen*⁵. German colonists always used the three-field system — winter crops, spring crops, and fallow lands rotating every year. The rest of the community land — a forest or meadow — was used collectively.

The existing landscape types resulted in the development of a certain type of colonist villages in Prussia. This type was called *Angerdorf*. In the centre of a village, there was a square, or *Anger*, where the church, the smithy, the inn, and later the school were situated. Farms lined the street. The houses comprised the living (facing the street) and household areas. Houses were built of wood or in the *Fachwerk* tradition (a timber frame with clay infill) (fig. 1).

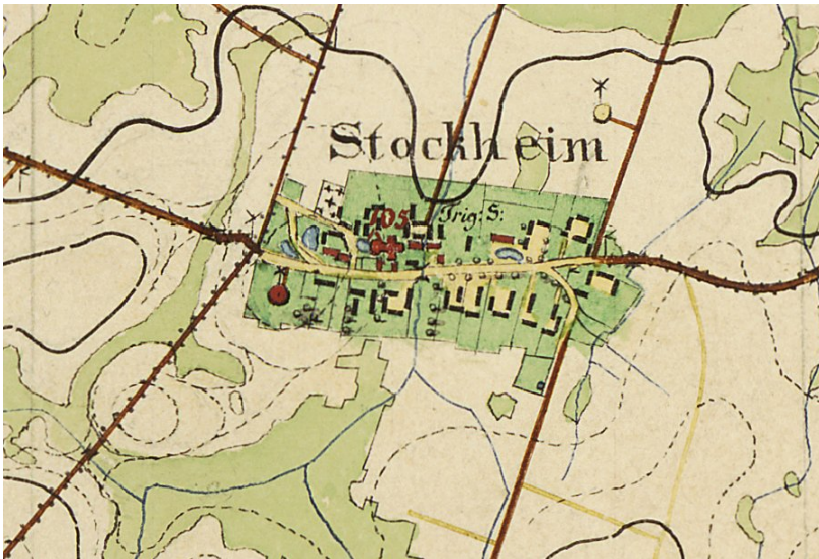


Fig. 1. Plan of the village of Stockheim (Zaitsevo)

Source: Prussian Geodesy Department, sheet 340, 1864.

Another form of rural settlements typical of the later period was continuous settlements. Changes in the planning were insignificant over times. The basic structure of most villages remained intact until the Separation, which took place in the first half of the 19th century. The only exception was villages that later become part of large estates.

⁵ 1 *hufe* is 16.5 hectares.

As it was mentioned above, the regular colonisation of the region along the left bank of the Pregolya — Natangia began in the second quarter of the 14th century. In this area, the Order built the fortresses of Friedland (1312, town privileges granted in 1335), Zinten (1313), Kreuzburg (1240, town privileges in 1315), Gerdauen (1325, town privileges in 1389), Preußisch-Eylau (1325), Domnau (town privileges in 1400), and Allenburg (1272, town privileges in 1400). The colonisation processes was governed from the west — the Balga *Amt* and the forest *Amt* of Brandenburg. [14] The most important (and the earliest) settlements of German colonisers were built on the sites of Prussian villages. For instance, in 1315, the village of Tharau was granted rights for 120 *hufen*. In the 14th—15th centuries, most villages were built between two rivers in areas cleared from trees. The changes in settlement in the *Amt* Balga can be traced by analysing the data on the sizes of land lots subject to taxation — 3020 *hufen* in 1396, 4575 in 1404, 4757 in 1410, and 4800 in 1412. [39]

Numerous estates were built at the same time as peasant villages. Only on the territory of the future *Kreis* Gerdauen, the Order granted 22 estates under the Kulm law in 1355—1400. This was very important for the Order, since the owners of estates had to do military service. The earliest estates are those of Korselauken (59 *hufen*, 1355), Fritzenhoff (1364), Schetzels (1365), Skandau (1364), and Bawin/Nikitino (1395).⁶

This history of these settlements can be traced by analysing the case of the village of Stockheim/Zaitesvo. The first mention of the village dates back to December 21, 1325, when the commender of Brandenburg, Erwin von Stockheim passed it into the ownership of his ‘trusted men’ — brothers Hermann and Claussen. From the second half of the 16th century, the owners of the village changed more than once. In 1567, Duke Albrecht lent Jakob von Schwerin 7,000 guldens for three years against security of the villages of Stockheim, Abschwangen/Chekohovo, and Frisching. After serving as security in 1618 and 1663, village was purchased as part of the estate of Pusckkeiten by *Landrat* Ludwig von Ostau in 1760. Documents suggest that, at the end of the 18th century, there were 27 farms with 195 residents in the village of Stockheim. [31]

Until 1525, the colonisations policy was carried out by the Order represented by the Marschall and commanders, who granted lands to both the nobility and peasants. From the 16th century, the role of the state represented by the duke decreased, as the nobility became more active. For instance, in the *Amts* of Balga and Brandenburg 758 *hufen* and 13 *morgen* (12,700 hectares) of duke’s lands — 7.6 % of the cultivated land — were passed to the nobility. [42] Land ownership by the nobility became part of the cultural space of East Prussia in the mid-18th century. Land was reclaimed and cultivated by peasants, who, by the time, were completely dependent on the

⁶ At the time, the Order forbade free citizens and the mobility to own estates of an area over 900 ha.

nobility. Many of earlier free peasants had to subdue to nobles, sometimes through selling their lands, sometimes under pressure, sometimes because of a dramatic deterioration of their situation. This was also the social factor behind the changes in the settlement pattern — peasants were leaving their villages for manors.

The case of the *Kreis* Gerdauen helps to trace the timeline of the territory's colonisation. In its western part — the right bank of the Rivers Łyna and Stogovka (Omet), — estates and villages were built in the fourth quarter of the 14th century. The eastern part — the area between the Rivers Borodinka and Stogovka (the former Wilderness) — was colonised in the late 17th/early 18th century (table 1).

Table 1

Years of the foundation of settlements in the *Kreis* Gerdauen [39]

West		North-West	
Schellenberg-Ogarevo	1355	Schönefeld-Prasolovo	1442
Brolost-Chaadaevo	1377	Kl. Gnie-Mozyr	1567
Arnsdorf-Smeloe	1378	Berschlack-Narvskoe	1605
Friedenberg-Dvorkino	1376	Abelischken (Ilmenhorst)-Belkino	1607
Keulenburg-Golubevo	1379	Kl. Potauern-Solovyovo	1684
Gr.-Sobrost-Zarechenskoe	1388	Hochlindenberg-Podlipovo	1685
Neuendorf-Nevoselki	1398	Schönwiese-Zimovskoe	1703
Wickerau-Cherkasovka	1433		
Dörings-Derzhavino	1437		

The fourth quarter of the 18th century witnessed a peak in the creation of *folwarks* in new manorial estates. For instance, Abraham von Braxein (1772—98) layed out seven *folwarks*⁷ on the drained and swidden lands. Moreover, he began growing potatoes and breeding carps, being the first Eastern Prussian landowner to liberate his serves. [42]

Landscape development in the 14th—18th centuries was based primarily on disboscation, increasing the fertility of soils, introducing agricultural techniques, and intensifying farming — the nine-field system replaced the three-field one, new crops were introduced. From the second half of the 18th century, the state launched a large-scale drainage campaign on wetlands and floodplains accompanied by creation of flood meadows and construction of dams. Later, drainage canals were dug, shrubbery uprooted, etc. Improved lands were either used as grazing fields (lowlands) or tilled (uplands). Local farmers specialised in animal husbandry.

The produce was sold in several towns that, with time, surrounded the Order's fortified castles. These were small towns traditionally called *Acker-*

⁷ 1764 — Braxeinswalde-Otvazhnoe, 1765 — Luisnehof, 1767 — Gröbensbruch, 1772 — Grünhof-Kuntsevo, 1773 — Braxeinshof-Kandievo, and Charlottenhof-Bugrion, 1777 — Hasseldamm-Kostyukovo.

bürgerstadt in Germany. Most townsfolk earned their living from working on the town's land plots rather than trade, crafts, etc. Later, the food and manufacturing industries — milk farms, sawmills, steam mills, brick factories, and butcheries — developed in the towns. Livestock fairs became regular events.

However, for a long time, the towns remained scarcely populated (table 2).

Table 2

Urban population changes

Town	Population, people					
	1782	1816	1852	1900	1925	1939
Allenburg-Druzhba	1 379	1 500	2 311	1 750	1 713	2 692
Domnau-Domnovo	1 002	1 200	1 727	1 921	1 986	2 988
Gerduaen-Zheleznodorozhny	1 600	1 800	2 578	2 926	3 267	5 125
Kreuzburg-Slavskoe	1 018	1 700	1 967	1 848	1 639	2 005
Nordenburg-Krylovo	1 300	1 800	2 366	2 205	2 472	3 173
Preußisch Eylau-Bagrati-onovsk	1 455	1 700	2 988	3 248	3 584	7 461
Friedland-Pravdinsk	2 000	2 300	2 559	2 824	3 233	4 410
Heiligenbeil-Mamonovo	1 768	2 200	3 072	4 553	5 147	10 631
Zinten-Kornevo	1 500	1 700	2 584	3 585	3 549	5 801

Source: [30, 24].

Many towns were controlled by influential noble families, being their property for a long time. For instance, the towns of Preußisch Eylau, Gerduaen, and Nordenburg with numerous villages, forests, windmills, water bodies, etc.⁸ were transferred in the ownership of a certain Georg von Schlieben (1425—1476) in satisfaction of a debt. In 1411, the Order granted a mercenary leader Konrad Egolfstein rights to the castle and town of Domnau.

Changes in the cultural landscape of the 19th century related to radical transformations in different areas of the state's structure, especially, in the land use system, which can be clearly seen on the topographic maps of the Prussian Geodesy Department. Surveys were carried out over 35 years, in 1835—1865, throughout the territory of Prussia. Unfortunately, it is impossible to establish when a certain area was surveyed. The territory's development was radically affected by the Prussian agrarian reform of 1807 — the Separation. The reform aimed at emancipating peasants who were given an opportunity to buy a land lot from their lords. This resulted in the establishment of independent peasant farms, although most lands belonged to the no-

⁸ The von Schliebens' control over the towns came to an end in 1824, as most of their land property was sold to different individuals, some of whom were not of a noble descent.

bility and the emerging class of rural bourgeoisie. By 1855, large landowners accounted for only 4 % of the population, owning 47 % of the land. This trend continued until the end of the 19th century. Having left the community and paid the redemption money, a peasant acquired a whole land lot — cropland, pasture, and a section of a forest. Whereas earlier a village community was an enclosed settlement with land lots stretching behind the houses in a narrow strip, after the reform, a peasant, having acquired a lot somewhere else, would move to a new place.

The process of division of the nobility's lands into peasant lots was long and painful. The lords did everything possible to stall the Separation. For instance, in the large estate of the von Schliebens, the first peasants separated in 1821 in the village of Melchersdorf. The village of Mauenfelde (Klyuchi) was divided into 20 peasant lots in 1825, Wesselowen (Pushkinskoe) and Adamswalde into 16 lots in 1826, Friedrichswalde into nine lots in 1827, and Hedwigsfelde into five in 1830, etc. [44]

All these social and economic changes had a dramatic effect on the material world. Owners of estates had to construct numerous outbuildings — sheds, stables, and accommodation for their presents-turned-hired workers. On their new individual lots, peasants were constructing all necessary outbuildings 'from scratch'. In terms of economics, they were making a transition from a natural to a competitive market economy. As a result, the area of cultivated lands increased. Such lands accounted for 20.5 % of the province's area in 1815, 44.3 % in 1849, and 54.9 % in 1913. [37] This also changed the types and forms of settlements. Villages of different social status were being gradually replaced by isolated farmsteads, folwarks, and manors. Many peasants, who managed to buy the lots of their neighbours, who were unable to fight off competition, were making a transition from the level of ordinary farmers to that of owners of manors.

The rural economic reform also affected the landscape, primarily, the condition of forests between land lots, especially, those in the earliest settled areas. When forests were owned by peasant communities, all problems were solved collectively, based on public regulations. According to the decree of September 14, 1811, all private landowners were exempt from government control, which turned out to be catastrophic. Many forests, earlier part of community property, vanished⁹. Having lost access to public forests and acquired rights to a small forest section of an area of 5—10 hectares, peasants strived to maximise their profits. According to the documents of the Königsberg Department, as early as 1859 — several years after the Separation process was completed — there were almost no public forests in the district. They were cut down, with rare exceptions, which were a result of the location of the forests on a border between communities. [35] The same was happening in the estates that had changed their owners several times. In 1880—1900, over 17,000 hectares of private forests were cut down in the Königsberg and 10—12,000 hectares in the Gumbinnen district [43] (fig. 2).

⁹ 1800 — 33%, 1830 — 25%, 1858 — 22%, 1878 — 18.2% [MAGER 1960].

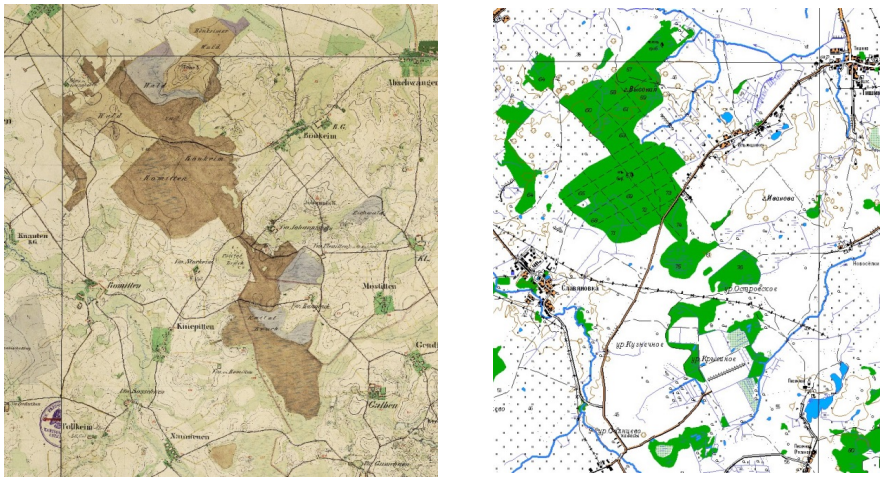


Fig. 2. The Bönkeim-Romitten forest in 1868 and 2010

Source: Prussian Geodesy Department, Sheet 340, 1864.

The total area of non-state — community, private, and public — forests reduced from 74,000 hectares in 1858 to 33,858 hectares in 1913, i.e. by 54.3 %. [34] Only large state-owned forests survived, which resulted in a general decrease in the forest area in East Prussia by the end of the 19th century (fig. 3).

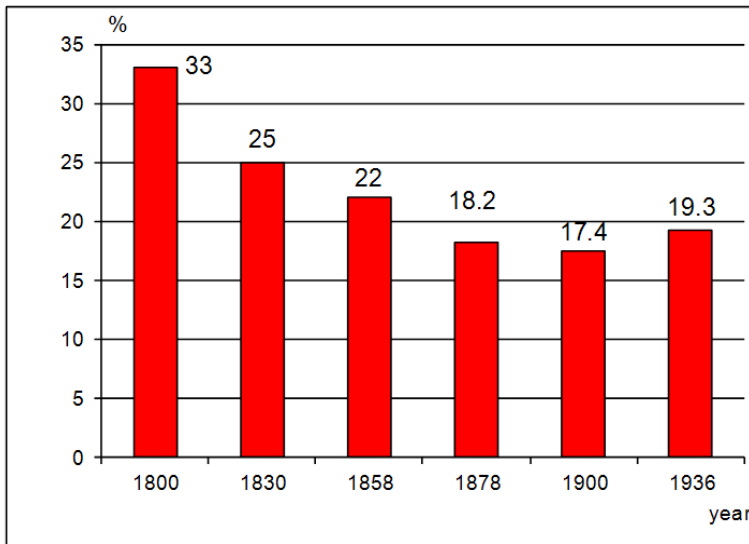


Fig. 3. Changes in the forest area in East Prussia

Source: [34].

According to R. Stein, in 1805—1860, the area of state-owned forests in East Prussia decreased by 160,000 hectares. It was 369,326 hectares in 1878 and 449,600 hectares in 1858. In 1893, it increased to reach 368,598 hectares. [42] The reduction was a result of both selling forests to private owners and further colonisations. The latter dramatically affected the edges of large state-owned forests, for instance, the northern part of the Ozyorsk forest (Forest Frisching). The villages of Lindenau/Dachnoe, Neu-Ottenhagem, Lindenhof, and others were built in the area. In different districts, the situation was not the same (table 3).

Table 3

A comparison of forest areas by district, 1936

District	Forest area, %
Heiligenbeil	11.6
Königsberg-Land	9.8
Wehlau	28.6
Gumbinnen	8.9
Insterburg-Land	22.7

Source: [41].

Moving from the enclosed village space to the edges of developed landscape not only resulted in a significant increase in the population size but also necessitated land improvement. Until the first half of the 19th century, all land improvement efforts were carried out by the state. However, as individual farms became more independent, the state tried to delegate this expensive job to public organisations — corporations and unions, which began to emerge in the 1870—80s¹⁰. As of 1888, there were 94 organisations on a territory of 104,430 hectares, including 68 water management associations, 21 drainage associations, and five dam building associations. [29] Such organisations were rapidly developing in 1890—1910, when the government began allocating substantial funds to public drainage organisations. At the same time, municipal drainage organisations — District Grassland Maintenance Authorities (*Kreiswiesenbauamt*)¹¹ — were emerging in the same period. Its legal framework was the so called Prussian agrarian legislation of 1843—46 aimed to improve the quality of soils, reclaim new territories, stop strip farming practices, etc.

¹⁰ Large farms were the first to use covered drainage for land improvement and increasing fertility. For the first time, this happened in 1852, when the Belgian engineer Leclerc, invited by the owner of the Fuchsberg/Kholmogorovka estate, designed the first East Prussian covered drainage system. [28] However, the cost of the project (over 1,000 Thalers) was very high.

¹¹ In *Kreis* Gerdaunen, such authority was established in 1908. It managed 63 drainage associations operating on a territory of 36,316 hectares. [23]

In the end of the 19th century, against the negative socioeconomic backdrop, the state decided to take control of settlement processes. In East Prussia, they were managed by the East Prussian Land Society (*Ostpreußische Landesgesellschaft — OLG*) and, from 1905, the East Prussian Construction and Settlement Society (*Ostpreußische Bau- und Siedlungsgesellschaft — Bausi*)¹². Since agriculture remained the basis of the province's economy, employing 75 % of the population, and large landowners were experiencing financial difficulties, the government reached a decision to purchase bankrupt estates and use public lands. New farms were to be built in a line to make possible the construction of a road, which would ensure the settlers' access to the village's infrastructure. If there was a road, new buildings were constructed along it.

Maps show the course of these changes. For instance, on sheet 339 of a 1864 topographic map, Groß Sausgarten (Beryozovka) is a regular estate. In the beginning of the 20th century, it was a linear village stretching for several kilometres. This was a result of the efforts of the East Prussian Land Society, which facilitated the construction of 45 farms [45] (fig. 4).



Fig. 4. The village of Froß Sausgarten in 1864 and 1913/22

Source: The Prussian Geodesy Department, Sheet 339, 1864 r.

These efforts had a significant effect on the territory's cultural landscape and population size. The population of former estates increased by 40—70 %. 12,900 new settler's holdings with 157,000 hectares were created in 1919—1934. [40]

¹² Moreover, in the early 20th century, there were approximately 50 organisations in East Prussia that were responsible for settlement processes — the East Prussian Land Association for New and Local Settlement (*Ostpreussische Landesgesellschaft für Neu- und Anliegersiedlung*), German Land Settlement for Special Tasks (*Deutsche Landsiedlung für Sonderaufgaben*), and cultural departments for local settlement.

By the beginning of World War II, a quantitative increase in the area of agricultural lands was completed, i. e. almost all land suitable for agriculture was used to this end. Further increase in the agricultural productivity could be sustained only through intensification. The studied territory remained a periphery with an agricultural economy. For instance, in 1939, 56.1 % of the population of *Kreis* Gerdaunen was employed in agriculture. Agricultural lands accounted for 76.9 % of the territory. An average lot was of an area of 17.7 hectares (third largest in the province), the total number of farms reached 2,074. In the land use system, arable land accounted for 67.5 %, pastures for 21.9 %, and meadows for 9.2 % of the territory. Mechanisation reached a high level. Many farms had either an electric motor or an internal combustion engine. Reapers, winnowing and sheaf binding machines, and other equipment were widely used at the time.

The level of development of peripheral agricultural districts is reflected in the number of manufacturing enterprises. Maps make it possible to trace the emergence of mills, sawmills, milk factories, dairy plants, and brick factories.

The mid-19th century saw the emergence of a developed transport infrastructure, consisting of railways and highways, which had a dramatic effect on the settlement pattern. Despite the fact that the first post roads were built as early as the 16th century, they did not provide a convenient connection. Preference was given to waterways. Sheet 86 of *Homann's map* drawn in 1731 shows ten post roads used at the time. The most famous was the road running from Danzig along the Vistula Spit through Königsberg to Cranz and Memel/Klaipeda. There were also connections between Tilsit — Popelken — Georgenburg — Insterburg, Insterburg — Darkehmen — Angerburg, and Königsberg — Heiligenbeil — Preußisch-Holland. [27] Construction of roads was crucial for the state in managing the colonisation of new territories, inflows of new settlers, revitalisation of the economy, and development of existing centres. In 1790, seven major post roads radiated from Königsberg (table 4). [32]

Table 4

Post roads

	Direction	Length, miles
1	Heilsberg via Mühlhausen, Preußisch-Eylau, and Bartnestein	
2	Marienwerder via Brandenburg and Heiligenbeil	24
3	Pillau via Widitten	7
4	Rastenburg via Mühlhausen, Preußisch-Eylau, and Bartnestein	19.5
5	Soldau	27
6	Thorn and Warsaw via Marienwerder	
7	Memel via Hohenrade, Tapiau, Taplacken, Insterburg, Ostwethen, Tilsit, Schameitken, and Heydekrug	34

Source: [32].

Only in the beginning of the 19th century, the French practices of *Chaussee* building were adopted in East Prussia. The first *Chaussee* — a 75.1 km long road connecting Königsberg and Elbing — was built in 1818—1827. Later, roads between Königsberg and Preußisch Eylau (1822—31)¹³ and Königsberg and Tilsit (1830—31) via Taplacken/Talpaki were constructed. The section of the road stretching from Taplacken via Gumbinnen/Gusev to Eydtkuhnen was built in 1835—37. It took 27 years (1826—1853) to build the 30-kilometre *Chaussee* to Cranz. From the 1870s, the construction of local roads was controlled by the district, which made it possible to reach a high level of transport accessibility by the beginning of the 20th century. As of March 31, 1938, there were 92,598 kilometres of district roads in *Kreis* Gerduoen, their width ranging from 4.5-5.5 m (80,381 km) to 5.5—6.5 m (12,217 km). 60,909 km of roads were paved with crushed stone, 26,609 km with cobblestone, and 5.08 km with sett. [23] Moreover, state roads No. 131 (Königsberg — Friedland — Gerduoen — Nordenburg), No. 141 (Wehlau — Gerduoen), and No. 139 Insterburg — Nordenburg ran through the *Kreis*.

Railways made an even greater contribution to the territory's development, ensuring its inclusion into the economy and granting access to markets¹⁴. If the first Eastern Railway¹⁵ stretching from Berlin via Königsberg to the Russian border was of strategic significance, the later railways connected remote districts with each other and local towns. Some railways provided a direct connection between towns, for instance, Königsberg and Preußisch Eylau or Insterburg and Gerduoen. Others provided links on the periphery, stimulating the economic activities of remote settlements and enterprises. These were the railways connecting Friedland and Gerduoen, Heiligenbeil and Zinten, Wehlau, Allenburg, and Friedland, Wittenberg, Tharau, and Kreuzburg, Gerduoen and Nordenburg, and Löwenhagen, Domnau, Friedland, and Gerduoen¹⁶.

In the late 19th century, it was officially permitted to build narrow-gauge railways (the Law on narrow-gauge railways of 1895). Districts, towns, and communes did not hesitate to take advantage of this opportunity. Almost all narrow-gauge railways were built in the province in 1898—1920. The construction reached its peak in 1900. The railways were owned by stock companies. The capital was provided by the state, the province, communities, and less often by private parties and contractors (as a rule, it was the firm Lenz & Co.). [26]

¹³ The width of the road reached 12.55 m. 5 m were 'summer roads' paved with crushed stone.

¹⁴ For more detail on the connection between railways and landscapes, see: Romanova E., Vinogradova O., Kretinin G., Drobiz M. (2015) 'The effect of railway network evolution on the Kaliningrad region's landscape environment', *The Baltic Region*, 4(26), 181—193.

¹⁵ Its Berlin-Königsberg section started operation on August 2, 1853, and the Königsberg-Eydtkuhnen on August 15, 1860.

¹⁶ In his work *East Prussia, An economic and geographical study*, Erwin Scheu analyses the reasons behind the emergence of brick factories, stressing the importance of not only the availability of raw materials, but also the accessibility of waterways [40]

Therefore, a comparison of maps of the mid-19th century and 1939 shows the following changes in the cultural landscape of the rural periphery:

- changes in the panning and sizes of settlements,
- an expansion of human occupation of the territory: a reduction in the forest area, development of food, construction materials, and other industries;
- characteristic land use practices (prevalence of large estates),
- creation of a developed transport infrastructure — railways and highways,
- river management and land improvement.

A new phase of cultural landscape development began in 1945, when an area 15.1 thousand km² of East Prussia was ceded to the USSR according to the decision of the Potsdam Conference. Active settlement of the newly established Kaliningrad region began in summer 1946. The remaining German population was deported by the end of 1948. The existing transport connections made a major contribution to the restoration and development of settlements. The road network survived to the degree that met the needs of collective farms. In 1948, the total length of regional highways was 4484 km, including 2934 km with asphalt and asphalt concrete, 976 km with crushed stone, 215 km with cobblestone and sett surfaces, and only 359 km of gravel-surfaced and unpaved roads. [5]

A comparison with the current data shows the surprising stability of the road network. In 2015, it comprised 4480.9 km of roads of all five categories (table 5).

Table 5

The length of highways of categories III—V in the Bagrationovsk and Pravdinsk districts, as of 01.01.2014, km

	Categories of municipal and regional highways			
	III	IV	V	Total
Bagrationovsk municipal district	112.2	274.6	61.0	495.2
Pravdinsk district	195.2	266.5	35.1	496.8
Kaliningrad region, total	1206.1	2045.1	1049.9	4480.9

Source: [46].

Despite a dramatic reduction in the settlement system and its transport elements (local roads, driveways, etc.), the situation was remedied by new construction.

Other important factors were the survival of houses and outbuildings, where tractor stations and dairy farms were established, and the quality of lands. However, manors and villages that escaped serious damage during the war but were situated at a significant distance from major transport routes ceased to exist. Many villages and farms remained abandoned, since the number of settles was half the size of earlier German population.

The settlement process was not easy. There were few liveable houses, different authorities could not reach a unanimous decision, resources were scarce, there was not enough equipment and seeds, etc. It is rather difficult to

understand why settlements were re-settled the way they were. Probably, the major consideration was the adequate condition of buildings (after the two years of the functioning of military units' farms and military sovkhoses¹⁷). Moreover, settlers were arriving irregularly and in small numbers. For instance, as of August 1, 1947, there were 49 settlements in the Zheleznodorozhny district¹⁸. Only nine of them were inhabited — the railway village of Klein Gnie (994 and 132 people) and the military sovkhos No. 133 (1415 people), including the villages of Ilmsdorf (55), Gross Gnie (101), Altendorf (5), Schönlinde (55), Nordenburg (39), Astrawischken (166), Bokellen (10), and Muldschen (1). 1018 families, including Germans, lived there. [6] A similar situation was observed in the other districts of the region¹⁹. Settlers were not welcomed by the military personnel, who were reluctant to leave their farms²⁰.

The process of organised settlement was completed in the early 1950s (table 5).

Table 5

**Number of settlers in the rural area in 1947—55,
based on different sources, thousand people**

Source	1947	1948	1949	1950	1951	1952	1953	1954	1955
Regional resettlement office	38.4	44.1	21.4	20.4	5.8	6.7	4.5	4.6	3.5
Office for regional statistics	54.4	54.5	37.9	33.8	21.3	20.9	25.5	25.5	20.7

Source: [16].

New authorities did not permit settling on isolated farms, even if they were well-preserved. '...5,069 house flats were renovated for the settlers of 1949, against the plan of 5,000. Therefore, all newcomers were housed in renovated flats in established settlements, settling on isolated farms was prevented'. [3]

¹⁷ In 1948, the Zheleznodorozhny district was commissioned to accommodate '...410 families, including 60 families charged with the organisation of a new kolkhoz in Perevalovo/Muldschen inhabited by 16 German families, who pillage and burn remaining buildings. Temporary employees of Lespromkhoz also live in the village'. [7]

¹⁸ Decree of the Presidium of the Supreme Soviet of the RSFSR of July 25, 1947, No. 614/7 'On establishing the Zheleznodorozhny district on the territory of the Pravdinsk region'.

¹⁹ According to the project of renaming the Pravdinsk region of September 1947, there were 88 partly inhabited settlements in the district and 39 kolkhozes were established on its territory. [9]

²⁰ See 'The inventory of outbuildings and agricultural equipment and tools signed away to the Pravdinsk district executive committee by the farm of the military unit 2297 as of November 15, 1950 in the village of Yagodnoe [Kapsitten]. [4]

The old drainage system could not be restored. Due to differences in cultures, agricultural practices, and lifestyles, serious mistakes were made when restoring the old drainage systems. Almost the whole system of covered and open drainage was either voluntarily or involuntarily destroyed or replaced. This was caused by several reasons²¹. Firstly, land use practices had changed — large collective owners and a single land improvement system replaced fragmented private farms. The German system did not meet the needs and requirements of the socialist economy. Numerous canals, and ditches divided farmlands into parcels of an area of 0.5 hectares, which was not suitable for kolkhozes.

In new political and socioeconomic conditions of collective farming, the settlement system did not need a large number of settlements, most of which were small isolated villages. The structure of agricultural landscapes also changed and often to the worse — developed and well-equipped estates changed their function and degenerated²². The structure of land use also altered. Small parcels of an area of 5—20 hectares did not meet the criteria of the planned socialist economy. The road network organisation and settlement pattern also contradicted the principles of large mechanised farms.

At the initial stage, collective farms were rather small — four fifth consisted of 16—60 households, two thirds had below 300 hectares of croplands. In 1950, according to a decision of the Central Committee of the All-Union Communist Party (bolsheviks), agricultural collectives were consolidated — 151 collectives were set up instead of 472. In 1964, the number of kolkhozes reduced to 110. There were also 67 sovkhozes. The larger sizes of farms (over 1,000 hectares), as compared to the pre-war situation, and their smaller number increased the pressure on the environment. [12]

The area of cultivated lands never reached the pre-war level. The rate of increase in the area of agricultural lands was rather low. In 1967, the area of agricultural lands accounted for 63.7 % of the pre-war level (739.6 thousand hectares as compared to 1161.5 thousand hectares). In 1980, it reached its maximum of 805 thousand hectares. In 2005, it was only 723.4 thousand hectares. [18]

A sovkhoz or kolkhoz included several settlements. The central settlement housed the sovkhoz office or kolkhoz administration, the school, the club, the library, the public sauna, and sometimes the Rural Council. Smaller settlements were called brigades or farms, if they had an animal farm.

The construction based on the designs, which were prepared by the *Oblselproekt* design institution, was carried out by the *Kaliningradselstroy* trust. In rural areas, houses of several standard types were being built using local materials — wood, silicate bricks, etc. — from the late 1950s. Settlement

²¹ '... the existing drainage systems have serious drawbacks resulting from the former socioeconomic conditions of agricultural practices' [17]

²² '...in a number of the region's districts — the Pravdinsk, Kaliningrad, Zheleznodorozhny, Krasnoznamensk, Chernyakhvosk, and other — individual settlers, unaware of local conditions, have tilled artificial meadows (located on dense infertile red clay wetlands). Almost all crops planted on the upturned bedrock fell out completely. I believe, this accidental 'croplands' have to be turned into permanent meadows once again'. [8]

planning was supervised by rural and kolkhoz development departments of executive commissions of district Soviets. A regulation of March 9, 1949 mentions that ‘...the Department of Rural and Kolkhoz Development of the Executive Commission of the District Soviet... prepares plans and designs for rural settlements, ensures the compliance of construction works with regulations, and oversees landscaping efforts; ...creates new standard designs of residential houses...’ . [10] In reality, new buildings were constructed in villages and kolkhoz and sovkhoz centres without necessary district and local planning. Only in 1962, the Regional Kolkhoz Development Association was established to create district plans. At the same time, relevant authorities compiled a list of ‘promising’ settlements, where new buildings could be constructed. Small villages and isolated farms were to be gradually demolished. New houses built in the listed settlements were to have all the facilities of an urban residence, which, however, ignored the needs of rural life. Urban-styled two-storey houses did not have outbuildings and adjoining land lots were extremely small.

In the 1960-70s, the so-called ‘unpromising’ settlements were demolished in line with the centralisation policy. Residential, leisure, and industrial development concentrated in ‘promising’ settlements, whose proportion was increasing. There were extreme cases. For instance, in 1963, the Ozyorsk Industrial Kolkhoz and Sovkhoz Department proposed demolishing 156 rural settlements, leaving only 27 of them as central farms or brigades. The Ozyorsk District Executive Committee did not approve this list, however, having adopted a list of settlements for new residential development²³. By the mid-1970s, plans were developed for 95 out of 107 central kolkhoz settlements. Slightly over 200 settlements were identified as ‘promising’ in the Kaliningrad region. In the beginning of the 1980s, the total number of rural settlements did not exceed 1,400. The density of rural population was rather low in peripheral districts.

In the Soviet period, the regional settlement pattern underwent dramatic changes, for instance, the number of settlements reduced by several times (fig. 5).

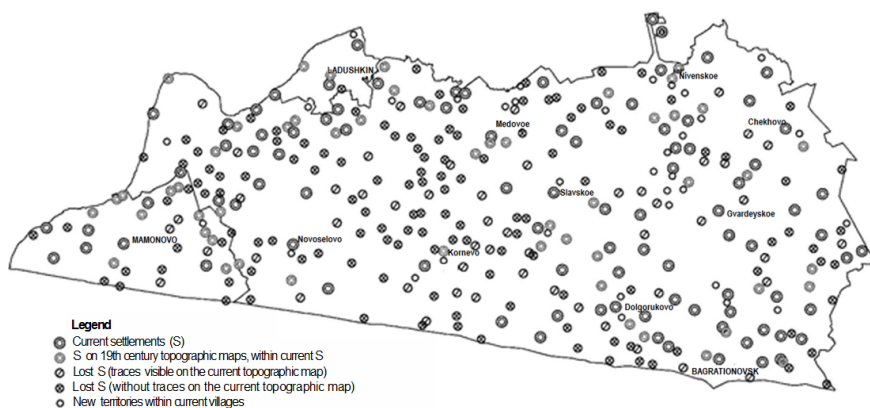


Fig. 5. Settlement pattern (1939-2015)

²³ For instance, in the ‘Luzhki’ sovkhoz, it was planned to increase the population of the central farm from 38 to 1,500 people through demolishing 21 settlements [17]

Therefore, the key results of the cultural landscape's economic development after 1945 was the consolidation of the settlement system accompanied by changes in settlements' functions, a decrease in the area and structure of cultivated lands, the creation of a land improvement system, and the transformation of the farming system.

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