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Cooperation models among countries**Baltic Population and Housing Census Seminars as cooperation model to study experiences and to develop future strategies for Censuses in Estonia, Latvia, and Lithuania****Note prepared by Statistics Estonia, Central Statistical Bureau of Latvia and Statistics Lithuania¹***Summary*

The history of the Baltic States Population and Housing Census (hereinafter referred to as ‘Census’) Seminars is first and foremost a history of cooperation between the statistical offices of Estonia, Latvia, and Lithuania. This article presents an overview of the various stages of collaboration and the central topics over the years.

The first Baltic Census Seminar took place in Lithuania in 1995, a few years after the restoration of independence in the Baltic States. Since then on, the seminars have been organized in Estonia, Latvia and, Lithuania.

The authors demonstrate the need, opportunities and the key role of Baltic States’ international cooperation of national statistical Institutes (hereinafter referred to as ‘NSIs’). The common goal of the NSIs of Baltic countries has always been to identify the hindering factors for the Censuses, learn from each other’s experience and find various solutions for all stages of Censuses.

¹ The present document was submitted late due to resources constraints.

I. Introduction

1. International cooperation is an integral part of the daily activities of NSIs of all three Baltic States, which allows us to meet our obligations as the European Union (hereinafter referred to as 'EU') Member States and contributes to protecting our interests in the international statistical system.
2. The Baltic Census Seminar has served as a crucial form of cooperation for the Baltic States countries after the restoration of independence, which has helped the NSIs to be aware of up-to-date statistics and meet the requirements for organizing the Census in line with the era-specific technological and methodological advancement. Additionally, such collaboration has provided different Census experts and institutions with an excellent way to highlight the significance of various Census-related aspects in the society. Let us mention the subjects related to the compilation of Census programmes or data changing over time such as address data.
3. Part of the document is dedicated to the beginning of Nordic–Baltic countries collaboration, when, starting from 1998, special Register Days were organized during the seminars, which were attended not only by statisticians but also by the representatives from the Nordic and Baltic countries' register authorities – to share good practices of using administrative data for Census needs and statistics purposes.
4. By participating in Census-related work, the NSIs of the Baltic States have been contributing to improving the methods of conducting the Censuses in time, meaning that, in addition to PHARE financial support, cooperation enables greater contribution to the improvement in the efficiency and effectiveness of the national Censuses.
5. Throughout decades, cooperation has been a subject for improvement of both technical skills and competences, listening to different parties, learning from good practices, etc. The common goal of the Baltic States has always been to identify obstacles to the Census, and find strategies that would contribute to methodological solutions when organizing Censuses.
6. Due censuses are conducting once per decade, and during this period there always are many changes in the world, society-at large and people's attitude to Census and statistics. Census teams in NSI's are changing as well; there are new staff who involved in Census project in various stages of Census or working at the same time with two or even three Censuses, for example: preparing data for users for a few Census, managing the recent Census and studied the possibilities of the future Census. The aim of Baltic Census seminars is to ensure the exchange of experience and information at the international level, focusing on issues which have to do with the development of Census projects. So, the seminars became an important Baltic or even wider international forum. Thus, the Baltic Census Seminars has become a place for providing Census-related supervision not only to organizers but also to the specialists of the enumeration network. Such supervision helps to better understand the resources allocated for the Census and become aware of the potential improvements to achieve the desired goals.
7. The history of the Baltic Census Seminars shows the discovery of a method that allows supporting and encouraging various Census organizers to learn from experience. The core idea of these meetings is to develop together, compare the experiences of involved countries, find solutions to potential problems or complex situations and lead for success.
8. The history of the Baltic Census Seminars is as follows:

Table 1
History of the Baltic Census Seminars

<i>Seminar No</i>	<i>Location</i>	<i>Date</i>	<i>Duration, days</i>
1	Palanga, Lithuania	12–16 June 1995	5
2	Jurmala, Latvia	19–23 August 1996	5
3	Tallinn, Estonia	8–12 September 1997	5
4	Trakai, Lithuania	7–11 September 1998	5
5	Jurmala, Latvia	23–27 August 1999	5
6	Tallinn, Estonia	10–12 October 2000	3
7	Kaunas, Lithuania	17–18 September 2001	2
8	Riga, Latvia	19–20 September 2002	2
9	Tallinn, Estonia	25–26 September 2003	2
10	Vilnius, Lithuania	18–19 May 2006	2
11	Riga, Latvia	27–28 September 2007	2
12	Tallinn, Estonia	12–13 November 2008	2
13	Vilnius, Lithuania	2–3 December 2009	2
14	Riga, Latvia	9–10 December 2010	2
15	Tallinn, Estonia	10–11 November 2011	2
16	Riga, Latvia	25–26 November 2012	2
17	Tallinn, Estonia	13–14 November 2013	2
18	Vilnius, Lithuania	17–18 December 2014	2
19	Riga, Latvia	30–31 March 2016	2
20	Tallinn, Estonia	26–27 April 2017	2

II. First steps of cooperation, preparation for the 2000 Census round² (1995–2003)

9. After the restoration of independence, the greatest challenge for the Baltic States in demographic statistics was the assessment of the quality of data on population in the countries and regions. This was possible only by carrying out censuses.

10. With the aim of ensuring high quality of the censuses and their compliance with the recommendations of the United Nations, NSIs of Estonia, Latvia and Lithuania analysed the experience gained from the implementation of censuses in the 1920s. Experience of the Soviet censuses was also analyzed and critically assessed.

11. Successful work required closer cooperation of the Baltic States' NSIs, Eurostat and other international organizations. In the 1990s, after the restoration of independence in Estonia, Latvia and Lithuania, in the context of statistics, meetings of the Baltic States' NSIs managers and specialists were organized. Priorities of the demographic statistics reform were highlighted during these meetings. The highest priority was the compliance of the total population and housing censuses with the United Nations recommendations for the 2000 censuses.

12. On the initiative of the Baltic and Nordic countries, business relationship were then established with the Nordic countries' NSIs, Eurostat, International Labour Organization, World Bank and Nordic Council of Ministers. European statistics experts started providing technical assistance for Estonia, Latvia and Lithuania. Tapjo Leppo, coordinator of the work in the field of statistics in the Baltic States, should be mentioned. He coordinated the cooperation of the statistical offices of the Baltic and Nordic countries. Subsequently, the

² In Estonia and Latvia censuses were carried out in 2000, in Lithuania – in 2001.

Baltic States NSIs experts were appointed to the population censuses. Goran Strengell, great expert from Finland, should also be mentioned. Situation assessment was carried out, and proposals regarding the 2000 censuses programmes, organization, technologies, data processing and preparation for dissemination were prepared.

13. The cooperation expanded; the key issues emerged; new forms of cooperation were sought, one of which was organizing a seminar in Lithuania on the initiative of Statistics Lithuania with participation of census experts from the Western Europe. The technical assistance and the first seminars were financed under the PHARE programmes, Nordic Council, the Ministry of Foreign Affairs of Finland, the UN Population Fund development programmes, state budgets of Baltic countries and NSIs.

14. During the first seminar, some basic knowledge was obtained as regards the new Census, cost-efficiency, data quality, concepts, and comparability mainly based on Nordic countries experiences (with participation of experts from Denmark, Finland, Norway and Sweden). All three Baltic States explained where they were on the way to having basic registers that could be used in the future for Censuses and statistics purposes as well.

15. The first seminar was successful. It was decided to organize such Baltic NSI meetings every year, with the participation of experts from other countries, by also inviting representatives of other national authorities of Estonia, Latvia and Lithuania responsible for preparation of administrative data and maps, main users of census data, representatives of science society.

16. The second seminar (1996) included the following items: pilot Census and other preparatory work (with participation of experts from Finland and Sweden). It was clear that at that time there would be traditional Censuses in the all Baltic countries, so there was a time dedicated to obtaining knowledge and advice from experts on how to organize the fieldwork for data collection and data processing. The Baltic States provided information about the work done on the studies of the possibilities for usage of population registers for future Censuses and ongoing work to prepare for the 2000 Census round, including preparation of the Census Programme and budget issues.

17. During the 1997 Baltic Census Seminar, the main items discussed with experts from Finland (Goran Strengell, Rolf Ahlfors) Ireland (Aidan Punch) and Sweden (Lennart Nordstrom) were data processing, draft Census questionnaires of all three Baltic States, organization and management of the fieldwork, data capture and coding, use of maps, and data confidentiality issues.

18. The fourth seminar with experts from Belarus, Finland, the Russian Federation, Sweden, and the United Kingdom was dedicated to the following items: contents of the Census programme, including UNECE recommendations, tabulation programme, complicated Census concepts such as family, household, and economic activity, management of fieldwork and post-enumeration survey, Census coverage and quality assessment, etc. The main conclusions were that Census questionnaires should be optimised, further work on the design of Census questionnaires was needed, scanning rules and dictionaries should be improved, etc. Among other issues, there were discussions about the experience of the Nordic countries in the field of using registers for the Census purposes. One day was dedicated to Population Registers and other administrative data.

19. After this Census seminar, representatives from Finnish Population Registers Centre of Finland decided to organize the other important events to emphasize the importance of Registers in the development of information society. These events (conferences) have been held since 2000, and they help to ensure collaboration among Baltic and Scandinavian institutions, (later on - other European countries) which develop and maintain registers. The first conference in 2000 and the fourth in 2004 were held in Tallinn, Estonia, the second in 2001 and 2006 were organized in Vilnius, and the 2003 and 2007 took place in Riga,

Latvia. Representatives of the various counties had been able to share experiences and best practice in relation to government registers, national information systems and the development of public services.

20. The 1999 Baltic Census Seminar was the last one before the 2000 Census round. Therefore, a discussion, led by experts from Finland and Sweden, included the last overview on the preparation for the Census, data dissemination and quality control.

21. The following seminar was organized in 2000 after Censuses in Estonia and Latvia. Discussions, led by experts from Finland and Sweden, were about Census results in the two Baltic States, usage of Geographical Information System (hereinafter referred to as 'GIS') technologies for census mapping, Census data processing software, quality estimation of Census results, usage of PC-AXIS for the dissemination of Census results, publicity campaign. Lithuanian Census specialists obtained some useful information, which could be used in 2001 Census in their country, avoiding some mistakes encountered and to use good practice from the colleagues.

22. The 2001 Baltic Census Seminar was special since in all three Baltic States the most significant and biggest part of work had already been done, that is, the population had been interviewed, the questionnaires had been filled in, results had been obtained, and data processing in the countries' NSIs was ongoing at the moment. It was the first Census in Latvia since the restoration of its independence. Its goal was to obtain comprehensive and objective information on the number of permanent population, composition, employment, sources of livelihood, housing conditions of the population, as well as other indicators included in the Census Programme, in each city and municipality in a situation when drastic changes in the economic system, permanent population structure were taking place. The discussion, led by experts from Finland and Sweden, was about data and metadata dissemination, GIS usage. For the first time it was decided to publish a common Census publication of all three Baltic States.

23. The 2002 Baltic Census Seminar was mainly dedicated to the dissemination of Census results and future plans. It was decided that cooperation among all three countries should be continued in the form of seminars, conferences, and joint publications.

24. The seminar in 2003 finalised the first stage of Baltic States cooperation. A discussion with experts from Finland and Sweden covered the analysis of the quality of the Population Register and minimum requirements for a register-based Census as introduced by Eurostat.

25. The 2000 round of Censuses in Baltic countries were the first Censuses after all three Baltic States regained independence. Latvia had combined Census, but Estonia and Lithuania had traditional Census. PHARE-funded support to the organization of the Baltic Census Seminars was crucial to obtain necessary knowledge for the successful preparation, organization of the Census, and dissemination of Census results in accordance with high quality requirements for European statistics. It was the first step in the use of administrative data sources for Census needs. For the first time a common Census publication of all three Baltic States was prepared and published. NSIs of the Baltic States were very grateful to the United Nations Population Fund (UNFPA) for the kind assistance and financial support expressed to the offices regarding the preparation and printing of the publication and understanding of the importance of Censuses 2000 round in the Baltic States. The joint publication was highly appreciated by the main Census data users in all three countries.

III. Second stage of cooperation, 2011 Censuses in the Baltic States (2006–2011)

26. The second stage of cooperation started with the 2006 Baltic Census Seminar. Lithuania was ready to use several registers. Country's national experts stressed the need for strong logical check of Census data. Latvia considered the possibility of organising a register-based Census as far back as 2010. The Latvian Census team maintained close collaboration with Statistics Finland and hoped to learn from them a lot. Also, they declared that they did not accept imputation but hoped to use surveys as an additional source of information.

27. The main goal of the 2007 Baltic Census Seminar was exchange of information about preparation for the 2011 Census – to get acquainted with the experience of Ireland on the basis of the Irish Census 2006 and to discuss some methodological issues regarding the Census. All three Baltic States stressed that they were planning to have a combined Census, where the main data source would still be a traditional Census but administrative data sources would be used, too. Several problems with administrative data availability and quality were mentioned; however, the goal was to improve the situation before the 2011 Census.

28. During the 2008 Baltic Census Seminar, organisational issues were discussed with experts from Finland, Luxembourg and Norway, and attention was focussed on the use of administrative data for Census needs. Estonian colleagues informed about the recent changes in the society (birth rate, migration, etc.) that influenced the usage of Census data and the role of the Census. There was a discussion about how to guarantee high quality of outcomes of the 2011 Census and a presentation and discussion on the use of GIS for the dissemination of Census results.

29. For the Baltic Census Seminar in 2009, experts from Luxembourg, Poland, and Spain were invited to share their experiences with the Baltic countries Census experts during discussions about the legislative and financial base for the 2011 Census, Census mapping, IT issues, pilot Censuses, enumeration of hard-to-count population groups, organisation of a publicity campaign and issues linked with the preparation of the Census Programme.

30. The 2010 Baltic Census Seminar was organised just before the 2011 Census. The main results of pilot Censuses, principal issues linked with the preparation for CAWI (computer-assisted web interviewing) and CAPI (computer-assisted personal interviewing) (questionnaires, technology, etc.), publicity campaign, organisation of the Census, communication with Census partners, fieldwork, quality report, and dissemination of Census results (including hypercubes) were discussed.

31. Statistics Estonia hosted the 2011 Baltic Census Seminar even though they were busy preparing for the 2011 Census (the censuses were carried out in spring 2011 in Latvia and Lithuania, and the census reference date in Estonia was the 31th of December). Latvia and Lithuania shared their experience as the 2011 Census had already been finished in both countries. Part of the information provided on the main lessons learned during the organisation of the Census was very useful for Estonian colleagues to avoid some mistakes and problems faced by their southern neighbours. The critical issue of undercoverage and ways of dealing with it was discussed by experts. The discussion continued about quality reports, emigration, population accounts and plans for data dissemination. Part of the seminar was dedicated to the initial discussion regarding plans to have a register-based Census in 2021.

32. The second stage of Baltic cooperation gave a positive outcome moving from a traditional to a combined Census. Several new methodologies, technologies, and

organisational issues were introduced, which were afterwards used in other areas of social statistics. Cooperation provided a possibility to learn from each other, to organise closer cooperation between seminars – to find quick solutions for problems occurring during the preparation for and organisation of the Census.

33. An important outcome of this cooperation was the second common Baltic States Censuses data publication, which was prepared by Census experts electronically on all three countries' NSIs' websites.

IV. Current (third) stage of cooperation, preparation for a register-based 2021 Censuses (2012–2017)

34. After the 2011 Census results were ready for publication and disseminated, countries have been making more active steps towards preparation for a register-based 2021 Census.

35. The 16th Baltic Census Seminar was organised in parallel with bilateral consultations between the CSB of Latvia and Statistics Netherlands, which provided a possibility to have a wider audience for the Dutch expert Eric Schulte Nordholt explaining the main issues concerning register-based Censuses and the use of administrative data sources for statistical needs. Participants of the seminar were familiarised with the practice of the Dutch Virtual Census based on registers and existing sample surveys, the history of the Dutch censuses, data sources, combining sources, including micro-linkage and micro-integration, conditions facilitating the use of administrative sources. Besides, some issues concerning the 2011 Census data dissemination were discussed.

36. The 17th Baltic Census Seminar was organised back-to-back with the 25th Conference of the Estonian Statistical Society "Demographic processes in the Baltic Sea region in the 21st century". The Conference featured a discussion about the 2011 Census results. The seminar was partially dedicated to the lessons learned during the 2011 Census. The Conference featured a discussion on common problems of confidentiality in data integration (experts from the Netherlands and Slovenia). It was a good input to the preparation for a register-based Census.

37. The main issues discussed during the 18th Baltic Census Seminar concerned administrative data sources – data availability and quality in the Population Register, Real Estate Cadastre, and Address Register. Some representatives from institutions responsible for the registers took part in the seminar. Plans for the 2021 Censuses in Estonia, Latvia, and Lithuania were discussed in detail.

38. Participants of the 19th Baltic Census Seminar were informed about the current stage of preparatory work for the 2021 Census in Estonia, Latvia, and Lithuania. The seminar featured a discussion about the extraction of administrative data, data quality checks: building of data warehouse in Estonia and Latvia, participation of Latvia and Lithuania in Eurostat VIP.ADMIN grant projects, improvement of the Address Register, definition of the place of usual residence, 2015 Micro-Census in Latvia, household and family formation. Participants were informed about the work of the Eurostat's Task Force on future Censuses. An initial discussion about Censuses after 2021 was organised.

39. The 20th Baltic Census Seminar was held with participation of Census experts from Israel and the Netherlands. As usual, the seminar started with information about the current stage of preparatory work for the 2021 Census in Estonia, Latvia, and Lithuania, followed by information of the situation in Israel and the Netherlands. The next issues discussed were extraction of administrative data, data quality and data confidentiality. The issue of indices as a methodology for solving different demographic problems was presented by Estonia. Information about ongoing Eurostat VIP.ADMIN grant projects was provided.

Information about a feasibility study on the definition of usual residence and Micro-Census results in Latvia, ESSnet on quality of multisource statistics was provided. A discussion on issues concerning household and family formation, educational attainment and place usual residence was organised. Participants were informed about the work of the Eurostat's Task Force on future Censuses and a discussion on Censuses after 2021 was organised.

V. Conclusions

40. Thanks to Baltic–Nordic countries cooperation, the NSIs of the Baltic States tackled with the first tremendous challenge for the new EU oriented countries: all three countries carried out Censuses at the beginning of the new millennium (2000 Census round), including preparation of Census legislation, organisation of fieldwork, processing and dissemination of Census results in accordance with high international standards. It is also important to mention very high standards of technical assistance from the Nordic countries and the EU via PHARE and other bilateral projects.

41. At the turn of the new millennium, the Baltic States started discussing ways of developing new methods and technologies based on the UNECE recommendations and EU regulations – for a more effective process of the 2011 Census.

42. Now, preparing for the 2021 Census, all three Baltic States have a goal to organise a register-based Census, which poses new challenges and requires new knowledge and developments.

43. Archived seminars documents and materials are very versatile, and the topical issue of register data has been presented based on the needs arising from different Census rounds, compiled by statisticians of various countries and experts regarding administrative registers.

44. Documents of the Baltic Census Seminars provide necessary information on improving accuracy, organisation, data quality, and other issues when preparing for the Censuses. The central value of this material lies in the comprehensive overview of information technology advancement in Census-related statistics.

45. The discussion of register-based Censuses has been topical in view of the need to start preparations for the Censuses. The three countries specified new tasks to be solved:

- To ensure the substantial/legal/technical feasibility of a register-based Censuses;
- To create methods for determining the Census population, i.e. those to be enumerated;
- To create a framework for quality improvement that would ensure the coverage, accuracy, and regular updates of register data.

46. Bottlenecks in organising the Censuses have been similar throughout 1995–2017. These include:

- Quality of Census data;
- Missing data;
- Ensuring IT compatibility of registers (identifiers, classifiers);
- Address data;
- Legal framework;
- Data collection technologies;
- Questionnaires and Census programme, etc.

47. Considering that Estonia, Latvia and Lithuania are preparing for the next register-based Census round, it was interesting to see the progress of discussing that question at the Baltic Census Seminars. It appears that this issue was topical already at the first seminar, held in 1995. The use of registers for the Census has been subject to long-term discussions about Censuses preparations.

48. The Baltic States have always been up against high Censuses costs. In terms of registers, it is imperative to find opportunities to cut the costs; therefore, it is crucial to exchange register-related experience with the Nordic countries. We have been working in close cooperation, especially when preparing for the 2000 round Census.

49. While preparing for the Censuses, attempts have been made to develop a sustainable information infrastructure for NSIs by using available budgetary means, as seen from the reviews of data collection and data processing systems prepared in 2000–2012. Information technology underwent rapid advancement in 1995–2011. Platforms and systems introduced in 1998 were no longer efficiently usable for the recent 2011 Census in the Baltic States; therefore, it was necessary to create a Census infrastructure from scratch.

50. After the publication of data in 2004, the Baltic Census Seminar was put on hold for a couple of years. The register issue came up again in 2007, when systematic activities towards quality assessment of main state registers could be observed.

51. As for the seminars which took place in 1995–2015, there were two main approaches to choose from in terms of using registers for Census purposes. The pessimistic approach, prevailing in the Baltic States, emphasises the lack of data quality and incompleteness of information available in registers, while the optimistic approach, taken by the Nordic countries, highlights the opportunity to cut the Census costs by using modern IT tools, integrating data from different registers, and reorganising currently dispersed data processing tasks in various institutions responsible for administrative data.

52. Those representing the pessimistic approach place an emphasis on the issue of responsibility for the quality of Census results at the EU and national levels, legislative gaps, problems with modernising hardware and software platforms (including databases and systems) for statistical purposes. Nevertheless, they are ready and willing to continue closer cooperation with various offices and agencies keeping administrative data in order to study register data and find ways to improve the situation.

53. The issue of register-based Census became topical again when choosing the Census method for 2021 Censuses and the reviews of the first steps towards using a register-based Census method were already presented at the 2017 Seminar.

54. Since the 2017 Baltic Census Seminar, it has become obvious that all three Baltic States are moving towards preparing for a register-based Census, and the continued close cooperation not only among the Baltic NSIs but also involving colleagues from the European countries with register-based Census culture is crucial for this purpose.

55. Representation of experts from Baltic States in various Task Forces (TF) of Eurostat and UN ECE is very important as for preparation to 2021 Census as for future of Censuses afterwards. There is a new way of co-operation started. It is organized in such a way that opinion of all three Baltic States is given during TF meetings as expert, representing one of the countries, is sending working documents to other colleagues for opinion and comments. Results are explained during Baltic Census Seminars, too.