

**DAMAGE CAUSED BY THE
SOVIET UNION IN THE
BALTIC STATES**

**International conference
materials, Riga, 17-18 June 2011
Social, economic and
environmental losses/damage
caused by the Soviet Union in the
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Contents

Introduction (<i>Prof. Dr. oec. Inese Vaidere</i>).....	4
SOCIO-ECONOMIC DAMAGE I	9
1. Historical background (1939–1991)	
2. Damage caused by the soviet union in lithuania – depopulation of 1940-1941 and 1944-1953 (<i>Dr. Arunas Bubnys</i>).....	22
3. Economic damage caused by soviet occupation to the national economy of estonia (<i>Dr. Kalev Kukk</i>).....	31
4. Economic and demographic damage caused by the soviet union in poland from 1945-1947 (<i>Dr.hist. Dariusz Rogut</i>).....	36
5. Damage caused by the soviet union to georgia (<i>Teimuraz Papaskiri</i>).....	43
6. Some general considerations on the damage caused by the soviet economic system in the baltic states (<i>Dr. Hans-Georg Wieck</i>).....	49
7. Latvian industry – 1940s-1960s: Excessive expansion and increasing regional disparity in the ussr (<i>Juris Prikulis</i>).....	51
8. Determining the damage of occupation: hypothetical evaluation of the development path of latvia, had it not been occupied (<i>Jānis Kalniņš, Gunta Piņķe</i>).....	59
9. Direct demographic losses suffered by latvia as a result of soviet campaigns (<i>Pēteris Zvidriņš</i>).....	65
10. Indirect demographic losses suffered by latvia as a result of soviet occupation (<i>Edvīns Vītolīņš</i>).....	76
11. Methodology for determining human value (<i>Jānis Počs</i>).....	82
12. Damage suffered by the baltic states and possibilities of compensation (<i>Boris V. Sokolov</i>).....	85
13. Environmental damage caused by the soviet regime; perspective of the european union (<i>Radvile Morkunaite-Mikuleniene</i>).....	89
ENVIRONMENTAL DAMAGE II	89
14. Environmental damage caused by the soviet regime to latvia (<i>Rolands Artūrs Bebris</i>).....	93
15. Pollution caused by industry and oil products (<i>Ināra Krūmiņa, Ivan Semyonov</i>).....	113
16. Environmental damage caused to latvia by pesticides used in the soviet agricultural system (<i>Daina Pužule, Ināra Krūmiņa</i>).....	119
17. Estimation of the damage caused to the national economy of latvia by the soviet army and the military-industrial complex (<i>Ilgonis Upmalis</i>).....	129
18. Environmental damage caused to latvia by the soviet baltic navy and estimated losses (<i>Ojārs Gērke</i>).....	139
19. Methods and results of remediation of the historically polluted territory, former soviet air force base at lielvārde (<i>Oļģerts Aleksāns</i>).....	145
Resolution.....	149

Introduction

Prof. Dr. oec. Inese Vaidere

Member of the European Parliament
Occupation of Latvia Research Society,
Chair of the Advisory Board



More than 25 years have passed since the three Baltic States – Estonia, Latvia, and Lithuania – regained their independence. However to this day the world has little information about the negative impact of the Soviet occupation on the economy, environment, demography, and societies of these nations.

To this day, not enough is known about the Soviet regime's ongoing negative effects on the occupied countries. It is also uncertain how long our nations will have to endure the adverse consequences of this brutal occupation.

Although Russia and the former republics of the USSR are now independent, disinformation continues to be published regarding the “benefits” that the Baltic States received under the Soviet rule. In particular, the accent has been that the Baltics received more than they had contributed. Russia, the legal and spiritual heir of the USSR, continues to spread this disinformation by investing heavily in propaganda institutions and mass media and actively censoring facts and disseminating myths. Russia also continues to prohibit access to archives that could reveal facts about the true nature of the Soviet regime and its crimes against humanity.

Before Soviet occupation in 1940, Estonia, Latvia, and Lithuania were developed European nations. The standard of living and manufacturing and agricultural intensities were, for example, similar to those in Finland and Austria and exceeded, by far, that of the grim reality of the USSR. In order to validate the occupation, Moscow created the myth that the Baltic States had “willingly” joined the Soviet Union, by claiming, for instance, that Latvia's economy was in such a poor state that the workers (proletariat and farmers) had looked longingly upon the advanced Soviet state. Such false assertions continue to be propagandized by today's Russia throughout the post-Soviet sphere.

If we review the circumstances of 1918 when Latvia declared its independence, the situation for economic growth was extremely unfavourable. War activity on Latvian territory was intense, resulting in the loss of almost 40% of its population – mostly young men. Many families had been forced to leave their homesteads and move to Russia's interior as labour for the war effort. Industry was dismantled and shipped

to Russia, as was the mercantile fleet. One-quarter of all buildings, roads, railway lines, and agricultural land was destroyed. No other European nation had suffered such losses by the end of WWI.

Industry was virtually destroyed during the First World War and needed to be rebuilt. Three sugar factories and the Ķegums Hydroelectric Station were built using the most modern technological advances available in Europe. Factories were built to make flour and baked goods, sweets, timber and lumber, fabric, and other goods, much of which was exported. In 1930, the largest and most modern central market in Europe was opened in Riga. The State Electrotechnical Factory (VEF) manufactured telephones, telegraphs, radios, communications central stations, and the famous miniature Minox (125 g) camera, which became very popular around the world. VEF also built various airplanes, automobiles, motorcycles, and small appliances. In addition, Latvia developed the most modern socialized medicine system in Europe.

In 1940 after 20 years of independence, Latvia had succeeded in creating a highly developed economy. From a net food importer, Latvia had become an agricultural exporter. Dairy and meat products made up a large portion of Latvia's exports: in butter exports, Latvia ranked 4th in Europe and 6th in the world. Pork and beef was exported not only to Europe, but to the USSR as well. At the time, Latvia ranked first globally per capita in meat and milk consumption, surpassing the USA and Great Britain.¹ At the same time, the Soviet Union was experiencing food shortages and famine.

Latvia's interwar period advances were also evidenced by an increase in education levels. During independence, 373 new schools were built and 587 buildings were renovated; teacher and pupil numbers grew. As a result, literacy rates were higher than those, for example, of Italy, Spain, Poland, Greece, and Portugal. The Soviet Union, in comparison, had a literacy rate of 50% at the end of the 1920s and the beginning of the early 1930s.² Latvia ranked 2nd behind Denmark in terms of published books per capita, and Latvia led Europe in the number of students enrolled in higher education per capita. The importance of the quality of higher education is attested to by discussions in Parliament and the University of Latvia about the high standards for University of Latvia staff and recognition of the qualifications of foreign PhDs.³

Latvia's economic and educational growth increased so rapidly during this period that by the mid-1930s, Latvia ranked 12th in Europe in Total Factor Productivity (domestic productivity, education, research, innovation).⁴

1 *Latvija citu valstu saimē* [Latvia in the Community of Nations], Rīga, 1939, p. 30.

2 *Latvija citu valstu saimē* [Latvia in the Community of Nations], Rīga, 1939, p. 30.

3 LR III Saeimas stenogrammas [Third Parliamentary Session Transcripts], III sesijas 19. sēde, 1929. gada 8. maijā, p. 632.

4 M. Šmulders, *Latvijas un PSRS ekonomiskie sakari un savstarpējie norēķini* [Economic Relations between Latvia and the USSR and mutual settlements], LZS, Rīga, 1990., p. 35.

As Latvia's economy grew, its economic ties with the USSR diminished. The Latvian ambassador to the USSR, at the time, Alfrēds Bīlmanis noted that safe and stable economic cooperation with the USSR was not possible, even for transit.⁵ Moscow had consistently tried to destabilize Latvia through economic means by regularly breaking agreements. This historic reflection still resonates today.

This brief overview indicates the general well-being experienced by the citizens of Latvia prior to the Soviet occupation of 1940.

During Soviet occupation, Latvia's GDP was consistently higher in comparison with the USSR, but Latvia's overall growth was slower than other Soviet republics, because Soviet investment, per capita, in Latvia was less than half the Soviet average.⁶ Compared to the Russian Federation, capital investment was 2.4 times smaller per capita.⁷

Despite a significant increase in manufacturing, Latvia fell far behind the other European nations, which continued to operate under a free market system. In comparison to other European nations with which Latvia had relative parity by the Second World War (such as Denmark, Austria, Finland), 1990 economic indicators show that GDP had fallen by about half.⁸

In his research on budget allocations for the USSR and the Latvian SSR, Dr. hist. Gatis Krūmiņš reveals that distribution of all income from Latvia was strictly divided between Soviet and Latvian budgets. The total amount received from Latvia between 1946 and 1990 was 84.9 billion rubles (based on the 1961 ruble value). Of this sum, only 44.3 billion was allocated to Latvia.⁹ Moreover, 15.7% of this sum was allocated directly to the Soviet military. In total, approximately 1/3 of the Latvian SSR budget was spent on Soviet military, and not on Latvian interests.¹⁰ This expenditure was often hidden behind allocations to various branches of the economy originally meant for the civilian population, but which also served military purposes.

During the Soviet occupation, Latvia, Lithuania, and Estonia were forcefully and fully integrated into the Soviet economy, resulting in a significant economic crisis after the collapse of the USSR. World Bank data indicates that decrease in industry was noticeable in all countries facing a "transition economy", but Latvia experienced the most dramatic decline.¹¹

5 LVVA [Latvian State Historic Archives], 2575.f., 8.apr., 59.l., 94.lp.

6 Коммунист (USSR CC theoretical journal), Nr. 14, Moscow, 1989, p. 46.

7 Conference materials *Postkomunistiskā transformācija un demokratizācijas process Latvijā. 1987. - 2003. gads* [Post-communist transformation and democratization processes in Latvia, 1987-2003]. LU, 2004, p. 55.

8 J. Kalniņš, *Latvijas pagātnes iespējamie attīstības scenāriji, kuri pamatoti ar tādu attīstīto kaimiņvalstu, kuras bija Latvijai līdzīgā situācijā pirms Latvijas okupācijas, bet nebija pakļautas totalitāram komunistiskam režīmam, izaugsmes raksturojumam* [Possible scenarios for Latvia's development, based on comparisons with neighbouring countries, who were not subjected to totalitarian Communism]. Rīga, 2006.

9 G. Krūmiņš, *Ieņēmumi un izdevumi Latvijas teritorijā 1946. – 1990. Latvijas PSR un PSRS budžetos* [Income and Expenses in Latvia, 1946-1990. Latvian SSR and USSR budgets]. Rīga, 2015

10 G. Krūmiņš, *Latvijas vieta un loma PSRS ekonomikā - mīti un realitāte* [Latvia's position and role in the USSR economy – myth and reality]. Rīga, 2015.

11 *The World Bank, Transition: The First Ten Years, 2002, Washington, D.C.*

Why was Latvia so deeply integrated in the Soviet economy? Latvia was not only the richest of the Baltic States, but also located in the centre. Consequently, it was a strategic transportation and communications hub of the Soviet Baltic military zone. In order to fortify the Soviet western frontier with reliable personnel, a significant military-industrial complex was built by workers brought in specifically from other Soviet republics. The influx of migrants increased Latvia's population by 35% by 1990. These migrant workers were supplied with modern living standards – apartments, kindergartens and schools, hospitals, and other infrastructure, - coming at a high price for occupied Latvia. It is estimated that each migrant to Riga cost the nation approximately 11,700 rubles (1988 rate).¹² The mass influx of migrants from other Soviet republics and repressions of ethnic Latvians resulted in the decrease in the population of the titular nation – Latvians – from 76% in 1940 to 50% in 1990. The most educated, intelligent and talented Latvian people were shot or deported during the occupation. As a result, Latvians lost at least 14% of its people.

It should be noted that in Latvia, the majority of the "nationally significant" industries set up by Moscow served the military-industrial complex. Their production made up over half of Latvia's GDP. After regaining independence in 1991, these industries were no longer needed. Similar to the inferior quality consumer goods produced during the period of occupation, military goods could no longer be sold in the East due to inflation and specific political policies, nor could they be sold in the West where the market was flooded with cheaper and better quality goods.

Fifty years of Soviet occupation created an economic system in the Baltics that could not compete on the free market. It did not develop naturally based on economic need, but was regulated "from above", based on Soviet political and economic interests. It is no wonder that industrial levels of 1990 were matched only in 2004. Clearly, it has yet to reach previous levels in other branches, as the economy shifts according to market needs and capabilities.

Gunta Piņķe from the Ministry of Economy noted in 2011¹³ that had not the Soviet system developed a centralized economy, the average wage of Latvian citizens in 1990 would have been double what it actually was and by 2000 – three times higher.

Expert of statistics Jānis Kalniņš calculated the total losses resulting from the Soviet occupation from 1950-1990 in comparison to Finland. This internationally adopted assessment system was also used to calculate losses in Estonia and Lithuania – their results are similar.

12 Latvian Academy of Sciences estimations, based on the 14 February 1989 Council of Ministers decree "Par pasākumiem iedzīvotāju skaita nepamatota mehāniskā pieauguma pārtraukšanai un migrācijas procesa regulēšanai Latvijas Padomju Sociālistiskajā Republikā [On actions to stop the migratory increase of population and regulation or migration in the Latvian Soviet Socialist Republic]" (P. Guļāns).

13 G. Piņķe, "Losses incurred by Occupation: a hypothetical assessment of the development of Latvia, had it not been occupied", presented at the conference *Social, economic and environmental losses-damage cause by the Soviet Union in the Baltic States*, June 2011, Riga.

Besides the outlined losses to the economy, there are many other types of damages: demographic, environmental, and social. In Latvia, these are estimated at 300 billion euros, which is equivalent to 37 years of the annual Latvian budget at the current budget rate. It should be stressed that the negative effects of Soviet occupation continue to incur costs of over 100 million euros to the Latvian budget annually.

The USSR purposefully and ruthlessly exploited its colonies – Estonia, Latvia, and Lithuania – turning them into donor nations. Fifty years of occupation have caused their economies to fall behind those of other independent European nations; today they could have found themselves among the leaders of the smaller European nations.

It is clear that political circumstances have suppressed discussion of these facts in the Baltics for many years. This, too, can be highlighted as a significant result of the effects of occupation on the psyche of society and their view of the world, their own nations, and others. This has resulted in strained societal and international relationships.

The conference Losses incurred by the Soviet Union in the Baltic States was organized to allow the rest of the world to understand the terrifying nature of the past events in order to prevent them from being repeated ever again. The motto of the conference was Understanding of factual history for a joint future. Participants from six countries, including Russia, have revealed how the Soviet totalitarian regime incurred great losses economically, demographically, socially, and environmentally on these nations, none of which benefited from this regime.

The conference was introduced by Prof., Dr. oec. Inese Vaidere, Member of the European Parliament; Ģirts Valdis Kristovskis, Minister of Foreign Affairs of Latvia; Ruta Pazdere, Occupation of Latvia Research Society, Chair of the Board; Dr. iur. Tālav Jundzis, Vice-president of the Latvian Academy of Sciences; Dr. oec. Uldis Osis, Member of the Latvian Academy of Sciences; and Dr. philol. Valters Nollendorfs, Museum of the Occupation of Latvia, Chair of the Board.

The papers presented at the conference on the effects of the Soviet regime in several countries – Estonia, Latvia, Lithuania, Poland, and Georgia cover three key issues: 1) Depopulation as a result of deportations, war activity, and environmental policies and accidents, 2) Russification of the titular nations through migration policies that offered preferential treatment for migrants at the expense of the indigenous population, and 3) Economic integration of the local economies into the vast military complex and breaking of economic ties developed during the interwar period with Western Europe, resulting in severely decreased economic potential.

The edited book offers its reader facts, which until today, have not been widely publicized. The publishers hope that this diverse and constructive source of information will be of use to everyone interested in the effects of Soviet occupation on a large part of Europe – effects that continue to directly influence the reintegration of these countries into the European family of nations.

Andrejs Mežmalis

Commodore, Retired

Historical background (1939–1991).

During the interwar period, the Baltic States and Poland were in an unenviable position between these two dictatorial powers. Both powers actively exported political propaganda and both dictators envisaged incorporating these young and relatively fragile countries into their empires. Such was the political reality of the period, as illustrated in a 1930s cartoon by Jānis Dreslers published in the newspaper *Jaunākās Ziņas* on 23 December 1933.



Travelling salesmen: Madam, have one of these beautiful Christmas tree decorations - it is an excellent product. Young lady: No, thank you! Foreign products are too expensive for me!

In order to protect themselves, the Baltic States and Poland sought guarantees against both covert and open interference in the internal affairs of their countries. Latvia joined the League of Nations on 22 September 1922 and actively sought security guarantees in the West and the East. Latvia signed the Latvian-USSR Non-Aggression Pact on 5 February 1932, which stipulated that all further conflicts would be settled peacefully. This treaty confirmed the Latvian-Soviet Peace Treaty of 11 August 1920, which formed a strong basis for good relations between both countries.

In the meantime, Hitler was pursuing a policy of expansion. In 1938, Austria was incorporated into Germany, and in 1939 – Czechoslovakia was occupied. Latvia sought security guarantees, and signed the Latvian-German Non-Aggression Pact on

7 June 1933. Clause 1 of this treaty also stipulated that if any third country attacked either country, the other would in no way support the aggressor.

Soviet and German collaboration (1939). Collaboration between Stalin and Hitler was implemented on a grand scale and included military and institutional cooperation, notably between the repressive institutions, NKVD and SD.

The first step was the Molotov-Ribbentrop Pact, signed on 23 August 1939, which included a secret protocol that divided Eastern Europe between the Soviet Union and Germany.

The plan provided for the following measures:

1. Sign a mutual treaty between Nazi Germany and the USSR, dividing Eastern Europe between both;
2. Force the smaller Eastern European countries (Finland, Estonia, Latvia and Lithuania) to sign a “mutual assistance agreement” with the Soviet Union, allowing deployment of Red Army troops in each country;
3. Accuse these countries of violation of the mutual assistance agreement, in order to present an ultimatum, forcing them to allow unrestricted deployment of Red Army troops; and
4. Invade and occupy each of these countries; and hold “elections”, appoint a Soviet puppet regime, and then annex and incorporate each of these countries.

World War II. On 1 September 1939, one week after the USSR and Germany had signed the Molotov-Ribbentrop pact, Germany invaded Poland. On 3 September, Great Britain presented an ultimatum to Germany, demanding withdrawal from Poland. The same day, a German submarine attacked the passenger ship Athenia, starting the war with Great Britain, followed by France’s declaration of war. Thus, World War II had begun.¹⁴ The USSR invaded Poland on 17 September, breaking the non-aggression pact with Poland, signed on 5 May 1939. The USSR and Germany had occupied Poland by 23 September and proceeded to divide the spoils. The USSR was interested in expanding unrestricted activities in Finland, the Baltic States, and Bessarabia. On 28 September 1939, the USSR and Germany signed the Boundary and Friendship Treaty in Moscow and collaboration continued.

German-ussr boundary and friendship treaty



The Boundary and Friendship Treaty included a map, signed by Stalin and Ribbentrop. The map shows the division of Poland, by which Germany “gave back” the Baltic States and Poland to the USSR.

The German-USSR Boundary and Friendship Treaty was of special importance to Stalin, as plans for the occupation of Finland and the Baltic States had already been prepared. It further consolidated the mutual understanding between both dictators and confirmed that Finland and the Baltic States were indeed within the Soviet sphere of interest, as stated in the Molotov-Ribbentrop pact.

In addition to the Boundary and Friendship Treaty, both parties signed a secret supplementary protocol on 28 September 1939, with the direct intention of oppressing the Polish people. The highest-ranking Soviet leaders decided to execute all Polish officers and high-ranking Poles arrested and held in KGB prison camps. The KGB chief, Lavrentiy Beria, drafted a document, signed by Stalin, Molotov, Voroshilov, Mikoyan, Kalinin, and Kaganovich, revealing that the highest-ranking state leaders both planned the mass murder and also gave their consent to these executions. For many decades, these documents were hidden.

The USSR-German Boundary and Friendship Treaty and the Molotov-Ribbentrop pact gave Stalin free reign in the Baltic States, Finland, and Bessarabia. His next step was to force those countries to allow deployment of Red Army troops in their territory. Concurrently in October 1939, the decision had already been made to

“liberate” the Baltic States from ‘undesirable’ persons.

German-Soviet collaboration expanded in the first year of the war, as the now allied dictatorship regimes had common borders after the occupation of Poland. Diplomatic correspondence clearly demonstrates that both countries had resolved to maintain this partnership. Documents clearly indicate that Germans and Soviets had had close commercial and other business ties in the 1930s, and that the goal of their future commercial cooperation was to regain the high volume of trade attained in the past.

As World War II progressed in Western Europe, Stalin did not hesitate to force the mutual assistance agreement upon each of the Baltic States and Finland. “Negotiations” between the USSR and Latvia were initiated on 2 October 1939, and under duress, the Baltic States finally signed the agreements forced upon them by Stalin; Estonia signed on 27 September, Latvia on 5 October, and Lithuania on 10 October. Finland refused to sign such agreement and the Soviets launched an attack on Finland on 30 November 1939. The Finns were better prepared for such attack than expected and the USSR failed to occupy Finland. There has been much speculation whether or not the Baltic States should have resisted the establishment of USSR military bases in these countries under the Mutual Assistance Agreement.

Was Germany informed of Stalin’s plans in the Baltic States? Some evidence suggests that it was, because Hitler gave the order to organize evacuation of Germans and Baltic Germans from Estonia and Latvia. According to German information, there were 16 000 ethnic Germans in Estonia and 70 000 in Latvia. On 30 October 1939, Germany signed an agreement with Latvia to repatriate Baltic Germans; approximately 50 000 Baltic Germans had left Latvia by the time of the Soviet occupation and another several thousand left for Germany after. This German emigration was an ominous sign, and Moscow did not like the hasty evacuation of the Germans from Estonia and Latvia.¹⁵

Soviet occupation (1940). Although the Soviet Union failed to fully occupy and subjugate Finland, it occupied part of its territory. Stalin’s next step was to conquer the Baltic States.

Lithuania was accused of having captured Soviet soldiers in order to force them to reveal USSR military secrets. These falsified accusations were intended for the mass media abroad and within the USSR. Soviet provocations reached their peak on 15 June 1940, when the Soviet Union demanded Lithuania form a new government and allow deployment of additional USSR troops. This contravened the Mutual Assistance Agreement signed on 10 October 1939. Lithuania accepted this ultimatum reluctantly and president Antanas Smetona left the country in protest.

The Latvia-USSR Mutual Assistance Agreement brought 25 000 Red Army soldiers,

together with Soviet naval and air base personnel to Latvia in 1939. On 15 June 1940, Soviet armed forces attacked Latvian border posts, killing and kidnapping 37 Latvian residents, including women. The next day, the Kremlin presented an ultimatum to Latvia, demanding formation of a new government and permission for an unlimited number of Soviet troops to be brought into the country. The same took place in Estonia simultaneously. Three Soviet army regiments with 39 motorized divisions and a large number of tanks were positioned at the border, waiting for the order from Moscow.

This was identical to the plan Moscow had employed against Finland. All ultimatums were given just a few hours for response; the Baltic States reluctantly agreed to avoid bloodshed. On 17 June 1940, the first Soviet tanks entered Riga.

Andrey Vyshinsky, the notorious prosecutor and executioner of the “Stalin cleansings” of the 1930s, arrived in Riga. His task was to form the new Latvian government. On 19 June 1940, the new Cabinet of Ministers was formed under the leadership of Augusts Kirchenšteins. At the time, the Latvian Communist Party had 400 members. After the formation of the new government, Moscow organized “worker’s demonstrations” in Riga in which people were forced to participate to create a “revolutionary atmosphere”. Lastly, “Soviet-style” elections took place for the purpose of electing a “parliament” in each of the Baltic States.



Soviet Red Army tanks enter Riga on 17 June 1940.

¹⁵ Alfrēds Bērziņš. 1939. New York, 1976; p.259-260.

Within five weeks, the USSR had presented ultimatums, invaded and occupied all three Baltic States, held parliamentary elections supported by the Soviet Army, appointed new governments, and incorporated the Baltic States into the Soviet Union.

These actions were, of course, contrary to international rights and the Constitution and laws of the Republic of Latvia. These actions were also taken against the will of the citizens of Latvia and the other Baltic States. But, it was only the beginning of the horror that awaited the Baltic States.

Throughout Soviet occupation and even today the Russian Federation (the legal successor of the USSR) still holds to the absurd idea that the Baltic States voluntarily joined the Soviet Union. Both the USSR and its successor have invested a lot of time and effort to mislead the world in regard to these events. The truth is that it was a violent occupation and annexation that violated international law and a number of international and bilateral agreements. The USSR wasted no time and made no attempts to draft a voluntary agreement on joining in accordance with the principles of international law. Boris Meissner, notable international law expert from Germany, notes: “The Soviet Union signed a contract with itself and performed the act of annexation, clearly violating not only the sovereignty of the Baltic States, but also the autonomy in the Baltic States, based on the Peace Treaty of 1920 [with Soviet Russia].”¹⁶

Following these events, the brutal and experienced Soviet secret police (NKVD) and the Soviet machinery began subjugation of the Baltic States, including “correctional operations” in all the Baltic States to transform the residents into “true” Soviet citizens.

Following the establishment of Soviet power in the Baltic States, the USSR implemented the Sovietization of education, including Russian language instruction starting from the second grade and classes on Stalin’s Constitution in the seventh grade.¹⁷ Private property and enterprises were nationalized. Latvian national symbols were replaced by Soviet and Communist symbols. Patriotic literature and independence era history books were banned; reading these constituted a criminal offense under new Soviet law. This was just the beginning of the horror that was to come – mass murder and deportation to Siberia.

After the occupation of the Baltic States, collaboration between the USSR and Nazi Germany continued until 22 June 1941 when Germany attacked Soviet Union. The USSR had already undertaken military measures to strengthen its sphere of influence in Lithuania. However, the pact did not include one region of Lithuania, for which a separate agreement was prepared. On 10 January 1941, Germany sold this Lithuanian region to the Soviet Union for 7 500 000 gold dollars, equal to 31 500 000 Reichsmarks.

The Soviets conducted mass murder and deportations in 1941. Soviet citizens took over administrative and police functions with the support of the NKVD. Section 58 of the

¹⁶ Meissner, Boris. *The Occupation of the Baltic States from a Present-Day Perspective*, Latvian Academy of Sciences. Riga, 2001, p. 440.

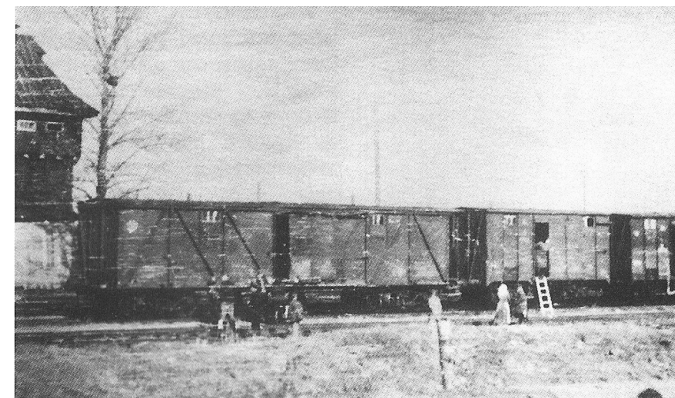
¹⁷ *Latvian State Archives. “Policy of the occupation powers in Latvia (1939-1991) – Collection of documents” (Okupācijas varu politika Latvijā (1939-1991) – Dokumentu krājums)*, Nordic, 1999, p. 422.

1926 Criminal Code of the Russian SSR was used by the NKVD to accuse Latvian residents of counter-revolutionary activity – imaginary, fictitious or fabricated. This ex post facto law encompassed activity from the 1920s and 1930s and also applied to Latvian freedom fighters, who had fought against the Bolsheviks. The NKVD began its activities with arrests, usually during the night. People started disappearing without a trace and terror reigned over the country. On the night of 14-15 June 1941, the NKVD, supported by the Soviet Army, deported 15 424 Latvian citizens; they were arrested and deported to Siberia in cattle wagons.

It is estimated that the deportations and mass murders planned and implemented by the NKVD resulted in the loss of 34 250 Latvian residents of Latvia, including 50% of Latvian military officers, including 22 generals and one admiral. Similar deportations took place in Estonia and Lithuania. The Nazi attack, *Operation Barbarossa*, on the Soviet Union on 22 June 1941 halted further Soviet operations¹⁸ and stretched over a vast front from the Baltics to the Black Sea.

The USSR was taken by surprise, and German Army units occupied Riga by 1 July 1941. The Germans entered Daugavpils in June, and they reached Liepāja and Jelgava on 29 June. The rapid German advance caused NKVD units to hastily conduct additional mass executions. The USSR forced thousands of Baltic youth, freshly recruited by the Soviet Army, to retreat with the Soviet Army; the majority of them disappeared without a trace.

By 7 July 1941, the Germans had occupied all of Latvia. The NKVD had little time to hide their crimes against humanity, and many NKVD documents fell into the hands of the new occupiers and Latvians. Indescribable scenes of horror – torture chambers, execution chambers, and mass murder sites – were revealed.



1941 deportation train. Men were separated from their families and few returned to Latvia.

¹⁸ Rudolph Bangersky, *Memoirs of My Life, Volume II*. Copenhagen, 1959, p.



Latvian officers executed in Litene.



Latvians executed by the NKVD in Riga Central Prison¹⁹

NKVD documents revealed that the highest-ranking Soviet officials had unrestricted authority to execute people: The NKVD was the pillar of terrorism and murder that served as the foundation on which the Kremlin secured its power from 1917 until 1991.

German occupation (1941-1945). The Nazi Army advanced quickly. Hitler planned to exterminate Jews in all lands occupied by the Germans, including the Baltic States. Historians and researchers have a clear picture of Nazi *Einsatzgruppen* (EG) activities in Eastern Europe. These units followed the German Army and exterminated Jews. It was emphasized that the Jews should be killed immediately after the German Army had occupied a territory and should be carried out to make it appear as if the locals had done this.²⁰

EG units arrived in Riga along with the Germany Army. The Commander of *Einsatzgruppen A*, German SS General Walter Stahlecker, and his men may have already executed Jews in Daugavpils on 26 June and Liepāja, Jelgava and Jēkabpils on 29 June. Stahlecker assumed responsibility for safety behind the German front, and orders and reports were verbal, so there would be no evidence. A few remaining documents indicate the nature of plans to annihilate the Jews and incorporate the Baltics into Germany.²¹

Three days after the German occupation, a synagogue with Jews locked inside was burned down, and general repressions were initiated against the Jews and Latvian nationalists.

19 A. Bērziņš. *The Unpunished Crime*. 1963, p. 12.-13.

20 Andrew Ezergailis. *Nazi-Soviet Disinformation*; Riga, 2005. P. 7-10,11.

21 *Military Tribunal-Nuremberg, vol. 38, document 221 L, p. 86-89*; Ezergailis, *Nazi-Soviet Disinformation*, p.9. In this document Hitler mentions the final resolution twice, by which he means the extermination of the Jews; he also mentions that foreigners must not be armed – so anyone, except Germans, must be disarmed.

Stahlecker ordered that the Latvian national and municipal governments be abolished; Latvia be incorporated into Ostland; Soviet laws remain in effect; wearing of Latvian uniforms be forbidden; and all weapons be surrendered to the Germans under pain of death for non-compliance.

All three Baltic States and Belarus were incorporated into Ostland. Following the Soviet atrocities and deportations, the initial reaction of Latvians to the German arrival in Latvia was to perceive it as liberation. Yet, the Nazi occupation was similar to Soviet occupation. The Gestapo (SD and SS) adopted methods similar to those used by the NKVD. The Gestapo had learned much from their mutual collaboration with the NKVD in the 1930s.²²

In November 1941, Stahlecker reported that the most of the national leaders had been assassinated or deported by the Soviets, especially in Riga, thereby making it difficult to carry out actions against the Jews. Spontaneous pogroms were not taking place, making it difficult to blame the local citizens. Jews were killed upon orders of high-ranking Germany officials.²³

Germans organized several Latvian SD auxiliary units by recruiting men from families that had suffered under the Soviets. These units were directly subordinated to Lange and Stahlecker. Arājs' team was the most well known. Evidence shows that this unit followed German orders and was under strict German supervision.²⁴

After World War II, Latvian legionnaires in POW camps identified Arājs as a war criminal; he was sentenced to life imprisonment in Germany in 1979. Konrāds Kalējs, another SD operative, was caught but died before he could be extradited to Latvia from Australia.²⁵

The Holocaust. On 23 October 1941, the Germans formed a ghetto in Riga, which housed approximately 25 000 Jews. Jeckeln gave the order to eliminate the Riga Ghetto and personally supervised this from 30 November-8 December 1941. German SS and police units executed this task in Rumbula, approximately 10 km from Riga.²⁶

Soviet show trials. During the Cold War, the Soviet Union (and now Russia) blamed Latvian self-defence and police units or Legionnaires for these murders; the Kremlin wanted to discredit exiled Latvians living in the West because they strongly opposed Communism. The Kremlin supplied falsified evidence and fabricated documents and other materials in order to brand Latvians living in the West and their leaders as "fascists". Jeckeln's testimony was concealed until 2005. The Soviet Union held show trials in Latvia that accused the 18th and 21st Latvian Police Battalions for murdering Jews; some

22 Edvins Snore. *The Soviet Story*. DVD film, 2008.

23 *Holocaust Research in Latvia – Materials from an International Conference. Rudite Viksne. "The Liquidation of Jews in Latvia's Small Towns – Research problems and results. Volume 12; p. 42. Publisher: Latvian Institute of History (Latvijas Vēstures institūts). Riga, 2004; Ezergailis, p. 12.-16, 33.*

24 Ezergailis, p.37-38.

25 Ibid, p.37, 189.

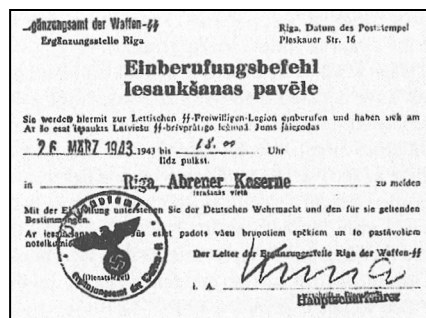
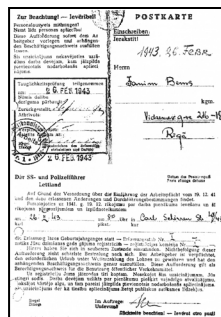
26 Andris Grūtups. *Ešafots*. Rīga, 2005. 40.-42.lpp.

of these soldiers had recently returned from hard labour in Siberian slave camps. These were fabricated allegations and innocent people were sentenced to death or once again sent to the Gulag. Since restoration of independence in 1991, Latvia has investigated both of these show trials and has shown that these trials were intended for Western and Soviet mass media.²⁷

In total, 25 000 German administrators and superintendents had come to Latvia.²⁸ They controlled every aspect of Latvian life and the annihilation of the Jews, just as the Soviet NKVD had done before in 1940-1941.

Recruitment of Latvians for German war purposes. In the second half of 1941, the Germans began to experience increasing difficulties with partisans, who were active behind the Eastern front. Ignoring the Hague Convention, they began forming Latvian Police Battalions from former policemen, guards, and soldiers. These battalions were initially used for keeping order, such as guarding railways and ports. However, they were soon sent to the Eastern front to battle against Soviet partisans (mainly Soviet soldiers behind the German lines); the number of volunteers decreased significantly.

The Latvian Legion (1943-1945). In the winter of 1942 -1943, the Battle of Stalingrad changed the course of the war and German forces needed replenishment. The Germans decided to create Estonian and Latvian Legions, once again violating the Hague Convention. Initially, Germans recruited only volunteers, but the response was so low that on 10 February 1943 Hitler ordered conscription of men into the Legion.



The penalty for failure to comply was imprisonment or execution. Two divisions were formed – the 15th and the 19th Divisions. Initially, the German intention was to mobilize 60 000 of men born from 1919-1924, but in reality they mobilized 42 000, of which 15 000 went to the Legion and 7000 became support for the German Army.²⁹

27 Andrew Ezergailis. *Nazi-Soviet Disinformation*. Riga, 2005, p. 44-53.

28 *Arnolds Aizsilnieks*. "Economic exploitation of Latvia during the German occupation 1941-1945" („Latvijas saimnieciskā izmantošana vācu okupācijas laikā 1941-1945"). Damage caused by occupation powers in Latvia 1940 -1990 (Okupācijas varu nodarītiepostījumi Latvija 1940-1990). *Stockholm-Toronto, 2001*; p. 162.

29 Andrejs Mežmalis. *The Latvian Legion*. Riga, 2010, p. 41-42; p. 55.

Retired Latvian Army General Rūdolfs Bangerskis was appointed Inspector General of the Latvian Legion; he had to walk a very narrow path, especially when protesting against German excesses, such as the use of the Inspector General's seal to conduct unauthorized mobilization of young Latvians.

Despite German objections, both divisions were united with several German divisions. They suffered heavy losses but succeeded in holding their front lines against Soviet Army forces that far outnumbered them.

To this day, Latvians commemorate these heavy losses. Such remembrance events were forbidden during Soviet occupation. Now every year on March 16, Latvians in Latvia and abroad continue to commemorate the great number of lives lost – 15 000 Latvian soldiers – most of whom were 18-19 years old. Latvians commemorate other Latvian soldiers who fell in World War II, approximately 80 000 men in total, including fallen soldiers, prisoners of war, and those who died in Siberian slave camps after World War II. Latvians also remember that these young men were forcefully mobilized, dressed in the uniforms of a foreign nations, and killed in a war that was not caused by Latvia, who had declared neutrality before the onset of the war, but which was ignored by the Soviet Union and Germany.

World War II losses. The number of fatalities in the Latvian Legion was very high, because they were often involved in battles on the front lines where the enemy forces outnumbered the Latvian units many times, sometimes even ten to one. According to estimates, 80 000 Latvian soldiers died during World War II.³⁰ Fatalities reached up to 55%.³¹ Both Latvian Divisions were supplemented with new recruits several times in order to replace the dead and injured. The Soviets also mobilized at least 20 000 young Latvians, approximately 50% of whom died or were injured.³² Latvian citizens were exterminated by both sides.

The Latvian population suffered unimaginable losses as a result of the Soviet and German occupations – murdered, mobilized, fallen, and deported. From 1939 to 1941 alone, Latvia lost 165 000 residents (70 000 repatriated to Germany; 35 000 executed or deported during Soviet occupation; 20 000 mobilized into the Red Army; 40 000 deported to Russia). From 1941 to 1945, Latvian losses amounted to 275 000 (90 000 executed or deported by the USSR; 35 000 taken to Germany; 80 000 died in the Latvian Legion; 70 000 murdered or deported by the USSR). In addition Latvia lost 230 000 residents (100 000 fled to the West; 50 000 were lost due to the annexation of Abrene by the USSR; 80 000 were lost due to other reasons). Thus, the total losses of

30 *Latvian soldiers during World War II (Latviešu karavīrs Otrā pasaules kara laikā)*. Plon, 1985; p. 468-469.

31 Gunārs Kurlovičs and Andris Tomašūns. *Latvian history for secondary schools II (Latvijas vēsture vidusskolai II)*. Riga, 2000; p. 243.

32 *Latvian Museum of Occupation Yearbook, 2000*. Riga, 2001; p. 209.-211. (Red Army war document. K. Mahaņko. Secret report o January 3, 1943 to J.Kalnberziņš and V. Lācis).

Latvia from 1939 to 1945 amounted to 670 000 people or approximately 33% of the country's population, whereas the Soviet Union lost only 12% and Germany (together with Austria) – only 10.5%.³³ In addition, Latvia lost another 100 000 residents from 1945 to 1953 because of Soviet terrorism.³⁴ The USSR captured 50 000 Latvian soldiers and deported them to the Gulag; only 10% of them survived the slave camps of Siberia. Another 7909 Latvian partisans were killed or arrested and deported.³⁵ Other sources provide estimations of those killed and deported from Latvia, Estonia, and Lithuania from 1940 to 1952³⁶:

Baltic fatalities due to Soviet occupation³⁷

	Estonians	Latvians	Lithuanians
1940 -1941 losses	60 000	34 000	75 000
Deported or killed during Soviet occupation 1944 - 1952	75 000	136 000	245 000
Total	135 000	170 000	320 000

Damage caused by Russification policy in the Baltics. After World War II, the Soviet Union had three main objectives in the Baltic States: 1) colonization, mainly by Russians, 2) Russification, and 3) 100% integration of the economies within the economic structures of the Soviet Union. This included the nationalization of all private property, except for minimum personal belongings. The property of all those deported was confiscated, since deportees were considered politically unreliable or simply classified as enemies of the state. After World War II, the Soviet Union resumed where they had left off in June 1941. Soviet colonization was closely tied to the mass executions, deportations and repressions against Latvian, Estonian, and Lithuanian residents. Following each mass deportation, migrants from other Soviet republics, mainly Russians, were brought into the Baltic States. The deported were allowed only to take a few personal belongings with them to Siberia, including food for the long road. Property and personal belongings, including their homes and furnishings, were confiscated and given to the colonizers. The colonizers were

33 Gunārs Kurlovičs and Andris Tomašūns. *Latvian history for secondary schools II (Latvijas vēsture vidusskolai II)*. Riga, 2000; p. 264.

34 Ibid; p. 276.

35 Andrejs Mežmalis. *The Latvian Legion (Latviešu leģions)*. Riga, 2010; p. 60.

36 *Damage caused by the occupation powers in Latvia 1040-1991 (Okupācijas varu nodarītie postījumi Latvijā 1940-1991)*. Stockholm - Toronto, 2001; p. 497.

37 Helmuth Weiss. *Die Baltischen Staaten. Die Sowjetisierung Ost-Mittel-europas*. A.Metzner, 1959; Andrievs Namsons. Die Nationale Zusammensetzung der Einwohner der Baltischen Staaten. *Acta Baltica I*. Königstein, 1962, p. 63-73; Adolfs Silde. *The Profits of Slavery*. Stockholm, 1958, p. 15; David J. Dallin. *Forced Labor in Soviet Russia*. New Haven, 1947; p. 264.

Soviet military, NKVD personnel, Communist functionaries, and also many economic refugees from Russian collective farms. During the first twelve years after World War II, more than 400 000 colonizers arrived in Latvia to settle in the apartments and houses of the deported and executed. Over the next forty years, the number of immigrants reached 708 000.³⁸ Following the war, the most serious situation was in Kurzeme, where the USSR imprisoned many men aged 16-60 in filtration camps; many were later sent to Siberia, some estimate approximately 50 000.

On 25 March 1949, the Soviets deported approximately 95 000 people

from the Baltic States (Estonia - 20 713; Latvia - 42 149; Lithuania - 31 917),³⁹ the majority of whom were women and children.⁴⁰ Colonization continued throughout the occupation until 1991. Data show that the number of immigrants (colonizers) to Latvia from 1945 to 1955 reached 535 000; they came mostly from Russia.⁴¹ This number excludes Soviet military officials who lived in Latvia. Soviet policy encouraged military personnel to retire in Latvia. Naturally, they came with their families, receiving in return special remuneration and privileges for starting a new life.

The Soviet Russification program was simply structured, but strictly enforced. Local children had to learn Russian and, usually, official tests had to be taken in Russian, although 90% of Latvians did not speak Russian. Russian dominated in daily life and events, such as at meetings and at the cinema. Nobody dared protest, because you could be sent to Siberia for lesser offences. Moscow had the goal of gradually diminishing the importance of the Latvian language. High-ranking positions in Riga and regional institutions were staffed by immigrants who did not speak Latvian, nor did they learn it, and all directives and reports were issued in Russian only. Exclusion of the Latvian language from daily use was so pervasive that even high-ranking officials protested.⁴²

Over fifty years, the USSR had turned Latvia into a huge military base. The Latvian economy was fully integrated into the Soviet military-industrial complex in which Latvia was producing nearly 80% of all goods and products for the needs of the Soviet Army. The damage caused by the Soviet Union in the Baltic States and elsewhere during World War II and the Soviet post-war occupation period is discussed in other papers, presented by researchers and experts from the Baltic States, Poland, Russia, Georgia and other countries.

38 Ilgonis Upmalis, et al. *Latvia under the Soviet military (Latvija Padomju militāristu vara)*. Riga, 2011, p. 98-99; *Unpunished Crimes*. Stockholm-Toronto, 2003; p. 87-96. [Article by Heinrich Strods. "Operation 'Coastal Storm' (PRIBOY) (Krasta banga) - The deportation of the Baltic Peoples 1949".

39 Ibid; p. 93.

40 *Unpunished Crimes*. Stockholm-Toronto, 2003; p.99.-100. (Article by Sindija Dimanta and Indulis Zālītis: "Structural Analysis of the Deportations of the 1940s").

41 Gunārs Kurlovičs and Andris Tomašūns. *Latvian history for secondary schools II (Latvijas vēsture vidusskolai II)*. Riga, 2000; p 265.

42 *Unpunished Crimes*. Stockholm-Toronto, 2003; p. 81. (Article by Jānis Riekstiņš: *The Dictatorship of the Russian Language*).

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Damage caused by the soviet union in Lithuania – depopulation of 1940-1941 and 1944-1953

Lithuania experienced a series of cataclysmic events during Soviet and Nazi rule, which were oriented towards extermination of the national population. The atrocities committed by Nazis have been scrupulously studied over the last 60 years, but the identification of the consequences of the Soviet terror has begun only recently.

Following the Soviet occupation of the Baltic States, Lithuanians and other nations that came under the influence of the Molotov-Ribbentrop pact (Western Ukrainians, Latvians, Estonians, Poles, and residents of the Western part of Belarus) became victims of Sovietization, persecution, terror, and even genocide. State and military organizations were banned. Cleansing was undertaken in public administration, military management was replaced, and extensive persecution operations were carried out. When the Soviet Union reoccupied Lithuania in 1944, persecutions increased. Following the re-occupation, Lithuania was forcibly incorporated into the Soviet Union. Initially, this was done with the help of Red Army forces; later by the repressive military units of the People's Commissariat of Internal Affairs (NKVD). In order to defend and to protect Soviet authorities, the NKVD deployed its garrisons in all of Lithuania, including the rural areas. The significant quantitative superiority of the NKVD units allowed suppression of armed resistance attempts by Lithuanians.

After the end of World War II, apart from general criticism of Soviet political doctrines, the international community and the most influential Western democratic countries did not actively protest Soviet policy in the Baltic States. The totalitarian Communist regime instilled terror and forced repressions in Soviet-occupied Lithuania. Soviet policies were implemented by force resulting in war crimes, crimes against humanity, and genocide. All crimes were committed with the knowledge and direction of state authorities and were considered justifiable from the ideological and practical perspective of ensuring public safety and other goals. These crimes were committed by the highest-ranking Soviet authorities and their subordinated institutions.

Deportation

Deportation, according to the Convention on the Prevention and Punishment of the Crime of Genocide, is an act committed with intent to destroy, in whole or in part, a national, ethnical, racial, or religious group. One of the most significant Soviet crimes was deportation, during which Lithuanians were forcibly deported from their homes to

the most remote northern and eastern regions of the USSR. Deportation was conducted on the basis of administrative, rather than legal principles and was oriented towards a category of people selected on the basis of ambiguous, pre-determined criteria, rather than targeting specific individuals. The use of deportations was initiated by the leaders of the Soviet Communist Party, but implemented by the NKVD.

The goal of the deportations was rid the country of the most active and well-organized national opposition groups, as well as a whole stratum of Lithuanian society; their property was confiscated in order to intimidate them and break their will to resist the Soviet regime. Deportations were cruel and carried out meticulously. In accordance with the pacts signed by the Soviet Union and Germany on 23 August 1939 and May and June 1941, large numbers were deported. In 1941, Estonia, Lithuania, Bessarabia (including Northern Bukovina), and the Western part of Belarus and Ukraine were designated as deportation zones. The total number deported from Lithuania from 14-18 June 1941 was at least 18 500. From early 1940 to late 1941, approximately 23 000 Lithuanian residents were sent to camps or deported. Most of the deportees, 29,8%, were farmers. After 1941, most of the deportees came from the Altai region - 7232 persons or 58,6% of all those deported. Over time, the justification for deportations changed.

Crimes against humanity – “deportation and forced resettlement within the borders of the same country” and for “forced labour” – influenced the lives of more than 130 000 people. The exact number of deported could be determined, if lists naming the deportees were published. Soviet law also determined “deported” status. In 1948, the situation of the deportees was further complicated by restrictions imposed (Decision of 21 February 1948 “*On deportation, forced resettlement and resettlement to be undertaken in special circumstances*, decision of November 24 ”*On persons who had been forcibly resettled*) and orders by the (Ministry of Internal Affairs) MVD and (Ministry of State Security) MGB (MVD – March 8, 1948 No 00246; MVD – December 7 No 0011145; MVD – November 16, 1950 No 00552):

1. Deportees were prohibited from leaving the place of deportation without the appropriate permit from the MVD;
2. Militia made relevant notations in the passports of the deported (stamps), specifying restrictions on the place of residence (living was permitted only in the region of the place of exile). Despite this, passports were confiscated from the deported and returned only in 1955;
3. Deportees had to report to supervisory authorities at least once a month. Adults had to report to special military offices, which were authorized to more frequent reporting, often depending on their “dangerous nature” and “working and living conditions”. Especially authorized officials had to check those deportees, who had come of age, at their place of residence at least once every two weeks; and
4. Based on the decision of the Presidium of the Supreme Soviet of the Soviet Union of 25 November “On criminal liability in cases when attempt of escape

from the place of exile had been made”, any person who had been caught while attempting to escape was to be held criminally liable and could be sentenced to 20 years of *katorga* (officially the order referred to Chechens, Germans, Crimean Tatars and other nationalities deported during the war, but in reality it was applied to Lithuanians, Latvians, Estonians and Ukrainians as well).

Most Lithuanians, Latvians, Estonians, and residents of Western Ukraine were exiled until 1958. They were considered to be particularly dangerous. Massive repatriation of deportees began in 1958, but the last were released only in 1963. However, many were forbidden from returning to their home countries.

Forced labor

From 1948 to 1951, approximately 80% of deported Lithuanians were exiled to the Krasnoyarsk region – most were to be employed in the forests and sawmills. Documents show that as of 1 January 1949, 22 025 of the 24 725 adult deportees worked for the Soviet Ministry of Forest and Paper Industry. It was one of the most difficult and exhausting jobs, carried out both by men and women. Poor living conditions and lack of food caused chronic diseases – scurvy, tuberculosis, cardiovascular disease – resulting in semi-invalid status. Almost everyone exiled to North Yakutia or the coastal areas of the Arctic Ocean suffered from scurvy.

Judging by documents and oral testimonies, all those who survived suffered from scurvy, tuberculosis, typhoid, dysentery, cardio and vascular diseases, and other diseases caused by forced resettlement, inadequate living conditions, and health disorders. Official documents show that in 1955, 104 000 of the survivors (including children), who had been employed in forced labour, had significantly deteriorated health. Approximately 14 000 of the deported children were forced to work at their place of exile; approximately 7000 of them were 16 years old, but the other 7000 were aged 12-15.

From 1941 until 1953, deportees had to work for food alone. Their life was determined by a series of restrictions – decisions made by the Soviets from 1939-1945: On 21 February 1948 “On deportation, forced resettlement and resettlement to be undertaken in special circumstances”; 24 November 1948 “On persons who had been forcibly resettled”, MVD order – 8 March 1948 No. 00246; MVD – December 7 No 0011145, MVD – November 16, 1950 No. 00552). On 3 June 1948, the USSR Council of Ministers decided that deportees accused of “malingering” could be sentenced to imprisonment. This suggests that forced labour was performed without any remuneration.

Many of the Siberian and Northern Russian industrial giants fulfilled state-imposed plans and expanded their resources on the backs of deportees who received no salary.

During this period, approximately 18 000-20 000 children were exiled; often only one parent survived or both died in exile. The children lived in poverty. Approximately 4000 dependent children were deported. The total number of orphaned deported children is estimated at 22 000-24 000.

In 1941, as well as from 1948-1951, at least 24 000 people were added to the deportation lists. These people had to hide, abandoning their homes, or join their already deported family members.

When returning from exile to Lithuania, the deportees were prohibited from working as sailors and in around 70 other different industrial enterprises and institutions. They were also deprived of the right to leave the Soviet Union. The KGB would also destroy the reputation and morale of the deportees and political prisoners to isolate them politically. In addition, the deportees who returned from exile could not recover any of their property.

Execution, persecution, torture, illegal arrest

Orders given by the MVD and MGB provided for a wide range of torture methods to be applied during interrogation of those accused of active or passive resistance. Torture was ordered by officials of the highest rank. In 1937, the All-Russian Communist Party (Bolshevik) [VKP(b)] Central Committee gave official permission to use physical coercion. It was forbidden to speak of the torture used during interrogation, and it was forbidden to record any references of its use in documents. In Lithuania, torture was used during the interrogation of political prisoners. From 1944 to 1952, approximately 62 086 persons were so classified, of whom 45 429 were members or supporters of resistance movements.

Executions. people who died because of torture or inhumane prison conditions

The total number of deaths as a result of execution, arrest, interrogation, inhumane prison conditions, and forced labour are included with missing persons:

- 1940-1941: 470 prisoners shot;
- 1940-1943: 595 prisoners executed in forced labour camps;
- 1944-1947 and 1950-1957: 1000 prisoners shot;
- 1944-1945 and 1948-1952: 718 prisoners died in imprisonment;
- 1946-1947: approximately 200 prisoners died in imprisonment; and
- 1946-1955: approximately 559 prisoners, including children, died in Šilute concentration camp.

Approximately 3000 prisoners died in Lithuania of various diseases, famine, unbearable conditions and interrogation, torture or execution; 70% of them were political prisoners. From 1941 to 1943, 595 prisoners were executed. Currently, there are two mass burial sites of the victims of Communist terror in Lithuania: Tuskulėni in Vilnius where 760 of the prisoners executed by shooting are buried, half of whom were political prisoners, and Maciķi in Šilute region where approximately 560 prisoners, of whom 70 were children, are buried.

Illegal arrests

Sovietization and oppression of the resistance movements in Lithuania would not have been successful without wide-ranging arrests. Every second Lithuanian man became a victim of genocide or passed through the wheels of the Red Terror machine. The intent was not only to suppress the resistance movement, but also completely subjugate and Sovietize Lithuania. Reformation of the public order in accordance with the principles postulated by the Soviet Union would not have been possible without use of force and terror and without the extermination of those social groups who were true patriots and economically independent. From December 1944 to December 1945, more than 200 000 people suffered the repressions of the occupation forces. About 54 000 were sentenced to long-term imprisonment and 32 661 people were sent to concentration camps. They suffered from physical and mental injuries that destroyed their health. From 1940-1953, approximately 150 000 Lithuanian prisoners were sent to concentration camps. Not all deported prisoners were accused and sentenced for “anti-Soviet” crimes. Many were accused of domestic crimes (failing to submit the required agricultural crops to the state, violations of the passport regime, failure to comply with orders of the Lithuania SSR). Approximately 50 000-60 000 prisoners, who had not been sentenced because of their political beliefs, were deported from Lithuania to concentration camps.

All prisoners had to perform forced labour. From 1940-1956, at least 20-25%, approximately 30 000-40 000 of those deported to concentration camps (of whom 20 000 -25 000 were political prisoners), died. Every third political prisoner died from 1941-1944, when the mortality rate reached its peak; during later years, the most common cause of death was inadequate prison conditions. By 1958, approximately 19 000 people imprisoned for political crimes had returned to Lithuania. Several tens of thousands of political prisoners had gone missing or were unable to return to Lithuania.

About 33% of political prisoners (20-25% of all prisoners) were shot, died in prison during interrogation or because of inhumane prison conditions and forced labour, or were declared missing.

The Republic of Lithuania law “On liability for the genocide against the Lithuanian nation” stipulates that persecution and torturing of Lithuanians, deportation of residents undertaken during the occupation years, and the annexation of the country by the Soviet Union shows features of genocide, as defined by international law. Genocide in Lithuania took the form of illegal arrests, imprisonment, execution, and deportation and was directed against Lithuanians as a nation or ethnic group. Documents show 1949 Soviet plans in which the list of the persons to be deported included children who were born to non-deported women in cohabitation with a deported spouse and who were granted the father’s nationality. Special legal status was applied to deportees from Lithuania. The fact that a third of the deported were children indicates a purposeful extermination of the Lithuanian nation.

Deaths during deportation

The trauma brought about by deportation began when the knock came on the door of people’s homes and apartments. Attempts to escape or resist were stopped by force. Those who tried to escape were fired upon, and those who were caught were beaten mercilessly. Death was caused not only by transport conditions – large numbers of people corralled in cattle cars – but also by anti-sanitary conditions, lack of fresh air and food, and mental anguish. More than 70% of the deportees were women and children; 39 000 children and 50 000 women were deported from 1941 to 1953.

The second highest mortality rate after children was among the elderly, followed by pregnant women and babies born in the cattle cars (they were not included in the number of deportees as they never reached the exile destination). At least 50 people, including infants, died in March 1949 on the way to exile destinations, and 39 children did not reach their destination during the deportation in October 1951.

Death in exile

Of the 132 000 people, including babies born in exile (deported from 1941-1952) 28 000 died because of disease, famine, or forced labour. Rough estimates show that another 3500 people died in exile from 1953-1958. Death was common among the deportees up to the day of their release. In addition, 50 000 deported Lithuanians struggled for many years to return to their homeland, and some never made it.

War crimes

Executions began on the first days of the Nazi-Soviet war (22-28 June 1941). The murder spree was due to the rapidly growing armed resistance directed against Soviet occupation forces. Members of the NKVD/NKGB, Soviet activists, and functionaries of the Communist Party carried out the murders. Dozens of people were murdered based on testimony of whistle-blowers or on suspicion of collaboration with rebel forces. Of the total fatalities (672), 518 persons died at the hand of Red Army soldiers. The total number of mass murders reached almost 40. There are 1095 deaths recorded during the 23 June 1941 rebellion.

After reoccupation of Lithuania in 1944, murder of civilians and members and supporters of resistance movements became one of the main weapons of terror.

In 1944-1945, extermination was far higher than from 1946-1953. In July 1944, MVD soldiers, railway security forces, and forces subordinate to the Special Service working behind the front carried out penal operations against participants of armed uprisings or persons suspected of resistance. These operations reached their peak in December 1944 when 144 farmsteads were burned and 265 Lithuanians were shot or burned alive. Of the 20 156 people killed from 1944-1953 by the NKVD (MVD) and the MGB for allegedly being partisans (in official documents they were referred to as “bandits”), approximately

5000 were civilians. It can be surmised that from 1944 to 1953, operations carried out by the NKVD (MVD) and the MGB were the main method for the physical extermination of Lithuanians.

In total, 1817 people were murdered by the NKVD Interior Force 4th Division from 31 December 1944 until 31 March 1945. Among those killed were approximately 550 partisans, but the rest were defenseless civilians, most of whom were men who tried to avoid forced mobilization. The greatest slaughters took place in 1944 and in 1945. Official data shows that 12 226 people were killed during this period. In 1944, only a tenth died in armed resistance battles, fighting for independence of Lithuania. The remaining 90% were unarmed civilians, who were murdered, tortured to death, or died in imprisonment. Study of NKVD operational reports indicates that no less than 3 000 of the unarmed civilians killed in 1945 were registered as partisans. The statistical reports show that 8527 partisans and 1080 individuals were killed.

Table 2

References found in documents on civilian killing operations in late 1944

Date	Place	Review of the killing operation
December 13	6 km from Ukmergė	Penal brigade burned down the barn and killed 8 people.
December 17	Radučiai village	Penal brigade burned down the house and killed 7 people.
December 17	Klavišiai village	Penal brigade burned down the house and killed 13 people.
December 19	30 km from Birži, Suvainiški district	Penal brigade burned down the farm and killed 15 people.
December 17-21	Butiški, Vosbuta, Bauki un Juodiči villages	Border Guard Battalion burned down 46 farms and killed 56 people.
December 22	Bubji, Ligaišiai, Padaugave and other villages, villages located 5km east of Vilkija	9 farms were burned down, 16 people shot and another 4 burned alive. In Klepoči village, 22 people were killed; in Mirkišiai district, Liždi village 10 people were killed, 2 of whom were women. The total number of fatalities was 48 people.
December 28	16-28 km east of Utena, Stulji and Miškiniški areas	Penal brigade burned down the house and barn, and killed or burned alive 14 people.

Looting of private property

In early December 1944, the Deputy Commissioner of the Interior of the USSR, S. Kruglov, noted that it would be better to convince the “bandits” to surrender, so that they would not be deported or have their possession confiscated. Confiscation of property and destruction of real estate was a common punishment. In his report to Stalin in July 1945, Suslov indicated that 30 899 farmsteads, or 10% of all farms, had been confiscated in whole or in part; 4055 of those were owned by the “enemies of the state”. As the deportees and the political prisoners returned to their homelands, they had no right to their previously owned properties. In 1988, the deportation of 3998 families (12 342 persons) was declared illegal. Before restoration of the independence of Lithuania, only about 9% of the deportees were given back (at least formally) the right to regain their properties. But, there is no information on actually returned properties. Political prisoners were denied even the hypothetical possibility of recovering at least some of their property.

Damage caused to the state of Lithuania

Severe damage was caused to all aspects of Lithuanian society, the state and its citizens. We must not forget that approximately 456 000 people (almost one-third of the adult population) and 93% of all prisoners suffered Soviet terror and various forms of violence; 96% of all deportees were ethnic Lithuanians. Approximately 350 000 of them were imprisoned, deported, exiled to Gulag camps, or killed. In addition, 25% of them did not return to Lithuania, and another 25-33% of those deported died in the camps. A total of 26 000 were killed in Lithuania. Approximately 500 000 people were forced into exile (see Table 1). If the number of Nazi victims (215 000 people, of whom 200 000 were Jews) is added, the population of Lithuania was reduced by 33% in 1940.

The terror that accompanied Sovietization destroyed individuals and whole social groups, their cultural values, and property. This has left a lasting impression, even in the current life of the Lithuanian nation and community, and is difficult to erase. It lingers on as an eternal ghost of the crimes committed by the Communist regime.

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Table 1

Depopulation of Lithuania 1940-1953

	1940-41	1942-43	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	TOTAL
Depopulation of Lithuania	75112		217409	148787	122438	34301	64803	50658	14678	34802	15815		780922
1. Deceased resistance movement members, family members and supporters (excluding those who died in prisons and during interrogation)	1400		2489	9777	2143	1540	1135	1192	635	590	457		21556
2. Deported to concentration camps and exile (excluding those who served their entire sentence in Lithuania)	22100		1338	38691	18264	22106	61995	48448	13549	33940	15266		275697
3. Repatriated or emigrated Lithuanian residents	51142		213000	71900	99300	9029							444000
4. Killed in battle				25000									25000
												TOTAL	1547175

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Economic damage caused by soviet occupation to the national economy of Estonia

Undeniably, all former Soviet block countries are lagging behind prosperous Western countries in terms of economy. According to the IMF, only four – the Czech Republic, Slovenia, Slovakia, and Estonia (beginning with April 2011) – can be considered economically advanced, but, judging by GDP per capita, the gap between these countries and, for instance, Scandinavia is still huge. The centralized planning system and mistakes made by the socialist government over many years are, to a great extent, to blame for the backwardness. In the case of Estonia, Latvia, and Lithuania, the 50-year violent annexation by the Soviet Union (colonization), must be added to these factors.

The Republic of Estonia, occupied in 1940, was incorporated into the USSR as a result of World War II – it became a part of the common economic system of the Soviet Union and a Soviet republic. The process, which for ideological reasons was referred to as the “Restoration and socialist transformation of the Estonian economy” in the post-war years, exhibited typical colonization characteristics:

1. Purposeful destruction of the national economy structure formed during 1920-1940;
2. Introduction of an industrial structure that served the interests of the occupation forces, referred to as “intensive development of those industries, which Estonia has specialized in within the framework of the Soviet Union”;
3. Vast and insatiable exploitation of the local natural resources;
4. Labour force and migration policy directed towards assimilation of the native residents; and
5. Breaking of former economic contacts of Estonia and isolating the country from the world economy.

The desire to make Estonia and “appendant” of Leningrad from the economic (as well as political) perspective was one of the main reasons the Estonian Soviet Socialist Republic earned more attention of the central apparatus than other regions of the USSR. First of all, it manifested as a violent takeover of the shale-oil stocks in order to use them to produce gas for the population of Leningrad, as well as to supply the industrial and transport sector of the city with the liquid fuel produced from the shale-oil. From 1950 on, it was used for producing electricity as well. These plans were already determined by the decision of the Committee for State Security of the Soviet

Union of 10 June 1945 “On restoration and development of the shale-oil industry of the Estonian SSR and Leningrad and gasification of Leningrad.”

This forced contribution made during the 1940s and 1950s, considered an “altruistic” act, was a clear attempt to take over the shale-oil stocks of Estonia in order to:

- Establish an industrial sector in Estonia that would not be subordinated to Estonian jurisdiction, but instead would be subordinated directly to Moscow authorities involved in resource export, who would export the products for the minimum price possible and
- Russify local residents, using the socialistic industrialization of the national economy of Estonia. From 1951-1989, the population of Estonia increased by 466 600 persons (42,2%), 241 200 or 51.7% of which consisted of net migration.⁴³

In 1983, Rein Taagepera described the industrialization of Estonia: “The industry, in which the Russians had invested, employed Russians; it was managed by the Russians according to the goals they had set, raw materials were mostly imported from Russia and the majority of products were exported back there. The whole show was named the industrial development of the ‘Baltics’ because the Soviet authorities decided to stage this farce in the territory of the Baltic States.”⁴⁴

Losing independence also meant an almost 50-year isolation of Estonia from the world economy. Close family relations with other Soviet republics replaced former ties with the whole world.

The products of Soviet Estonia lost their competitiveness in the global market. In 1980, only 2-3% of Estonian industrial products were sold outside the Soviet Union, of which only 0,4-0,5% were sold for freely convertible currency. The internal export share (to other Soviet republics) constituted 93-95% of the export balance in 1980.

After the Iron Curtain fell (isolation from the global market is considered a conscious or unconscious manifestation of the self-preservation instinct of the Soviet Union), the high level of development of Estonia (and other former Soviet block countries), based on ideological grounds, became just a fiction. Calculations made within the framework of the European Comparison Program show that in 1993, the Estonian GPD per capita in current prices was only 5% of the Austrian value, whereas, compared in terms of purchasing power parity standard, the difference with Austria was five times, as illustrated in Table 1.

43 О газификации Ленинграда. 1945. Материалы IX сессии Ленинградского городского совета депутатов трудящихся. 18-19 июля 1945 г. Ленинград; Census data show that in 1934 the proportion of Estonians among all population was 88,1%, but in 1959 it dropped to 74,5%, and in 1989 it decreased to 61,5%. The total number of Estonians was accordingly 992520, 892653 and 963281.

44 Romualdas J. Misiunas and Rein Taagepera. 1983. *The Baltic States: Years of Dependence 1940-1980*. Berkeley and Los Angeles: University of California Press, p. 107.

Table 2

GPD per capita in selected post-communist European countries as compared to Austria (1993, Austria=100)

	Purchasing power parity standard	In current prices
Slovenia	48	28
Czech Republic	44	13
Hungary	31	16
Slovakia	30	9
Belarus	26	6
Russia	26	2
Poland	24	10
Bulgaria	22	6
Croatia	20	11
Estonia	20	5
Lithuania	19	3
Romania	19	5
Ukraine	17	3
Latvia	16	4
Moldova	12	1

Source: *Wirtschaftslage und Reformprozesse in Mittel- und Osteuropa*. 1996. Bonn: Bundesministerium für Wirtschaft, p. 86.

Restoration of Estonian independence in August 1991 was a new start for the national economy. Based on Eurostat data from 1993, Estonian GPD per capita constituted only 7% of the relevant Finnish value (1000 and 14 700 euro respectively).⁴⁵

Why is there such a big difference between neighbouring countries that share a common language and traditional values and that had close relations before World War II? During the interwar period, the living standard was quite similar in Estonia and Finland.⁴⁶ In the late 1980s, Finland was among the most advanced and prosperous European countries. At the same time in Estonia, many people were

45 Data from the Statistical Office of Estonia show that in 1993 the GPD per capita was 976 euro or 1155 U.S. dollars.

46 Olev Lugas and Pentti Vartia (Eds.). 1993. *Estonia and Finland - a Retrospective Socioeconomic Comparison*. Helsinki: Taloustieto Co., p. 1.

employed in agricultural and industrial sectors, but the poorly developed tertiary sector had hindered Estonia by 20-30 years in terms of development, compared to Western countries.⁴⁷

The damage caused to Estonia by incorporation into the Soviet Union from 1940-1990 must be assessed from two aspects:

1. The total value of property destroyed or squandered by the Soviet central apparatus, as well as the percentage share of the GDP (GNP) subtracted through the tax and price policy and
2. Assessment of the damage caused by the restriction of the national economy to the global market and European practice and adjusted to its values.

The first method can be used to gain initial insight. Considering that occupation lasted for two generations, and its effects are still felt today, and that the pricing policy in the Soviet Union was determined on the basis of arbitrary administrative mechanisms, only the second method can be used, since it allows for calculation of the damage, or the adverse effect, on the economic development of the state. This can be expressed in terms of Estonian backwardness in comparison to neighbouring Finland as a reference point. National income that was not gained in the past and will not be gained in the future must be calculated as well. In other words, a hypothetical calculation of damage has to be undertaken to assess what Estonia would have gained, had it not been occupied and had it been able to have a market economy.

If we assume that Estonia would have evolved similarly to Finland (in terms of GDP per capita), the GDP of Estonia should have been 45 billion euros in 2010. Estonia has hypothetically lost 31 billion euros in 2010, which, from 1993-2010, would have amounted to 500 billion euros (see Table 2).

Estimates show that the Estonian GNP from 1969-1987 should have been at least 153 billion U.S. dollars or 73% of the hypothetical GNP value, which may have been achieved, had it evolved according to the Finnish scenario.⁴⁸

⁴⁷ In 1990, the proportion of people employed in the primary, secondary and tertiary sectors of the economy in Estonia was 12,7%, 42,5% and 44,8% respectively; 21,6% of those employed in the industrial sector worked in light industry and 15,2% were employed in food production (Statistical Office of Estonia).

⁴⁸ Juhan Kahk (Ed.). 1991. *World War II and Soviet Occupation in Estonia: A Damages Report*. Tallinn: Perioodika Publishers, p. 67-69.

Table 2

GDP per capita in Estonia and Finland, 1993-2010 (euros)

Year	Current prices			By purchasing power parity standard		
	Estonia	Finland	Estonian performance in comparison to Finland (%)	Estonia	Finland	Estonian performance in comparison to Finland (%)
1993	1000	14700	7			
1994	1400	16700	8			
1995	2000	19600	10	5300	15800	34
1996	2600	19700	13	5800	16300	36
1997	3200	21900	15	6800	17900	38
1998	3600	22500	16	7200	19300	37
1999	3900	23700	16	7600	20400	37
2000	4500	25500	18	8600	22300	39
2001	5100	26800	19	9200	22800	40
2002	5700	27600	21	10200	23500	43
2003	6400	27900	23	11300	23300	48
2004	7200	29100	25	12400	25200	49
2005	8300	30000	28	13800	25700	54
2006	10000	31500	32	15600	27000	58
2007	11800	34000	35	17300	29400	59
2008	12000	34900	34	17000	29600	57
2009	10300	32500	32	15000	26900	56
2010	10800	33600	32	15900	28300	56

Source: Eurostat (<http://appsso.eurostat.ec.europa.eu/nui/setupModifvTableLAYOUT.do> 10.08.2011)

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Economic and demographic damage caused by the soviet union in Poland from 1945-1947

The defeat of Poland in September 1945 resulted in the occupation of its territory by two aggressors: 48,4% of the conquered lands were given to Germany, and the Soviet Union acquired the remaining 51,6%. The Hague Convention prohibited the use of occupied countries for military purposes, but the economic policy enforced by the occupation regimes was focused on maximum exploitation of Polish resources for the benefit of the aggressors.

If calculated per capita, Poland undeniably suffered the greatest material and demographic damage in its history during World War II. According to estimates, the value of the lost properties amounted to 38% of the total value of all national property. Damage to the industrial sector reached approximately 50% of production capacity: 60% of industrial companies operating in Poland in 1939, were completely destroyed. The total value of losses and material damage suffered by Poland (estimated in 1947) amounted to approximately 50 billion US dollars (in 1939 prices). Considering real appreciation, currently the damage would amount to more than 600 billion US dollars. This sum should also include damage suffered by individual citizens as well. For political reasons, Poland's damage balance did not include the losses suffered under Soviet occupation and looting from 1939-1941, as well as in 1944 and 1945.

Following World War II, Central and Eastern European countries came under the political influence of the Soviet Union. The Communists could establish a regime in Poland largely owing to the Red Army. As one historian said: "The mechanisms of the new power were formed under the guise of the Soviet Army and politicians. In reality it was an absolute and complete occupation of the newly established Poland". The Communists were fully supported by the counterintelligence service *Smersh*, three NKVD divisions, and the Red Army. They carried out mass arrests of members of the Polish resistance movement and those suspected of being Polish underground supporters. The Communist administrative authority, forced upon the Poles, called itself the Polish Committee of National Liberation and signed an agreement on 26 July 1944 under which Polish civilians living in the war zone became subordinate to Soviet jurisdiction. The agreement did not specify any restrictions on this jurisdiction. According to estimates, from January 1944 to late 1944, approximately 80 000-95 000 ethnic Poles were arrested and sent to "corrective labour" camps.⁴⁹

49 A. Skrzypek. *Mechanizmy uzależnienia. Stosunkipolsko-radzieckie 1944-1957*, Pultusk 2002, p.38, 57; S. Ciesielski, W. Materski, A. Paczkowski. *Represje sowieckie wobec Polaków i obywateli polskich*. Warszawa 2002, p. 26-30.

Persons subjected to repressions fell into five broad categories: 1) "interned" members of the underground movement who were fighting for independence; 2) interned persons and persons living in the Eastern border regions of the second Republic of Poland under Soviet power – civilians who were sent to the control and filtration camps on suspicion of participation in the underground movement; 3) persons accused of anti-Soviet crimes – those convicted by Military Tribunals and the NKVD were mostly deported to corrective labor camps; 4) persons who were illegally and forcibly recruited into the Red Army; and 5) Polish prisoners, including Mazurs, Kashubians and Silesians, who had been included in the labor battalions established by the German Army.⁵⁰

Arrests, internment, trials (based on Soviet law) and mass deportations constituted a violation of international rights.⁵¹ Official Communist propaganda portrayed Poland as a fully democratic and independent country with stable judiciary power. The reality was quite different.

Political decisions were made to prohibit the activities of political parties, associations, and non-governmental organizations, as well as independent mass media formed during the pre-war period. Official (government) publications of the time were also subject to censorship. By July 1945, even the personal guards of Communist Party leaders (Bolesław Bierut, Władysław Gomułka, Edward Osóbka-Morawski) were selected from the 6th Directorate of the Soviet NKGB.⁵²

Two main periods of independence from the USSR can be highlighted in the history of the Polish People's Republic. The first lasted from 1944-1953, and the second began after 1956. These periods can be sub-divided further, but we shall consider some of the features of the period of 1944-1947.⁵³

For the purpose of resolving the contentious issues during the first post-war years, which included the role of the Soviet Army and the "war trophy" issues, countless economic and military trade agreements were signed that stipulated economic subordination. In reality,

50 More information can be found in D. Rogut D., *Polacy z Wilenszczyzny w obozach sowieckich „saratowskiego szlaku” (1944-1949)*, Toruń 2003; Idem, *Polacy i obywatelpolscy w obozach NKWD-MWD ZSRR 1944-1956* [w:] *Represje sowieckie wobec narodowEuropy 1944-1956*, red. D. Rogut, A. Adamczyk, Żelów 2005; D. Rogut, *Polacy w obozie kontrolno-filtracyjnym nr 283 NKWD-MWD w Stalinogorsku (1945-1947)* [w:] *OdRosjipo Bliski Wschod. Studia his- toryczneXXw.*, red. D. Rogut, Żelów, 2010, s. 175-208; idem, *Zarys historii sowieckiego obozu specjalnego nr 4 (Stieplag) w latach 1948-1954*, „Pamięć i Sprawiedliwość” 2010, nr 2, s. 273-293.

51 The term "internment", which officially referred to the Poles, is incorrect. This term refers to civilians who were "under temporary detention until resolution of the armed conflict". Such repressions applied to civilians of warring country until the resolution of the armed conflict. Poland was one of the allies that had a formal agreement with the USSR. Therefore using this term in regard to Poles is not acceptable.

52 Лубянка. *Сталин и НКВД-НКГБ-ГУКР „Смерь” 1939 - Март 1946. Документи, состав.* Хаустов В.Н., Наумов В.П., Плотникова П.С., Москва 2006, с. 533.

53 R. Sudzinski, *Etapy i kierunki oraz metody iformy ekonomicznego uzależnienia Polski od ZSRR w latach 1944-1989 na tlepozostafych krajow bloku komunistycznego* [w:] *W objłciach Wielkiego Brata. Sowietci w Polsce 1944-1993*, red. K. Rokicki, S. Stępien, Warszawa 2009, s.61; A. Skrzypek, *Mechanizmy uzależnienia. Stosunkipolsko-radzieckie 1944-1957*, Pultusk 2002, s. 34-35, 80.

they were signed to ensure that “the Red Army, upon crossing of the line of Kerzona, would not be considered an intruder in regard to the country, which was considered to be its ally, regardless of the fact that it was still an armed intrusion”.⁵⁴ The position of the local Soviet authorities towards the war trophies was defined by “advisors” or “consultants”. They worked at various levels – from municipalities to the central apparatus – and in various administrative institutions, including courts, prosecutors’ offices, and the security service.

Polish economic dependency on the ussr

There were many bilateral agreements. The agreement signed between the pro-Soviet Polish Committee of National Liberation and the USSR on 4 August 1944 stipulated that Poland allow the Soviet Army to requisition food, agricultural feed, and industrial products for their needs (within the 1939 territorial boundaries of Poland). At the same time, an order issued by Stalin on 9 August obliged the commanding office of the Soviet Army to protect public, personal, and municipal property within the recently established Polish territorial borders. This same order prohibited seizing of property, equipment, or vehicles. Yet, reality was different. Food and raw materials and equipment abandoned at factories were confiscated, as were Polish properties. The USSR treated Poland as its colony and viewed the Polish national economy as a war trophy, as declared by Nikolay Bulganin, the USSR Minister of Defence and authorized representative of the Soviet government in Poland, during a meeting with the pro-Soviet Polish Prime Minister Osóbka-Morawski.⁵⁵

On 20 December 1945, Stalin signed Decree No. 7558, which specified that materials, equipment, and goods produced in Poland in German-built military purpose factories shall be exported from Poland to the USSR. The decree also applied to factories that were located in German territories joined to Poland as a result of the Yalta Agreement. Stalin’s order served as basis for the “agreement” signed on 26 March 1945 between Poland and the USSR. This applied to companies located in German territories incorporated into Poland and other companies that operated within Polish 1939 territorial boundaries and were reconstructed or rearranged by the Germans during the war.⁵⁶ The pro-Soviet interim government gave away the properties the Germans had abandoned. All heavy industry (metallurgy, military, chemical) was taken by the Soviet Union as a war trophy.

Equipment was dismantled and removed from production plants and factories in Poznan, Bydgoszcz, Torun, Gdynia, and Rzeszow. The Soviet Union removed 50% of the equipment used in the textile industry in Lodz.⁵⁷ Sawmills and lumber mills, train control systems, technical equipment, wagons, locomotives, rails, and even railway sleepers were transported to the USSR. The Polish railway transport system was completely paralyzed.

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55 E. Osóbka-Morawski, *Dziennikp polityczny 1943-1948*, Gdansk 1981, s. 41-42.

56 ArmiaRadziecka w Polsce 1944-1956. Dokumenty i materiały, oprac. M.L. Krogulski, Warszawa 2003, s. 27.

Dismantling of industrial plants in the annexed territories (Pomerania, Silesia, East Prussia) until the signing of the Potsdam Agreement (16 August 1945) could be considered legitimate enforcement of the agreement of 24 March 1945, which fully complied with Soviet interests. Equipment, valued at around 500 million US dollars, was removed, and transport of equipment continued even after March, although to a lesser extent. It must be noted that from 20 April to 20 May, the USSR sent approximately 6000 freight wagons loaded with industrial equipment from the southern regions of Poland. Often, the equipment and machinery was dismantled in such a brutal manner that they were no longer usable. The Soviet Union seized at least 487 000 cattle, 44 000 horses, and 100 000 sheep.

The initial stage of Polish Sovietization concluded with the signing of the Treaty of Friendship and the Mutual Assistance and Cooperation, forced upon Poland on 21 April 1945. On 16 August, a bilateral agreement was signed on the enforcement of the Potsdam Agreement: the interim government of the pro-Soviet Polish National Unity signed a treaty stipulating that the Soviet Union shall return to Poland 1.5 billion dollars (15%) of the reparations received from Germany, renouncing any claims on German properties and other material values within the territory of Poland.⁵⁸ The agreement provided for the hypothetical possibility for the Red Army to finish the massive dismantling and removal of production plants and materials, not only from the “re-united lands”, but also from the territories that had been historically owned by the Poles.

The treaty was amended, stipulating that the USSR would hand over to Poland 30% of the reparations received from the occupied western areas. Poland, in turn, would compensate half this amount through production output. For Moscow, this presented an opportunity to demand supplies of food and other products needed for the starving people in the areas occupied by the Soviet Union. The secret “Coal Agreement”, signed by Osóbka-Morawski and Molotov, stipulated that the price of coal supplied by Poland would be 1.22 US dollars per tonne and the price of coke would be 1.44 dollars per tonne.⁵⁹ Poland had to supply the USSR with coal for a fixed price (10% of the global market price); in 1946 they supplied 8 million tonnes of coal, from 1947-1950 – 13 million tonnes per year, and in the following years – 12 million tonnes annually. Such terms were stated because the then Polish government intended to renounce the “reparations”.

On 5 March 1947, a supplementary protocol was signed reducing the coal supply

57 A. Dziurok, B. Musiał, “Bratni rabunek”. *O demontażu i wywozce sprzętu z terenów Górnego Śląska w 1945 r. [w:] W obłjciach Wielkiego Brata. Sowietci w Polsce 1944-1993*, red. K. Rokicki, S. Stepień, Warszawa 2009, s. 332-335; K. Kxajewski, T. Eabuszewski, *Wyzwolenia? Terror sowiecki w dokumentach Delegatury Sił Zbrojnych na Kraj [w:] W obłjciach Wielkiego Brata. Sowietci w Polsce 1944-1993*, red. K. Rokicki, S. Stepień, Warszawa 2009, s. 448-453.

58 *w Polsce 1944-1993*, red. K. Rokicki, S. St’pien, Warszawa 2009, s. 448-453; M.L. Krogulski, *Okupacja w imię sojuszu. Armia Radziecka Polsce 1944-1956*, Warszawa 2000, s. 99; A. Korzon, *Niektoreproblemypolsko-radzieckich gospodarczych latach 1945-1957*, “Studia z Dziejow Rosji i Europy Srodkowo-Wschodniej” 1993,t.28,s. 135; M.L. Krogulski, *Okupacja w imię sojuszu. Armia Radziecka Polsce 1944-1956*, Warszawa 2000, s. 99.

59 *W. Materski, DyplomacjaPolski „lubelskiej” (lipiec 1944- marzec 1947)*, Warszawa 2007, s. 123.

amounts by half. Reparations to Poland were also reduced to 7.5% of the total amount of reparations paid to the Soviet Union. The damage that Poland suffered from 1946-1953, while supplying coal to the USSR at a reduced price, amounted to approximately 836 million dollars.⁶⁰ By 1953, when the payout of reparations ended, Poland had received equipment and goods totalling 228.3 million dollars, according to Soviet information, although it should have received a total of 750 billion dollars.⁶¹

This agreement prevented Poland from entering into cost-efficient agreements with Western countries. It also prevented Poland from receiving loans from the US for restoring industrial operations in 1945 and 1946. Poland could not obtain information on reparations paid to the USSR or the volume of finished products, because it was unable to meet its coal export obligations to the USSR.⁶²

The Soviet Union also refused to pay for transactions made in US dollars at global market rates. Settlements were made on a non-cash basis, depending on the mutual financial obligations of the parties. Thus, the Soviet Union forced Poland to produce specific goods to pay off the loan. Moscow forced Poland to reject the Marshall plan, which led to even greater dependency by Poland on the Soviet economic system.⁶³

By late 1945, agreement could not be reached with the USSR on restitutions for Polish manufacturers relocated to Germany during the German occupation. Despite the agreement signed on 15 October 1945, many ports (Kolobrzeg, Darłowo, Leb) continued to operate as Soviet naval bases in 1946. They provided systematic equipment transport and also unloaded shipwrecked German steamers and transported them east. Similar problems were faced with the partial transfer of German merchant ships to Poland, because the Soviet government demanded payment for them in US dollars.⁶⁴

Agriculture

It is also difficult to calculate the agricultural damage. Białystok Voivodship in the northeast part of Poland is a good example. In September 1945, an evaluation committee was set up to calculate the damage caused by re-dislocation of the Red Army, as well as driving of cattle and horses from Germany to the USSR, resulting in destroyed crops and forests. Soviet soldiers removed food and household items from the residents of roadside villages, as well as firewood stored in railway station warehouses. Herds of cows and horses taken from Germany grazed along the roadsides. The committee estimated that in

60 A. Chmielarz, *Ekonomiczna eksploatacja ziem polskich w latach 1939-1945*, www.polishresistance-ak.org/PR_WWII_texts/30_Artykul.rtf.

61 B. Musiał, *Haracz za „wyzwolenie” Polski*, http://www.rzeczpospolita.pl/dodatki/plus_mi-nus_070721/plus_minus_a_3.html?k=on;t=2007070120070726.

62 R. Sudzinski, *Etapy i kierunki oraz metody iformy ekonomicznego uzależnienia Polski od ZSRR w latach 1944-1989 na tle pozostających krajów bloku komunistycznego [w:] W objęciach Wielkiego Brata. Sowietci w Polsce 1944-1993*, red. K. Rokicki, S. Strępień, Warszawa 2009.

63 E. Sudzinski, *Etapy i kierunki oraz metody...*, s. 66.

64 W. Materski, *Dyplomacja Polski...*, s. 139.

1944-1945, the damage to agricultural crops, agricultural machinery, and tools amounted to 188 219 599 Polish zloty.⁶⁵ The Soviet government refused to pay any compensation; Polish farmers were forced to write off these losses. In May 1946 more damage was caused in four northern regions in the amount of 331 350 000 Polish zloty. Equipment from dairy production, spirit (vodka) production, brickwork, breweries, cement factories, and power stations was dismantled and removed.

General issues

The deepest humiliation to the Polish nation was caused by theft and rape, often committed by groups. Soviet marauders raped both Polish and German women living in Poland. This process escalated in the spring of 1945 as the war drew to its end; massive looting of German property became a regular phenomenon, and thefts and rape were widespread.⁶⁶ The worst situation was in former German territory and areas adjacent to West-East transport routes. Soldiers looted private homes, and railway stations and trains were looted. Highway robbers flourished. It was a long period of chaos for Poles, made even worse by the fear of rape, robbery, beating, and killing.

These were no longer just crimes committed by individual soldiers; group marauderism became popular, though to a lesser extent. In July 1945, soldiers deployed in Olehuva station by Łódź attacked five nearby villages. Residents were robbed, and many women were raped. Victims of the attack fled in panic, abandoning their homes.⁶⁷

Soviet authorities planned to deploy the northern front troops to Poland. Soviet Marshal, and ethnic Pole, Konstantin Rokossowski, commanded the troops. Under his command, Poland suffered material losses worth many millions.

Troops used the Polish telecommunications system. During the initial post-war years, this was done without any contractual basis. From 1945-1947, this caused damages of 2 377 000 zloty, of which only a part could be recovered later in 1948.⁶⁸ The railroad contract, signed on 11 July 1945, required that the Polish government take over the national railroad system on 1 August 1945. By then, the railroad was used for military purposes and managed by the Soviet Army. The contract specified that the Polish National Railroad would ensure Red Army military freight transportation, free of charge, including electricity, power, fuel, and medical care.

65 Marek Kietliński, www.bialystok.ap.gov.pl/kalendarium/22_09.htm.

66 K. Kxajewski, T. tabuszewski, *Wyzwolenia? Terrorowsowiecki w dokumentach Delegatury SHZbrojnych naKraj [w:] W objęciach Wielkiego Brata. Sowietci wPołsce*, red. K. Rokicki, S. Strępień, Warszawa 2009, s. 445.

67 B Kozłowski, *Opuszczenie Polskiprzez ostatni o wojsk rosyjskich*, <http://kalendarium.polska.pl/wdarzenia/article.htm?id=223126>; J. Wrobel, *Represje sowieckie wobec nych ziem polskich 1945-1947 [w:] Represje sowieckie narodow Europy*, red. D. Rogut, A. Adamczyk, Żelów 2005, s. 99-123.

68 M.L. Rrogulski, *Okupacja w imię sojuszu. Armia Radziecka w Polsce 1944-1956*, Warszawa 2000, s. 120-123.

The fee for transportation of a soldier and his family members was only 2,34 zloty per 100 km, while the standard rate paid by a Polish citizen was 32,40 zloty. Railroad losses suffered due to the transportation of the soldiers, their belongings, and Soviet cargo in 1947 and 1948 alone reached 1 962 658 867 zloty. By 1955, the amount due for soldier and freight transportation from the GDR to the USSR had reached 466 million roubles, which Poland never received. The Polish government was forced to subsidize railroad transportation for the Soviet Army for many years.⁶⁹

It is difficult to calculate the damage caused to Poland as a result of the USSR's failure to pay custom and railroad transportation fees. Railroad freight transit through the country was virtually uncontrolled. Much was exported from Poland – furniture, cattle, food products, bicycles, and cars – despite prohibitions. Szczecin customs information indicates that 9000 tonnes of various goods were exported from Poland in August 1946 alone.⁷⁰

A similar situation existed with payment for consumer electricity. By 1948, Red Army debt for electricity exceeded 7 million zloty. By 1948, the debt for water and gas amounted to 5 862 000 zloty. Trees were arbitrarily cut down, fish caught, and poaching thrived, ignoring prohibitions of hunting out of season and ecological issues.

Less valuable plants and equipment were dismantled without informing the Moscow authorities. Anything of value – military, heavy industry, chemical, textile, and shoe production plants and equipment – was dismantled and removed. Systematic looting was planned in accordance with general guidelines given by Stalin personally. Soviet leaders considered Poland a subordinate territory.

Difficulties in calculating exact damage caused to Poland

At the current stage of research, it is difficult to determine the exact extent of economic damage caused by the Soviet Union. This requires more years of researching archive materials. I am convinced that this can be achieved through joint Polish and Russian research. The losses resulting from coal export can be calculated rather precisely, but damage to agricultural and other sectors of the national economy, as well as ecological damage, can be estimated only partially. Due to lack of information, it will be much more difficult to calculate the damage suffered by individuals as a result of massive marauderism and looting. Should this be treated as a purely economic problem? Even if we succeeded in estimating the salary owed to Poles and others placed into corrective labour camps, how do we calculate and compensate the moral suffering of many thousands of raped women? How do we compensate their fear, humiliation, and pain?

The Soviet Union undeniably played a great role in liberating Poland from German occupation. But as a result, Poland became a Soviet colony and was exploited to the maximum.

69 M.L. Rrogulski. *Okupacja w imię sojuszu. Armia Radziecka w Polsce 1944-1956*, Warszawa, 2000, p. 129-131.

70 Ibid., p. 131-144.

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Damage caused by the soviet union to Georgia

In 1918, when the three Baltic States declared their independence, Georgia declared the establishment of the Democratic Republic of Georgia as well. But on 11 February 1921, Soviet armed forces launched an offensive against the Democratic Republic of Georgia, attacking it from several sides. This was the onset of Russian aggression that was concluded by the Soviet occupation of Georgia: Georgia fell into the hands of Bolsheviks on 16 March 1921. The government was forced into exile. Although Georgia was formally taken over by the Soviet regime, it was still considered an independent state. After the official establishment of the Union of Soviet Socialist Republics on 30 December 1922, Georgia was incorporated into the USSR as part of the Transcaucasian Socialist Federative Soviet Republic. After the adoption of the new constitution of the USSR, the Transcaucasian Socialist Federative Soviet Republic ceased to exist and instead the Georgian SSR, Armenian SSR, and Azerbaijan SSR were established as parts of the USSR.

From the first day, the Soviet occupation of 1921 caused huge political, economic, and demographic losses to Georgia, the most important of which was political. Not only did Georgia lose its independence, but several territories were taken as well. The Soviet Union forced Georgia to give up the Sochi region and Dvaleti (Northern highlands) to the RSFSR; the Lore region (south of Tbilisi) was given to the Armenian SSR, the Zakatala region (historically the Eastern part of Hereti and Saingailo) fell into the hands of the Azerbaijan SSR, and part of the Batumi region, Artvina region, and Ardagana region (South-West part of Georgia) were given to Turkey.⁷¹ Abkhazia, which once was an autonomous region in the Democratic Republic of Georgia, formally became an independent Soviet Socialist Republic (in late 1921 the legal status of Abkhazia was quickly changed, incorporating it into the Georgian SSR, but in 1931, Abkhazia officially once again became an autonomous area of the Georgian SSR).⁷² Adjara became an autonomous republic, and the status of the autonomous area of South Ossetia (Sidakartli) was also revised.⁷³ These changes intended to deter Georgia from anti-Soviet uprisings in the future. However, as Soviet power began to decline, the Abkhazians and the Ossetians rose against the Georgians. The Russian elite maintained this policy even after

71 Toidze L. *Full range – intervention in occupation, forced Sovietization, actual annexation*. Cooperative publishers Iverta Mhare. Tbilisi, 1991, p. 191-197. (In Georgian).

72 See: Papaskiri Z. *Non-fabricated history of Abkhazia*. Reprinted with corrections and additions. Tbilisi, Sukhumi State University Publishing House, 2010 (in Russian with foreword in English).

73 See: Topcishvili R. *Ossetians of Georgia – myths and reality*. Tbilisi, „Universali”, 2009, (in Russian).

the collapse of the USSR. In August 2008, it transformed into open Russian aggression against Georgia, and its armed forces still occupy two territories that historically belonged to Georgia.

The Soviet occupation caused Georgia serious demographic damage as well. During the first years, the Soviet authorities did not enforce political repressions. The first wave of repressions followed the riot of 1924, during which the Georgians attempted and, in some regions, even succeeded in overturning Soviet authority. About 12 500 Georgians were executed and even more were arrested and deported.⁷⁴

The physical extermination or execution of persons who were undesirable to Stalin's clique, implemented by the USSR in the 1930s, also caused huge losses to Georgia. When compared to the extent of the cleansing undertaken in other Soviet republics, Georgia suffered less in sheer numbers – about 12 000 people were repressed,⁷⁵ but the number of those arrested and deported reached into hundreds of thousands. A large part of the Georgian intelligentsia was killed during these years as well.

One of the most notable Georgian writers, Mikhail Dzhavahishvili, popular Georgian poet Titian Tabidze, and well-known film producer Sandro Ahmeteli were among the executed. Fearing arrest, the poet Paolo Jashvili shot himself. The popular Georgian historian Ivan Dzhavahishvili was dismissed from Tbilisi State University for expressing anti-Soviet sentiments. This caused serious damage to Georgian culture.

World War II also brought along demographic damage of a scope unprecedented in the history of Georgia. Although no warfare took place in the territory of the Georgian SSR, apart from a few minor battles in the Caucasus mountain passes, the war took the lives of more than 300 000 Georgians (out of 3,54 million = 8,5%).⁷⁶ Almost all were men aged 18-40. This was the biggest demographic loss in the history of the Georgian nation, which is also deemed to be a consequence of Soviet occupation. If Georgia had not been incorporated into the Soviet Union, it is unlikely that it would have lost so many people in World War II. The demographic damage caused by this war is still felt in Georgia today.

74 Pethybridge R. V. *Two steps ahead, one back – the Soviet Union community and politics under the context of the new economical policy*. Oxford University Publishing House, 1990, p. 256. (in English).

75 Avalishvili L., Dzhishkariani D., Kldiashvili G. *Stalin's lists in Georgia*. Open lecture prepared on the basis of the archive materials of the former security services. Project of the Institute on Promotion of Freedom of Information. Georgia, Tbilisi, June 23.

76 Georgian Soviet Encyclopaedia States that 300 000 were killed (*Georgian Soviet Encyclopaedia*, Vol. 3. Tbilisi, 1981, p. 538 - in Georgian.), but the recent estimations of the Georgian specialists show that the number of the persons killed ranged around 350,000 and the number of those mobilized around 7,000,000 (see *Georgia in World War II*. <http://www.georgianbiography.com/history9.html>, counted on July 16, 2011). The recent publications of the Russian specialists in turn state an unbelievable figure -79,5 thousand (see Krivosheyev G. F. *Losses of Russian and Soviet Armed Forces in the wars of the 20th century*. Statistical study. Moscow, „Olma-Press”, 2001, Table 121 – in Russian), but it seems that the main reason for using this number was to spread the opinion that the number of the Georgian fatalities was less than 1%, to be more exact - 0,91% of all fatalities suffered on the Soviet Union side, in order to slightly reduce the role of the Georgians in World War II.

Apart from the political and demographic losses, the Soviet occupation also caused Georgia significant economic damage. Although the economic policy of the Democratic Republic of Georgia was rather chaotic during its first years, in 1921, the economic situation in independent Georgia was better than in 1918. The government had succeeded in finding foreign investors from Germany and Italy who were interested in investing in the Tkvarcheli collieries and Chiatura manganese deposits. One of the first things ensured by the occupying power was further preservation of foreign companies, because these investors provided convertible currency and bread to Soviet authorities.⁷⁷ After the occupation, the majority of income from these deposits went to Moscow, and Tbilisi received almost nothing.

One of the most significant economic losses was caused during collectivization. As in other regions of the Soviet Union, farmers in Georgia also suffered great losses. One of the direct losses was cattle expropriation from private owners, but there were other, even greater indirect losses. Residents of the Georgian highlands, whose welfare largely depended on cattle herds, were forced to abandon their villages and move to the cities. This is one of the reasons several Georgian mountain regions are almost completely abandoned today.

Industrialization is one seemingly positive economic result experienced in Georgia, as several production plants and factories were built. But the purpose of building these was to make Georgia more dependent on the USSR. Georgian factories received raw materials from other areas of the USSR, but the majority of production output was sent to other Soviet republics. As a result, Georgian industry was basically dependant on Soviet resources and the Soviet market. After the collapse of the Soviet Union, both were lost and the industrial sector of Georgia suffered a severe reduction. This is one of the most negative effects of Soviet occupation on the economy of Georgia.

Implementation of the planned economy in Georgia had a negative economic effect. The plans required increased production, and soon it became impossible to fulfil them. The execution of plans, on paper, spread throughout the Soviet Union. Adding a few digits (sometimes even several zeros) to actual figures misrepresented performance and became a widespread phenomenon. Georgia was certainly one of the leaders in this process. Every year, production of defective goods increased. Yet, there was a drastic shortage of nearly all types of consumer goods in the Soviet Union, so even defective goods could be sold.

One example is the production of tea. During the Soviet era, Georgia became one of the biggest suppliers of tea to the Soviet republics. Initially, the tea was of good quality and only slightly lagged behind tea from India or Ceylon. However, there was not enough tea of such quality to supply the amount required by the Soviet government. This problem was partially solved by introducing tea harvesters. This resulted in previously unharvested, inappropriate parts of the tea plant appearing in the tea crop, resulting in a catastrophic deterioration of quality, and Georgian tea lost its competitiveness, even in Soviet countries.

77 Toidze L. *Full range – intervention in occupation, forced Sovietization, actual annexation*, p. 147-149.

Another example is the trucks produced in *Kutaisi Auto Mechanical Plant*. Due to an output increase without adequate technical provisions, almost none of the trucks produced could run more than 500 km without having problems. During the Soviet era, this car factory got a bad reputation and soon many jokes spread that “Kolhida (name of a specific model) was in ‘good working order’” if you managed to drive it through the factory gates; only cars that could not do so were considered defective.

Soviet occupation also caused extreme damage to the mentality of Georgians. It hit its lowest point during the Khrushchev Thaw. Despite the fact that Stalin, an ethnic Georgian, did virtually nothing for Georgia, Georgians still viewed him as their representative in the Kremlin. Many Georgians perceived de-Stalinization as a process directed against all Georgians. Anniversary events remembering Stalin’s death on 9 March 1956 can be seen as a turn in the minds of Georgians. This anniversary quickly turned into a demonstration, demanding the independence of Georgia from the Soviet Union. This day marked the beginning of more comprehensive changes in the public opinion of Georgians, because Soviet soldiers pointed their rifles against the demonstrators and were ordered to fire; even today, the exact number of fatalities is not known, but according to some estimates, it ranged from 100 up to 2500 people.⁷⁸ Some of the changes were irreversible, as increasingly more Georgians began to strive for independence. However, most of the changes had a negative effect.

Until 1956, the Soviet Army had several national divisions, including the Georgian Divisions as well. Most Georgians served in the national divisions, which were usually deployed within the Georgian SSR. When the Soviet government decided to use force to suppress the Tbilisi protests, soldiers of the Georgian Divisions refused to obey the orders, and one of the divisions even tried to help the demonstrators (it is thought that the leader of the Georgian Communist Party Vasily Mzhavanadze had a role in stopping this to prevent more bloodshed).⁷⁹ Soviet leaders saw the unreliability of national divisions, and they were soon dissolved.

After the dissolution of national divisions and attempts to use the Soviet Army against the people, Georgians felt increasingly alienated from the military service. Since the late 1950s, despite the famous Georgian fighting spirit, military service became one of the most undesirable things and was avoided as much as possible. Some were even prepared to get the “white ticket” (exemption from military service) issued to the mentally ill.

78 Official documents about the events of March 9-10, 1956 state that only 21 protesters died (Georgian SSR Deputy of the Minister of Foreign Affairs report, April 23, 1956, in Russian. Digital version http://www.idfi.ge/userfiles/files/dagupulebi_da_da_chrilebii.pdf viewed on July 16, 2011). Eyewitnesses assert that these numbers are inaccurate and greatly reduced. This may be closer to the truth, because the report only listed those victims taken to the hospital, but the majority of those killed did not make it to the hospital at all.

79 It is not possible to verify these facts, as there are no official documents available. But Soviet authorities ceased to trust Georgian national divisions. See Sakva R. *Introduction to Soviet politics*, 2nd edition, for a full review of Soviet politics. London, Routledge, 1998, p. 243.

Some parents attempted to bribe Soviet Army commanders, trying to secure a more desirable post in the army for their offspring, so they would not perform active service. All those who could bribe commissioners tried to avoid serving far away from Georgia, and many succeeded (it was rightly considered that serving in Georgia, Armenia, and Azerbaijan was a lot easier than in other areas of the Soviet Union). Universities with war departments (graduates had to serve only two or three months in their home country instead of two to three years in compulsory military service, as it was in the 1960s and 1970s) turned into a real refuge for Georgians. This led to increased corruption in the education system. A military career became very unpopular in Georgia, and there were only a few Georgians among the officers in the Soviet Army. This caused many problems in Georgia after the collapse of the Soviet Union. The attitude towards military service has changed only recently, and now more and more young people choose a military career.

Alienation from the Soviet Union was encouraged not only by military service. The events of 1956 changed the attitude of Georgians towards the state in general. State property was not respected and Georgians did not consider stealing from the state to be a bad thing (“What do you want from me? I am not stealing your property. I just took it from the state”). In truth, this was not typical of Georgia alone. Beginning with the 1960s, the Soviet authorities, still unable to provide people with what they required, began turning a blind eye to the fact that people stole output from factories, building sites, or large farms. Still, Georgia managed to stand out in this regard.

Instead of the planned three years,⁸⁰ construction of the Inguri hydroelectric power plant dragged on for 12 years, during which time countless private homes were built in the Western part of Georgia using materials intended for the construction of the power plant. Of course, Moscow noticed the delay, but Georgian officials always managed to solve such problems, armed with boxes of the best Georgian cognac. It was very difficult to change this attitude in the 1990s, which caused many problems in Georgia. Even today, many Georgians believe that the state owns nothing, so you can easily mismanage state-owned properties.

It is not possible to talk of the damage caused by the Soviet occupation without mentioning corruption. In the early 1960s, Georgia earned a bad reputation because of its corruption level. Admittedly, it was encouraged by Kremlin leaders in many ways, because the more corrupt the officials, the easier they were controlled. Of course, there was corruption in other countries as well, but the most significant damage to the state is caused by corruption among medium and lower ranking leaders.

80 Construction of the hydroelectric power plant began in 1961, but the first stage was planned for operation in 1972. All stages of the hydroelectric power plant were commissioned for operation in 1978 (see: “Enguri HES”, Tbilisi, 2008 – in Georgian); In the Transparency International *World Corruption Barometer 2010*, p.12, p.46, Georgia has been named as one of those countries where less than 3% of the respondents admit having given bribes – less than in the USA, Canada, France or Spain. <http://www.transparency.org/content/download/57399/918005> viewed on July 16, 2011, reports that now the corruption risk could be less than in Germany, Great Britain or the USA (*World Corruption Barometer 2010*, p.12).

Corruption was widespread in the Georgian SSR, ranging from state institutions to kindergartens. The education sector was one of the most corrupt. If you needed a Gold diploma, all you had to do was to bribe the school principal, but sometimes this did not help, because someone else was willing to pay more, or was a good friend of the principal. Without special relations or large sums of money for bribing the commission, many faced difficulties getting into university. This continued even after the collapse of the Soviet Union, and only radical measures undertaken by the new Georgian government after the Rose Revolution succeeded in reducing corruption. Currently, the level of corruption in Georgia is relatively low compared to other European countries.

The last issue I would like to touch upon is criminalization of a large part of Georgian youth. The protest against the Soviet regime gradually began to manifest as growing influence of the “thieves-in-law”. A large part of the Communist elite had grown close with organized crime and controlled the inner life of prisons. Information on the growing influence of the thieves-in-law started to spread in the late 1950s. The number of young people who dreamed of the life of a thief-in-law and a criminal career increased. Georgians became an influential force in the criminal world of the USSR. Results of a survey taken right after the collapse of the USSR indicate that approximately three-quarters of the thieves-in-law were directly or indirectly linked to Georgia or the Caucasus.⁸¹ Later the influence of the thieves-in-law increased in many spheres of life in Georgia, as in many other parts of the Soviet Union. For instance, if someone had had their car stolen, it was more efficient to ask the thieves-in-law for help than the police; the thieves-in-law returned the car to the owner for a small payment within a few days’ time, whereas the police usually never recovered the stolen cars. After the collapse of the Soviet Union, the thieves-in-law took over control of almost all spheres of life in Georgia. In fact, they became quite an influential power in almost all post-Soviet countries, especially in Russia. After the Georgian government, led by President Mikheil Saakashvili, launched a campaign against them, the state regained control and criminal authorities were forced to consider leaving Georgia. This significantly reduced the level of crime, and today it is no longer dangerous to leave a car on a Georgian street.

In conclusion, I would like to emphasize that the recent achievements of the Georgian government clearly highlight the potential evolution that Georgia would have followed, had it not been occupied by the Soviet Union. It is a pity that Georgia cannot use its potential in full, because the effect of the occupation did not end with the collapse of the USSR. Russia is still occupying two districts belonging to Georgia, thus making it impossible for this Caucasian country to follow the development path it has chosen.

81 Sergey Dyushev’s research shows that previously more than 400 out of 600 “thieves-in-law” were of “Caucasian origin – Georgians (from Tbilisi, Western Georgia - Kutaisi and smaller towns like Zugdidi, Hobi, Calendzhiha), Armenians or Kurds”. See: Dyushev S. *Thieves-in-law and state authorities*. Moscow, Eksmo, 2008 – in Russian. Individual extracts are available electronically http://www.e-reading.org.ua/bookreader.php/97018/Dyshev_-_Vory_v_zakone_i_avtoritety.html viewed on July 16, 2011).

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Some general considerations on the damage caused by the soviet economic system in the Baltic states⁸²

Prior to the 1940 Soviet occupation, the economies of the Baltic States were part of a successfully functioning European and global economic system. It was based on private property and personal responsibility for companies and farms. The functioning of the economic system was relatively little regulated by the state, which ensured a legal framework for a free economy, including an independent judiciary.

The Soviet system destroyed free enterprise in the three Baltic States, international integration of their economies, and eradicated the social strata that managed market-oriented companies, which operated in cities and rural areas. Soviet ideology destroyed both the concept of private property and private owners themselves. The activities of the entrepreneur, managing economic and financial properties and values, were substituted by a centralized planning system, created by the Party and the state. These served the interests of the state and Party power structures, supposedly satisfying the needs of the population and the planned economy.

In the 1920s, the Soviet Union adopted the planned economic system that was established by Germany during World War I in order to ensure its military ambitions and meet the needs of the population. Specialized factories were built in the USSR and produced large volumes of a limited assortment of products in compliance with Soviet technical standards, which were far from first-class. The planned national economy excluded such basic economic principles as market-oriented product quality, industrial innovations, and cost efficiency. The social structure was reformed to ensure that society was made up by state employed workers and party bureaucrats.

The goal of the Soviet planning system was to stimulate the national industrial base and to enhance military potential on behalf of the international labour movement. This system acquired foreign currency by selling natural resources, such as oil, gas, coal, diamonds, and precious metals.

82 Hans-Georg Wieck’s paper was presented at the conference by the Deputy Chairman of the Board of LOIB, President of the Baltic-Scandinavian Research Centre, Bonifācijs Daukšts.

The Soviet Union lacked a legal framework to regulate private business, which would include an independent judiciary and a tax system to ensure fair distribution of industrial output values among economic structures and provide funds for infrastructural improvements and implementation of other social projects. This is why the judiciary of the Baltic States lost its independence.

The Communist planned management spirit and ideology, driven into the minds of the population, were the main obstacles preventing the post-Soviet Baltic States from creating an open economy based on market principles and an efficient tax system. The shadow economy – unorganized and tax-avoiding market – evolved in many areas of the Soviet Union. Integrating the economic and social structures of the Baltic States in contemporary European and global economic system, dominated by innovations, quality products and market principles, is an extremely costly process. It is difficult to calculate precise costs required for reorganization of a national economy, shaping new social attitudes, and mastering of new skills.

The prejudice against bourgeois capitalists, spread by Communist dogma and rooted in society, caused people to have a false idea about the market economy. These people did not pay attention to, or ignored the fact that a national economy is not viable without true competition, innovations, and commercial initiative that occur within an appropriate legal framework. The post-Soviet economies inherited corruption and mafia structures from the USSR, which basically sought to manipulate social strata and classes.

Unlike the Soviet Union (including the Baltic States), Communist Poland protected its small enterprises, small companies, and workshops through its Constitution since 1955. After the collapse of the planned national economy in 1990, this protections significantly enhanced the economic prospects of Poland.

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Latvian industry – 1940s-1960s: Excessive expansion and increasing regional disparity in the USSR⁸³

In addition to great human loss and suffering, the Soviet occupation caused great losses in the industrial sector of the Baltic States. Soviet propaganda took great pains to show the “undeniable advantages” of the Soviet system in the industrial sector and the “huge contribution” to the industrial development and improvement of the living standard of the working class, especially in the new Soviet republics.⁸⁴ Yet, facts indicate that after incorporation into the Soviet Union, economic development of the Baltic republics was significantly slower than the Soviet average.⁸⁵

Up to the collapse of the USSR, the majority of the “old” Soviet republics continued to lag far behind Latvia and Estonia in industrialization. It must be noted that in 1940, Lithuania lagged behind Latvia and Estonia in terms of industrialization. Compared with Western countries and despite some major scientific and technical achievements (mainly in the military and space fields), the Baltic republics and the USSR and its satellite countries actually sank deeper and deeper into technological stagnation and regional disparity. These facts were concealed from the Soviet public. The Soviet economic system caused great losses to most Latvian industrial enterprises, particularly in technological terms; the effect is still felt today and, most likely, will continue to be felt in the future. These adverse conditions developed during the 1940s-1960s in Latvia; the industrial capacity of Latvia was geared mainly for strengthening the Soviet empire.

Certain features of Latvian and Estonian industry differed from Lithuania and other Soviet republics during the first post-war years. These differences resulted largely from the economic and demographic catastrophe of the initial post-war years in the

83 This paper expands on my previous work and that of others in Latvia and abroad. See: Daukšts B., Prikulis J. *Historical investigations regarding USSR-caused economic losses suffered by the Baltic States*. - Latvijas Vēsture (Latvian History), Riga: University of Latvia, 2011, No 4 (84), p. 26- 45.

84 Latvija padomju režīma varā: 1945-1986. Dokumentu krājums. (Latvia under the Soviet regime: 1945-1986. Document collection). (resp.ed. Šneidere I.). R.: Latvijas vēstures institūta apgāds, 2001, p.13; Доклад: Латвия в составе СССР паразитовала за счет России и Украины, Телеграф, (Report: Latvia's parasitism of Russia and Ukraine in the Soviet Union), 2010, 25. окт.

85 Guļāns P. *Vai Latvija ir parādniece?* [Is Latvia a debtor?], Cīņa, May 26, 1990.

areas closest to the Russian Federation, the non-Black Earth regions.⁸⁶ This resulted in a large number of economic refugees migrating in particular to Riga and Tallinn. Many migrants from the collective farms of the non-Black Earth regions found refuge in Latvia and Estonia, causing a rapid population increase that was completely uncharacteristic in general for the European part of the USSR.

As the war neared its end, Latvian industry faced a rapid increase in labour. Many demobilized Red Army soldiers did not wish to return to the impoverished collective farms and small towns of their homelands. Yet, regulations did not make this easy to do and various machinations, requiring patience and time, were used to escape from the poverty of the non-Black Earth region. One legal escape method was demobilization after compulsory military service. By the early 1950s, the population of Riga had doubled as compared to July 1945. This abundance of labour resulted in exceeding Soviet industrial plan schedules.

The Soviet industrial post-war five-year plan (1946-1950) called for the industrial GDP in Latvia to increase by 180%, but a 303% increase was achieved.⁸⁷ However, in the eastern part of Latvia and western parts of Russia, industrial plans failed and output volumes were below the performance of 1940. For many years to come, Latvia and Estonia would exceed the five-year plans, largely due to the abundance of labour and unlike the non-Black Earth areas where industry or agriculture plans were never achieved.⁸⁸ Such chaotic progress in the first post-war years was heavily enhanced by Soviet central ministries and their subordinate departments that were unwilling and unable to encourage harmonious regional development of all Soviet territories.⁸⁹

86 Economic division based on soil quality compared to the particularly fertile territory in southern Russia and Ukraine. Šmulders Modris. Who owes whom? Mutual Economic Accounts Between Latvia and the USSR, 1940-1990. Riga : 5th THS, 1990, 37 pp.; Шмудлерс, М. В. Кто кому должен? Взаимные экономические расчеты между Латвией и СССР (1940-1990 годы). Рига: Народный фронт Латвии, 1990, 43 с.). Full texts of both brochures are available at www.vislatvii.lv/viewpage.php?id=44; Шмудлерс, М. Экономические отношения Латвии и СССР и их результаты. 1920-1990. (Economic relations of Latvia and the USSR and their results). Р.: Латвийский институт статистики. 1992, 96 с.

87 Starptautiska zinātniska konference „Postkomunistiskā transformācija un demokratizācijas process Latvijā. 1987-2003. gads. (International conference – Post-communist transformation and democratization in Latvia. 1987-2003). Riga : LU u.c., 2004, p. 55.

88 Прикулис. Ю., Федотов, А. Союзный план и ведомственный интерес. (Union plan and institutional interest). Коммунист, Москва, №. 14 (сентябрь), 1989, с. 44-47. Прикулис. Ю., Федотов, А.Н. Место Прибалтийских республик в отклонениях от пятилетних планов развития промышленности СССР (к оценке советологических концепций). (Role of the Baltic States in deviations from the five-year plans of industrial development of the USSR (in regard to evaluation of the Sovietologic concepts). Известия Академии Наук Латвийской ССР, №. 12, 1989, с. 42-53; Шмудлерс, М. В. Кто кому должен? Взаимные экономические расчеты между Латвией и СССР (1940-1990 годы). (Smulders Modris. Who owes whom? Mutual Economic Accounts Between Latvia and the USSR, 1940-1990). Рига: Народный фронт Латвии, 1990, с. 3.

89 Прикулис. Ю., Федотов, А. Союзный план и ведомственный интерес. (Union plan and institutional interest). Коммунист, №. 14 (сентябрь), 1989, с. 44-47. Прикулис. Ю., Федотов, А.Н. Место Прибалтийских республик в отклонениях от пятилетних планов развития промышленности СССР (к оценке советологических концепций). (Role of the Baltic States in deviations from the five-year plans of industrial development of the USSR (in regard to evaluation of the Sovietologic concepts). Известия Академии Наук Латвийской ССР, №. 12, 1989, с. 42-53.

In 1951, the Soviet Union secretly surveyed the results of the post-war five-year industrial development plan. Major negative deviations were discovered, especially in regional terms, but the Baltic republics were not the main concern. The Soviet government was more worried about the poor performance of the non-Black Earth regions of Russia, which failed to fulfill the post-war industrial restoration plans. In fact, the industrial production output in these regions continued to lag behind the already low pre-war indicators. As a result, in 1957 during the Khrushchev Thaw period, rectification was attempted by creating national economic regional councils that would restrict the arbitrariness of central ministries, but the Soviet government secretly sabotaged them, and, in 1965, they were eliminated.

Researchers lack Soviet statistical materials about the Stalin era. Unlike statistics of independent Latvia, Soviet statistics, especially since the 1937-1938 purges, were incomplete, and data were forbidden to be published. In addition, public quantitative data on Soviet performance were often exaggerated and embellished. Data on the industrial performance of independent Latvia were concealed throughout the Soviet era, particularly in the initial post-war years.

The Soviet regime concealed the successful industrial development of independent Latvia and Estonia before World War II. Latvia suffered greatly during World War I and the ensuing battles for independence: Latvia was looted and vandalized – a quarter of all buildings were destroyed and railroads, factories, and the shipping industry were dismantled and sent to Russia. The population of Latvia was 2.5 million in 1914, but in 1918 – about 1.5 million. No other European country suffered such a loss. Independent Latvia had to start from scratch.⁹⁰

After 1920, the Latvian economy grew rapidly. Surviving factories resumed operation and rapidly expanded their production output, importing required equipment from the West or producing and improving it on site. During the 1920s-1930s, Latvian industry developed much faster than agriculture. In the 1930s, production of radio appliances, phones, photo equipment, buses, bicycles, and other vehicles, as well as cement, electricity, and many industrial goods flourished. The State Electrotechnical Factory (VEF) began producing the world-famous mini camera *Minox*. By the late 1930s, the total volume of industrial output exceeded the performance of the early 1920s by nearly five times,⁹¹ despite the economic depression. Before Soviet occupation, Latvia was an advanced European country with a level of welfare, as well as industrial and agricultural industrial performance, that exceeded by far the harsh reality of the neighbouring Soviet Union.

90 Daukšts B., Prikulis J. Kvēli murgi kādā konferencē Maskavā (Fervor nightmares in a conference in Moscow). Available at: www.ir.lv.

91 Šmulders Modris. Who owes whom?; Шмудлерс, М. Экономические отношения Латвии и СССР и их результаты. 1920-1990.

Comparatively, in post-World War II Latvia, the population decreased approximately by a quarter, not including refugees and inmates in the filtration camps, some of whom later returned to Latvia.⁹²

For the majority of the Latvian post-war community, the years 1946-1950 (officially referred to in the USSR as the “First Post-war Five-year Period”) were a time of great economic damage from several perspectives. Secret Soviet statistics show that during this period, Latvia was, in fact, diminished to the level of the old Soviet republics.

Since the 1930s, Soviet leaders had been promising to catch up and outperform the USA and other Western countries in terms of industry and production of other material values. In 1961, this slogan even became the main subject of Soviet propaganda. However, since incorporation into the USSR, Latvian industry generally lagged behind Western countries in terms of technology, especially during the Brezhnev era. In the eyes of Latvian, and especially Estonian society, this was clearly manifested by comparison of the Baltic States with Finland. After 1945, low levels of investment and excessive reliance on Latvian industry developed during independence became one of the most significant negative aspects for Latvia. For many years after World War II, investment per capita in Latvian industry was much lower than investment in the Russian SSR and other old Soviet republics. Distribution of resources resulted in taking away from Latvia, the “new” republic, in favour of the “old” republics.

Soviet propaganda argued that Latvia received great industrial support, but there was no reliable data to support this claim. Only summary statistics, published and disclosed during the Khrushchev Thaw, showed that investments in Latvian industry (84,9 million roubles, 1946–1950) were proportionally the smallest when compared to the average performance of other republics.⁹³ Investments per capita in Latvian industry during the 1946-1950 Five-year plan were less than half the average investment in the USSR and Russia, causing a lag behind Finland and other democratic European countries. Over the years, the donor function performance increasingly reduced Latvia’s socio-economic performance. As a result of the low investment rate and the general militarization of the Soviet economy, Latvian industry failed to become internationally competitive. This caused Latvia additional difficulties when it regained sovereignty.

The migration of residents to Latvian and Estonian cities from economically weak areas consisted primarily of economic refugees from collective farms (see Table 2 and the map),⁹⁴ and in comparison to the number of native residents, was more massive than the

92 *Latvija padomju režīma varā: 1945-1986. Dokumentu krājums.* (Latvia under the Soviet regime: 1945-1986. Document collection). (resp.ed. Sneideris I.). R.: Latvijas vēstures institūta apgāds, 2001, p.13.

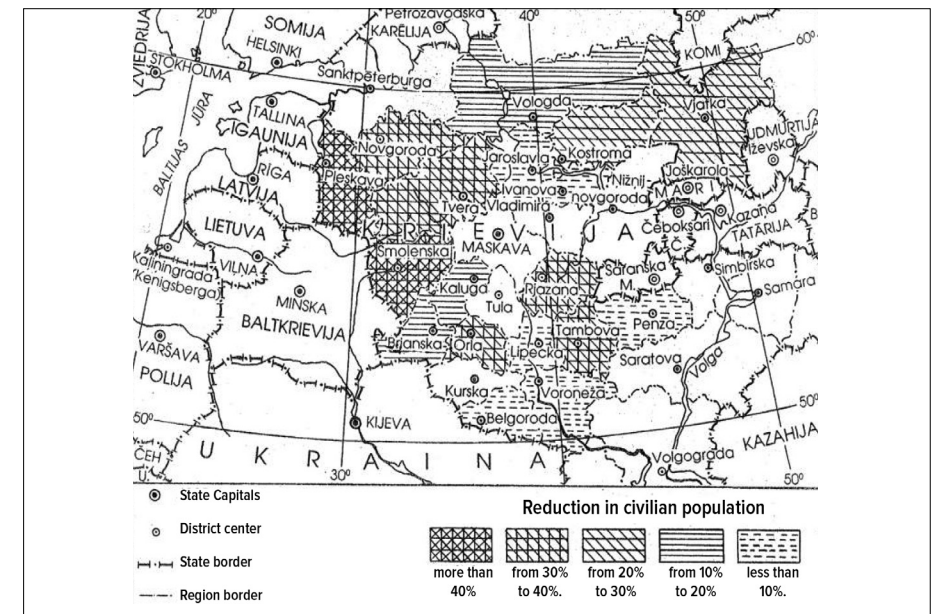
93 *Капитальное строительство в СССР. Статистический сборник.* (Capital construction in the USSR). Москва: Госстатиздат ЦСУ СССР, 1961, с. 111; *Народное хозяйство СССР. 1922-1972. Юбилейный статистический сборник.* (National economy of the USSR. Anniversary statistical compilation). Москва: Статистика, 1972, с. 148.

94 *Зубкова Е. Прибалтика и Кремль. 1940-1953.* (The Baltic States and the Kremlin, 1940-1953). М.: Институт Российской истории РАН, РОССПЭН, 2008.

entire post-war migration wave of Turks and other migrant workers to Germany and other Western European countries. As a result, the average living space per person in Latvian cities was reduced by more than half from ~25 m² in 1945 to 12 m² in 1950.⁹⁵ Data published for internal use in 1958 during the Khrushchev Thaw showed that in early 1940, the population of Riga was 355 200, whereas by 1 January 1950, it was already 489 100.⁹⁶ In 1940, the residential stock in Riga consisted of 4.4 million square meters, but in early 1946 – 3.912 million square meters and in the early 1950s – 4.22 million square meters. Limited apartment construction in the first post-war years prevented further significant migration to Riga and other cities. During the post-war years, residential space in Riga was only partially restored compared to the pre-war period. In 1950, it was still reduced by 4,1%, but the population had increased by 37,7%. These data were strictly confidential as indicated on the title page of the statistical publication: “не подлежит опубликованию в открытой печати” (not to be published publicly).⁹⁷

Figure 1

Areas of Russia, where the population in 1991 was less than in 1940



95 *Dzīvokļu saimniecība (Housing).* – *Latvijas Enciklopēdija (Latvian Encyclopedia)*, Vol. 2, Riga: SIA Valērija Belokoņņazdevniecība, 2003, p. 361.

96 *Латвийская ССР. Статистический сборник.* (Latvian SSR. Statistical compilation). Рига: ЦСУ СССР, Статистическое управление Латвийской ССР, 1958, с. 40, 225.

97 *Ibid.*

In 1940 in Latvia, national income per capita exceeded the average pre-war Soviet indicators of the time by 65%,⁹⁸ but in 1956 the margin was only 21% (see J. Zubkova Известия, 09.10.2012). During Soviet rule, investments per capita made in Latvia were less than the Soviet average. During the fourth Soviet Five-year plan (1946-1950), the share of capital investment in Latvian industry was only 0.49% (84,9 million rubles) of all capital investments in Soviet industry, although 1.09% of the Soviet population lived in Latvia in 1950.⁹⁹ Even fewer capital investments per capita were made in comparison to the Russian Federation. In subsequent five-year plans, the situation did not change much, and the level of investment in Latvian industry was lower than international benchmark standards.

Table 2

Depopulation in Lithuania and the “old” Soviet republics in 1950 compared to 1940 (thousands)

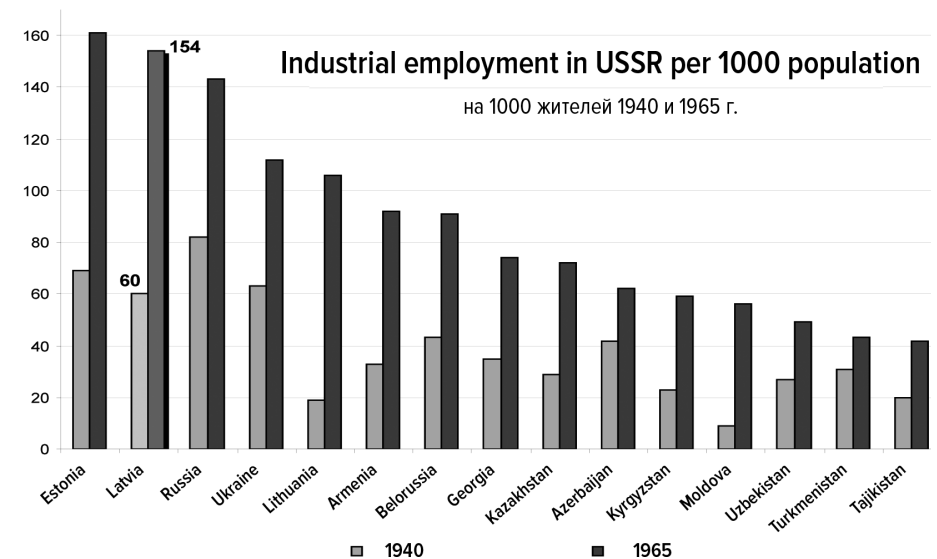
	1940	1950
Lithuania	2950	2573
USSR	194077	178547
Russian Federation	110098	101438
- Pskov region, 1939*	1549	1043
-Novgorod region, 1939*	1152	737
- Smolensk region, 1939*	1983	1220
- Leningrad	3015	2899
- Leningrad region	1294	1000
- Kalinin (Tver) region, 1939	2489	1891
Belarus	9046	7709
Ukraine	41340	36588

(Soviet statistics published in 1988 in Moscow)

98 Guļāns P. *Vai Latvija ir parādniece?*

99 Starptautiska zinātniska konference „Postkomunistiskā transformācija un demokratizācijas process Latvijā. 1987-2003. gads. (International conference “Post-communist transformation and democratization in Latvia. 1987-2003»)). Rīga : LU u.c., 2004, p. 55; Прикулис. Ю. Зарубежные авторы о месте Прибалтийских республик в развитии промышленности СССР (региональный аспект). В: Зарубежная литература о Латвии. Вып. 6. (Prikulis J. Foreign authors on the role of the Baltic States in the industrial development of the USSR (regional perspective). In: Foreign literature on Latvia. Vol. 6). Рига, 1989, с. 260.

Table 3



In terms of population, in 1965, Latvia ranked 14th among all the Soviet republics; Estonia was last. However, development resulted in Estonia and Latvia the highest in terms of industrial employment rates per 1000 inhabitants as indicated in Table 3.

Therefore, the argument that the Baltic States were a subsidized region in the Soviet Union¹⁰⁰ does not agree with actual statistics, but was convenient for the Stalinist myth of the constant pampering of the Latvian, Lithuanian, and Estonian nations during the totalitarian regime and later. The reform attempts by A. Kosigin in the second half of the 1960s were fruitless. Statistical data, collected by professor Modris Šmulders in 1990, show that Latvia had been a donor-republic since the first years of incorporation into the USSR: materials and money were taken from it to be used in other Soviet territories.¹⁰¹ Estonia and Lithuania suffered similar losses as well, only in different proportions.

100 Доклад: Латвия в составе СССР паразитовала за счет России и Украины, Телеграф, (Report: Latvia in the Soviet Union parasitized on the account of Russia and Ukraine), 2010, 25. окт.

101 Smulders Modris. Who owes whom? Mutual Economic Accounts Between Latvia and the USSR, 1940-1990. Rīga : 5th THS, 1990, 37 pp.; Шмудерс, М. В. Кто кому должен? Взаимные экономические расчеты между Латвией и СССР (1940-1990 годы). Рига: Народный фронт Латвии, 1990, 43 с.). Full texts of both brochures are available in the intener - www.visulatvii.lv/viewpage.php?id=44; Население СССР. 1987. Статистический сборник. (Population of the USSR. 1987. Statistical compilation). М.: Государственный Комитет СССР по статистике, 1988.

In 1996, Russian scientist, Russian State Duma deputy, and professor, Oksana Dmitrieva, supported the statements that coincided with general conclusions drawn during the Latvian Awakening. In her book *Regional Development: the USSR and after*, she showed that Latvia, Estonia, and Lithuania had been donor-republics in the USSR. Dmitrieva also emphasized that Moscow received huge subsidies from the Russian Federation and other Soviet regions.¹⁰²

In the 1970s, the world experienced an increasingly intensive transition to post-industrial society. Since the Soviet Union missed the beginning of this process, it also lacked the required material and human resources. Therefore, in the global market, the Soviet Union developed as a raw material-supplying country.

More than 70% of the industrial production in Latvia supported the military-industrial complex of the USSR directly or indirectly; this was no longer in demand after regaining sovereignty.¹⁰³ In turn, the reorganization and conversion of companies or their parts to provide non-military goods and services was possible only with unfeasibly ambitious capital investments.

Jānis Kalniņš

Industrial statistics,
material product system and
system of national accounts

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Determining the damage of occupation: hypothetical evaluation of the development path of Latvia, had it not been occupied

We offer calculations of the damage caused by the occupation using the indirect method of determining the total losses, based on assumptions of the potential development path of Latvia, had it not been occupied. It is assumed that Latvia would have developed more like its closest Western neighbours, who based their economic activities on free market principles (Finland, Denmark, Sweden, and Norway).

Data on the gross domestic product (GDP) per capita, calculated according to purchasing power parity, serve as the theoretical basis for the comparison of economic development of various countries at the level of macroeconomics. In the pre-war period, these were usually called national income calculations. Unlike the calculations based on single currency at the exchange rate, these calculations have eliminated the differences in price levels in individual countries. The US dollar (World Bank global estimates) or euros (Eurostat EU estimates) are usually used as the single currency. These data series can be calculated in prices of each individual year or in prices of a base year. The former can be used to compare the level of consumption between countries, the latter – as time series.

In order to make the necessary calculations, the following must be evaluated:

1. Level of the economic development of Latvia before occupation (until 1940), compared to neighbouring countries;
2. Potential development path of Latvia during the occupation years, based on the evaluation of the achievements of neighbouring countries; and
3. Structure and development perspectives of the Latvian national economy in transition to a market economy (1991 -1995).

¹⁰² Dmitrieva O. *Regional Development: the USSR and after*. 1996, London: St.Martin's Press, p. 256.

¹⁰³ Upmalis I., Tilgass Ē, Stankevičs E. *Latvija padomju militāristu varā. (Latvia under the Soviet military)*. Rīga: Latvijas Okupācijas izpētes biedrība, 2011, p. 302.

Level of economic development of Latvia before occupation

The first major studies on the national income of Latvia are based on the work of Alfrēds Ceihners (1899-1987).¹⁰⁴

In the late 1920s and early 1930s, Ceihners published articles on “National property and national income” in *The Economist* in which he presented calculations for the Latvian national income. Ceihners also prepared these data for Volume 11 of the *Latvian Conversational Dictionary*. His calculations were made in current prices and noted in US dollars for the purpose of comparing with other countries.

Table 1

National income calculation on average for the period of 1925-1934¹⁰⁵

	Latvia	Finland	Austria	Denmark	USA
National income, millions of US dollars					
- at currency exchange rate	195	444	1040	1051	66203
- at purchasing power parity	249	473	1613	1008	66203
Price level against US prices (USA=100)	78	94	64	104	100
Population in 1930, thousands	1900	3457	6715	3648	123148
National income per capita, in dollars					
- at currency exchange rate	103	128	155	288	538
- at purchasing power parity	131	137	240	276	538

104 Latvian Encyclopedia published in Sweden states (p. 371) Alfrēds Ceihners, economist, b. 20.08.1899, in Riga. Studied at Riga Polytechnic Institute, graduated from the Department of National Economy, *Brīvā Zeme* 1935-1939, member of the editorial board of *Brīvā Zeme*. Author of: *Economic importance of Latvian forests* (1929), *Agriculture and farmers* (1937), *Economic policy of Kārlis Ulmanis* (1939), *Was Europa drohte: Bolschewisierung Lettlands* (1943), *Bolshevisation of Latvia* (1944). Several hundred articles published. In 1944, went into exile to Germany. It does not mention here that Ceihners also worked as a clerk in the Department of State Economy of the Ministry of Finances. For a more detailed evaluation of the economic opinions of Ceihners, see: Oļģerts Krastiņš, *Latvijas saimniecības vēsturiskā pieredze 1918-1940* (Historical experience of the economy of Latvia) (Riga, 2001, pp. 198-202).

105 Colin Clark. *The Conditions of Economic Progress*. London, 1940

In 1933, the State Statistical Bureau began calculating national income.¹⁰⁶ Actual State Statistical Bureau records have not yet been discovered. In the *Latvian Encyclopaedia*, Kārlis Zīverts published the national income of Latvia not only at current prices in lats, but also at constant prices for 1929. It also provided recalculation in dollars according to purchasing power parity, both with and without the farm consumption.

Country comparisons on the purchasing power parity of individual currencies can be found Colin Clark's *The Conditions of Economic Progress*, published in 1940 in London. It must be noted that national income was calculated per employee instead of per capita, because Colin Clark studied labour productivity issues (see Table 1).

Potential development path of Latvia during occupation, based on the evaluation of the performance of neighboring countries

The potential development path of Latvia for the period of the occupation years, compared to Finland, has been estimated using GDP per capita in both countries at international dollars.

The most important sources of information for such calculations were databases from the United Nations, the World Bank, and the US International Comparison Centre at the University of Pennsylvania. However, this data covers various time periods, making it difficult to use. The World Bank database contains data on GDP in Latvia since 1965, based on information and calculations on former Soviet republics collected by the World Bank and published in 1993 in the *Statistical Handbook – States of the Former USSR*. The UN database contains information from 1990.

The Latvian Central Statistical Bureau has published a time series since 1980. In order to include earlier years, information on national income, collected using Soviet methodology, had to be utilized. The simplest method is to use GDP and national income ratio, which is relatively stable. Latvia does not have national income calculated for 1950 and earlier. There is only a rough estimate for 1950 and 1940 at constant prices. Therefore, it is assumed that development was steady from

106 *Latvian Encyclopaedia* (p. 2821): Kārlis Zīverts, statistician, b. 22.09.1907 in Stende district, son of a farmer. In 1932, graduated from the University of Latvia; since 1937 worked as an assistant in the Department of Statistics; in 1943 became an assistant professor; from 1942-1944 lectured on economic geography; in 1952 worked in Statistical Department of the University of Uppsala. From 1929-1936, statistician for the Central Statistical Bureau in agricultural and internal trade statistics; from 15.06.1940-22.09.1942 was the director of the Statistical Bureau of Riga city. Fled to Sweden in 1945. Employee of Statistiska Centralbyran.

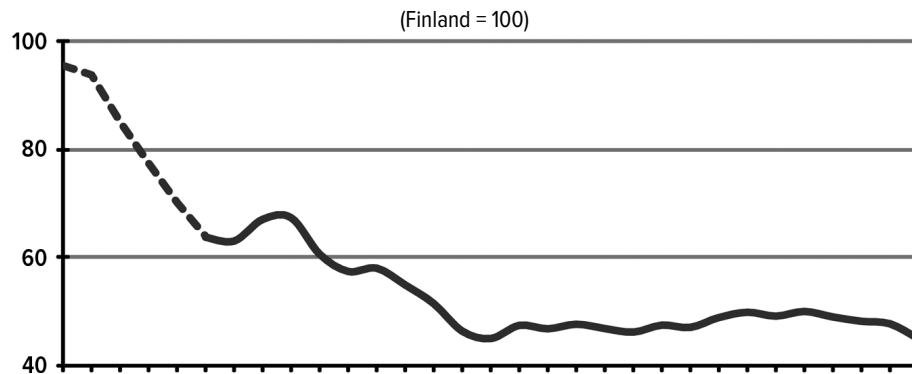
1951-1955. The various values in the databases of international organizations have been balanced in a simultaneously integrated time series.

World Bank data and University of Pennsylvania data also differ. Since the latter covers a longer period of time, our integrated calculations use the *Penn World Table* for the GDP of Finland, Austria, Denmark, and the USA at purchasing power parity; for Latvia, we used World Bank data, because the *Penn World Table* contains virtually no data on this period.

These data show that in 1965, GDP per capita at purchasing power parity in Finland was 2221 dollars, whereas in Latvia it was only 1418 dollars, 64% of the Finnish level. By 1968, this ratio increased to 67%, but it later declined. By 1975, the Latvian level was at 45% of Finnish performance. Afterwards, the Latvian level began to grow to 50% in 1986, only to fall back to 45% in 1990, as indicated in Figure 1.

Table 1

Latvian GDP per capita at international dollars of each year 1935-1990



Source: Compiled by J.Kalniņš from above-mentioned sources

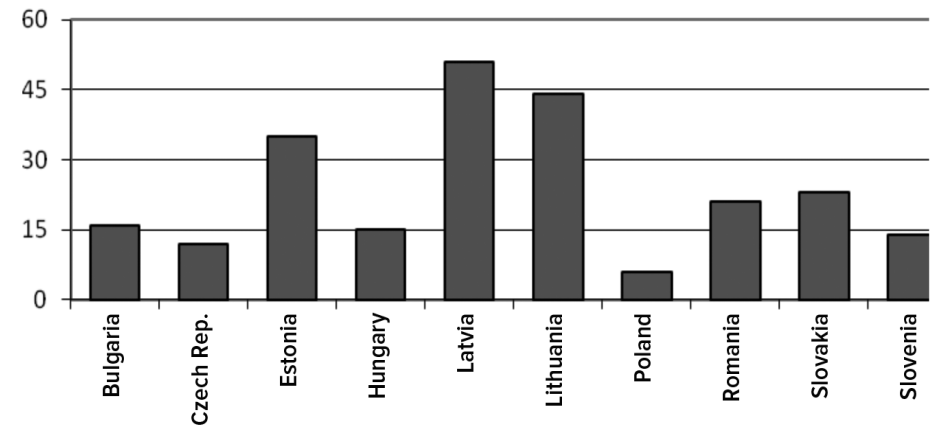
Development perspectives for the national economy during transition to a market economy

Transition from a planned command economy to a market economy also had a negative impact on the economy of Latvia. A large part of these losses was related to the consequences of occupation – the structure of the national economy that was not based on development of natural and acquired economic advantages.

All transit economies experienced reduction in production upon launch of reforms. However, the economic recession was twice as high in the Baltic States as in other EU candidate countries, as noted in Figure 2.

Figure 2

Depth of the economic recession of the transit period (GDP reduction %)

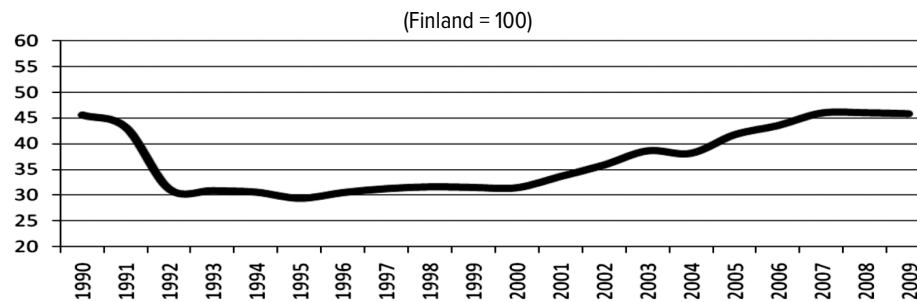


Source: The World Bank, *Transition: The First Ten Years*, 2002, Washington, D.C. Although all transition states had basically the same economic system, they began the transition at different industrial levels. More importantly, all other new EU member countries were independent countries with more or less established independent administrative and financial institutions.

The Baltic States had been most deeply integrated into the Soviet economic system; therefore, the collapse of the USSR had a more dramatic effect on them. The Baltic States found it more difficult to find new markets to replace the lost eastern market and to operate under market economy conditions. Under the Soviet command economy, there was no competition, which resulted in the lack of the “acquired economic advantages”, which allow for easier integration into international markets, without having to rely solely on natural resources and cheap labour. The Soviet economy was deliberately designed to reinforce the interdependence of individual republics and form disproportionately large industrial monopolies where material and technical provisions and marketing were strictly regulated by the state plan. As reforms began, “tradable sectors” were the first to face reduction of production output, mainly in the industrial sectors. It was very difficult for the Baltic States to restore their national economies, because they were dependent on external economic relations – export and import.

The structure of the national economy and the industrial level achieved during 50 years of occupation failed to be competitive in the market economy, because they had not evolved naturally. During this time, the national economy of Latvia did not evolve based on economic efficiency, but was determined mostly by the policy of Soviet central ministries, based on their economic interests and needs of the extensive military-industrial complex.

Figure 3

Latvian GDP per capita in international dollars of each year

Source: The World Bank <http://data.worldbank.org/indicator>

Having evaluated the total economic damage, a consequence of occupation and the forced command economy, it can be argued that the average income of every Latvian resident would have been twice as high in 1990 and three times higher in 2000, compared to actual values as noted in Figure 3.

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Direct demographic losses suffered by Latvia as a result of soviet campaigns

Introduction

This paper will describe the direct demographic losses suffered by Latvia during Soviet occupation.

In Latvia, population records were carefully kept during the pre-war period. The population census data of 1935 gives the numbers and composition of the population of Latvia during the initial Soviet period. However, this information should be used with caution, considering that the borders of Latvia were already changed in 1944. Studies on the beginning of the Soviet occupation period and especially the post-war years are complicated, because the first Soviet census was conducted only 14 years after the war and 24 years after the last population census in 1935. In addition, post-war publications on demographic changes were rather limited, whereas data distortion for certain years was considerable. Several researchers, both in Latvia and abroad, have made estimates on the population of the Latvian SSR and the natural and migrative movements in the 1940s and 1950s. However, more in-depth focus on determining demographic losses took place only after the restoration of independence, especially since 2005, when the Cabinet of Minister set up a Commission to determine the number of victims of the Soviet totalitarian occupation regime and mass grave sites, to collect information on repressions and mass deportations, and to estimate the damage caused to the Latvian state and its people.

Methodology

Studies on the population of the Latvian SSR raised issues of methodology for determining direct and indirect demographic losses. Only initial calculations have been made. In the future, demographic and other sector specialists must determine the total population of Latvia during World War II and the post-war years, because the published data are mostly false.

Encyclopaedic publications, such as *Encyclopaedia Britannica*, *Russian Demographic Encyclopaedia* (1994), and others contain entries on demographic or population losses, mostly due to natural catastrophes or military conflicts. Most often, direct losses are related to people dying as a result of war or repressive actions, including those who died from injuries at the front and civilian casualties in occupied territories and exile

sites, as well as forced migration and territorial changes.

Indirect losses caused by occupation include deterioration of the health of population, marriages that were not concluded, birth rate decline, reduction of working capacity, premature death, incomplete education, etc. Declining birth rates and increased mortality in the post-war years can also be seen as direct demographic losses. It is more important, though, to determine how these losses could be assessed.

In 2006, demographer J. Rudzāts identified several population groups that can be attributed to direct demographic losses:

1. Mass deportations in 1941, 1949, and other years;
2. Latvian national partisans (mostly from 1944-1949);
3. Latvian Army losses (those shot in Litene and those who died in concentration camps);
4. Persons mobilized in the Soviet Army during occupation;
5. Refugees who fled to the West in 1944 -1945;
6. Losses caused by annexation of the eastern part of Abrene to Russia in 1944; and
7. Other demographic losses (attacks on border posts in 1940, individual arrests and deportations, war in Afghanistan, elimination of the consequences of the Chernobyl power plant emergency, etc.).

It should be noted that some of the deportees suffered repeatedly; many of those who were deported were later released and returned home, as did many refugees.

The age and sex of individuals should also be determined. According to I. Zālīte and S. Dimante, four in ten deportees died in imprisonment or exile, while the remainder were later released, of whom some were terminally ill. Less than half of the deportees can be attributed to direct demographic losses, but deportation of others caused indirect losses from the perspective of demography (disability, breaking of family ties, etc.). More detailed calculations should take into account that every population has a natural mortality rate, regardless of repressions, appropriate to the development level of the society.

Direct losses also include the years during which deportees spent in forced emigration or exile outside of Latvia, following the end of their sentence. This should also include the losses of people who returned home to Latvia from Western countries, only after the restoration of sovereignty. It is important to determine whether calculations have been made for the number of people or for the number of human-years. Calculation in human-years would be more appropriate, because it considers both the number of victims and the years not spent in Latvia. For this purpose, I used a special demographic potential method to assess the reduction of the "vitality potential".

German occupation also caused direct and indirect demographic losses. Most of the people mobilized into the Soviet Army during World War II and other military actions (Afghanistan, Czechoslovakia, Hungary etc.) are victims of the Soviet occupation regime and make up direct or indirect losses. The issue of losses caused by the involvement of Latvian residents on the German side, especially the Latvian legionnaires, is more complicated. Here, the approach could be differentiated, as Latvians mobilized in the German Legion did not fight for the Nazis, but rather against Soviet re-occupation. Besides, the proportion of volunteers was rather small. Judging by the recent publications of H. Strods, B. Sokolovs, and others suggest this proportion should be reduced, and it is likely that the damage caused by Soviets and German during the war was roughly even.

Determining direct demographic losses during the occupation of 1940-1941

Latvia suffered great demographic losses through its incorporation into the Soviet Union. In 1940-1941 alone, more than 30 000 Latvian residents, mostly Latvians, were evacuated, deported, or shot. Most of them were employed in political, military, and education sectors or worked as economic managers. The People's Aid Registration and Information Desk registered 34 866 Latvian residents who went missing in 1940-1941. Nearly half of them can be attributed to the deportation of 14 June 1941. However, deportation of smaller groups began immediately after occupation.

The Bolsheviks arrested, deported, or killed 21 members of the Latvian government, 32 members of parliament, and other political leaders, including President Kārlis Ulmanis and General Jānis Balodis; 563 officers were deported from Litene alone. The first and largest group was sent to Komi ASSR on 25 April 1941.

Earlier, from 1937-1939, approximately 17 000 Latvians, who were living in the Soviet Union were exterminated on the grounds of their nationality. Although they were not Latvian residents, some could have potentially returned to their homeland. In addition, 2387 Latvian citizens were arrested and punished in Soviet territory in 1942 and 1943. According to KGB data in Latvia, 5247 persons were arrested and punished in Latvia in 1940-1941 (not including the deportation of 14 June 1941). Together, the number of persons arrested and punished from 1940-1943 totalled 7634, many of whom were shot. In 1991 at the conference on Communist totalitarianism and genocide practice in Latvia, J. Stradiņš noted that 1488 of those arrested in 1940-1941 were shot. Most likely, the number of persons arrested and punished during this period was even greater. However, some of these victims lived in the Soviet Union before the occupation, a matter for future research.

Due to a lack of information on the age of the victims and the fate of those who were not shot, I am currently unable to make human-year loss calculations. However, considering the fact that every fifth repressed person was shot, it can be roughly

estimated that direct demographic losses amount to many tens of thousands of human-years and that Latvia lost at least 45 000 human-years. The loss of those who were arrested could be rather similar. The total direct losses are closer to 100 000 human-years.

Deportations of 1941

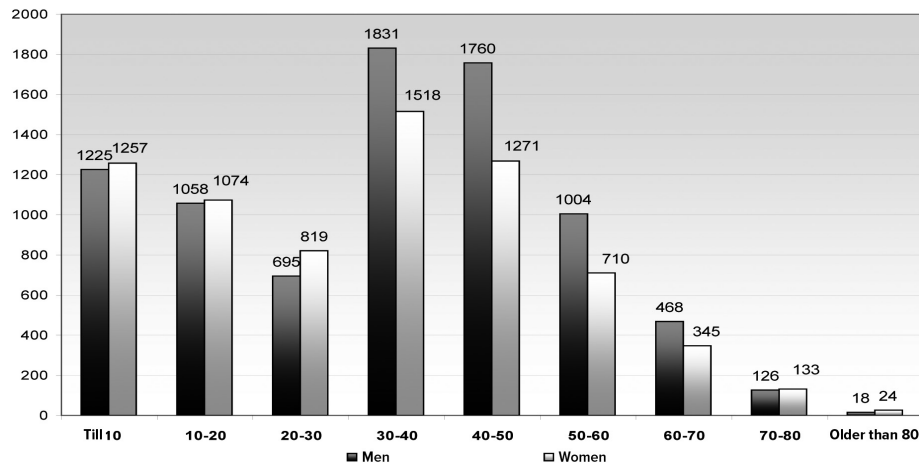
The Latvian State Archive (LSA) published *Aizvestie* (Deported) in 2001, which provides specific information on persons deported on 14 June 1941, indicating that 15 443 people were deported. Based on this information on the fate of the deported, at first glance it can be assumed that at least 6000 people were permanently lost to Latvia, whereas the remainder are mainly indirect demographic losses: breaking of family ties, loss of unborn children, disability, reduced viability, etc.

Using the data on the distribution of the deportees by gender and age, mortality and reduced viability, losses caused by the deportation of 1941 could hypothetically amount to 443 000 years (some of the deported returned to Latvia after the war and lived a number of years). This figure could be used in estimations of economic damage, while determining non-created values.

I have calculated the summary losses in human-years by using the demographic potential method, based on the so-called viability potential of the individual. Here we use the viability characteristics of the “notional generation” (calendar year). Under the perspective of actual generations in the post-war situation, these quantifiable losses should be slightly higher, because, in general in Latvia, the viability characteristics tended to increase in the post-war period.

Table 1

Number of people deported in June 1941 by age and sex



Losses could be calculated by determining the exact age of deportees at the time of deportation and their future demographic viability. The deported should have lived for approximately 30 years more. In reality, approximately 40% of the deportees died immediately upon, or shortly after, deportation. This represents a loss of approximately 185 000 human-years. The remainder is comprised of: 1) those who never returned home (their number is small) and 2) those who were later released and returned.

Determining viability parameters for the remainder is rather difficult. However, there is no doubt that this segment of deportees had deteriorated health and viability.

Deportations of 1949

LSA created a database and updated the number and composition of those deported from 25-30 March 1949, published in the book *Aizvestie, 1949. gada 25. marts* [Deported, 25 March 1949], published in 2007. A more accurate collection of data on the age of these persons and time spent away from Latvia has been obtained, which allows rough determination of direct demographic losses.

Documents from various institutions of the Ministries of Interior of the USSR and the LSSR contain slightly different data on the number of deportees, ranging from 41 400–42 000. LSA data indicates 42 125 people. This figure increases by adding the 211 children born on the way and in 1949 in exile, as well as by adding those 513 people deported after 25 March 1949.

Determining direct demographic losses relates to the deportation of 42 849 persons.

The USSR Presidium of the Supreme Soviet decree of 11 March 1952 freed members and supporters of the nationalist underground and released them from imprisonment, but they were sent to special forced settlement sites with their family members (mostly in 1954, 1955 and early 1956) until the forced settlement sites were dissolved.

The majority of 1949 deportees, 23 300 (55.4%) were 16 to 59 years old; 11 000 (26.1%) children were exiled together with one or both parents, or in some cases, together with grandparents or other relatives. The deportations of 25-30 March 1949 resulted in a loss of more than 3% of Latvia's pre-war population. A clear majority, 95%, of deportees were ethnic Latvians.

Comparison of losses caused by the deportations of 1941 and 1949

My calculations indicate that the average age of 1949 deportees was 37 years; in 1941 – 33 years. Although more people were deported in 1949, the proportion of those who died in exile (12%) was one-third of those deported in 1941. The majority of the 1949 survivors had a shorter exile period than those deported in 1941. These losses would have been far higher if the goal of deportation had not been also colonization of unpopulated and underpopulated Siberian regions and if liberalization of the special forced settlement regime had not taken place after the death of Stalin. Minor children were allowed to return to Latvia in mid-1954, but single disabled and terminally ill persons in March 1956.

The years 1956 and 1957, in particular, saw the highest number of released deportees – 18 500 and 11 300 respectively. Thus, 75% of the deported were released within 7-8 years. However, a considerable number did not return home; some were prohibited from returning by the Soviet authorities, and some had already established families in exile. The loss of these people also increased the direct demographic losses to Latvia. Estimates show that approximately 80% of those deported in 1949 returned home sooner or later, but at least 8000 people never returned to Latvia.

Calculating demographic losses caused by deportation is further complicated by the lack of information on the time of the return of the deportees to Latvia. I estimate that at least 300 000 human-years were lost. Women, who are more viable than men, made up a large number of the deported. Therefore, the demographic losses due to the deportation of women were felt more acutely than those of deported men.

The total demographic losses of the returned deportees is calculated both by their absence (from 1949 to 1957) and also because of their deteriorated health and viability after return. These losses constitute approximately 350 000 human-years.

A rather high loss of lives was caused by the marriages not entered into and children not born. However, this loss, which I estimate to be within the range of 350 000-400 000 human-years, must be attributed to indirect demographic losses.

Losses caused by annexation of part of abrene district

In August 1944, an area of Abrene district, more than 1200 km² with about 45 000 residents, was separated from Latvia and added to the Pskov region of Russia. These undeniably were and still are direct losses for Latvia. Statistical data also show that only 1/8-1/10 of the population was ethnic Latvian. This proportion was higher only in Abrene and Purvmala districts, but it was rather minor elsewhere.

I studied data on the population and average age and life expectancy (viability of population in Abrene region was slightly lower than generally in Latvia). The losses calculated this way constitute at least 1.3 million human-years.

Refugees and persons forced to depart

In the spring of 1944, when troops and German civil administration were planning to leave Latvia, certain population categories (women, children and elderly men) were allowed to emigrate from Latvia, but in late September 1944, all residents were free to flee. Ships departing from Riga were initially used to escape, but until February 1945, ships from Liepāja and Ventspils were used as well.

Historian Kārlis Kangeris, distinguishes between types of emigration or deportation of Latvian residents during German occupation, including relocation to Germany of troops mobilized in Latvia in 1944/1945, Jews relocated from Latvian prisons and Salaspils and Mežaparks camps, recruited volunteer workers, and people arrested against their will by the police during various order and security campaigns.

Particularly high losses occurred at the end of the war when approximately 200 000 Latvian residents fled to the West, mostly to Germany and its occupied territories. At the end of the war, approximately 25 000-30 000 Latvian prisoners of war and captives were located in Germany. A very small number repatriated back to Latvia – only 3600. According to my estimates, these losses constitute at least five million human-years.

Losses caused by the Afghanistan war

In 2007, Inese Straume calculated that 3640 Latvian residents were sent to Afghanistan and involved in warfare. Sufficiently accurate information is available on 3216, or 88% of them. According to these data, 64 soldiers died in Afghanistan – a third were not yet 20. Each of those who were killed could have lived approximately another 45 years; but the loss can be estimated at approximately 3000 human-years. Some of the losses caused by injuries, disability, and premature death immediately after returning to Latvia can be attributed to indirect demographic losses.

A total of 187 people were injured and disabled, but no information is available on the fate of another 400 persons who were sent to Afghanistan. The average age of the injured was 20.8 years. Naturally, the time spent in Afghanistan and treatment costs after return caused great losses to the national economy of Latvia. Apart from the absence of these soldiers and other persons who were sent there (on average for 1.5 years), losses were caused also by reduction of working capacity after their return. Absence of more than 3500 soldiers alone constituted a direct loss of at least 52 000 human-years.

Losses related to the chernobyl power plant disaster

One of the sources of Latvian demographic losses is related to elimination of the consequences of the Chernobyl power plant disaster. Many people suffered in the disaster of 26 April 1986, especially in the regions adjacent to the power plant in Belarus, Ukraine, and Russia.

Increased levels of radioactivity were established in Latvia as well. However, these losses are related to the direct involvement of Latvian residents in the elimination of the consequences of the disaster in Ukraine, and less with damage done to the health of the population in the territory of Latvia. The latter is very difficult to assess due to a lack of information.

According to data collected by the Latvian War commissariats, 5178 soldiers were recruited for work within a 30 km risk zone. This work also involved several hundreds of Latvian residents who were recruited into active service, included in the operational groups of Soviet ministries, or who worked in the Ministry of Interior and the State Security Committee.

Demographer Edvīns Vītolīņš and other specialists estimate that 6000 to 6500 residents of the LSSR, or 0.23% of the population, were involved in the clean-up from May 1986 to 1989 – mostly men aged 19-40.

Information provided by the Occupation and Radiation Medicine Centre at P. Stradiņš Clinical University Hospital indicates that at least 550 participants died by 2008. E. Vītoliņš suggested the number of deceased could be 1000 people, and their average age of death was 40 years. Considering that the average remaining life expectancy for men aged 40 is approximately 30 additional years, the total loss of those who died prematurely is estimated at 30 000 human-years. The losses caused by the deterioration of health and viability of the other participants, approximately 5000 men, could be even higher. Most of them (approximately 3000 in 2007) were granted disability status, but another 600-700 people have reduced working capacity. This indicates that only one in four participants in the Chernobyl power plant disaster clean-up has not suffered significant losses in health or work capacity.

Other demographic losses

As we know, arrest and shooting of residents continued after the second Soviet occupation. According to KGB data in Latvia, in February 1945, mostly German families were deported from Latvia, 675 people in total. In March 1951, Jehovah's Witnesses were deported. We can estimate that apart from those deported in 1949, another 1600 persons were exiled during this period.

Specialists provide various data on the fatalities suffered at the hands of the Red Army and Soviet partisans. It is estimated that from approximately 43 000 men of the Latvian Division, only 6000-7000 (15%) of the initial number of men returned to Latvia. Russian historian Boris Sokolov cites statistical data on the losses suffered by Latvia during World War II – 117 000 people, including 15 000 military officials, who fought on the German side, and 16 000, who fought on the Soviet side.

The losses suffered by the national partisans were relatively high as well. The first partisan units were formed in the autumn of 1944 in Latgale, and the last one ceased to exist in late October 1956. The total number of members of the armed resistance movement is estimated at 25 600. National partisans, as well as their family members and relatives were shot. These demographic losses have not yet been fully accounted for and should be attributed to the consequences of the Soviet occupation.

The Communist genocide policy continued in the 1950s, mainly through deportations and shooting of people without trial, as well as placement in work camps until 1953. After 1954, repressions took less visible forms of genocide and turned against political opponents, defenders of faith, and the spiritual intelligentsia. Simultaneously, the government of the LSSR called for those deported earlier to remain in Siberia. Those, who returned home, were discriminated against, both at work and in daily life.

In total, 2541 people were arrested and punished in Latvia after 1954, but the average number of those arrested and punished (77) per year was 40 times lower than during the Stalin era. Direct demographic losses are estimated in the tens of thousands of human-years (40 000-50 000); nevertheless that is much less than in any of the deportations in the 1940s.

Summary

It can be concluded that Latvia suffered great demographic losses under the Soviet occupation regime. Research results were published for the first time in 2008. The corrected slightly calculations are summarized in Table.

Table 1

Direct demographic losses caused by the Soviet occupation regime in man-years

Population groups in Latvia	Man-years, in thousands	Notes
Incorporation of Latvia of 1940 - 1941 (including those arrested and punished in the territory of the USSR in 1942 and 1943)	100	The amount of repressed persons of certain categories shall be specified
incl. – persons shot	45	
Total number of victims of 1941 and 1949 deportations	745	
incl. deportation of June 1941	443	There is need to clarify methodological principles and methods of calculations,"
deportation of March, 1949	302	
Losses suffered by both armies during the war		There is need to clarify methodological principles and methods of calculations
National partisans	300	The proposed methodological principles and calculations result must be clarified
Persons arrested and punished after deportation of March, 1949		Relevant analysis has to be conducted and losses determined
incl. 1949-1953		
1954 and later	45	
Forced refugees and emigrants in 1940's	At least 5000-	More detailed analysis of the number and composition of refugees is required, taking into account the gender and age of the refugees and characteristics of those who returned home
Population of the separated territory of Abrene	1300-1350	More specific calculations are required, using the population structure of the time and viability of the gender and age and, if possible, demographic biographies
Persons involved in Afghanistan war	5	Fate of around 400 persons sent there have to be specified
Liquidators of the consequences of the Chernobyl power plant disaster	30	Number and age of those deceased have to be specified.

Particularly heavy losses were caused by emigration at the end of the war and by losing Abrene district. However, these data still require additional work in collection and analysis, especially in regard to the number and composition of the refugees.

Strictly direct demographic losses for the considered aspects could range from 7 to 9 million human-years, apart from the fatalities in both armies, civilian losses during the war, increased mortality rate during the post-war years, and time spent in the military service. The total direct demographic loss suffered could exceed 10 million human-years. The losses suffered by both armies during the war cannot be determined currently, because methods for determining such losses have not yet been published. Nevertheless, there is no doubt that the direct losses of those involved in warfare alone constitute several million human-years.

In the future, determining total losses should also include smaller population groups, who fled from the LSSR, such as Germans, Poles, and Jews.

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Indirect demographic losses suffered by Latvia as a result of soviet occupation

Economic and direct human losses have been traditionally studied and assessed, more so than indirect demographic losses and moral damage caused by the occupation. However, Latvian demographers have repeatedly noted that Latvia suffered huge losses of such nature, and more attention should be paid to them in research.

Methodological issues of calculating indirect demographic losses and moral damage

Due to lack of data and deliberate secrecy and falsification by the Soviet authorities, as well as for several other reasons, it is very difficult to assess direct losses in regard to many specific items. Specialists are divided on the issues that should be attributed to indirect losses caused by the Soviet occupation, because no appropriate definitions or methods have been worked out. Therefore, research often requires intuitive approaches and rather bold estimations, using the poor informational base that is available. Still, it is necessary to distinguish, as accurately as possible, between the considerable demographic losses caused by Soviet and German occupations. On 14 June 1941, Soviet authorities deported 1900 Latvian Jews, many of whom soon died in exile. The damage done to Jews by the German occupation authorities was undeniably much greater. Losses caused by the involvement of the Latvians on the German side, especially in regard to the Latvian legionnaires, is a complicated issue as well.

A differentiated approach is required, and most of the direct and indirect losses should be attributed to the consequences of Soviet occupation. Because of the Year of Terror – the repressions and mass deportations of 1941 – most of the mobilized legionnaires who fought for the German side did not actually support the Nazis, but fought against Soviet re-occupation. The repatriation of Germans to their ethnic homeland in 1939-1940 should also be partially attributed to damage caused by the Soviet regime. In principle, Baltic Germans left not just because of aggressive German policies, but also because Soviet ones.

The following should be classified as the indirect demographic losses caused by the Soviet occupation:

- breaking of family ties,
- potential, but not concluded marriages,
- decline of birth-rate (potentially unborn children),

- interrupted education,
- deterioration of people's health, disabilities,
- reduction of labour capacity, and
- premature death.

It is very difficult to assess the losses caused by the occupation, which resulted because of interrupted education and reduction of personal work capacity. In-depth research of these issues would allow determination of losses in monetary terms. Establishing and estimating the number of families that lived in Latvia before and after the war would allow for accurate calculation of the demographic losses related to marriage – destroyed and potentially not-founded families. In regard to calculation of losses caused by the declining birth rate, the number of unborn children could be estimated, which would allow further calculation of the cumulative loss of the viability potential in human-years.¹⁰⁷ Calculations in human-years would be suitable to estimate losses related to the deterioration of people's health and premature death (decrease in viability). The range of the moral damage caused by the Soviet authorities is vast:

- political persecution and spying on people;
- restrictions on assembly, association, political, and literary activities (censorship);
- restrictions on choice of employment and residence (especially in regard to repressed persons, their children and relatives);
- large numbers of immigrants flowing into Latvia from other regions of the USSR and necessity to adjust to the needs and mentality of these immigrants;
- necessity of using the Russian language in official communication and daily life;
- severely limited possibilities for travel and contact with foreigners;
- state administration system usurped by the Communist Party and the necessity to follow the orders of officials appointed by the CP;
- constant deficit of consumer goods and services under conditions of a relatively low living standard;
- properties expropriated from citizens and restrictions of private property rights;
- forced principles of Socialist economy, restrictions imposed on private initiative; and
- military service and forced recruitment into the Soviet Army.

Lackadaisical attitudes towards work, criminality, and alcoholism were widespread during the Soviet era. In fact, all Soviet policy and its associated management system caused immense psychological damage to the majority of the population.

The question is how to assess this? It is important to work out a methodology to estimate the intangible damage suffered by the people.

¹⁰⁷ A human-year is a time unit used in population studies, indicating existence of a person of any age and gender during a full year.

Estimates of indirect demographic losses

The indirect demographic losses caused by the Soviet occupation must include broken family ties and the potential, but not-concluded marriages due to repressions. Destroyed or not-founded families were not a direct cause of death but could have had a negative impact on one's life expectancy and certainly had a significant impact on the number of unborn children.

The annexation of Abrene region by Russia in 1944 and exodus of residents to the West may not have caused significant changes in gender proportions of the Latvian population, but there was a distinct loss of men in nearly all other areas, which caused distinct gender disproportion in the post-war period.

Compared to the period 1939-1941 (on average 21 000¹⁰⁸ marriages were concluded per year in the pre-war period), the average number of marriages per year from 1946-1953 was 18 000. Several thousand potential, not-concluded marriages should be added to the indirect demographic losses, which could range from 30 000-50 000 during the entire Soviet occupation. The proportion of broken families could be proportional to the ratio of the lost population of Latvia against the total population: The total number of families lost to Latvia as a result of repressions and mass forced deportations exceeds 100 000, and the Soviet regime reduced the number of families in Latvia by at least 150 000. In addition, many migrants from other Soviet republics came to Latvia, mostly of young working age, which increased the number of marriages between Latvians and non-Latvians. This resulted in a significant decrease in the proportion of Latvians in post-war Latvia.

Although gender disproportion gradually decreased, it continued to be a factor among the working-aged population, particularly pensioners, until the restoration of independence. This was also reinforced by the increased mortality rate among working-age men during occupation. After the restoration of independence, male mortality continues to be an issue and can be partially explained by the consequences of the occupation; mortality rate differences between the sexes are considerably less pronounced in economically advanced countries.

Potentially unborn children constitute a very important component in the calculations of the indirect losses caused by the Soviet occupation. The number of women of childbearing age who were lost to Latvia or could not have children due to various consequences of the Soviet occupation could be established. It is possible to roughly determine the number of unborn children by using the pre-war birth-rate intensity values (total fertility rate).

As mentioned, the loss of women was felt less than the loss of men. Quantitatively,

¹⁰⁸ Численность, состав, естественное и механическое движение населения. Латвийское ССР. (Number, composition, natural and mechanical movement of population. The Latvian SSR). Рига: ЦСУ Латв. ССР, 1961.

the greatest losses were due to the departure of refugees to the West – more than 200 000 are estimated of whom approximately half were women. More than 30 000 women were deported from Latvia during the mass deportations of 1941 and 1949, and the majority of them, approximately 20 000, never returned from exile. Latvia lost approximately 20 000 women due to the annexation of Abrene. The number of women lost in other instances (refugees that fled to the USSR and did not return, victims of individual persecutions, war casualties, resistance movement, etc.) could range between 20 000 and 30 000. The Soviet occupation caused a loss of at least 150 000 women in Latvia.

Some women already had children or had passed childbearing age. Nevertheless, approximately 80 000 women could have become potential mothers, each of whom could have had 2.5 children. Thus, we can add about 200 000 unborn children to the indirect losses. If we know that the average life expectancy of the Latvian population was approximately 70 years, then the Soviet occupation resulted in the loss of 14 million human-years. We should also take into account that the unborn children could have had children themselves. Thus, the loss of Latvian population and un-lived human-years could be considerably higher.

It is difficult to calculate the indirect demographic losses due to deterioration of health and decreased viability of repressed persons. No studies have been conducted in Latvia on the decreased viability of those who were repressed and returned. Yet, it cannot be denied that the health and viability of many repressed persons suffered considerably.

One of the biggest disasters occurred on the night of 26 April 1986 when the Chernobyl nuclear power plant block broke down. Information on the damage caused by the disaster was not published in the USSR. A joint report of the International Atomic Energy Agency, the World Health Organization, and the United Nations Development Programme, published on 5 September 2005, noted that radiation was likely to be the direct cause of death for about 4000 people who were exposed to it in Chernobyl – those who worked at the disaster site in 1986-1987, evacuated people, and those who lived in the most polluted territories. The document emphasizes the victims in Belarus, Russia, and Ukraine, but the disaster had significant impact on the health and viability of the population in other Soviet republics, particularly for those who were sent to clean up the mess. It is not possible to obtain accurate data on those losses. According to expert assessments, the total number of persons from Latvia involved in the clean up exceeded 6000 people, approximately 0.23% of the Latvian population. The number of those involved in the entire USSR was slightly above 0.27%.

Only men were involved in the Chernobyl disaster: their average age was 31. Approximately 1000 of those from Latvia who participated have died in the 25 years since the disaster. More than 3000 people have been granted disability status. The rest suffer severe health disorders. Latvia has lost approximately 50 000 human-years as a

result of this disaster; the state provides huge material aid and covers a large amount of medical expenses for those people. Those who were involved in the clean up had 1300 children. They require special medical monitoring. The rough estimate is that the total losses suffered by Latvia as a result of the Chernobyl disaster have considerably exceeded 100 million lats at the moment, and they will certainly continue to grow in the future.

Severe indirect and moral damage was also caused by the illegal mobilization of Latvian residents into the Soviet Army. Service in the Soviet Army prevented young men from studying and starting a family for several years. At least 64 soldiers¹⁰⁹ recruited from Latvia lost their lives. There were lethal accidents as well; in some cases suicides were committed. These are direct demographic losses. Military service often took place in unhealthy conditions, especially if the recruit was sent to a high radiation zone. The soldiers were also negatively affected by bullying, which increased during the last years of the Soviet occupation. Serving in Soviet Army significantly contributed to the spread of addictions (smoking, alcohol abuse).

The most accurate method for calculating the number of those recruited in the Soviet Army would consist of obtaining specific information on the number of recruits in specific years and aggregation of the data. This has not been done, because information on the total number of recruits was confidential and most of the important information was removed from Latvia. The method for calculating the number of persons recruited for military service is based on the data of the age of young men living in Latvia in any given year.

Results of population censuses from 1946-1991 were used in the calculations for the number of young men recruited in the army in order to enable estimation of the number of recruitable men in any given year. It was estimated that approximately 80% of all eligible men were recruited for military service during Soviet occupation.

Usually, young men who had reached the age of 19 were recruited into active military service. Slight deviations were possible for various reasons, and slightly older men were also recruited for service. Until 1968, general military service lasted for 3 years, but those in the navy served four years. In 1968, the duration of compulsory service was reduced to two years, while in the navy it was reduced to three years. There were cases when service was prolonged.

Over nearly 50 years of Soviet occupation, approximately 629 000 Latvian residents were conscripted for active military service. As a result, Latvia lost approximately 1 560 000 human-years.

Before World War II, Latvia and Finland had approximately equivalent living

standards. The demographic indicators, including the average life expectancy of the population in both countries, differed only slightly. Currently, the average life expectancy for both sexes is higher in Finland than in Latvia. During Soviet occupation, it was on average higher by four years. We can attribute this difference to the indirect demographic losses caused by the Soviet occupation regime. As a result, 1.9 million pre-war Latvian residents have potentially lost about 7.2 million human-years. Of course, the decrease of average life expectancy affected all other people living in post-war Latvia as well. In principle, the number of potentially lost human-years is considerably higher.

According to my estimates, the total indirect demographic losses due to decreased viability and birth rate of the population constitutes at least 21 million human-years.

109 Straume I. *PSRS okupācijas režīma nodarītie cilvēkresursu zaudējumi Latvijai karadarbības laikā Afganistānā*. [Soviet inflicted human resource losses to Latvia as a result of war in Afganistam] Unpublished report. Rīga, 2007. Pasūtītājs: Valsts kanceleja.

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Methodology for determining human value

In 18th century Germany, Gottfried Wilhelm Leibniz stated: “The true power of domination lies in the number of people. Where there are people, there is also substance and power.” Such formulation of the problem paved the way for determining the official worth of the biological resources of people. If the aim of any occupation is to reduce the power of the subjugated country, this can be done quite simply – by physically reducing the number of people.

In the 19th century, the director of the State Statistical Bureau of Imperial Prussia, Dr. Ernst Engel (1821 -1896), studied human value from an economic perspective. He believed that the main criterion of human value should be what each individual is able to produce and that the life of each person is a specific and quantifiable value. Around 1883, Engel defined value as “...significance (meaning), which society attaches to a certain thing, considering a certain purpose, for a certain time and in a certain place in the space”.¹¹⁰ He distinguished four types of human value: cost value, use value, return value, and exchange value. From today’s perspective, nothing has fundamentally changed.

We could attribute those monetary benefits, which must be invested in a person until the moment s/he is able to work for the benefit of society and give her/his contribution to the costs. All expenses required to preserve the physical and mental abilities of a person, as well as for education during the whole production period, should be added as well.

The use value could be attributable to the sphere (profession), in which a person operates – what specific benefits required by society can s/he offer, what needs can s/he meet (be a good locksmith, singer, sailor, etc.), and how much is society prepared to pay for it.

The return value is the ability of a person to create various economic benefits. As the division of labour and, hence, productivity increase, s/he can create more than s/he is able to consume.

The exchange value is the most difficult to define, but, it could be compared to payment for work depreciation (amortization) as an alternative, which would apply to mechanical equipment required to replace living labour.

¹¹⁰ J. Vogeles und W. Woelk. Der „Wert des Menschen“ in den Bevölkerungswissenschaften vom ausgehenden 19. Jahrhundert bis zum Ende der Weimaren Republik.

In daily business, depending on various manipulations (both theoretical, when it comes to strategic planning of human potential in the state economy and also physical, when, for instance, a football player is sold by one club to another), undertaken with a person as the carrier of economic value (human value), the value (price) attributed to each specific case will be constituted by the sum of various combinations of the aforementioned values.

When calculating the losses resulting from occupation, the essence of the main problem is how to create cost combinations for each group of people individually and for the lost human potential in general, depending on the age and education level of the people (professional competence to create the necessary benefits) or the uncreated return values, if the person was physically exterminated or was not employed for the benefit of Latvia.

Calculation of the total amount of all losses caused by the occupation regime requires an equal indicator for all types of losses; usually the economic value in monetary terms is used for this purpose. Application of such value to people and their years of life is difficult due to general and case-specific methodological problems.

The latter includes four elements. First is the categorie of people who died and were forced to be absent for a long time, attributed to the direct and indirect losses caused by the Soviet regime in particular. These undeniably include all groups of people who were wrongly punished, deported, and exiled.

The second is the basis for the economic assessment of the lost human-years that must be worked out. There is no general methodology for such calculations in Latvia, or anywhere else in the world. The value created in a country within a year is expressed as GDP per capita, but it is mostly created by people of working age. Such people made up the majority of those who died or were repressed or exiled by the occupying regime. The damage caused to the national economy by the loss of people was higher than in the case if the composition of the victims did not differ from the whole population. For this reason, it would be useful to distinguish the share of working-age people in lost human-years, and it requires additional calculations of their numbers, depending on the age of the repressed persons and the duration of their absence.

In this regard, we must speak of the indirect losses or the costs resulting from the preparation of people for work or raising them to working age. Statistical information of Latvia available until 1940 is not compatible with the information required for such calculations. Also, we do not yet have information on the structure of the repressed population, both from the demographic perspective and also social indicators (education, professions, etc.). This means that development of methodology for calculation of compensations due to the loss of human potential caused by the occupation must be based on information obtained in other studies.

Thirdly, considering the general increase of the economic productivity under peacetime conditions, the economic benefit not created due to the loss of the human power would have been different at various times. Therefore, these losses should be calculated

individually for specific periods. The highest losses of human power caused by the Soviet occupation of Latvia were registered from the end of World War II until the release of the majority of the repressed survivors in 1956. Afterwards, the losses are calculated only by the remaining years of those who died and were exiled until the end of the working age and the number of human-years of the children who were not born to them or who were working in the West.

Unlike the types of losses of human power in the second half of the 1940s and the first half of the 1950s, the losses suffered in later periods are categorized both as direct and indirect losses. The children of those deported for a long time and survivors included in the first period mostly reached working age only around the time of returning to Latvia; others were born here, so the calculation of indirect losses is not required.

The fourth element questions how we determine the abilities of a person to create added value or what measure of the values created by a person should be used in Latvia in order to determine the nation's true ability to create the benefits required. Here we must speak of labour productivity. What was labour productivity in the USSR, and what was it, for instance, in Finland, which had also suffered in World War II? What values were a Finn and a Latvian able to create within a given period of time, based on the relevant work organization of the USSR and the economic management strategy? Here we must speak of the structure of the post-war national economy of Latvia and the benefits created by it, in which great attention was paid to the needs of the Soviet military-industrial complex that instantly led to real decline of the national economy of Latvia after the restoration of independence in the 1990s.

It is very difficult to determine the economic damage resulting from the loss of human resources during the occupation period, and this process will always be based on various, more or less objective, assumptions. While studying the problems of the effects of the occupation, researchers of the Institute of Economics of LAS returned once more to the theoretical and practical aspects of determining human value. However, the formula for calculating human value has been worked out under the context of today's needs.

Taking into account the directions of the research methods and the selection of criteria, the following formula can be used to conceptually calculate human value: $SI + Ii + Gi + Ki + CVi = CVi$ where:

SI – all social costs required for raising a person to reach the working age and/or start up his own business activities;

Ii – costs of obtaining the i- education level;

Gi – duration of the productive work in years for the person of the i- education group;

Ki – productivity (added value) coefficient for the i- education group;

A – average created or quantifiable value (gross domestic product, gross national product) per capita; and

CVi – value of a person with i- education level.

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Damage suffered by the Baltic states and possibilities of compensation

Due to the length of the occupation of the Baltic States, the problem of compensation for the damage caused is particularly complicated. In the case of temporary military occupation, the compensation for damage is a simpler matter, because all events are documented: the number and names of the persons killed, injured, and deported are known and damaged buildings, bridges, companies, farms, and other property are registered. Since the occupation lasted half a century, it is impossible and useless to attempt to calculate the resulting economic and social losses, because new sites have been built in the occupied territories for decades and salaries, pensions, and social benefits have been paid. Determining and seeking out the number of victims is a complicated task as well.

You can estimate what the potential development of Lithuania, Latvia, and Estonia could have been, were it not for the occupation, and compare it against the actual situation that would give the amount of compensation. The commission, set up by the Latvian government, used this formula to estimate the damage caused by the occupation to be at least 200 billion lats. This sum includes direct damages amounting to 18,5 billion dollars. In 2004, Estonian researchers concluded that the GDP difference is 29.6 billion euros. The Lithuanian Seima commission concluded that this sum amounts to 23 billion euros. By calculating the difference, Russian scientists can also determine the losses caused by the occupation by the Soviet Army or the "enterprises of All-Union importance" that brought virtually no benefit to the Baltic States. Such calculations have some theoretic value; they are interesting from a scientific perspective and can be used for public information purposes. However, they cannot be used while negotiating compensation.

Compensation for economic losses is usually paid after the end of a war. Reparations are paid by countries that have lost the war. Formally, the amount of reparations is calculated according to the military expenditure of the victorious country and economic losses caused by the war. In reality, the amount of reparations is determined by the desire of the winning country to weaken the subjugated countries.

Russian or foreign experts should have no difficulty in estimating the value of the transport infrastructure built in the Baltic States after 1945. The value of oil and other energy resources supplied to Lithuania, Latvia, and Estonia from other Soviet

territories can also be recalculated in current prices, and a balance sheet can be made based on various calculation methods to show that the Baltic States owe several billion euros to Russia.

The only way to receive compensation for the damage caused to the Baltic States by the Soviet occupation is to demand compensation on behalf of the victims of repression and their relatives. The compensation amount must be determined by the government of the Russian Federation, similar to the way Germany acted in regard to compensations for Jews and persons employed in forced labour – the Ostarbeiters. However, such a solution is not acceptable to the Russian government or society, because there is still a great deal of imperial sentiment alive. In the future, when Russia will have a democratic government, the issue on compensation for the impact of the occupation can be resolved.

The State Commission for the Examination of Repressive Policies Carried out During the Occupations of Estonia has estimated the amount of damage caused by the Soviet occupation, which includes ecological damage caused by the Red Army at four billion US dollars (the ecological damage caused to Latvia is estimated at 770 billion dollars) and compensation of approximately 13.5 billion US dollars for 180 000 killed Estonians, which is 75 000 dollars per person. Estonian scientists argue that this is the amount Germany paid for each victim of the Holocaust. But Russian society finds this amount to be too high. In truth, the German government paid only 2556 euro to each Jew who survived the Leningrad blockade.

The contemporary Russian political elite and society ignore the fact of occupation of the Baltic States by the USSR. They do not wish to pay for the crimes committed by the Soviet regime against other countries and their citizens. The Human Rights Ombudsman of the Russian Federation, Vladimir Lukin, believes that Russia might admit that the victims of the Katyn massacre are victims of Stalin's repressions and Katyn materials could be fully released to the public, if Poland would waive compensation for the damage. There would hardly be a government that would waive compensation on behalf of the relatives of the victims for the repressions against them.

The Economist noted that Russia should repent the incorporation of Lithuania into the USSR, in return for which Lithuania would waive the claim of compensation from Russia for its occupation. The current Latvian Ambassador to the Russian Federation, Alexander Vishnakov, believes that attempts to demand compensation from Russia for Soviet occupation are unsuccessful and will only complicate the relationship between Russia and Latvia. Even the Russian democratic opposition is divided on the matter of compensations for the victims of the Soviet occupation. Many democratically-minded opposition members believe that it is unfair to pay compensations to other countries when there are so many victims of Stalin's repressions and their relatives in Russia. Kremlin authorities refuse to pay the Baltic States for damage caused by the Soviet occupation on principle based on three arguments:

1. The Soviet Union did not occupy the Baltic States;
2. Today's Russia is not responsible for the crimes committed by the Soviet authorities; and
3. The investments made by the Soviet Union per capita in Lithuania, Latvia, and Estonia have by far exceeded the amounts spent on the economy of other Soviet republics, Russia included.

These arguments stem from estimates made by Russian and Baltic advocates of Marxist and Soviet economic theories and are controversial. We must keep in mind that most of the investments intended for Latvia and Estonia were used to build factories, which employed labour brought in from other Soviet republics, and nearly all output was sold outside the Baltic States. Living standards were better in Lithuania, Latvia, and Estonia than in the rest of the USSR. But the native residents of the Baltic States do not compare their living standard with that of the rest of the Soviet republics. Instead, they refer to living standards in Norway and Finland. For instance, in 1930, the Lithuanian national income per capita was 280 lats, in Poland 380 lats, in Latvia 600 lats, in Finland 610 lats, and in Estonia the national income per capita amounted to 550 lats. In 2010, the Lithuanian GDP per capita amounted to 10 280 dollars, in Poland 12 210 dollars, in Latvia 10 870 dollars, in Finland 45 525 dollars, and the Estonian GDP per capita was approximately 15 300 dollars.

In 1930, the economic indicators per capita of Poland were lower than in Latvia and Estonia by 1.58 and 1.45 times respectively. Today the economic performance of Poland exceeds that of Latvia by 1.12 times and only falls behind Estonia by 1.13 times. This is the economic price paid by the Baltic States for Soviet occupation.

The difference in economic performance between Lithuania and Latvia decreased from 2.14 to 1.06 times, while that between Lithuania and Estonia – from 1.96 to 1.45 times. The difference in the economic performance between Lithuania and Poland decreased from 1.36 to 1.18 times. We can draw the conclusion that during the Soviet era, the national economy of Lithuania grew faster than that of Latvia, Estonia, and even Poland, which, despite formal independence, was also subordinate to Communist power. The rapid growth rate of Lithuania during the Soviet years can be also explained by the return of the region of Vilnius to Lithuania in 1939 and considerably fewer migrants from other regions of the Soviet Union.

The ruling authoritarian government of Russia will never pay the Baltic States any compensation for the damage caused by the occupation and other Soviet crimes. The corrupt political elite of the country is not used to paying for crimes committed and human rights violations, whenever they may have occurred. It is hard to believe that the Russian government may admit to Soviet transgressions, because it still dreams of restoring the Soviet Empire. Russia will be ready to pay out compensations to Soviet victims and their relatives in the Baltic States only when a democratic government replaces the authoritarian regime. This will happen only when Russia takes moral

responsibility for paying compensations to Soviet victims, as did the Federal Republic of Germany did for the victims of Hitler's regime. The compensation that Germany paid to the Jews and Ostarbeiters (2500-3000 euros per person) might be considered sufficient. However, this will happen only in the very distant future. Currently, Russia is paying 10 000 roubles (250 euros) compensation to their own victims of the Soviet repressions. Estimates show the amount of compensations to be paid to Soviet victims in the Baltic States could reach 1.5-2 billion euros.

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Environmental damage caused by the soviet regime; perspective of the European Union

Much attention is paid to citizens and the damage caused to their property resulting from deportations, imprisonment, and confiscations, but there is another form of damage that should be discussed in more detail. It is environmental damage.

Up until the 1980s, issues related to ecology were rarely included in the political agendas of global nations, even though the environment often suffered significant damage. In Western countries, this was based on the reluctance of many entrepreneurs to reduce their profits. In Eastern European countries, where property was nationalized and natural resources were considered property of the state, these resources were irresponsibly exploited. Economist Richard Goldman noted that Soviet officials were usually more prepared to sacrifice the environment, unlike officials in countries where private entrepreneurship existed and public accountability was higher.

In Soviet-controlled countries, it was forbidden to speak of environmental issues openly until perestroika. There were many ecological accidents and disasters in the Soviet Union, including the nuclear reactor explosion at Chernobyl in Ukraine, the drying up of the Aral Sea in Uzbekistan and Kazakhstan, and radiation caused by the Semipalatinsk (now Semey) nuclear weapon test site in northern Kazakhstan. All these sites are proof of the lax Soviet attitude towards the environment and its people.

In 1990, it was revealed that 40% of Russian Federation territory (an area equal to $\frac{3}{4}$ of US territory) was exposed to high or medium ecological stress. Apart from the areas of radiological pollution, another 56 sites are considered to be degraded areas, demonstrating true ecological disaster or moderate environmental pollution. The countries that were once occupied and annexed by the Soviet Union are still struggling with water and air pollution problems. The Baltic Sea, Black Sea, and Caspian Sea are among the most severely polluted areas.

During Soviet occupation, the Baltic region also suffered from ecological disasters, albeit to a lesser degree. In 1898, an accident took place at the Azota chemical factory in Jonava in central Lithuania, chemical weapons dumped by the Red Army have polluted the Baltic Sea, and locations of former Soviet military bases remain toxic.

In the late 1980s, environmental issues became issues for the National Awakening

movements. Environmental groups organized pickets against construction of the new block of the Ignalina nuclear power plant and held peaceful rallies on the coast of the Baltic Sea to draw public attention to the environmental situation.

The West generally showed little interest in the environmental situation of the Soviet countries, because the main focus was on the Soviet military. In the European community of the time, state authorities and entrepreneurs did not consider ecological issues a priority. In the 1970s, with the growing concern about the state of the environment, the European Community began to work out environmental protection measures. In July 1972, the leaders of the European Community member countries and governments unanimously declared that in order to continue economic development and improve living standards, more attention should be paid to environmental issues. The first action program was worked out and approved, outlining the environmental policy of the Community.

A series of programs and adoption of directives on the protection of water and air, noise reduction, environmental protection, and waste management followed. The first EU regulation to address environmental issues was the Single European Act signed in 1987. Maastricht, Amsterdam, Nice, and Lisbon treaties specified the role of EU environmental policy, stipulating that the environmental shall be considered upon drafting any new legislation.

The European Community had rather limited possibilities to evaluate the environmental policy implemented behind the Iron Curtain. The negative environmental conditions that impacted on human lives were kept secret. Public information was available only on disasters outside the USSR; in the case of Chernobyl, disaster was only discovered by satellite images. In the case of several Soviet nuclear submarine disasters, information came from the coast guard or Soviet scientists who sympathized with the West.

Thus, it was difficult for the West to express any official opinion on the environmental situation in the USSR, and Western countries paid attention only to those cases of environmental pollution that posed a direct threat. In 1986, after the Chernobyl disaster, the European Community worked out several documents and reports related to food contamination, import of Soviet agricultural products, and nuclear safety. On 23 October 1986, the European Parliament adopted the resolution "Forced labour of Estonians at Chernobyl".

In order to assess the ecological damage caused by the occupation, participating parties must agree on assessment criteria, which is not easy to do. Many lives were lost, a large part of the cultural heritage of the former Soviet countries was destroyed, forests were cut, rivers were drained, and landscapes devastated.

Currently, the European Union (EU) can be considered a world leader in environmental protection. Of course, there have been natural disasters in the West, but now such accidents result in new, stricter European environmental standards. For example,

the 1976 disaster at the Seveso chemical factory in Italy resulted in directives that provide for application of increased safety standards to areas where large amount of hazardous chemicals are stored. Two oil tanker accidents in 1999 and 2002 resulted in more stringent requirements, providing for criminal liability, among other things. The Fukushima disaster in Japan resulted in the review of nuclear power plant safety and security standards in the EU.

The EU has no doubts that the pollution knows no national boundaries. It is crucial to ensure that satisfactory environmental status is guaranteed both in the EU and its neighbouring countries. For this purpose, the EU constantly provides financial aid for environmental improvement measures. The "new member" countries primarily receive support from the Cohesion Fund and structural funds. These provide funding for spheres such as waste management and recycling, remediation of polluted sites, and wastewater treatment. The Soviet legacy often appears in the form of polluted forests and water reservoirs, over-fertilized fields, and illegal waste landfills.

The EU has also assumed the responsibility to co-finance the closing of the outdated Soviet nuclear power stations in Lithuania, Bulgaria, and Romania. In the Lithuanian case, this meant aid of 2 billion euros.

The emission-trading scheme can also be used to remedy the negative impact of the Soviet legacy. Large and environmentally inefficient production plants still operate in the former Eastern European block countries. Factories face difficulties in complying with the environmental standards of the modern world, and additional quotas were granted in order to remedy the disadvantageous situation.

EU financial support was also provided to the non-EU countries of the former Soviet block, which were even more financially disadvantaged. Since 1991, the EU has provided significant financial contribution in Russia, Ukraine, Armenia, and Kazakhstan to improve nuclear safety. With the establishment of the Chernobyl sarcophagus fund, the EU has become the main financial source for the elimination of the consequences of the Chernobyl disaster. The European Commission has approved Chernobyl-related projects in the amount of 470 million euros. Most are related to the improvement of nuclear safety. Other programs that aim to help local population and ensure quality health care for affected families have also received support. The framework of the EU-Eastern Partnership program includes environmental projects as well.

There are several other programs designed to help the EU member countries and border regions to solve ecological problems, for example LIFE+, ERAF, EZF, 7th Framework Programme and INTERREG. Russia and Belarus are also involved in the Northern Dimension and the Baltic Sea Action Plan.

If one estimated the total amount invested by the EU in remedying the environmental legacy of the USSR, it would be many billions of euros.

Parallel to financial aid, the EU is also working out more stringent ecological

standards and negotiating their implementation to achieve more satisfactory regional environmental protection.

Can these goals be achieved, knowing that Russia is building a new nuclear power station next to the EU border that will also have an experimental reactor?

Russia is the legal successor of the Soviet Union, and the legacy is often accompanied by old ways of thinking, which affect ecological issues. This is evidenced by such controversial projects as *Nord Stream* and the Kaliningrad and Belarus NPP.

I would like to emphasize that we are all victims of the totalitarian regime, which caused damage (including ecological damage) to EU member countries and other European and Asian countries. International discussion of the crimes committed by the Soviet totalitarian regime is important for all parties. As pointed out by Russian historians and politicians, Russia is one of the victims of this totalitarian system. Hopefully, such an opinion will enable it to better deal with its past.

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Environmental damage caused by the soviet regime to Latvia

Introduction

Before 1939, Latvia was politically, economically, and also environmentally at the same level as Finland. Then, no one could not imagine that the manufacturer of rubber products NOKIA would one day produce one of the world's best mobile phones. At that time, Norway had not yet begun extracting oil from the sea. Now, we are lagging behind these countries in all areas due to the 50 years spent under the Soviet regime. After the restoration of independence, this huge gap began to shrink until the onset of the economic crisis. The current difference between Finland and Latvia, in particular, is the best evidence of the negative effects of the Soviet regime. In order to achieve the environmental state of Finland, Latvia must invest huge amounts of money to eliminate the historical pollution left behind by the Soviet regime and to develop the outdated infrastructure.

Before discussing the environmental damage in Latvia caused by the Soviet regime, I must say that as a water expert, I had already dealt with surface and ground water pollution caused by the Olaine hazardous waste landfill and the Inčukalns acid tar ponds during the Soviet era, especially in the mid-80s, when people finally began paying more attention to environmental problems and water quality. Until then, no information on the alarming environmental state was provided to the public. For instance, bathing in Lielupe in the territory of Jūrmala was formally banned due to intense ship traffic on the river and resulting rough waves, and not because of the catastrophic water quality of Lielupe, Buļļupe, and the Daugava within the borders of Riga. Due to deteriorating water quality, the resort beach of Jūrmala was close to losing its beach status as well. Latvian residents began to protest and with public support, LSSR scientists began to fight Gorbachev's ecologically risky projects – the proposed Riga metro, the expansion of the Daugavpils hydroelectric power plant, and the continued operation of Sloka pulp and paper factory that was harmful to Lielupe and Jūrmala. In the late 1980s, a very important problem was the centralized collection and treatment of Riga wastewater in Bolderāja and subsequent release of the treated water into the sea, discontinuation of the release of untreated wastewater, and stopping the pollution of the Daugava River and Jugla and Ķīšezers Lakes.

My work as director of the Environmental department was directly related to evaluation of the environmental state of Latvia, development of environmental policies, and finding of adequate policies to solve ecological problems. Long-standing pollution has been one of the most complicated and expensive problems since the adoption of the first Latvian environmental policy-planning document in April 1995. Despite work already completed and large financial investments, including co-financing by EU funds since May 2004, the negative effect of long-term pollution is still present, thus reducing the economic competitiveness of Latvia.

Since 2000, I have personally managed the creation of the polluted and potentially polluted site register in Latvia, launching an information campaign on collection of data in all regions. After the creation of the register, I coordinated the drafting and implementation of remediation projects of the most-polluted sites. When the Cabinet set up the Commission for calculating the number of the victims of the Soviet occupation regime, I was as an expert in the identification of damage to the environmental sector. I was convinced that the actual energy problems of Latvia were rooted in the legacy left behind by the Soviet regime, and these cannot be eliminated or even diminished in a few decades.

The development of agriculture is still hindered by collectivization, which destroyed traditional agriculture and individual farm culture. Industrial decline after the restoration of independence cannot be explained by the poor privatization process alone, but also by the failure of the centralized and closed internal market of the USSR. The impact of the Soviet military is a special story in itself, which includes massive volumes of trees cut and mineral deposits used for military purposes, with no accounting procedures.

Even companies created in Latvia, formally not subordinate to Soviet ministries but under supervision of the Council of Ministers of the LSSR, were actually beholden to Moscow officials.

Until the beginning of Gorbachev's reforms, the military virtually ignored environmental regulations that were in place in the USSR as a whole. They dumped hazardous waste into household waste landfills and the forests (including areas close to drinking water sources), dumped liquid hazardous waste into water sources, and dumped pesticides and fertilizers in the snowbanks next to the Daugava River by the Riga Hydroelectrical power plant water reservoir – one of Riga's drinking water sources. Historic pollution still affects the health and quality of life of many Latvian residents. Inland water pollution continues to contaminate the Baltic Sea, indirectly affecting the people living along its coasts. We need a calculation of losses; Latvian society needs to be aware of the scale of ecological problems and how much a full remediation of these problems will cost our children and us.

Management of the environmental sector during the soviet regime

After World War II, the USSR was one an active founder of the United Nations, and Soviet scientists were involved in international environmental issues and the development and implementation of various scientific and environmental programs. The USSR was involved in and often formally entered treaties such as the UN Charter on Ground-Water protection in 1948. It helped draft and recognized UN, UN/ECE environmental instruments/contracts, and World Health Organization (WHO) standards. In regard to the Baltic Sea region, it acted on the Helsinki Baltic Marine Environment Protection Convention in 1974. However, internal environmental issues were generally addressed at a narrow sectoral level. As a result, the environmental management system contained contradictions within itself, as each sector had its own objectives and its own distinct and sometimes even contradictory rules. The principle of responsibility of the polluters was practically unattainable in a centralized planned economy.

Soviet ministries were interested in ecological matters only to such extent as to prevent ecological disaster, while the military-industrial complex usually completely ignored such matters. The military sector was not stipulated in Soviet environmental legislation and could not be subjected to any civilian control. In some cases, scientific institutions studied and analysed environmental problems as part of the Soviet State plan. Scientific conferences, or lowly authorities such as the Nature and Monument Protection Society, served as a forum for their limited declarations. The studies were mostly confidential and even the local executive authorities and interest groups were prevented from accessing results, not to speak of informing the the public. As a result, the environmental situation and the health of the population deteriorated in many parts of the Soviet Union, while the declared planned economic gains became more distant each year. From the perspective of systems management, it became clear that no success could be achieved without an integrated evaluation of the situation and coordinated actions. Still, several years had to pass before a unified system of environmental protection, the Soviet Environmental Protection Committee, was founded.

Development of the environmental management system in the Latvian SSR

During the Gorbachev era, the Baltic States began casting their sights over the border to their Western and Scandinavian neighbours – countries that have long had separate and authoritative environmental ministries. The LSSR Environmental Protection Committee was established in the summer of 1988 under the direct supervision of the Supreme Council of the LSSR. Such environmental institutions were quickly

established in the other Baltic republics, often cooperating with emerging non-governmental environmental organizations and significantly contributing to the establishment of the Third Awakening and the emergence of green policies within the region. At that time, thinking green was popular, not only in a narrow social stratum, but also within the Academy of Sciences and local engineers, builders, and artists. The newspaper *Literatūra un māksla* (Literature and Art) posted articles on development issues and projects, such as expansion of the Daugavpils Hydroelectrical power plant and the Riga metro project. For the first time, many people dared to protest against further Russification and also dared to justify their professional opinions. The evaluation of professionals differed from the perspective of Moscow: they had witnessed often that centralized decisions were economically unjustified, designed for quick profit, and risky. In addition, poor implementation of these decisions left behind many unsolved problems for Latvia, while the creators in Moscow received bonuses and awards, ignoring matters of environmental and cultural monument protection.

The Environmental Protection Committee of the LSSR required compliance with environmental regulations of the time, and they began to punish offenders, such as tractor drivers who dumped barrels of ammonia in ditches or car drivers who washed their vehicles by rivers. Sanctions against managers of large farms or industrial enterprises were relatively rare. It required the August coup of 1991 and the total collapse of the USSR for environmental inspectors to dare to issue the first administrative fines against the Soviet armed forces for polluting.

There were sectoral regulations, including those concerning the environment, which covered all economic sectors. There were environmental requirements for planning, storage, and transport of petrol; waste management; construction; industry; and agriculture. The inquiry, design, construction, supervision, and building operation measures were regulated by construction norms and regulations, and although the general and environmental requirements were adapted to the different natural and social conditions of the individual republics (appropriate to seismic conditions, temperature, snow cover, river flow, etc.), these norms generally tended to ignore, rather than take into account regional differences.

Environmental regulations were adopted at the all-USSR level and within the localized regulatory framework of the republics, including translation into national languages. The “Land Code of the Latvian SSR”, first adopted in 1959, was republished in 1970 in Latvian. The LSSR law “On Conservation of Nature” was published in 1968, the Subterranean Depths Code and the Water Code were published in 1976, and the Forest Code – in 1978. The “Latvian SSR Regulations on Water Protection of the Coastal Zone of Water Reservoirs” was adopted in 1979, and the LSSR Council of Ministers adopted the decision “On Use and Protection of Surface Waters” in 1982. No one could really complain about the lack of environmental regulations. Problems were caused by the reluctance of officials at various levels to fulfil the regulations, and also by the failure of the system to even partially admit to potential economic losses as a

result of ignoring environmental risks. Although there were laws, which stipulated both administrative and criminal liability for violations, such options were used only against petty offenders who did not really cause great environmental damage.

When the USSR collapsed in 1991, many serious problems became obvious. When NATO experts arrived in Liepāja naval base, where the Soviet Army had sunk warships and submarines in the channel, they realized that the foundered ships and the several-kilometer-long fence, built from lead batteries from submarines, presented a serious environmental problem that would require much work, time, and money. Expenses for the removal, cutting, and transportation of ships were covered by NATO countries; Latvia and Liepāja were left with the legacy of the contaminated soil of the naval base channel, the complete remediation of which would cost approximately 20 million lats. A similar situation occurred after the detonation of the Skrunda radar station and abandonment of several missile bases, tank bases, and military airfields – pollution accumulated through the operation of the military base was not the only thing left behind. A dozen abandoned military towns with semi-devastated infrastructure could be found in all regions of Latvia. Neither the state nor municipal institutions had the funds to perform the immediate inventory, acquisition, and security measures for more than 500 military sites.

In general, Latvia inherited polluted and potentially polluted sites from the Soviet regime, inspection and cleaning of which have not yet been completed due to a lack of funds. Over 2000 potential sites still need to be inspected, covering vast territories, infrastructures, and historical pollution, which exceed by far that which was generated during the period of independent Latvia. For comparative purposes, the combined Latvian Armed and Naval Forces with NATO partners are currently using an area and infrastructure at least 10 times smaller than that used by the Soviet Armed Forces. If compared to the former German Democratic Republic, which had its military territories reduced only by half and the relevant industrial orders to an even lesser extent, the losses suffered by Latvia as a result of the operation of the Soviet military complex are several times higher.

Management of the environmental sector after the declaration of independence

After the redeclaration of independence (4 May 1990), control over the companies, ports, and incoming ships was taken over on 20 June. However, the Baltic Sea Basin Fish Protection and Fish Stock Regulatory Board (Baltribvod), the Latvian Hydrometeorological Department, and the Latvian Geology Administration system were still controlled directly by the USSR: only the failure of the August Coup of 1991 completed the incorporation of these institutions into the public administration system of the Republic of Latvia. Previously, information on the environmental situation was collected centrally and then returned to the republics in a correct, edited

form. Therefore, the Environmental Committee faced difficulties evaluating the environmental situation. The Soviet Armed Forces and the military-industrial complex ignored requirements set out by the authorities of the Republic of Latvia. However, during the gradual withdrawal of the Russian troops from Latvia, which lasted until 31 August 1994, they were forced to comply with the law “On Environmental Protection” passed on 6 August 1991 and other new regulations.

Latvia launched an ambitious campaign to replace former Soviet regulations and sectoral standards with new ones. This was organized by the Ministry of Environmental Protection and Regional Development (VARAM), established in 1993. The first were UN principles and conventions and national environmental policy documents and regulations, followed by adoption of the environmental requirements of the EU, concluded in the autumn of 2002, long before Latvia joined the EU on 1 May 2004. The issue of damage caused to Latvian environment by the Soviet regime is identical to the situation of Estonia and Lithuania and similar to that of Poland, the Czech Republic, Slovakia, Hungary and other new EU member countries from the Eastern European region.

Since 2001, liability for polluting activities is regulated by law, incorporating EU requirements. However, laws and regulations lack comprehensive explanation concerning historical pollution and associated liability. The law clearly specifies the procedure for evaluation and registration of polluted and potentially polluted sites, and the Cabinet adopted regulations and carried out inspections of potentially polluted sites in the whole territory of Latvia, which resulted in the creation of the database of polluted and potentially polluted sites (www.lvgmc.gov.lv). As of July 2011, the data base contained 3568 registered/identified sites, 242 of which were qualified as polluted (of which only nine are considered to be recent), but another 2665 sites were qualified as potentially polluted.

Latvia has gained experience in matters of environmental compensation, relating to damage caused by other countries. No compensation was received after the cyanide pollution of the River Daugava that occurred in Novopolock, Belarus in 1991, which endangered the drinking water supply in Riga for several days, but today, all matters relating to liability of polluters for environmental damage are clearly defined in regulations and are successfully applied in practice. The estimation of environmental damage after the ship *Golden Sky* ran aground near Ventspils on 15 January 2007 was presented to the ship’s owner and compensation was received. VARAM also has international experience in the evaluation of damage and receipt of compensation caused by cross-border pollution with Lithuania in regard to the accidents at Butinge terminal and with the consequences of a diesel spill into the Daugava caused by oil product pipes owned by a Russian oil company in Belarus in March 2007. International issues are mostly settled in accordance with procedures set out in various international treaties and multinational agreements.

Assessment and elimination of historical pollution in Latvia

Right after the restoration of independence, Latvia lacked the required capacity to evaluate the environmental situation, including the assessment of the historically inherited pollution; support from different countries and environmental projects financed by the World Bank was of great importance. Experts from NATO countries were involved in the assessment of environmental impact of military pollution.

The most dangerous legacy of historical pollution is found at military bases and their vicinity – explosive devices in the ground and in local waters. Latvian environmental authorities had little information on these issues until the restoration of independence, and even now it is not complete. However, cooperation has been achieved between VARAM and the Ministry of Defence and also involves municipalities and entrepreneurs who have obtained special permits for working in these dangerous sectors. Special attention was paid to the investigation of historical military pollution in the early 1990s, identifying and limiting the principle risks in order to prevent fatalities caused by possible contact with explosives or hazardous substances and in order to stop further pollution of the environment. Sites, such as Liepāja naval base, Zvārde aviation base, Rudbārži missile base, and airfields were among the first to be assessed.

Principal information on the operation of industrial and agricultural enterprises and resulting pollution had already been collected by the Environmental Committee, but it required systematization. The environmental authorities also had initial information on waste management, wastewater treatment, chemical control, and other important issues relating to pollution.

Much work, time, and investments are needed to go from pollution feasibility studies to project preparation, not to speak of launching such projects, tendering, contract signing, and completing clean up. Special praise should be given to long-term successful cooperation with Riga City Council (long-term remediation projects in the former Rumbula military airfield and Sarkandaugava), as well as support from the Danish Environmental Agency and contributions of other international consultants in performance of inspections and remediation. Inspections were carried out and clean up started in many polluted sites – co-financed both by the Latvian Environmental Investment Fund (LVAIF), Riga City Council, and foreign donors. Such projects were implemented in Riga, Liepāja, Daugavpils, and in other smaller municipalities. The biggest polluted sites were already reported in the Environmental Performance Review, approved by the UN/ECE Environment Committee (*Environmental Performance Review Latvia 1998*), and some of these sites were even included in the priority list of UN/ECE polluted sites.

UN financing was allocated only for the involvement of foreign experts, but not

for launching of remediation work. Many foreign and local experts have visited these polluted sites, but they were not always sufficiently competent to prepare remediation projects. Initially, these projects were prepared for the purpose of receiving co-financing from the EU PHARE program and, after joining the EU, Cohesion Funds. Several of these projects have been implemented and many are still active, but experience shows that not only the complexity and huge costs of the projects, but also the lack of clarity in regard to the historical causes of the pollution and the ultimate remediation goals were the reasons for slow proceedings and lengthy discussions in Geneva, Latvia, and Brussels.

Western countries began solving similar environmental issues considerably earlier; they had long ago established the practice “the polluter pays”. The decision-makers of these countries find it more difficult to understand the historical origins of such sites and their existence in Latvia today, while their remediation is perceived as either direct or hidden state support of the guilty polluters and failure of the Latvian state to solve these problems. The fact that Western nations rarely perform complete remediation processes due to active farming makes it even more difficult for Western partners to understand the problems faced by Latvia.

Since the establishment of VARAM in 1993, it has included long-term pollution issues in its policy planning documents, developed regulatory frameworks, and attracted funding for settlement of these issues, including the use of EU financial instruments. Identification of this pollution, inspection of the polluted sites, drawing up of a list of priority sites, drafting of remediation projects, attracting of finances for project implementation, and selecting of remediation projects in accordance with the funding available and coordinated implementation of remediation projects in many sites is continuous. VARAM has comprehensive information on the origins of pollution, its type, the time of polluting activities, and the environmental impact.

Historical pollution was emphasized in the 2002 Sustainable Development Strategy of Latvia and the program “Remediation of historically polluted sites”, developed by VARAM for acquisition of EU ERDF funds and approved in 2006. Historical pollution has been also mentioned in the “National Environmental Policy Plan 2004-2008”; it continuous as a priority in the “Environmental Policy Strategy 2009-2015”. Many documents specify the largest sites with total costs required for their remediation and the perspective project implementation schedule.

The main historically polluted sites are Liepāja naval base, acid tar pond in Inčukalns, Olaine liquid hazardous waste landfill, Jelgava liquid hazardous waste landfill *Kosmoss*, and several municipal waste landfills in Riga where hazardous industrial and military waste was dumped.

Although the Ministry had based its activities on risks to the public and the environment posed by these polluted sites, it never differentiated pollution sites by volume, hazard, or remediation costs.

Establishment of governmental commission and its work in the environmental sector

Work on identification and assessment of the damage caused was launched in the late 1980s in Estonia, Lithuania, Poland, and other countries affected by the Soviet regime. However, only on 5 May 2005 did the Latvian Parliament approve the declaration “On Condemnation of the Soviet Totalitarian Communist Occupation Regime Enforced in Latvia”, charging the Cabinet with the establishment of a specialist commission for determining the number of the victims of the Soviet totalitarian Communist occupation regime and mass grave sites, collecting of information on repressions and mass deportations, and calculating the losses caused to the state of Latvia and its population.

The first studies, conducted by *SIA Vides projekti* in 2006, analysed the data base of the polluted sites, collected information on previous inspections, and prepared remediation projects. Similar studies were continued in the following years. In total, six studies were conducted in the environmental sector. Both results of the studies and also proposals for perspective work were presented at Commission meetings, because no one had ever conducted a theoretical evaluation of all damage caused in the environmental sector of Latvia.

Launching of such studies necessitated the systematization of the available data based on specified criteria and solution of various methodological problems. Russia, as the heir to the Soviet regime, could not be held accountable for things that were done before or after the establishment of the Soviet regime or for what had not been identified and internationally stipulated on the global scale at that time. Therefore, it became necessary to clarify the historical origins of the sites and document the intensity of their operation by years and to evaluate the methods and technologies used, as well as issues of pollution treatment and waste management. The international, Soviet, and the localized LSSR regulatory basis of the time had to be assessed, as well, to determine the scope of its application.

It must be emphasized that these issues raised little doubts, because the biggest production plants, directly supervised by the Soviet ministries, were not subordinate to the planning actions of the LSSR and were only relatively subordinate to local control. They received resources, produced output, and distributed it to other republics or abroad as per the Soviet centralized plan, but Latvia was left with production waste. Industrial waste was often dumped in peri-urban forests, inadequately accounted for in municipal waste landfills on Deglava street and in the Kleisti area of Riga, dumped in the waste landfill *Kosmoss* near Jelgava, and placed in other unsuitable locations. This was done without adequate preparation of the landfill sites or monitoring of their operational impact. Special hazardous waste landfills were established later, such as the liquid hazardous waste landfill in Olaine. This waste was geologically injected into the Cambrian strata near Olaine. Today, the Soviet ministries responsible for this

decision and their subordinate enterprises no longer exist, but the polluted territories have been divided among many smaller companies through privatization, which are neither direct nor indirect successors of former Soviet enterprises and bear no responsibility for technologies employed until 1990 and inappropriate waste disposal.

The scope of military historical pollution left behind by the Soviet regime is even less clear, but the fact remains that the Soviet military complex left behind pollution and abandoned infrastructure after the withdrawal of Russian armed forces.

The activities of the Commission were suspended in 2009 due to the financial crisis of 2007. The Commission presented an informational report to the government on the work accomplished from 5 August 2005 to 31 July 2009 and provided rough estimates of the damage caused to the environment of Latvia.

Importance of the work of the commission

While assessing the impact of the Soviet regime on the environment of Latvia, certain difficulties were caused by the lack of multinational agreements and direct cooperation between the countries from the early 1990s until 2007, when the Latvian-Russian Intergovernmental Commission, which until then had existed only formally, began regular work. This included several relevant environmental issues in the agenda of the Working Group on Humanitarian Cooperation. By then, international negotiations attempted to solve many issues, especially in relation to the withdrawal of Russian Army from Latvia, but issues related to historical pollution and the responsibility of the Russian Federation for environmental damage caused by the Soviet regime have never been included in any agreement with the Russian Federation.

After 2007, the Intergovernmental Commission succeeded in drafting an intergovernmental treaty on Latvian-Russian cooperation on environmental matters that was accepted by both countries and came into effect in early 2011. However, this agreement did not stipulate the historical succession of Russia and its responsibility for the environmental pollution left behind by the Soviet regime, although this served as the basis for further cooperation for solving many environmental issues, exchange of information, and even evaluation of remediation technologies. Only time will tell whether this agreement will result in cooperation by both countries in the elimination of the consequences of historical pollution in some sites in Latvia.

Nevertheless, the importance of research goes further than just the context of the mutual Latvian-Russian relationship in regard to the historical assessment of the Soviet regime. The EU is on its way to a more detailed assessment of totalitarianism and its effects; similar assessments have taken place in other new EU member countries. Every European should know the system, which, through arbitrary management in the Baltics, permitted arbitrary dumping of hazardous waste in the woods or pouring of unused fuel in ditches (aviators completed training hours were determined by the amount of consumed fuel). Consequences of such management have left a deep

impact on a large part of society as well.

Latvia is well aware that co-financing by the EU will be the main support for elimination of the consequences of historical pollution. Therefore, matters related to historical pollution must be finally settled, because they also determine the conditions for obtaining EU co-financing for preparing and implementing remediation projects of historically polluted sites.

Planning impact and infrastructure inertia

The infrastructure and economic ties established in Latvia during the 50 years of the Soviet centralized economy have had long-term impact on the economy and the living conditions of the population. The municipal infrastructure is the most inert, because it is directly dependent on population income and purchasing power. The infrastructure was not designed for the needs of the population, but solely for the interests of the Soviet Union military-industrial complex. The domestic issues of the residents and their related environmental issues were secondary matters and dependant on the development of factories or collective farms. All domestic and environmental matters were dictated by the managers of the producing institutions, whereas local municipalities, Councils of People's Deputies, had very limited possibilities.

Soviet economic activities, civil engineering, and public utilities were planned and implemented in five-year periods. Decisions had long-term effects; it would take several decades to rebuild the engineering networks in a qualitative, modern manner. Extending the life of poorly built and low quality apartment buildings or improving their energy efficiency is wide-ranging and constant work. However, it is nearly impossible to completely redesign and reconstruct city neighbourhoods and districts. A similar situation exists with unfulfilled plans. No monies were budgeted for transport infrastructure projects for Riga (bridges, overpasses, railway bypasses) scheduled to be completed by 1990. After the restoration of independence, Riga and many other cities suffered inadequate transport infrastructure; many residents still suffer from air pollution, noise, and vibrations.

Latvia required more than two decades to reorganize water and sewage and waste management; 2015 was the milestone specified in regulations for reaching European levels.

For many years to come, cities and regions will feel the inertia of Soviet planning. For example, burial of radioactive waste from the Salaspils scientific nuclear reactor at the site *Radons* near Baldone was not fully completed at the projected 1990 level; storage volumes were insufficient and the radioactive waste landfill site was in urgent need of modernization to avoid endangering public health and the environment around Baldone. When Moscow decided to build the Salaspils scientific reactor near Baldone, they cared not about the safety and public health of a small Latvian city: The Ministry of Environment had to attract additional funding in the early 1990s

to prevent catastrophe. Even after a generation change, the residents of Baldone still do not believe in the safety of *Radons* and do not trust state monitoring data. The municipality constantly submits various compensation claims to the state. This example confirms the long-term effects and huge inertia of decisions made during the Soviet era – it takes several decades to arrange and rearrange energy, planning, and municipal issues.

Residents of Pļaviņas find themselves in a similar situation in the case of Pļaviņas hydroelectrical power plant. Moscow designers ignored the flood risks to this city. The residents of Ogre, Ikšķile, Salaspils, and Tome, who live around Riga Hydroelectrical Power plant, are dependent on the operation of the pump station in case of power failure. They must also be aware that the current ground water stagnation in the impact zone of the hydroelectrical power plant will cause them to completely abandon shallow drills and wells. It is not possible to draw a clear line between the gains and the losses, but it is pointless to reproach the Latvian government or municipalities for these problems.

Summary of the accomplishments of the commission in the environmental sector

Methodological issues

Previously gained experience of remediation suggests grouping all historically polluted sites by the main component of pollution and the practical methods to be used in rectification. *SIA Vides Projekti* has identified the following pollution groups: especially polluted territories, territories polluted by oil products, municipal waste landfills, non-liquid pesticides, and military pollution.

It is important to determine the total scope of the damage caused to the environment. The environmental remediation projects usually do not aim to achieve complete remediation of the environment or perform recultivation. Ten to twenty percent of the costs of remediation usually exceeds the costs of remediation of all the principal pollution. As a result, the compilation of the previously prepared projects provides considerably lower amounts, and these do not correspond to the remediation costs of the total pollution amount. The total losses can also be characterized by the total amount of the penalties specified for unauthorized discharge of pollution into the environment by the Natural Resources Tax Law (DRN). However, such estimates should be based on the experience of methodically compiled calculations of environmental measurements and practical assessments of the pollution amounts, as well as the calculations of the penalties.

Among general issues there is also the matter of the recalculation of previously made assessments and prepared projects, based on actual current market prices or prices on a specific date. However, these issues were not fully resolved due to the suspension of

the Commission's work, and assessment of specific sectors and even relatively similar sites has not been based on absolutely similar methods.

Especially polluted territories

Especially polluted territories include complex polluted sites, remediation of which requires preparing complicated projects. In each case, individual solutions must be sought, requiring many resources, because the companies capable of carrying out this work are not always found in Latvia. EU Cohesion Fund project applications have been prepared for these projects, and they have been assessed both in accordance with government regulations and within the framework of the EU JASPERS program. However, this assessment does not enable more accurate determination of the total damage caused by the Soviet regime. On the contrary, the assessment is oriented towards reduction of the costs of planned remediation projects. This group includes the following projects with total remediation costs amounting to 50 492 968 Ls:

- Inčukalns acid tar pond,
- Olaine liquid toxic waste landfill,
- Liepāja naval port, and
- Jelgava toxic waste landfill *Kosmoss*.

In summer 2011, work was carried out in the Jelgava toxic waste landfill. A retaining wall was built in Liepāja naval port channel, behind which the contaminated and toxic soil extracted from the channel bed will be stored. Preparation was carried out at the Inčukalns acid tar ponds and remediation work began in spring 2012, while preparations are underway at the Olaine liquid toxic waste landfill. The total cost of the completed work, expert assessments, and pre-projects undertaken at all these sites cannot be accounted for because much work has been funded by international institutions, international aid projects, or simply have not been totalled. The funds used for research alone has exceeded one million lats.

Territories polluted by oil products

Territories polluted by oil products can be found both in military bases, industrial and agricultural production territories, and the transport sector in petrol and fuel reserve storage areas. Low petrol and fuel prices encouraged a superficial approach to accounting and control. These projects can use remediation technology and with comparable costs per pollution or area unit, which allows easy transfer of calculations to other sites. Similar pollution was found at currently operational sites, but owners were required to finance clean up in order to receive permits for continued operation. Such requirements can no longer be applied to former Soviet Army petrol and fuel bases and petrol stations, factories that have ceased operation and their boiler houses, closed collective farms, and other ownerless sites; the state will pay for their remediation in the future. Latvia does not have many petrol and fuel reserves, because

such stockpiling is not needed under free market conditions. The total losses estimated by *SIA Vides projekti* for this group amount to more than 100 million lats.

Municipal waste landfills

During the Soviet era, municipal waste landfills were used also for the disposal of hazardous waste, because no other alternatives were established. Accurate information is available on this sector: in order to adapt to EU waste sector regulations, Latvia not only had to establish a municipal and hazardous waste management system with new landfills and a final hazardous waste disposal site, but also had to close all old, non-conforming landfills and perform complete remediation by 2012. This condition did not apply to historical landfills that had been previously closed, such as the landfills on Deglava Street or Kleisti and Bukaiši Streets in Riga; the landfill *Kūdra*; groundwater pollution in the biggest landfill in Latvia – Gētlīņi near Riga; and many other old landfills and closed sectors of currently operating landfills. The total costs in this sector exceed 67 million lats. The municipal waste sector should be reassessed in detail at the site level, because prevention of environmental pollution – caused by incorrect planning, flouted regulations, and haphazard disposal of hazardous waste from industrial and military sectors in municipal landfills has resulted in pollution of the soil and groundwater.

Pesticide storage facilities

Information on environmental pollution due to poorly stored and expired pesticides and other non-liquid agricultural chemicals, including fertilizers, is compiled under “Pesticide Storage Facilities”. During the Soviet era, fields were vastly overfertilized to achieve higher yields. Storage of fertilizers and pesticides in unsuited premises was allowed – sometimes even uncovered in the fields, where they compacted into a dense mass that became unusable. This resulted not only in accumulation of unusable hazardous waste, but also in formation of vast soil and groundwater pollution areas around these sites.

Latvia was one of the first Central and Eastern Europe region countries to utilize provision of a UNDP project to carry out inventory and collection of unused pesticides in Gardene for deposit in a temporary storage facility specifically equipped for this purpose; a hazardous waste furnace in Olaine, in cooperation with Danish Environmental Agency, began burning the waste. Following Latvia’s entry into the EU, when restrictions on waste transport between the EU countries were lifted, it was more cost-efficient to export the remaining pesticides and other non-liquid agricultural chemicals for burning to other EU countries, where the costs of burning one tonne of pesticides were considerably lower.

Latvia paid at least 4 million lats for the inventorization, collection, storage, and disposal of approximately 2000 tons of ownerless pesticides, and many territories

are still awaiting their removal. Smaller pesticide storage facilities still remain, and resolving this problem will require an additional few million lats. Similar procedures for collection of unused pesticide were launched all over Eastern Europe; much has been achieved in Estonia and Lithuania as well. Simultaneously, similar measures are taking place in the Russian Federation and in Belarus, but at a much slower pace. Thus, Latvia still faces cross-border risks of water pollution from pesticides.

Military pollution

We must conclude that some pollution components exceed not only the territory and competence of Latvia, but also those of other Baltic States and Russia as the successor of the USSR. Certain issues must be considered at the level of the UN, EU, the Russian Federation, and the Baltic Sea region and the Helsinki Commission (HELCOM). These issues should be considered within the context of bilateral Latvian-Russian negotiations. Military pollution is the most difficult to distinguish historically and by affiliation, especially with the legacy left behind by the confrontation of Germany and Imperial Russia (WWI) and later Germany and the USSR (WWII). The USSR would be responsible only for the pollution left behind on their military bases, in the sea, and in the ground. However, these issues have not been sufficiently stipulated or resolved in a timely manner within the framework of the treaties on withdrawal of Russian troops from the territory of Latvia.

International competence in the field of historical military pollution

An issue of international importance that should be distinguished separately is the neutralization of mines found in the Baltic Sea and monitoring and possible extraction and disposal of unused chemical weapons and ammunition that belonged to Germany and was buried in the Baltic Sea after World War II by the Allies.

Thousands of mines from World War II are still floating in the Baltic Sea; their numbers could reach 10 000 in Latvian waters alone. Without regular mine trawling at the end of each summer, the effect on navigation safety could be catastrophic, including passenger ferry traffic. The USSR and, later, the Russian Navy were responsible for this issue until the withdrawal of the Russian Army from Latvia. Now this job is assigned to the Latvian navy and is carried out together with the forces of other NATO countries. In turn, the Russian Navy is looking for mines in its territory in the Baltic Sea. In either case, this work must be carried out to ensure the safety of navigation. Discussions on the adverse impact of this activity on marine biological resources will resurface again; potential damage could be assessed over time and, perhaps, compensated as well. However, this cannot be relegated to contemporary Russia.

On 20 December 2010, the UN General Assembly repeatedly raised the issue of

unused German chemical weapons and ammunition buried in the Baltic Sea after World War II by the Allies and potential environmental risks in its declaration “On joint measures to identify environmental effects of the chemical ammunition residuals disposed in the sea”. Although previous HELCOM research verified that these substances are not causing significant damage to the Baltic Sea environment, as they are buried at great depth, society cannot be given a full guarantee of the safety and sustainability of the marine environment. The HELCOM MUNI working group was established in order to assess the situation in accordance with the latest scientific knowledge and modern remediation practices.

During the first meeting of the working group in 2010 in Neumünster, participants were introduced to the latest international experience in research and remediation of similar weapon burial sites, and they agreed that the pollution of inland waters and earth by weapons and ammunition is a serious problem. Ammunition designed for traditional warfare is even more harmful to the environment, because it rusts more quickly, and relatively larger amounts are found in the water and earth. Although white phosphorus, recently washed out from the sea on Latvian coasts, has not resulted in dangerous consequences to health, such incidents have increased on the Danish and German coasts. Thus, the working group agreed to include white phosphorus in the list of substances to be studied and to re-examine the information in all HELCOM member countries. EU strategies for the Baltic Sea Region can be used to launch a fight against potential threats caused by ammunition left behind in the Baltic Sea region.

Historical military pollution as an issue in Latvian-Russian bilateral negotiations

Similar to the mines and chemical weapons buried at sea, there are still anti-tank mines found in Latvian forests and swamps. This has become an urgent issue due to widespread use of heavy logging equipment. Life and health risks must be assessed first, followed by the environmental impact. The biggest military ammunition storage site – Cekule ammunition storage facility – has changed ownership several times over the course of its history. However, Russians can be considered irresponsible in their actions at Zvārde Aviation Airfield where aerial bombs and ammunition has been left behind. Although Zvārde district (located near Saldus – a town with almost 10 000 inhabitants) has not been used for aerial bomb dropping training for nearly twenty years, these once fertile agricultural lands still pose many risks.

From 1950-1990, the Soviet armed forces occupied more than 1000 km² of the territory of Latvia, including more than 30 000 ha without permission,¹ with more than 500 sites related to the military-industrial complex.² The good news is that most of the armaments and hazardous warfare substances were removed as the army left Latvia. The remaining pollution is mostly composed of poorly managed

and inadequately stored petrol intended for military and industrial needs. Heavy metals and complex pollution is found in tank repair plants and similar sites, which can be broadly characterized by BOD (biological oxygen demand), COD (chemical oxygen demand), and other generalized parameters. Large quantities of dangerous substances, which could pose a direct threat to human life or health, were not identified during the research. Only in some places in the district were drinking water sources under direct threat.

In large areas, various economic activities must be limited by developing planning documents at the national and municipal level. It is difficult to calculate the damage incurred by current development in many municipalities, not to mention individual wells and damage caused to private landowners; these are mostly unestimated and unaccounted for. Total losses for this group, estimated by *SIA Vides projekti*, amount to more than 355 million lats. However, it could exceed the 500 million mark. It is difficult to comment on the total amount of 625 million lats for damages in all military sites from the perspective of the environmental sector alone, because the environmental authorities lack sufficiently detailed information on all ships and weapons that were buried at sea.

Other forms of environmental pollution or environmental damage

One of the most serious problems (resulting from untreated industrial wastewaters and socialist agricultural manure storage systems, overfertilization of fields, and overuse of pesticides) appears to be the catastrophic loss of biodiversity in the early 1980s and 1990s, when the number of storks, frogs, rabbits, mice, game animals, and fish decreased. Experts were not ready to prepare a program for the assessment of such a seemingly obvious relationship. This could be due to insufficient statistical references when comparing the pollution loads with the dynamics of the species and their numbers. Rapid reduction of the pollution load began in the early 1990s and has allowed nature to compensate. However, there is a lack of more accurate information on individual species to conduct such a study.

A similar situation arose concerning emissions into the air and accumulation of pollution in the environment and in the food chain. This refers to agricultural chemicals or persistent organic pollutants (POPs) and their potential impact on the environment and human health. Coming into contact with POPs, such as PCBs used in transformer oil additives, is linked to persistent accumulation of the compound in the body. It must be clearly established that many people who worked with these substances were subjected to exposure and could get a variety of occupational diseases; the poisoning could have an impact on following generations as well. Sufficiently representative data are not available for such studies. No life-threatening concentrations have been recorded in humans to date (through examination of breast milk of women in Liepāja and Olaine) or in the environment, including the fish and sludge in estuaries. Nevertheless, the increased

levels of dioxins in salmon and other marine fish are still cause for concern about the sources of poison.

The “polluter pays” principle is effective in the environmental sector globally

The UN approved principle – “the polluter pays” – is effective, but it is easier to avoid such pollution in advance. These principles have been embedded both in international and national laws and regulations, and various institutions and procedures have been created to enforce them.

Integrated Pollution Prevention and Control Requirements are applied in the EU and Latvia. Emissions into the environment are specified in pollution permits issued to the operator. Emissions are measured and must be reported on a regular basis. Background monitoring measurements are done in places where the environment has changed little to allow assessment of the impact of various activities. Modern monitoring determines the total pollution load and accurate estimations of cross-border components of pollution transfer in the air or water. Modelling of the impact of each Baltic Sea region country on the pollution of the Baltic Sea and setting of the required quota of pollution reduction was successfully conducted within the HELCOM Baltic Sea Action Plan adopted in 2007. Instruments for the assessment of emissions and redistribution of finances, established for the implementation of the 1997 Kyoto Protocol of the UN Climate Change Convention and operating in accordance with the emission quotas internationally allocated to the countries, are known globally and have been put into international practice. We must keep in mind that, in this case, we are speaking of emissions caused by large incineration plants, which can be both measured and calculated by the amount of the consumed fuel, while many other environmental sectors lack such accurate information. Developed countries worked hard over several decades under UN management, but many developing countries are still not ready to join this mechanism. Overall, multilateral environmental treaties and conventions created by the UN, instruments of the UN Environment Programme, the UN Development Programme, and the global monitoring network control roughly all national emissions and evaluate global and cross-border risks.

The road to modern environmental management has been long, and individual countries have their own reference points. In relation to Russia, the Baltic States belong to the Central and Eastern European group of countries (CEEC) of the UN Economic Commission for Europe (UNECE). Both general UNECE global environmental instruments and also environmental treaties apply to the Baltic States and Russia. Globally, UNECE is the most active region in the environmental field. In many cases, signing parties represent nearly all the former Soviet countries. However, none of these legal measures stipulate responsibility for the historical pollution left behind in the territory of another country. Western countries and Russia have a

shared responsibility for unused chemical weapons and ammunition that belonged to Germany and were buried in the Baltic Sea after World War II. This issue has been raised again in the public and mass media, and NATO experts are dealing with it. This presents a common environmental problem for all Baltic Sea countries.

The Baltic States form an external border of the EU, and cross-border issues now impact EU foreign policy issues, which has been at least partially addressed in bilateral negotiations between the EU and the Russian Federation. However, responsibility for the historical pollution left behind by the Soviet regime has not yet been discussed at this level.

The Baltic States are represented at the Council of the Baltic Sea States, which is influential in security and cooperation issues within the region. Since 1974, environmental and navigation issues have been settled within the framework of the Helsinki Convention on the Baltic Sea environment. HELCOM was established for the purpose of implementing this convention.

Although HELCOM has been conducting regular assessments of pollution entering the Baltic Sea for several decades, including cross-border pollution (PLC- Pollution Load Compilation), it is not possible to determine damage to human health or the environment from previous emissions into the air or to estimate the volume of polluted runoff and total transfer of historical pollution through rivers into the Baltic Sea. This study has never been given the task of assessing and distinguishing historical pollution. The Baltic Sea Joint Comprehensive Environmental Action program (JCP), adopted by HELCOM in 1992, and its implementation thereof until 2001 (JCP – *Ten years of Implementation*, BSEP No.88, 2003) reveals that the entire Gulf of Riga was defined a “hot spot” or “risk” site. The main causes are Riga wastewater collection and treatment system, mechanical engineering and metalworking companies in Riga, chemical and pharmaceutical industry in Riga and Olaine, Sloka pulp and paper plant, and Riga region agriculture. This program ignored military pollution as a risk to the Baltic Sea, but one must realize that JCP included Russia, which never would have agreed to a review of military issues. The list also mentions industry and wastewater treatment in Daugavpils and Liepāja. In ten years, Latvia has achieved considerable improvement in the wastewater treatment field, and the impact of industrial production and agriculture has decreased because of more stringent requirements and considerable reduction of production output. The JCP did not include threats to biological diversity, which is now an essential part of Baltic Sea protection.

The EU also joined this Convention in 1995, and the recently adopted EU Strategy for the Baltic Sea Region could play an important role in settling of issues on elimination of historical military pollution. Baltic Sea Environment Proceedings (HELCOM BSEP Nr.82A), published in 2001, indicate that old warfare hardware buried in the Baltic Sea does not pose substantial risks to the population and does not cause significant damage to the marine environment. The HELCOM MUNI working group was set up

in order to re-address research on chemical warfare substances buried in the Baltic Sea and to assess the situation in accordance with the latest scientific knowledge and best remediation practices.

Apart from the aforementioned multilateral and regional international legal instruments, an important role is also played by direct bilateral relations and cooperation practices, established by regulatory frameworks. Admittedly, cooperation agreements on environmental matters were signed with neighbouring countries – Lithuania, Estonia, Belarus, and Poland – in the early 1990s, giving the opportunity to address a number of relevant cross-border issues. Unfortunately, signing of such agreements with the Russian Federation was delayed by more than a decade. In the environmental sector, there is no succession in the practice between the Republic of Latvia on the one side and the Russian Federation on the other. In addition, responsible Soviet institutions have been dissolved or reorganized, and Latvia has difficulties accessing environmental information compiled by Moscow. Former professional relations between the experts of both countries have also been lost.

Conclusion

The Commission was suspended in mid-2009, but the report on work concluded from 5 August 2005 until 31 July 2009, submitted to the government, reflects the first compilation of data obtained in the environmental sector and has been widely accessible to the public. Since then, all interested parties have had the opportunity to comment, evaluate, and supplement these data. The Occupation of Latvia Research Society (LOIB) continues the analysis and summarization of damage caused by the Soviet regime. The report submitted by the Cabinet Commission provides information that is not fully complete due to the suspension of the Commission. There continues to be a lack of information on damage caused to private land and water owners. The Cabinet Commission has not carried out sufficient evaluation and coordination to enable approving the total amount of losses caused by the Soviet regime. This could exceed 1 billion lats including the damage caused to Latvia's environment by the military sector. Therefore, only general comments can be given on this report.

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State enterprise *SIA Vides projekti* project manager

Ivan Semyonov

Doctor of Geology, UNEXE expert

Pollution caused by industry and oil products

Territories were polluted during the Soviet era, and the new owners should not be responsible for the pollution left behind. The legacy left by the Soviet Army after the collapse of the Soviet Union has now become the responsibility of municipalities and private individuals, who are not responsible for the causes of this pollution. In this case, we cannot apply the “polluter pays” principle.

The polluted and potentially polluted site database contains 2897 locations, including 242 polluted sites and 2655 potentially polluted sites.

Territories polluted by oil products must be specifically noted and has been done so in 165 sites out of 242. In other territories, pollution has been caused by municipal waste landfills, pesticides, or heavy metals.

The following are the largest soil and groundwater pollution areas in Latvia: Inčukalns tar ponds; Olaine liquid toxic waste landfill; Getliņi municipal waste landfill; former Rumbula airport; Mīlgrāvis oil bases and oil factory; Liepāja naval base; Ventpils oil bases and port territory; Jelgava liquid toxic waste landfill; Daugavpils railroad depot; and Tukums oil base and military airfield.

Inčukalns acid tar ponds

The National Environmental Policy Plan 2004-2008 highlights Inčukalns acid tar ponds as one that causes significant environmental damage and has been included in the list of primary locations to be addressed.

During the 1950s-1980s, roughly 16 000 tons of acid tar – production waste generated in medical and perfume oil production – were taken from the Riga oil refinery and lubricant plant and brought to the former sand quarries in Inčukalns district, 30-35 kilometres east of Riga, now known as the Northern and Southern ponds. The waste was discarded in the sand quarries with no hydroinsulation. The main components of acid tar are oils, asphaltenes, sulfonic acids, and sulphuric acid (pH —1,5; sulphur content ~ 4 mass%). Inčukalns was included in the UNECE primary list of sites contaminated by chemical industry in 1996 requiring remediation.

The project for remediation of Inčukalns was approved in 2009 and included liquidation of the Northern (partial excavation, construction of the retaining wall, groundwater

remediation) and Southern (excavation) ponds and liquidation of boreholes. Total clean-up costs are estimated at 28 996 268 Eur, with 20 290 171 Eur supplied by the European Regional Development Fund and 8 693 754 Eur supplied by Latvia.

Jelgava toxic waste landfill

Jelgava toxic waste landfill was established in 1965 when the leather factory started dumping liquid chemical waste there. It operated for 22 years. The liquid waste was collected mostly in four ponds, enclosed by sand ramparts.

In 1987, after the pond walls broke, the liquid waste flooded the forest to the north of the landfill and was found in ditches to the south of the landfill as well. The landfill territory is 23 000 m² and up to 12 m deep and contains a wide range of groundwater pollution (COD - 488 mg/l, BSP₅ 260 mg/l).

The remediation of Jelgava toxic waste landfill was approved in 2009 as part of the European Regional Development Fund for “Remediation of historically polluted sites”, which included treatment of polluted waters, construction of a retaining wall, encapsulation of the solid and pasty mass containing the hazardous substance, and creation of a remediation covering of the landfill and installation of monitoring wells. Total costs are 7 911 977 Euro: ERAF funding – 5 538 384 Euro and State funding – 2 373 592 Euro.

Olaine liquid hazardous waste landfill

Olaine liquid hazardous waste landfill is one of the best-known pollution sites in Latvia and is the source of significant environmental damage; it was included in the list of primary sites to be cleaned from 2007-2013.

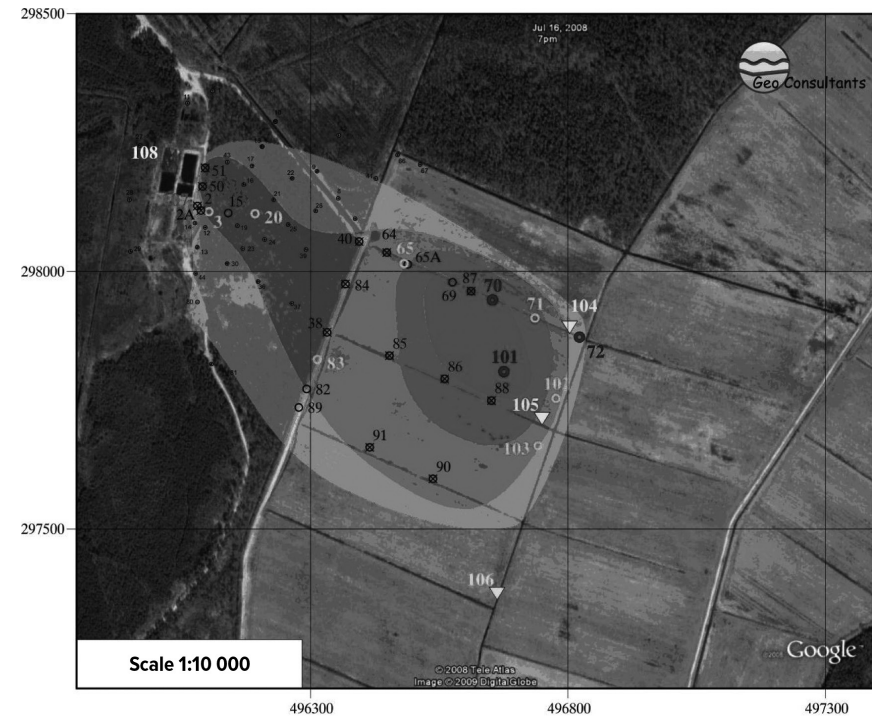
Olaine liquid hazardous waste landfill is near Riga in Olaine district territory, approximately 2 km north of the Olaine city border. The pollution source is liquid hazardous waste landfill, created by several ponds. The landfill consists of four concrete tanks (ponds), which were used to store liquid hazardous waste generated during the production of pharmaceuticals. It has been established that improved hydroinsulation does not preclude penetration of toxic substances into the ground waters (see Figure 1).

Filling the landfill ponds with chemical waste was done without sorting the waste by composition. As a result, the ponds contain a mix of many different chemical substances. The ponds are not covered and precipitation gets inside and mixes with the waste, seeping out of the ponds into the groundwater.

Several investigations have been carried out, and TEP for remediation has been developed, proposing two alternatives: 1) Thermal treatment of the waste and burial in the landfill, treatment of the polluted groundwater NAI – 6 203 726 million Euro and 2) Solid waste incineration and treatment of the polluted groundwater by biodegrading in situ – 9 846 282 Euro. The project has not been approved to date.

Figure 1

Olaine liquid hazardous waste landfill



Indicators
Quality of groundwater. Level of contamination

Обозначения	Качество почвы	Сl, мг/л	ХПК O2/л	Сод. нит. мг/л
	Чистые	5 - 20	10 - 40	0,1 - 3
	Загрязнённые	20 - 1500	40 - 2000	3 - 300
	Сильно загрязнённые	1500 - 5000	200 - 6000	3 - 300
	Ядро загрязнения	5000 - 15000	2000 - 8000	300-1000
			8000 - 20000	1000 - 4000

Примечание: Выделены скважины, из которых взяты образцы

Territories polluted by oil products

For nearly 50 years, oil products were not considered to be of great value in Latvia. Storage, handling, and transportation of oil products was done carelessly. Considering the vulnerability of groundwater, these became the major soil and groundwater pollutants. The main sources of pollution are oil bases, petrol stations, railway sorting yards and locomotive depots, port terminals, airports, and Soviet Army bases. The differences between Soviet Army and civilian oil product bases, factory territories, depots, and transport bases are not great in terms of the amount of pollution. The main pollutants are

gasoline, kerosene, diesel, and fuel oil. These pollution categories are combined based on application of similar treatment methods.

There are also many small sites polluted by oil products: former collective farms and state farms registered in the database as potentially polluted, but, unfortunately, yet not inspected. Groundwater pollution has been established in all old petrol stations that were inspected – 53 to date. Most Soviet Army units had their own fuel storage and tank facilities. The environmental damage caused by the ten biggest former Soviet Army oil bases has been estimated: A few centimetres to a meter layer of oil floats above groundwater at all these oil bases.

The largest polluted former Soviet Army oil base territories:

- Rumbula airport territory;
- Army fuel base, Riga, Tvaika iela 39;
- Army fuel base, Viestura prospekts, Riga;
- Former Navy fuel base, Riga, Flotes iela 6/8;
- Marine aviation fuel base in Skulte, Mārupe district;
- Oil base Vangaži;
- Army fuel base in Liepāja, Upmalas iela 16;
- Army oil base Zaļumi, Daugavpils region;
- Army airfield oil base in Tukums, Pļavas iela 10; and
- Lielvārde airfield oil base.

It has been estimated that 10 869 723 Euro are required for the inspection and remediation of these bases.

- Facility hazard assessment processes included:
- Scope and area of the pollution, its migrating capacity (in form of a soluble phase or a floating phase);
- Filtration conditions (filtration coefficient, groundwater flow gradient, atmospheric precipitation, surface runoff conditions); and
- Presence of protected (endangered) sites (residential houses, surface waters, etc.).

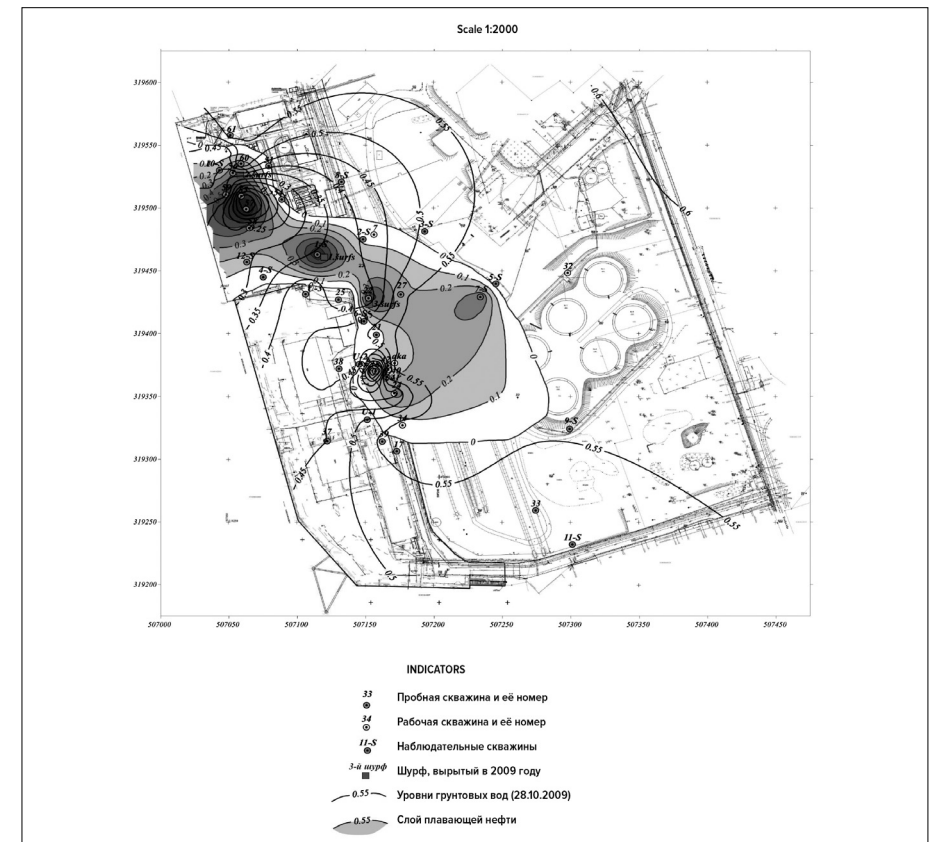
It is assumed that during remediation, the layer of oil products floating on the groundwater level has to be eliminated; the soil, polluted by oil products, has to be treated and the oil product fractions, dissolved in the groundwater, must be eliminated after assessing if there are endangered or protected sites downstream and what the probability of migration of oil products could be. It is possible to treat all three types of pollution concurrently if technological, technical, and financial conditions allow.

Feasibility assessments and indicative cost estimates of the measures have been conducted for additional inspection of soil and groundwater pollution (if such inspection is required at the given site) and for remediation measures individually. In general the estimates are made at the indicative level.

1	Oil bases	25 674 704 Eur
2	Petrol stations	5 447 580 Eur
3	Former mechanical workshops of collective farms, fuel storage facilities and boiler houses	103 705 184 Eur
4	Railway and airport infrastructure sites	8 536 056 Eur
TOTAL:		143 363 524 Eur

The largest project has been developed within a Latvian-Swiss cooperation program, and should be mentioned as an example of the costs of remediation of a territory polluted by oil products. It combines the territories of the former Soviet Army oil base and civilian oil base and oil factory in Sarkandaugava in Riga (Fig. 2).

Figure 1



Losses have been calculated at the former Army oil base and civilian oil base territory in 2009:

- Elimination of the floating oil product layer 3 775 764 Eur
- Elimination of the remaining pollution 1 384 380 Eur
- Design, supervision, etc. 664 367 Eur

TOTAL: 5 824 515 Eur

In Figure 2, we see the density of the floating oil product layer in the territories of the former oil base and oil factory.

In addition in 2011, losses were calculated at the territory of SIA Ovi Rīga, or the territory of the former oil factory totaling 4 109 223 Eur:

- Liquidation of motile oil product fractions – 1 828 308 Eur
- Liquidation of heavy oil product fractions – 1 950 911 Eur
- Monitoring of work – 111 319 Eur
- Design, supervision, etc. - 218 681 Eur

Daina Pužule

Pr. Mg., Bc. biol.

Ināra Krūmiņa

State enterprise *SIA Vides projekti* project manager

Environmental damage caused to Latvia by pesticides used in the soviet agricultural system

Composition of pesticides used in Latvia and the potential prevalence thereof in the environment

Pesticides can have a toxic effect on living organisms; currently, approximately 30 000 various types of pesticides – insecticides, herbicides, fungicides, insecticides, acaricides, nematocides, etc. Pesticides are also classified by their chemical structure: organochlorine, organophosphorus, organosulphur, carbamates, chlorophenols, etc.

Pesticides – persistent organic pollutants (POPs) – are human-made substances that can persist for decades in nature and travel long distances by wind and water. Of these, only DDT (1961-1967), toxaphene (1966-1992), and small amounts of heptachlor (used for seed dressing) have been used in Latvia.

The prevalence and environmental stability of pesticides depend on their chemical structure, physical qualities, biological stability, as well as soil characteristics, seasonal rainfall, etc. Pesticide interaction with soil is determined mainly by the absorption processes (physical, chemical, and ion exchange). Depending on the location and intensity of biological degradation processes of the pesticides, chemical decay and spread can vary. Pesticides penetrate the waters of open reservoirs by being washed out of the soil as sediment suspension and through precipitation.

Location of pesticide storage facilities in Latvia

During Soviet occupation, there were 25 regional agricultural chemical (fertilizer and pesticide) storage facilities in Latvia. Pesticides were most frequently stored in a separate storage area. Most of the former chemical storage facilities are still being used today; they are owned by companies or individuals. Chemicals are stored according to regulations.

Small pesticide storage facilities of former collective and state farms (Ill. 1) can be found in every district and currently constitute a threat to people, animals, and nature. Most are abandoned with open doors and windows and leaky roofs, and sometimes contain remnants of unidentified chemicals. Only a few of the buildings inspected are owned by municipalities and located on private land; they usually lack information on what to do with these ruins.

The use of organochlorine insecticides in Latvia is provided in Table 1.

Illustration 1

Former pesticide storage facility Knaģi in Tukums region, Jaunsāti township (2006)



Table 1

Year	Total amount of organochlorine insecticides, tons	
		including DDT
1961	88,0	43,4
1962	118,0	57,8
1963	94,1	38,5
1964	108,0	57,8
1965	175,0	118
1966	135,0	49,3
1967	63,7	2,4
1968	36,3	
1969	30,1	
1970	24,3	
1971	25,9	
1972	49,6	
1973	48,6	
1974	9,7	
1975	13,5	
Total:	1019,8	367,2

Inspection methodology

We developed an estimate of costs required for complete recultivation and return to economic circulation of the polluted territories.

A more detailed description of the inspection of 22 pesticide storage facilities, conducted in 2006, follows and provides a list of other studies conducted and describes technologies used in pesticide elimination.

Inspection of the polluted sites

Twenty-two former pesticide storage facilities were inspected for potential threats to human and environmental safety, water sources, and future development of the territory. We met with municipality representatives and, in some places, with the landowners in order to determine future plans for the territory. Composition of residential housing, proximity of water reservoirs, soil structure, and groundwater levels were determined; buildings sizes were measured during inspection and photos were taken. Contacts were established in places where such information was missing.

Materials used

The information contained in the report “Preparing of proposals for establishment of the group of projects for remediation of polluted sites and development of substantiation for the purpose of drafting the Operational program project for the EU financial programming period 2007-2013” was used as the basis for inspection.

In 1997, *A/S BAO* (Hazardous waste management organization), together with the Danish company *Chemocontrol*, conducted an inventory of pesticide storage facilities in Latvia. The project resulted in identification of more than 600 pesticide storage facilities from which pesticides were later taken to two centralized storages. Based on the visual inspection, specialists from *A/S BAO* indicated that at least 300 of the inspected sites showed considerable environmental pollution, but site descriptions were not made.

The Latvian Environmental Agency (LVA), State Environment Inspection (VVI), and the State agency *SIA Vides projekti* created a project to review the use of (POPs), emissions, stock, and polluted sites and created additional POP testing and developed a monitoring plan for 2002 -2003.

The project included compiling and analyzing information available on POPs; identification of production, distribution, use, import and export of products containing POPs in Latvia; and taking soil samples from sites potentially most polluted by POPs.

Assessment of costs

New technologies for disposal or removal of pesticides have been created and developed over the last 10-15 years. These technologies have shown that efficient

removal of the POPs is possible without incineration. However, the EU has a large capacity for pesticide incineration, so sellers of new technologies find it difficult to enter this market. This is why these technologies are not widely available in the European market.

Possible remediation forms are:

Type of pollution	Origin	Solution	Alternative
Pesticide waste Heavy soil pollution	Storage facilities	Incineration in special plants	Burial in landfills
Moderate soil pollution	Storage facilities	Soil incineration or washing	Bio-remediation or burial in landfills
Minor pollution - diffusion in the soil	Agricultural lands	Not defined	Self-purification processes
Groundwater and surface water	Waste/soil+ diffuse infiltration	See technologies below, natural self-purification	Pollution localization methods (hydraulic)

It must be emphasized that soil or groundwater treatment costs are very high: in 2006 these costs were estimated at 853 Ls/t. In our opinion, the best solution is excavation of the soil and transportation to a specialized landfill.

In regard to non-persistent pesticides, we assumed that over time such pollution would be reduced to the “B” category level. These pesticides are biodegradable and since most of these pesticides were used in the 1980s, self-purification processes have been working for over 20 years. Visual inspection was used to assess the indicative costs.

Inspection of pesticide storage facilities and assessment of costs

Four most intensely polluted areas have been selected from the general study. These are the pesticide storage facilities in Viļāni, Nereta district, *Nīcgaļes muiža* in Daugavpils region, and in Talsi region, Lībagu district.

Pesticide storage facility in Viļāni

This facility is located in the railway station territory next to the Riga-Zilupe track.

From 1969 to 1975, the LSSR Ministry of Agriculture collected prohibited, unidentified, and unusable pesticides from all regions of the republic and placed them in warehouse Nr. 1 of the State enterprise *Agroķīmija*, only 300-350 m away from housing and approximately 600 m away from the Malta River. The waste was in metal barrels, paper bags, or simply discarded on the warehouse floor. Over time, as the metal barrels rusted and the bags disintegrated, approximately 200 tons of various pesticide waste (more than 100 types) mixed together.

Spontaneous combustion caused a fire in this warehouse on 3 May 1987. In August 1989, in order to prevent another potential accident, the mass was combined with cement in a concrete mixer and put into a metal container. Pesticides were found also in the pond and drainage ditch of a nearby house. Full relocation of pesticide waste from this warehouse to a newly-built non-liquid waste storage facility *Kņava*, located approximately 5 km from Viļāni, was done only in 1995. At present, the former pesticide storage facility is virtually demolished and no economic activities take place there (see Ill. 2).

SIA VentEko carried out inspections of the site in 2003. Additional inspection drillholes were made, and soil and groundwater analyses were conducted. The results show considerable pollution of the soil and ground with organochlorine pesticides and various other trace elements. DDT and the cumulative concentration of its metabolites considerably exceed the C threshold (up to 106.3 mg/kg) in all samples taken in direct proximity to the former pesticide storage facility. Hexachloran isomers were also identified in all the samples; however, their concentration in the soil was much lower than that of the DDT group pesticides. This is due to the lower environmental stability of lindane, as compared to DDT. The half-life of DDT in the soil is 1000-2000 dnn, whereas that of lindane is 400 dnn.

Illustration 2

Remains of the former pesticide storage facility in Viļāni



Groundwater inspection shows clear signs of pollution. Laboratory tests show an increased concentration of all substances (elements). However, compared to current groundwater quality criteria, none of the pollutants exceeds the C threshold. It should be noted that the norms do not include elements, concentrations of which exceed the background level thousands of times – cerium, lanthanum, and yttrium. This may cause unpredictable threats to human welfare and the stability of ecosystems.

Herbicides of the triazine group (atrazine and propazine) have also been identified in the water of the monitoring wells and in the 100 m distant concrete ring well. One sample showed presence of highly mobile chlorophenoxyacetic acid herbicides, but non-mobile organochlorine insecticides (DDT) were not found, despite their high concentration in the soil.

Groundwater has been polluted in a narrow zone between the storage facility and the Malta River. The polluted groundwater obviously penetrates the Malta River (concentration of the organic substances in the polluted groundwater, COD reaches 280 mgO₂/L).

Approximately 6700 m³ of polluted soil and 500 m³ of construction debris must be removed. Additional research will cost 24 900 Eur and installation and operation of a monitoring system 42 686 Eur. Total remediation costs: 542 826 Eur.

Pesticide storage facility dainas, Nereta district, Aizkraukle region

The pesticide storage facility is located in Aizkraukle region, Nereta district, on the property Smilgas, not far from the Lithuanian border. The storage facility is located in a deciduous forest, by the side of a local road.

Toxic substances are kept both in barrels and in bags. From 1960-1995, various pesticides, herbicides, and poisons used for plant protection were kept at the storage facility *Dainas* at the former collective farm *Draudzība*. DDT was brought in around 1973 – the stocks, intended for the whole region (approximately 5 tons), were stored here until 1998 when everything was collected and removed to the toxic chemical storage facility in Gardene. The spilled chemicals were not gathered.

At present, the toxic chemical storage facility is not being used. The building is well preserved; it is built from bricks with a slate roof. The closest residential houses are located 600 m away, and there is a drainage ditch 200 m north of the storage facility.

Although most of the pesticides have been removed, there is still a strong pesticide smell in the air. Several bags of unidentified chemicals have been left behind and still remain there (Ill. 3). The floor of the storage facility was once covered in concrete, but now it is severely damaged.

Pesticide storage facility *Dainas*



Detailed environmental inspection, including determining the amount of pollution in the territory, has not been carried out.

Two soil samples were taken during the UNDP/GEF funded project “Preparation of the National Implementation Plan on Persistent Organic Pollutants (POPs) under the Stockholm Convention”, which show DDT pollution – 720 mg/kg and 1,5 mg/kg. The first sample exceeds the permissible concentration in soil by 720 times; the soil sample was taken at 1,5-5 m distance from the storage facility door, and the other sample, 25 m from the access road.

Remediation cost calculation

The following has to be eliminated:

1. 0,5 t of unidentified chemicals;
2. Storage facility floor 17mx10m= 170 m², up to 1 m deep - 170 m³;
3. Soil around the storage facility - 400 m², on average up to 0,5 m deep - 200 m³; and
4. Slate (containing asbestos) - 200 m².

The following has to be ensured: additional research 31 303 Eur;

Total remediation costs: 60 211 Eur

Pesticide storage facility Nīcgale muiža, Daugavpils region

The former pesticide storage facility is located in Daugavpils region, Nīcgale district. The storage facility is located 50 m from the Daugava River; the closest residential houses and a well are located approximately 500 m from the pesticide storage facility.

A total of 5,589 tons of phenoram, NaTHA mix, granozane, TMTD, and semerone were removed in 2003. According to *A/S BAO* information, pesticides were dumped outside the storage facility into the snow. At present, the brick house does not have a roof or windows and it has burned down (Ill. 4). The total period of use was 20 years.

Illustration 4

Pesticide storage facility Nīcgales muiža



One POP project soil analysis showed 4 mg/kg pollution of DDT, which exceeds the permissible norm by four. The sample was taken 1-3 m from the storage facility doors.

Remediation cost calculation

The following has to be eliminated:

1. 50 m³ of construction debris and
2. Amount of polluted soil near the storage facility 7 m * 50 m (up to the Daugava) * 2m (potential depth of pollution) is approximately 495 m³.

The following has to be ensured: additional research 8 537 Eur.

Total remediation costs: 44 856 Eur

Pesticide storage facility in Talsi region, Lībagu district

The pesticide storage facility is located on the side of the Talsi-Stende road, approximately 2.5 km from the Rīga-Ventspils highway. The storage facility is brick; the floor has a concrete base. There are approximately 15 barrels of unidentified chemicals in the storage facility; a few cardboard bags with unidentified and spilled chemicals are lying around as well (Ill. 5), and there is a strong chemical smell in the air. In the adjacent room, there are torn cardboard bags with unidentified substances; however, the smell is relatively minimal. Although the doors are closed, but access is easy through open windows. The closest residential houses are located 250 m away.

The storage facility is located in the protective zone of the road; it once belonged to the Stende Plant Breeding Station. At present it belongs to Lībagu District.

Soil quality tests have not been done.

Illustration 5

Pesticide storage facility in Talsi region, Lībagu district



Remediation cost calculation

The following has to be eliminated:

1. 15 metal barrels with unidentified chemicals;
2. ~1 t of chemical remnants, paper bags;
3. 200 m² x 1m = 200 m³ of polluted soils; and
4. 200 m³ of construction debris.

The following has to be ensured: additional research 8 537 Eur and installation of a monitoring system 2 134 Eur.

Total remediation costs: 41 974 Eur

Summary of remediation costs

The inspection results showed that small, abandoned areas and storage facilities of former collective and state farms, where persistent pesticides (including DDT) were stored since the 1970s, are considered to be the most dangerous sites. Pesticide containers (barrels, bags) and unidentified chemicals are still found in these storage facilities.

The buildings have been vandalized.

Table 3

Pesticide storage facility in Talsi region, Lībagu district

	Description	Unit	Unit price, Ls	Volume, m ³	Measure costs, Eur
Amounts and costs of remediation measures					
1.	Excavation and transporting of the polluted soil	m ³	20	17359	493 993
2.	Collection and transporting of construction debris	m ³	40	1654	94 137
3.	Burial of the polluted soil and construction debris in the landfill	m ³	25	12313	437 996
TOTAL:					1 026 126
Costs of the required additional research					
4.	Additional research to determine the scope of pollution of the soil, construction debris and groundwater				243 311
Remediation measures and research TOTAL:					1 269 437

Table 3 provides the summary of technical/economical assessment of required measures based on visual assessment and using the current soil pollution data.

It must be emphasized that the actual amount of remediation work and costs for elimination of the historical pesticide pollution is much higher, but it can be determined only after inspection of all pesticide storage facilities and additional research.

Unfortunately, only 22 storage facilities could be inspected within the framework of this study, but there are more than 200 such sites in Latvia.

Conclusions

We estimated that the environmental damage caused to Latvia by pesticides used in the Soviet agricultural system of the USSR amounts to 1 269 437 Eur.

This sum may change, depending on when remediation work will be carried out, who will carry it out, what technologies will be used, and what funding will be used to cover the costs.

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Estimation of the damage caused to the national economy of Latvia by the soviet army and the military-industrial complex

The victory of the USSR and its allies in World War II created a new geopolitical situation not only in Europe, but also in the world. At the end of the war in 1945, the Soviet military had 11 million soldiers, an unimaginable amount of military equipment, and a fully militarized economy. Free labour, in the form of more than two million prisoners of war and Gulag captives, was used to restore the economy devastated by war. During the post-war years, this free labour was constantly restocked through repression of the population of the former German-occupied territories and even entire nations that had allegedly supported the Germans in battles against the Bolsheviks.

As the war ended, the German occupation troops in the Baltics were replaced by an approximately one million-strong Red Army contingent, which helped establish the Soviet regime. Together with the Soviet repressive authorities and the “istrebityel” (exterminator) units organized on site, the Soviet Army fought against Baltic national partisans, participated in campaigns against civilians, and guarded the main sites of state power. During the Soviet occupation, the Army participated in local government elections, controlled the social and political life of the Baltic population, and monitored the work of the government and the Latvian SSR Communist Party. The Soviet Armed Forces, together with the armed units of the National Security Committee (KGB), served as the tool of the occupation regime used to establish and maintain power in the Baltics.

During the war, all economic structures of the USSR were geared towards military production. The production of goods required by the national economy and the population was partially suspended; cities and their infrastructure were in ruins. After the war, factories used for military purposes continued producing machinery and military equipment. Creation of nuclear weapons and missiles completely changed military strategy and warfare tactics. An industrial complex was created for the purpose of coordination of military work, including nearly all Soviet ministries and ministries of the subordinate Soviet republics, research institutions of the Academies of Sciences, and structural designer offices. During the entire period of the Soviet Union’s existence, this military complex played a decisive role

in the total militarization of the state. Due to high secrecy, little was known about the operation of the military-industrial complex up until the collapse of the USSR. Soviet propaganda did not mention the military-industrial complex, army, military factories, or secret army sites. However, we knew about the new factories that were being constantly built and the grand Communist buildings, most of which were based on classified military objectives. Even when a new bridge over the Daugava was built, it was designed to have places for the installation of explosives to blow up the bridge, in case of war.

For more than 50 years, the Baltic States were the Western border of the Soviet Union – the place where the most modern army weapons were deployed first.

According to information provided by the Baltic Military District, 3009 troop units were deployed in cities in 24 out of 26 regions from 1944 to 1990. This list did not include the Baltic Fleet units, which were deployed in all Latvian ports. This concentration of armed forces in Latvia for more than 50 years had a devastating effect on the national economy of independent Latvia after the collapse of the USSR and the withdrawal of its army.

In 2008, when the Commission for the estimation of the damage caused by the Soviet Communist occupation regime asked me to estimate the damage caused by the Soviet Army during the occupation of Latvia, I could not imagine that it would be such a complicated task. For many years, I had worked in the Baltic Military District, and I had information on the deployment of troops and military sites in the Baltics. After the collapse of the USSR, I was the head of the bureau that oversaw the withdrawal of the Soviet Army, set up by the then Latvian Council of Ministers. Successful withdrawal of the army from Latvia was possible only if we let the Soviet Army leave a contaminated environment behind. It was clear that Latvia would not need the military structures, most of which were located in the forests. There would be no need for military use of such sites like Skrunda radar station, nuclear storage facilities in Bārta and Tukums, 14 strategic missile stations, the missile launcher shaft, and many more sites. In 1993, the Bureau pointed this out to both the Russian delegation and also to the Latvian government during the negotiations on the withdrawal of the army. Russia refused to demolish the unnecessary military structures and clean up the deployment sites as the Army departed, but the government of Latvia needed to have the army withdrawn, at any price, and in the shortest time possible. This led to the current situation, which requires spending enormous amounts of money to have the environment at least somewhat cleaned up and the partially demolished military structures removed.

As we launched the study with the purpose of making estimates, it was clear that we would need legal evidence of the army's location in the specific geographic area. We found evidence in the archives in acts on the allocation of land for troops deployed in Latvia. The land allocation acts did not specify, for instance, that the

strategic military ballistic missile unit had been allocated land in any specific place. By comparing archival data with transferal documents showing geographic sites and lists of troops submitted by the Baltic Military District and local municipalities, we could determine, where troops were located and for how long. Having inspected these sites, we marked them on the map of Latvia and took photos of the abandoned military structures and everything that was left behind by the Soviet occupation army. Determination of potential ecological damage required specification of types of weapons located at each site. When we had determined the length of time army units had stayed in a specific location, we developed basic criteria to allow estimation of the damage that had been caused to the state and society. An inspection card was filled in for each territory occupied by troops, showing basic criteria, such as types of weapons, facilities, type of territory, etc. on the basis of which we made our estimates.

In total, 300 former military sites were inspected in Latvia, and inspection cards were filled in for 235, showing the time of dislocation of the army unit from the site until the withdrawal of the army or handing over of the site to Latvia. The Russian army left many sites, such as reserve airfields and border guards sites along the Baltic Sea, in the hands of newly established commercial entities, which, were later found to be created by illegally demobilized army officers and former employees of the KGB.

At the time of the withdrawal of the army, many former sites or their ruins were privatized in a rather dubious manner, such as the army buildings in the dune zone. Latvian legislation prohibited construction of buildings in the protective dune zone unless the buildings were there during the period of independent Latvia. Latvian legislation prohibits construction of buildings on the foundations of privatized army buildings on the seashore. So, those who wished to privatize these buildings, especially in Ventspils area where there are still many sites remaining from those built in 1939 within the framework of the Base Agreement, had a problem. They could not use them but they could not sell them – no one wanted to buy them.

While making estimates, we faced problems on what to do with these 1939 buildings? Many of these same strategic sites had been occupied by the Soviet Army after 1945, and in the Ventspils area, French-design coast guard long-range cannons continued to be aimed at Irbene Strait until the withdrawal of the army. Liepāja Naval Base had ruins of buildings constructed in the period of Imperial Russia. The Soviet army had used the undamaged bastion cellars as ammunition warehouses to store nuclear weapons for the Baltic Fleet.

The information contained in the inspection cards can be divided into three blocks. The first block describes the damage resulting from the operations of the Soviet military-industrial complex, including funds used from the common Soviet Union budget for construction of sites and production of arms. This also includes the costs

of destruction of farms located at the military sites and in their vicinity, as well as natural resources – dolomite, gravel, timber, and other materials – used during the construction and operation of the sites.

The second block describes the damage caused at the sites, including ecological pollution, to which the costs for demolition, disposal of construction debris, territory clearance, elimination of explosives, and cleaning of the environment can be added.

The third block indicates the damage caused to the national economy of Latvia through maintenance of the army, use of infrastructure, military orders placed with national production plants, and recruitment of young people for military service. Unfortunately, the third block is not included in the cards because it requires separate study and calculations. There is no financing available for such task.

While studying archival documents, we found interesting information, which showed that orders for military purposes were placed in almost all national production plants in the LSSR. In some, such as the Electrotechnical Factory VEF, the volume reached 80%. There was a clear military action program made for preparation for war. It became clear why the largest Latvian factories collapsed so quickly after the restoration of independence. There were no more military orders or product sales for the needs of the military-industrial complex (MIC). Our research resulted in such a large amount of material on the MIC and its operations in the USSR, that after the estimation of damage, we wrote the book *Latvia under the Soviet military*. Due to limited finances, we could not publish all the research materials, documents, and photos in this book.

It was disturbing to discover, from the declassified documents, how the military arsenal of the superpower Soviet Union was created, and that up to 70% of the gross national product was spent for military purposes. Everything that happened in the field of armament in the Soviet Union also happened in the Baltic States. In terms of territory, the concentration of army units in Latvia was impressive (see map in *Latvia under the Soviet military 1939 -1999*: I. Upmalis, Ē. Tilgass, E. Stankevičs, Riga, 2011). The militarized Soviet empire had contradictory slogans: after World War II – “Armament brings peace to the world” and in 1980 – “Disarmament for lasting peace in the world”!

The empire collapsed and, as collapsing empires do, it left ruins behind. The USSR was a completely militarized empire, the collapse of which did not cause destruction of gigantic historical monuments (such were never built), but rather the destruction of gigantic military sites, for the removal of which we estimated the necessary funds. For example, as the withdrawal of the army began in 1992, more than 200 million roubles, equal to 6.6 million 1987 US dollars, had been invested in the unfinished construction of the Skrunda radar station *Darjal-UM*, whereas eight million US dollars were spent blowing up the radar, removing the debris, and cleaning up the territory in 1995.

Having compiled the research data, we discovered that 163 856.23 ha of land were allocated for army needs in 219 sites (excluding sites in city territories) and 1335 agricultural farms were closed at army dislocation sites. During our research, we inspected former military sites and filled in 235 object inspection cards, showing the scope of damage on each site. We established that the monetary damage suffered by the state and people of Latvia in 24 administrative regions, amounted to 3 307 818 343 Eur as of early 2011. The environmental damage, estimated by ecologists as of August 2009 (when the government stopped funding the research) was equal to 891 074 310 Eur.

The total estimated damage amount is 2 950 995 775 Ls, or at the exchange rate on 1 January 2011 – 166 661 327 688 roubles; 5 713 422 920 USD; or 4 170 937 428 EUR.

Approximately three billion lats or more than four billion euros could be the amount currently required to clear the ruins of the former military sites, clean up the environment, and, perhaps, slightly clean up the Baltic Sea, where World War II trophy weapons and ammunition have been buried. This amount is constantly changing, as the cost of the work and the condition of the sites to be demolished change. It would be a gesture of goodwill by Russia, as the successor of the Soviet Union, to grant these financial resources to erase the scars caused by the Soviet occupation.

Ecological damage has not been determined for all sites due to the government’s suspension of funding. The estimate does not show the damage caused by the military-industrial complex to the national economy, through placing military orders with civilian factories. The damage that was caused by supplying the army with agricultural and other food products has not been reflected either. Factory orders for the army were mandatory and had to be completed first. Factory or collective farm heads were personally responsible for the timely execution of military orders.

Our research is the first of its kind in Latvia. Today, there are many publications available in Russia on the subject of the former Soviet military sites and the operation of the MIC, but I have not come across anyone, who has tried to estimate the damage caused by the former Soviet military to the Soviet nation. Can these be expressed in specific figures at all?

Latvian archives hold many unexplored documents on the deployment of the Soviet army in Latvia and the operation of the military-industrial complex during occupation. All those who wish to write on this subject should study these documents.

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Damage caused to Latvia by the deployment of the soviet army in Kurzeme in 1939

The provisions of Article 3 of the Mutual Assistance Agreement, signed by Latvia and the USSR on 5 October 1939, stipulated that Latvia had to grant the USSR rights to keep navy bases in Liepāja and Ventspils ports, as well as airfields in Kurzeme and a coastal artillery base on the seashore between Ventspils and Pitrags on a tenancy basis for an agreed price.

From 24 October-2 November 1939, a Latvian-Russian intergovernmental commission inspected the sites that had been selected and demanded from Latvia by the Soviets.

Approximately 25 000 Soviet Army units were deployed in:

1. Ezere - mechanized regiment and aviation;
2. Vaiņode - two tank battalions and aviation;
3. Priekule - one tank battalion and tank brigade headquarters;
4. Paplaka - one tank battalion;
5. Ēdole - one infantry battalion and regimental artillery;
6. Durbe - one motorized infantry, repair-restoration battalion and tank brigade combat provision battalion;
7. Pitrags - Mazirbe - one infantry battalion and regimental artillery;
8. Ventspils - one infantry battalion, one artillery regiment division, navy and aviation;
9. Liepāja - Navy, infantry division management with special sections: tanks, field engineers, reconnaissance and communications battalions, two infantry battalions, howitzers and cannon artillery regiments, aviation; and
10. Piltene – fighter aviation regiment.

In order to deploy these units, Latvia handed over the following to the Soviet army:

1. Liepāja – Karosta (naval port) and airfield in Grobiņa;
2. Ventspils – two ship piers on the north (right) bank of the Venta river with adjacent territory, airfield, warehouses, and former railway worker apartments, as well as a school building in Pārventa;

3. Ezere – territory of the former Ezere Manor together with the castle building and land for airfield purposes, by dissolving 9 farms;
4. Vaiņode – sanatorium with outbuildings, airfield, and one farmstead;
5. Priekule – 3 buildings, hospital, and 1 ha of land;
6. Virga – Paplaka Manor;
7. Bunka – Bunka Manor, Izriede children summer camp, school building in Krote, residential house and outbuildings;
8. Cīrava – Forestry school, residential building, the municipal alms-house, and land acquired by dissolving 5 farmsteads; and
9. Ēdole – Ēdole Castle with outbuildings.

In addition, rights were granted to establish naval aviation bases at Liepāja Naval Airfield and Busnieki and Durbe Lakes. Soviet naval aviation had rights to fly over the territory of Latvia west of the meridian of Tukums.

Officially, the Soviet Army garrisons were dislocated only in these locations, but most of Kurzeme – from Ezere to Melnsils included (eastern border) – came under their influence (secret order Nr. 12, signed by the Minister of War of Latvia, J. Balodis, on November 1, 1939).

The Memorandum of Agreement on the protection of Irbe Strait (signed 23 October 1939) stipulated that the Soviet navy shall be granted rights to establish a coastal artillery base in a 5 km wide coastal zone from Ventspils to Pitrags. In this coastal zone, the Soviet Navy was allowed to build railroads and land roads for manoeuvring and supplying of mobile artillery (including railroad artillery), build positions for coastal batteries of various calibres, install stationary and zenith batteries, keep the artillery manoeuvring both on the tracks and by mechanical drive, install surveillance and checkpoints, especially at the Ovīši and Miķeļbāka lighthouses, and install radio stations, telegraph, telephone lines, and spotlights stations. Article 7 of this Memorandum stated that the stations allocated to the Soviet navy shall be handed over for the use of the navy on tenancy rights, as were the buildings and equipment located in these stations. This memorandum was signed on behalf of Latvia by the Chair of the Military Commission of Latvia, General Hartmanis, and the naval commander, Admiral Spāde. These special agreements, specifying the payment that Latvia should have received, have not been found in Latvian archives; no documents verifying the fact that any payment was received were found either. It is presumed that the tenancy agreement documents are located in the Russian archives.

The special agreement stipulated that Soviet Army Corps commanders and other officers were granted permits and could travel on Latvian highways and land roads within the dislocation area of the Corps (up to the eastern border) with no restrictions.

As a result of the Base Agreement, the 67th Infantry Division of the 2nd Special Infantry

Corps, the 6th Light Tank Brigade, the 10th Heavy Tank Regiment, the 86th Zenith Artillery Division, and the 18th Aviation Brigade with three aviation regiments of the Red Army were located in Latvia in the autumn of 1939. One heavy bomber regiment – 64 airplanes – arrived later.

It must be noted that the number of troops – up to 25 000 men – mentioned in the confidential protocol of the signed Memorandum applied only to land troops. Navy personnel were not mentioned. The agreement on permanent USSR transport ship passage to Liepāja and Ventspils stipulated that they shall be exempt from customs, sanitary, or any other inspection and that they shall have free navigation rights within the territorial waters of Latvia and be allowed to enter Latvian ports. Undisturbed navigation and anchoring of Soviet hydrographic vessels in the territorial waters of Latvia was permitted as well. This shows that the actual number of foreign troops in Latvia at the time was much higher.

In order to ensure provisions to the Soviet Army deployed in Latvia, the law “On Provisions to the Foreign Troops Deployed in the Territory of Latvia” and the regulations “On the Soviet Garrison Procurement Committee” stipulated that only the Minister of Agriculture or institutions or persons designated by him shall be allowed to sign contracts for the provision of the foreign troops deployed in the territory of Latvia. The Minister of Agriculture was entitled to impose a fine of up to 14 228 Eur to the guilty offender for violations of the law or regulations.

The Soviet Garrison Procurement Committee began its work on 8 November 1939. The very same day, the Minister of Agriculture, J. Birznieks, assigned the chairman of the procurement committee, H. Stolcs, the task of compiling a list of all properties occupied by the Soviet Union for the purpose of determining rent and calculating losses and expenses incurred by the state and municipal authorities and individuals.

On 30 January 1941, the Municipality Department of the Ministry of Interior of the Republic of Latvia submitted to the Procurement Committee a claim for compensation of losses incurred by the municipalities of Liepāja (34 592 Eur), Ventspils (132 769 Eur), Ezere district (18 931 Eur), Vaiņode district (74 561 Eur), Priekule district (9 383 Eur), Virga district (149 Eur), Bunka district (1 074 Eur), Durbe district (1 940 Eur), Cīrava district (1 522 Eur), and Ēdole district (5 241 Eur), totaling 280 167 Eur.

This list did not include all losses caused by the deployment of the troops as applications were submitted later by several municipalities and individuals to the Procurement Committee. For instance, the municipality of Ventspils stated in its application that the value of the airfield owned by the city, with an area of 55 ha, was 117 387 Eur, city pastures - 46 101 Eur, city forest - 58 906 Eur, and Mežgals building - 29 880 Eur, totalling 252 275 Eur.

The Procurement Committee was considered to be the only advocate of the interests of Latvian population in face of the Soviets at the time and also after the complete occupation of Latvia on 17 June 1940, as attested by applications from residents and

authorities, regarding various losses caused by the Soviet army. Latvia attempted to address these applications, but army representatives never came, and losses incurred were never reimbursed. The arbitrary actions of the Soviet garrisons is verified by the 8 November 1939 letter from the Chairman of the Procurement Committee to the Chief of Staff of the army, which stated that the Soviet units in Ventspils and other places outside Liepāja had not submitted their provision requirements to the appropriate Latvian army authority, but instead had taken these matters into their own hands.

The Procurement Committee compiled data on the turnover in the Soviet garrisons from November 1939 to July 1940. Goods delivered and work performed during this period amount to 7 778 725 Eur.

In early 1941, the Soviet Army had been deployed in 64 Latvian cities and populated areas, where it occupied 636 buildings. These data were compiled by the government of the LSSR on the basis of information received from the municipalities.

The Latvian army was incorporated into the troops of the separate Baltic Military District on the basis of a special decision of the Council of People’s Commissars of the LSSR of 22 August 1940. The Latvian army liquidation commission operated until 19 March 1941. The commission carefully recorded its activities. For instance, it was noted that 2450 wagons and 1680 truckloads with the belongings of the former Latvian army had been handed over to the Red Army, apart from those items that the Red army units had received on site. The commission took over the financial resources of the Latvian Ministry of Defence: 4 406 589 roubles, bank deposits: 439 285 roubles, and foreign currency 107 904 British pounds. The commission noted in one of its records that “Pribvo does not react to the activities of the commission and is doing everything their own way.” As verified by Directive Nr. 0/2/105022 of the People’s Commissar of Defence of the USSR of 17 August, the entire armament and property of the Latvian Army was incorporated into the armament of the special Baltic Military District. The value of the armament and property of the Latvian Army at the time amounted to 668 750 380 Eur. Upon negotiating the withdrawal of the former Soviet Army from Latvia, the Latvian delegation submitted to the Russian delegation a claim for compensation of the value of these arms and property in 1993. The Russian party was ready to discuss this matter, but after the replacement of the head of the Latvian delegation in the summer of 1993, Latvia no longer persisted in its claim.

Various measures were consistently implemented after the occupation for the purpose of militarizing the economic activities of Latvia: the factory *Tosmare* in Liepāja and the department of *A/S Vairogs* in Bolderāja shipyard had already been handed over to the People’s Commissariat of the Soviet Navy in August and September. Construction of three oil product warehouses for the needs of the Baltic navy began, and work was started on building a parallel track on the railroad Ostrava-Zemgale. The Council of People’s Commissars of the USSR decided on March 24 that quick construction

of airfields was to take place in Latvia. An area of 2027.6 ha was allocated for the construction of 14 airfields, and four artillery airfields were set to be established – *Gauja* in the Riga region: 22 153 ha; *Līksna* in Daugavpils region: 3900 ha; *Litene* in Madona region: 9888 ha; and in Liepāja: 1116 ha.

The expanded construction of military sites, such as airfields, railroads, and fuel warehouses in Latvia, indicated preparations for a future attack, rather than defence against Germany. The local population of Latvia was forced to take part in this work. The USSR failed to implement these intentions due to the German attack and onset of war activity in the Baltic States in June 1941.

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2. 270f-lc. and inspections of the dislocation sites of the former Army units.

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Environmental damage caused to Latvia by the soviet baltic navy and estimated losses

In 2008, I conducted an assessment of the environmental damage caused by the Soviet Baltic Navy and calculated the environmental losses within the framework of the study “Estimation of the damage caused in the Baltic Sea in the territory and economic zone of Latvia as a result of the activities of the former Soviet Army units and in the 1990s by the Russian Armed Forces units”. This paper is based on documented facts and results of pollution research.

Ministry of Maritime Affairs of the Republic of Latvia documents from 1993 show that the Soviet Baltic Navy had occupied the following waters:

- Riga port: pier No 117 (naval ship repair factory in Bolderāja, Esplanādes street 1); Daugavgrīva port piers No 1-9; 12-26; 28-31; 34-54;
- Liepāja port: Karosta piers 40-49; 56-65; 66-72; 29th pier in Tosmare; and
- Ventspils port: piers No 23 and 24 (were used for the purposes of the Soviet Navy Hydrographic department military unit No 9864).

Significant environmental damage, caused by the Soviet Baltic Navy, had already been identified in Riga and Liepāja ports in 1993, as verified by several reports made by the State Inspectorate for Protection of the Baltic Sea about the sinking of ships in Liepāja and Bolderāja naval ports and cases of water pollution.

Although all of the sunken vessels (see Ill. 1 and 2) have been raised and scrapped, the activities of the Soviet navy caused Liepāja naval port to be the most polluted port in the Baltic Sea in 2011. Based on the decision of the Helsinki Committee, it has been included in the priority list of the most polluted sites and requires treatment as soon as possible. The density of the contaminated sediment layer in 2010 was 2.2 metres, with the maximum density recorded at the intersection of Tosmare/Karosta channels. The total amount of sediment to be removed is approximately 690 000 m³. The sediment is contaminated by oil products (max. 16400 mg/kg) and heavy metals; therefore, it is prohibited to dispose of them at sea.

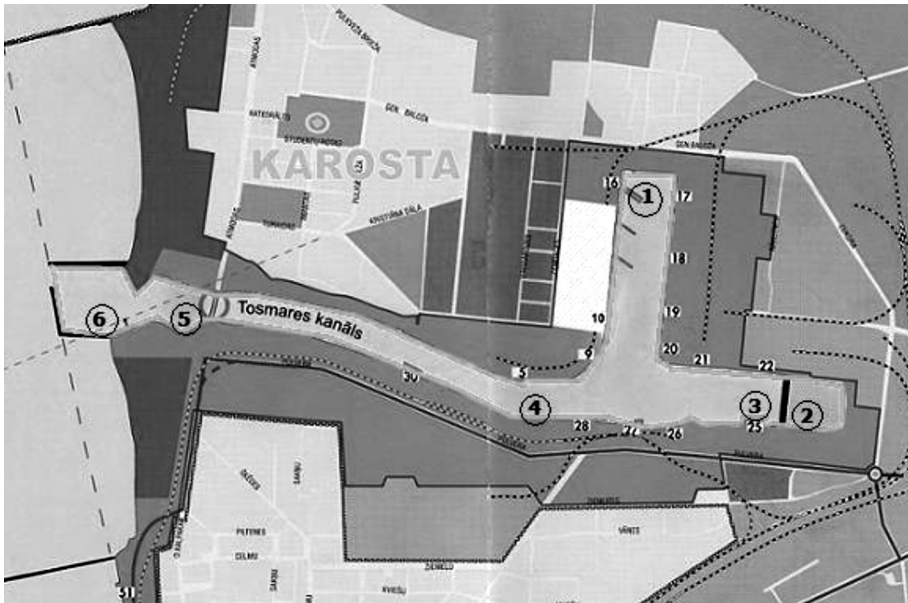
Illustration 1

Sunken Soviet Navy vessels in Tosmare channel, Liepāja port, January 1993



Illustration 2

Location of Soviet Navy sunken vessels in Liepāja Karosta, January 1993.



The channel inspection, conducted in 2010, resulted in finding and localizing large-scale items (wrecks, wood pile supports, floating piers, reinforced concrete anchors) and approximately 500 small items (ropes, cables, debris, batteries) as seen in Illustration 3. In addition, the channel is polluted not only with industrial waste but also with explosive items and unlabelled projectiles.

Based on the documented information and results of pollution research, the cost of dredging and disposal of contaminated sediment and removal of sunken ships from the ports of Riga and Liepājas Karosta is estimated at 20.3 million Ls (29 million EUR).

Illustration 3

Large-scale items, raised from Liepāja naval port in 2010



Projectiles buried in the Baltic sea

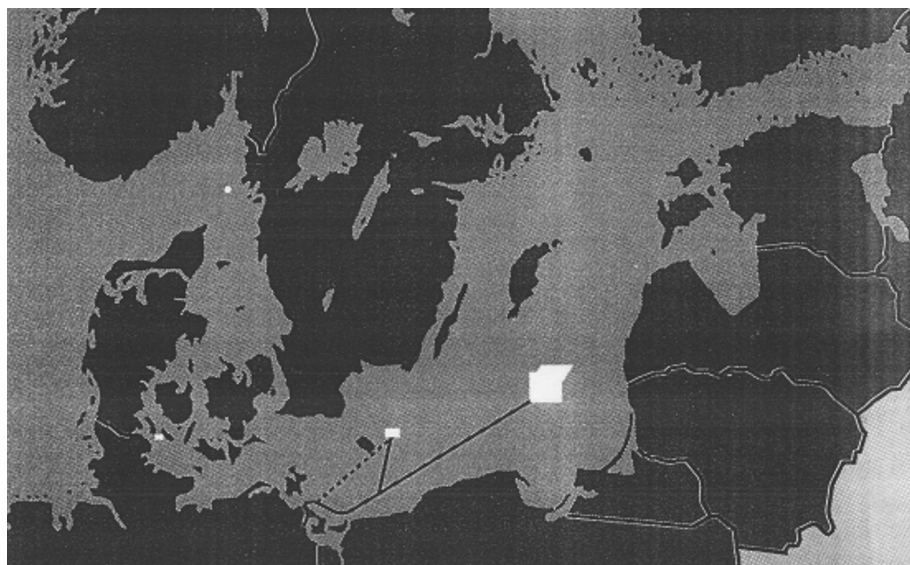
Documents from the Russian Ministry of Foreign Affairs archives show that the Soviet Union destroyed the German chemical weapon stock in accordance with the decisions of the Anti-Hitler Coalition Control Commission; therefore, this was not a unilateral decision by the USSR and the effects of this environmental damage cannot be directly attributed to the actions of the former Soviet Army. According to these documents, in 1948, the Soviet

Union sank 30 000 tons of German chemical weapons 70 nautical miles southwest of Liepāja at a depth of 100 - 105 m and in area of 4700 km² - 5000 tons and 14 nautical miles east of Krīstians Island, in the region of Bornholm Island at a depth of 100 - 105 m and in area of 1500 km².

After World War II, Soviet and German chemical munitions that had not been used in the war, were sunk in the Baltic Sea. These munitions were disposed of southeast of Gotland: the burial areas are 56°16,0'N 18°39,0'E, 56°16,0'N 18°51,0'E, 56°20,0'N 18°55,0'E, 56°20,0'N 19°31,0'E, 56°07,0'N 19°15,0'E, 55°56,0'N 18°39,0'E (see Illustration 4).

Illustration 4

Chemical weapon disposal landfills in the Baltic Sea



----- Transport routes

These substances were mainly sulphur mustards, adamsite, and chloroacetophenone (Table 1). The arsenic contained in the munitions is not classified as a chemical warfare agent.

Chemical warfare agents can be classified by their effect on a person:

- Sulphur mustard - skin irritant (mustard gas)
- Chloroacetophenone – has an irritating effect on sensory organs, sight/mucous membranes (tear gas)
- Adamsite - respiratory irritant (sneezing gas/suffocating gas).

Table 1

Types and amount of chemicals

Type	Sulphur mustard	Arsenic	Adamsite	roaceto-phenone	Other substances	Total
Aviation bombs						
Artillery projectiles						
Explosive bombs						
Mines						
Cartridge clip						
Smoke grenades						
Containers						
Barrels						
Total						

Condition of the buried chemicals in the marine environment

Chloroacetophenone has poor degradation properties and solubility in water, but its chemical composition allows for biodegradation. After the number of chlorine atoms in the substance has decreased, non-toxic end products are generated, which fully degrade in the marine environment.

Adamsite is almost insoluble in water or soluble in very small quantities. It hydrolyses very slowly and forms phenarsenic zinc oxide and hydrochloric acid. Taking into account its poor hydrolysis, it retains its chemical properties for a long time and is toxic. Even if it is fully degraded, inorganic arsenic is generated, which retains toxicity and does not degrade.

Sulphur mustard hydrolyses in seawater in two stages. The result is thiodiglycol and hydrochloric acid, the first of which is non-toxic, and the second is neutralized in the seawater. Degradation of sulphur mustard, depending on the water temperature, salinity, and other conditions, may take several weeks or even several years.

Viscous mustard gas, which has thickening additives, behaves differently in the marine environment. It looks and behaves differently from regular mustard gas. Approximately 20% of the mustard gas was treated with additives, such as polystyrene. The water-insoluble thickeners completely change the degradation performance of sulphur mustard in the marine environment by preserving it. Therefore, it takes a very long time to degrade, and pieces of sulphur mustard move along the seabed and are often washed onto the coast, for example, in the coastal area of Liepāja.

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Oļģerts Aleksāns

Research director, SIA *Venteko*

Methods and results of remediation of the historically polluted territory, former soviet air force base at Lielvārde

There was virtually no environmental quality control ensured at the sites managed by the Soviet Army and taken over by the Latvian National Armed Forces, so inspections and tests had to be conducted at all sites because of the potential risk of pollution. Geological tests carried out in one such site – the former Soviet Air Force airfield at Lielvārde – showed high level of historical pollution in the soil and interlayer water around the railroad platform next to the former oil product handling and storage terminal. Latvian legislation stipulates that in such cases, site remediation shall commence immediately.

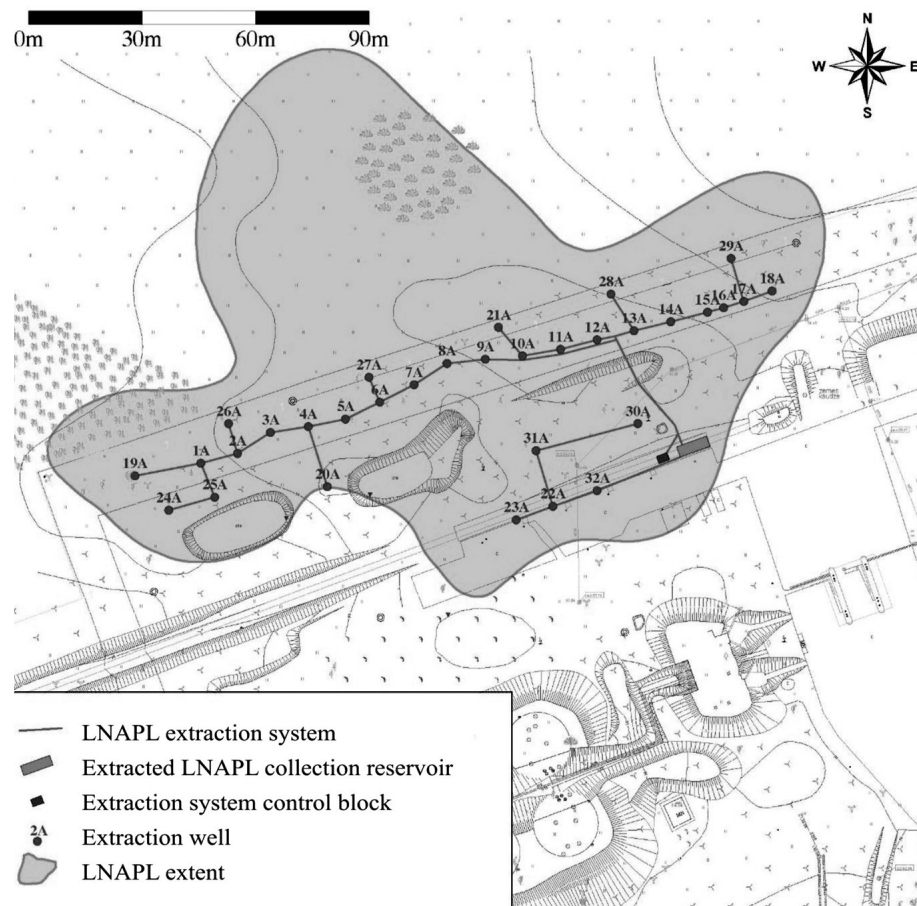
National Armed Forces authorities decided to entrust the elimination of the effects of pollution to experienced specialists from *SIA Venteko*. Information available on the pollution around the railroad platform next to the former oil product handling and storage terminal indicated the following results:

1. In some places in the upper part of the hydrogeological section, there is a 2-3 m thick layer of excavated or newly added soil. Pleistocene moraine sediments and silt, typical in Latvia, can be found at a depth of about 3-4 m, as well as sand of various fractions, which forms a relatively homogeneous, approximately 2-3 m thick interglacial layer throughout the area.
2. The oil product layer, which floats above the interlayer waters and in some places reaches a thickness of up to 3 m, meets the sand sediment, creating small conical formations in the moraine sediment mass. The total area, in which the aqueous phase liquid layer has been identified, occupies approximately 1,6 ha and its volume is approximately 1300-1400 m³.
3. Groundwater is heavily polluted, especially under the floating oil product layer. Laboratory tests established that composition exceeds the norms permitted by several times.
4. The volume of oil polluted soil is approximately 25 800 m³, and the polluted interlayer waters spread over a 5 ha large area.
5. The interlayer groundwater found in the territory is under pressure, which results in the exposure of the sand layer horizon in the well, in relation to the groundwater and the above oil product layer. Considerable level increase, up to 2 m, was observed in the wells.
6. The oil product layer that pollutes the soil and groundwater consists mostly of aviation fuel fractions.

Analysis of the data obtained in previous inspections indicates that the main remediation will be the elimination of the aqueous phase liquid layer. Based on long-term experience in remediation of such pollution, it was decided to eliminate the oil product layer by pump-and-treat method, using special *AutoPump* AP pneumatic separator pumps and a floating gravity pump, designed specifically for the pumping out of the aqueous phase oil products. Having assessed the pollution area and the thickness of the aqueous phase liquid layer, it was decided to install a pneumatic separator pump system with 32 wells (see Figure 1). The main line of pumping wells (Ill. 1) was positioned in the central part of the polluted area.

Figure 1

Pumping system in aqueous phase liquid layer



The pumping system installed at the polluted site, in 2007, operated independently and did not require human intervention, except when regular technical maintenance or inspection had to be carried out or the operation mode needed to be adjusted. The operation of the system yielded nearly completely separated oil products; the process could take place without interruptions throughout the year, in winter as well.

In order to avoid pumping excessive water masses to storage reservoirs, the pumps were adjusted for operation at such depths that allowed pumping out virtually pure jet fuel (petroleum). Pumping of the wells stopped when the oil product layer dropped to a few centimetres. After about an hour-long break, while the oil product layer regenerated and the operational depth of the device was adjusted, the pumps were restarted. Measurements of the groundwater level and the floating oil product layer were taken daily, using a special Interface Probe portable immiscible fluid contact surface detector. The obtained values allowed for adjustment of the pump immersion depth.

The dynamics of the ecological situation were recorded both before commencement of remediation work and during its performance. Measurements of the groundwater level and the floating oil product layer were taken on a regular basis; soil, groundwater, and surface water sample tests were conducted in the laboratory, as was the assessment of the pollution.

Almost pure oil products were pumped through the system at the initial stage of remediation, and the pump rate reached 3-4 m³/day. Later, as the pollution amount decreased, the capacity of the pumps dropped to approximately 0,5 m³/day.

During the 15-months this remediation took place, more than 400 m³ of nearly pure jet fuel were pumped out of the ground. Despite the fact that pumping was rather successful, there was still a floating oil product layer of approximately 900-1000 m³ in the ground. Remediation allowed for reduction of the average thickness of the floating oil product layer to approximately 1.2 m; compared to the initially recorded thickness, the layer was reduced by 1.1 m.

The completed remediation– elimination of the aqueous phase liquid layer – is just the first step in the improvement of the ecological state of the territory, which requires further work over the span of several years.

Illustration 1

Line of aqueous phase liquid layer pumping wells



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Resolution

Damage caused by the Soviet Union in the Baltic States

The conference participants from Estonia, Russia, Georgia, Latvia, Lithuania, Poland, and Germany have generally agreed on the following:

1. Although 20 years have passed since the collapse of the USSR, the consequences of the totalitarian Communist occupation regime have not been fully identified and evaluated.
2. The Soviet totalitarian occupation regime caused huge damage in each of these countries – to the economy, environment, demography, and other areas – resulting in backwardness of these countries compared to independent countries in Europe and worldwide.
3. The damage caused by the Soviet regime is still felt in each of these countries, both in the social sphere and also economics, requiring substantial additional funds from state and municipal budgets to manage and eliminate these consequences, thus delaying their development.
4. Russia, as the successor of the rights and obligations of the USSR, has the duty of apologizing for the crimes against humanity committed by the Soviet regime and must consider compensating the losses caused by the Soviet regime, as done by Germany and other colonial states.
5. The entire population of the Baltic States, the former USSR, and Europe needs accurate information on these facts in order to form a common understanding of the past, the present, and the joint future of our countries within a common European value domain, based on respect of human rights.
6. Work must be continued to implement the motto of the conference “True understanding of history – for a common future”.

Conference organizers:

Member of the European Parliament - **Inese Vaidere**,

LOIB member and Head of the Advisory Board

Chairman of the Occupation of Latvia Research Society (LOIB) - **Ruta Pazdere**

Occupation of Latvia Research Society (LOIB)

LOIB is a public non-profit organization, set up by the members of the Cabinet Commission for determining the number of the victims of the Soviet totalitarian Communist occupation regime and mass grave sites, which collects information on repressions and mass deportations and calculates the losses caused to the state of Latvia and its population. Research was suspended in 2009 because of the economic crisis. In order to continue this work and achieve the intended results, the Society decided to continue research on the social and economic situation in Latvia during the occupation periods, as much as possible. The damage caused by the occupation after 1940, as well as the negative effect, which the people of Latvia still feel today and will continue to feel for a long time to come, is being identified. Despite lack of state funding LOIB has succeeded in publishing several new books, organizing international conferences and informative events, and representing Latvia in events held by international organizations.

Currently there are 40 people working in the Society: researchers, experts, civil servants, politicians, and representatives of public organizations. The advisory board, which consists of 24 experts, acts as a structural unit of LOIB and is managed by professor Dr. oec. Inese Vaidere.

LOIB collaborates with the institutions from different EU Member States, the Latvian Academy of Sciences, ministries, the University of Latvia, the Central Statistical Bureau, the Museum of the Occupation of Latvia, and other organizations. In 2011, LOIB became one of the founding organizations of the Platform of European Memory and Conscience. At the moment, approximately 55 organizations from 19 countries are active in this platform with the purpose of creating a common understanding of totalitarianism and the meaning of Soviet and Nazi German occupations in European countries. The Society cooperates with researchers from 12 countries, who have also spoken at international conferences organized by LOIB.

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