



EUROPEAN
STATISTICAL
SYSTEM

PEER REVIEW REPORT

ON COMPLIANCE WITH THE EUROPEAN STATISTICS CODE OF
PRACTICE AND FURTHER IMPROVEMENT AND DEVELOPMENT OF THE
NATIONAL STATISTICAL SYSTEM

ESTONIA

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1. EXECUTIVE SUMMARY

Estonia has high ambitions for digitalisation and e-government. An example of this is the pursuit of the 'once-only' principle, according to which individuals and enterprises should have to submit the same information only once when dealing with government entities. The demanding objectives in the digital field and for dataflows are an important backdrop to developments in the statistical field, where ambitions are also high, as reflected for example in Statistics Estonia's vision 'to become the most effective and innovative producer of reliable and user-friendly statistics in Europe'. Ambitions are built on foundations that are already very strong.

The law governing official statistics is in many respects state-of-the-art in both underlining the professional independence of institutions producing official statistics and granting them widespread access to data, including privately held data. It provides Statistics Estonia, together with Eesti Pank (Bank of Estonia), as the only producers of official statistics, with an important role in public sector data governance.

Strong cooperation links exist between Statistics Estonia and producers of both official and other statistics as well as administrative data providers, in all cases based on formalised agreements. In addition, there are significant links between Statistics Estonia and academia, with useful inputs and services flowing in both directions, including via researcher access to microdata, subject to strict data protection. Bilateral relations with ministries as main users of statistics have also been strengthened.

Statistics Estonia already uses administrative registers in statistics production, with the upcoming population and housing census being essentially register-based and hence providing an example. It has built the foundations for intensifying the use of administrative data, together with holders of such data, by creating a systematic inventory of administrative datasets that provides overview, clarity and transparency on their features with a view to future cooperation, including towards agreement on standards and classifications.

The increased role of commissioned work as part of a concerted effort to become a statistical service provider has strengthened the focus on users and awareness of their needs, while also creating synergies with mainstream statistical work and, at the same time, strengthening the resource base of Statistics Estonia.

The internal organisation of Statistics Estonia has been increasingly structured along process lines, with clear procedures in place. There is also a clear commitment by Statistics Estonia on quality issues, tools, methods, and related documentation as part of a comprehensive self-assessment of statistical procedures and products.

Considerable work has been undertaken by Statistics Estonia in the area of experimental statistics (through using data linking, new data sources, new methods, and modern visualisation techniques), with lessons learned in primarily analytical explorations that will be useful in future statistical production.

Statistics Estonia has made great strides in its communication and dissemination policies, with sophisticated targeting of individual user groups through a range of different communication channels.

Finally, but very importantly, Statistics Estonia has a very engaged, dynamic, and highly educated staff which, due to dedicated efforts and also the highly dynamic and purposeful workplace in general, is demonstrating rising satisfaction with all measured aspects of job satisfaction.

The peer review team has found it useful to present its recommendations under four main headings, indicated below. Given the observed general compliance with the European Statistics Code of Practice (ES CoP), 18 out of 19 recommendations are focused on improvements going beyond compliance with the ES CoP, with only one recommendation (the last under the first heading) addressing a compliance issue.

RECOMMENDATIONS

I. Strengthening the system of official statistics including perceptions of its independence

An important aspect of strengthening the system is to increase the budgetary funding of Statistics Estonia, which has not kept pace with the institution's activities. This implies a risk of having to reduce national statistical activities or could even be a threat to the quality of output. Some contributions for resolving what the Statistical Council, an important independent advisory body on both statistics and data governance, has described as under-funding of Statistics Estonia could come from internal efficiencies, linked for example to greater reliance on administrative data and from additional revenue sought by Statistics Estonia as a statistical service provider.

To improve beyond compliance with the ES CoP, the peer review team recommends:

1. The Government should increase budgetary funding for Statistics Estonia in the light of new activities and to avoid the institution having to cut back on its work programme and on output quality – even though some relief could also come from internal efficiencies and additional resources outside the main budget. (Improvement related: ES CoP, Indicator 3.1)

Salary levels at Statistics Estonia are generally low, and for some categories of staff, notably those with high-level skills in analysis and data science, recruitment and retention pose serious challenges. Hence, salary levels should be adjusted for relevant categories of staff, provided there is budgetary room to do so.

To improve beyond compliance with the ES CoP, the peer review team recommends:

2. Contingent on available funding, Statistics Estonia should adjust salary levels for staff categories that are difficult to attract and retain. (Improvement related: ES CoP, Indicators 3.1 and 7.5)

In a situation where important whole-of-government efforts are undertaken in the area of data governance, it is particularly important that both the Statistical Council and Statistics Estonia are seen as having no vested interests, which could call for some reflection on institutional structures. Hence, the roles of Statistics Estonia as service provider to the Statistical Council and as a member of the Council may call for some reconsideration. The combination of the two roles could conceivably already have detracted from the Council's authority when criticising the funding of Statistics Estonia.

To improve beyond compliance with the ES CoP, the peer review team recommends:

3. The Government should consider ways to enhance the reputation of the Statistical Council in terms of its independence e.g. by reconsidering its membership and responsibilities for its servicing. (Improvement related: ES CoP, Principle 1)

To further underline the professional independence of Statistics Estonia, perceptions of which have not uniformly come out as high in some surveys, it may be worth considering whether the list of statistical activities which form part of the official statistics programme is best adopted by the government as now, or at a distance from the political level, for example, by devolving it to the Statistical Council.

To improve beyond compliance with the ES CoP, the peer review team recommends:

4. The Government should consider ways of setting up the programme for official statistics that involve less direct influence from the political level e.g. by devolving responsibility to the Statistics Council. (Improvement related: ES CoP, Principle 1)

With a view both to strengthening perceptions of independence and to take on board the new responsibilities of Statistics Estonia in whole-of-government data governance, some reflections on the administrative anchoring of Statistics Estonia in the Ministry of Finance could also be called for.

To improve beyond compliance with the ES CoP, the peer review team recommends:

5. The Government, jointly with Statistics Estonia, should reflect on the administrative anchoring of Statistics Estonia in the light of potential effects on perceptions of professional independence and consider its role in whole-of-government data governance. (Improvement related: ES CoP, Principle 1)

There is a need to correct the situation of statistics produced by the National Institute of Health Development (NIHD). Some of these are submitted as European statistics without belonging to the body of official statistics and hence without the requisite quality assurance. Different institutional options exist to correct this anomaly, but the situation has to be addressed.

To comply with the ES CoP, the peer review team recommends:

6. The Government should take action to ensure that statistics from the NIHD are included as part of official statistics, to ensure conformity with the ES CoP and to avoid duplication of work. (Compliance-relevant: ES CoP, Indicators 1bis.1 and 1bis.2 but also a vast number of other indicators on which little is known for statistics produced by the NIHD)

II. Making the most of the evolving data landscape

The recommendations under the second theme also relate to the ongoing modernisation of data governance and the ability of Statistics Estonia to base its production increasingly on administrative and other non-survey data, including those privately held.

As part of its efforts in data governance, Statistics Estonia is well-advanced in creating a tool to monitor the quality of individual administrative datasets both transparently and continuously. Three recommendations build on this important achievement. First, it is the right time for Statistics Estonia to develop a strategy for future use of administrative datasets driven, importantly, by its own statistical needs.

To improve beyond compliance with the ES CoP, the peer review team recommends:

7. Statistics Estonia should continue to prepare the ground for increased use of administrative data sources in statistics production, including by pushing forward with the initiative on data governance. In this regard, Statistics Estonia should build on its work together with administrative data owners to increase the transparency on the quality of administrative data to develop a vision and a prioritisation for use of these data. (Improvement related: ES CoP, Indicators 2.2 and 10.3)

Based on the work to create transparency on administrative datasets, it is important to provide impetus to efforts by data owners to address shortcomings in their datasets, e.g. on quality and standards used. All institutions involved need to prioritise the common cause of improving data quality and creating an environment that is conducive to such efforts.

To improve beyond compliance with the ES CoP, the peer review team recommends:

8. Statistics Estonia, together with relevant institutions, should jointly build on increased transparency on the quality of administrative datasets and put in place mechanisms, such as peer reviews, that could add further impetus to efforts to boost data quality, e.g. in terms of convergent standards and classifications. (Improvement related: ES CoP, Indicators 8.7 and 10.3)

As a contribution to creating an environment where all relevant institutions make strong efforts to improve the quality of administrative datasets, the government could usefully clarify the responsibilities of individual actors in this field.

To improve beyond compliance with the ES CoP, the peer review team recommends:

9. To help strengthen the quality of administrative datasets, the Government could clarify the definition of different actors' responsibilities in data governance. (Improvement related: ES CoP, Indicators 8.7 and 10.3)

The Official Statistics Act gives widespread access to privately held data to official statistics producers in recognition of the increasing importance of such datasets. In this regard, the Government should ensure, for the common good of statistics, that this right of access is not contravened by sectoral legislation, as seems to be the case in some sectors.

To improve beyond compliance with the ES CoP, the peer review team recommends:

10. The Government should ensure that sectoral laws do not impinge on the access rights of official statistics producers to privately held data in particular sectors, such as mobile network operators and credit institutions. (Improvement related: ES CoP, Indicators 2.4 and 9.4)

Statistics Estonia has undertaken a range of laudable activities under the label of experimental statistics. These have been useful for the analytical insights they have created, the human capital development they have engendered, and the added attractiveness of Statistics Estonia they have generated for other stakeholders and potential recruits. Going forward, the pursuit of these activities should focus on contributing to statistical production and should eventually be embedded in a more strategic approach.

To improve beyond compliance with the ES CoP, the peer review team recommends:

11. Statistics Estonia should pursue its efforts on experimental statistics, with a focus on their exploitation in regular statistics production. In due course, experiments with new data sources should be embedded in a more strategic approach. (Improvement related: ES CoP, Indicator 11.1)

III. Further strengthening cooperation with stakeholders

Relations with academia are always important but perhaps particularly so during a moment of rapid development driven by an evolving data landscape. Statistics Estonia has good relations with academia but, perhaps not unsurprisingly in a small country, these have tended to be based on personal contacts. To ensure continuity and homogeneity of approach across subject areas, a greater degree of institutionalisation of these relations may be called for.

To improve beyond compliance with the ES CoP, the peer review team recommends:

12. Statistics Estonia needs to build on the generally good, albeit unequal and often person dependent, relations with academia to both achieve a higher degree of relations with institutions and a strengthening in areas where such relations are currently relatively weak. (Improvement related: ES CoP, Indicator 7.7)

Statistics Estonia should also take action to strengthen the user-friendliness of researcher access to microdata, which is an increasingly important basis for research and hence, societal progress. While protection of data is paramount, solutions exist in other countries that provide faster access to data and allow access on more convenient terms such as, for example, through general use of remote access solutions.

To improve beyond compliance with the ES CoP, the peer review team recommends:

13. Statistics Estonia should take initiatives to increase the user-friendliness of researcher access to microdata. (Improvement related: ES CoP, Indicator 15.4)

Statistics Estonia has acted to boost its delivery of services against payments and so far the uptake appears to have been good. This is an activity that should be developed further. If there is an outside willingness to pay the associated costs of Statistics Estonia, by definition society's welfare is enhanced. Statistics Estonia should focus in particular on demands from government ministries, as services against payment may allow fulfilling such demands without putting further pressure on the general budget allocation.

To improve beyond compliance with the ES CoP, the peer review team recommends:

14. Statistics Estonia should build on the success of the Eight Statistical Services programme to expand the delivery of statistical services against payment. The purpose would be, not least, to address demand from government ministries. (Improvement related: ES CoP, Indicator 11.1)

Government ministries already make a significant input to the Statistics Estonia's official five-year work programme, but there are many other categories of users outside the government. In this context, a democratisation of influence could be achieved by consulting stakeholders more widely on the programme, including both the general public and academia.

To improve beyond compliance with the ES CoP, the peer review team recommends:

15. Statistics Estonia could usefully consult stakeholders more widely in the preparation of its official five-year work programme, allowing more input, e.g. from the general public and academia. (Improvement related: ES CoP, Indicator 11.1)

Statistics Estonia has strengthened its bilateral consultations with ministries, and it would be useful to build on these consultations to obtain an early sense of upcoming policy issues and thus be able to anticipate future demands on the work programme. Such early knowledge of potential future demands will allow Statistics Estonia to better consider and plan for responding to the demands.

To improve beyond compliance with the ES CoP, the peer review team recommends:

16. Statistics Estonia should make use of its increased interactions with ministries to obtain an early sense of upcoming policy needs for statistics to help anticipate future demands on the official statistics programme. (Improvement related: ES CoP, Indicator 11.1)

IV. Strengthening internal processes and information flows

Statistics Estonia engages in both light annual quality assessments of its statistics and deeper assessments when changes are made to statistics or problems emerge. However, the process does not ensure that all statistics are regularly covered by in-depth reviews, and action to achieve this would be useful. It should involve input from persons outside of the individual production processes, and if feasible from outside the institution, in order to provide an external perspective.

To improve beyond compliance with the ES CoP, the peer review team recommends:

17. Statistics Estonia should ensure that in-depth quality assessments cover all statistics at regular intervals, hence giving a view external to the production process on individual statistics, and possibly including input by experts from outside the institution e.g. academia and other National Statistical Institutes. (Improvement related: ES CoP, Indicator 4.4)

Survey data collection has relied on software which is ageing and inflexible and efforts are being undertaken to develop new, more flexible tools. This activity is important and the institution needs to press on with it. Likewise, efforts to standardise data processing need to continue and should be accompanied by intelligent automation, where faulty observations that do not significantly affect statistics can be edited by machine, while human effort is focused on observations that matter.

To improve beyond compliance with the ES CoP, the peer review team recommends:

18. Statistics Estonia needs to continue efforts to standardise and automate data processing and to update software and questionnaires used in data collection. (Improvement related: ES CoP, Indicators 9.3, 10.2 and 10.4)

Statistics Estonia has undertaken substantial analytical activity under the label of experimental statistics. It is vital that the results of these and other analytical efforts are spread through the institution, both because they can act as inspiration to others and because this reduces the concern about different members of staff doing more or less attractive work. Vehicles to achieve such communication can be low-key and practical without a need for substantial expenditure.

To improve beyond compliance with the ES CoP, the peer review team recommends:

19. Statistics Estonia should take initiatives to spread knowledge in-house of outcomes of research projects and experimental statistics. (Improvement related: ES CoP, Indicator 7.6)

Summing up, the Estonian statistical system and Statistics Estonia are undergoing a particularly dynamic development at this juncture, driven both by developments in data and by a conscious policy of exploiting the datafication of society. Much progress has already been made and the peer review team believes that progress on the above recommendations, which with one exception are focused on improving beyond compliance with the ES CoP, could both consolidate the gains and spur future developments.

In the spirit of continuous improvement integral to the ESS, Statistics Estonia will interpret the recommendations formulated in this report into improvement actions for implementation within the national statistical system.

2. INTRODUCTION

It is recognised that quality is one of the European Statistical System's (ESS) comparative advantages in a world experiencing a growing trend of instant information and new challenges, driven by exceptional circumstances or the continuous need for faster but quality-assured data. The European Statistics Code of Practice (ES CoP) is the cornerstone of the ESS common quality framework, and the ESS statistical authorities have committed themselves to adhere to it.

In this context, it is crucial for the ESS to be equipped with a review mechanism, the peer reviews, supporting with credible evidence this self-commitment to adhere to the ES CoP. The objective of this review mechanism is to enhance the integrity, professional independence and accountability of the ESS statistical authorities. The first round of peer reviews was carried out in 2006-2008, followed by a second round in 2013-2015.

In 2017, the ES CoP was reviewed and extended and now encompasses 16 principles. This revised version of the ES CoP triggered a third round of peer reviews, being carried out in the Member States of the European Union and of the European Free Trade Association, and Eurostat from 2021 to mid-2023. This round of peer reviews aims at improving the quality and trust in European statistics by assessing the compliance of the ESS with the principles of the revised ES CoP. The peer reviews cover the ESS statistical authorities (Eurostat, the National Statistical Institutes (NSIs) and selected Other National Authorities (ONAs)) developing, producing and disseminating European statistics. The peer reviews will be followed by a period of annual monitoring of the implementation of the improvement actions developed by the NSIs to address the recommendations laid down in the peer review reports.

The third round of peer reviews has the following two objectives:

- To review the compliance/alignment of the ESS with the ES CoP, in order to demonstrate to the ESS and to external stakeholders that the ESS is a system based on the principles of the ES CoP;
- To help NSIs, ONAs and Eurostat in their further improvement and development by indicating future-oriented recommendations; at the same time they should stimulate government authorities to support the implementation of these recommendations.

Each peer review is conducted by a team of four statistical experts (both from inside and outside the ESS). The peer review has four phases: completion of the Self-Assessment Questionnaires (SAQs) by a country; analysis of these SAQs by the peer review team; a country visit by the peer review team; and the preparation of the final report and ensuing recommendations by the peer review team. These recommendations are of two types:

- Compliance related (ensuring compliance/alignment with the ES CoP);
- Improvement related (less critical/technical supporting improvements).

A combination of an audit-like and a peer review approach is used when assessing the national statistical systems (NSS) in the countries to benefit from the positive aspects of both approaches. The audit-like approach requires the provision of documents as evidence, the ownership of the recommendations by the peer review expert team, and the right for the NSIs to express diverging views on the recommendations and to formulate the corresponding improvement actions. Whereas the peer

review approach allows for common agreement within the ESS on the methodology, the objectives, scope and implementation arrangements, the focus on improvements and a peer learning process.

Although all principles of the ES CoP will be reviewed for all countries through the SAQ, the peer review experts are free to customise the country visit to concentrate on those principles where more clarification/explanation is needed. However, certain principles such as those concerning professional independence and coordination and cooperation, as well as principles including elements of modernisation, will be assessed during the peer review visit for every member of the ESS.

The peer review team took as input Statistics Estonia's answers in the SAQ, the supporting documentation and information on the Statistics Estonia web pages, the report from the second-round peer review of Estonia and the recommendations for improvement identified within it, together with the related improvement actions and the report on their implementation. On that basis, topics were identified for the peer review visit where more information was needed to reach a final assessment and potential recommendations.

In addition to the above-mentioned generally included principles, the focus of the peer review visit was extended to the principles on Adequacy of Resources, Cost Effectiveness and Non-Excessive Burden on Respondents which are closely related to the modernisation elements inside Statistics Estonia and towards external stakeholders.

Adequacy of Resources was identified as one of the problematic topics in the report from the second round of peer reviews. It was also mentioned by Statistics Estonia in the SAQ together with the difficulties in hiring and retaining qualified staff with high-level skills. The Statistical Council also highlighted the under-funding of Statistics Estonia as a problem, though with the associated risks seen as pertaining to national (not European) statistics. The principle on Cost Effectiveness was selected for deeper acquaintance with the activities of Statistics Estonia in measuring and evaluating the use of available resources, information and communication technologies and in implementing standardised solutions.

The efforts of Statistics Estonia to extensively use administrative data and private data sources and to decrease the burden on respondents were also covered to better understand the extent of these activities and the related internal procedures, and to learn about other practices used in contacts with respondents to obtain high-quality input for statistical production.

Also, although the reports should not be used to compare one country to another, much effort has been made to ensure the harmonisation of the reports and the ensuing recommendations across the countries so that all countries are treated equitably.

The peer review of Eurostat was conducted by the European Statistical Governance Advisory Board (ESGAB).

3. BRIEF DESCRIPTION OF THE NATIONAL STATISTICAL SYSTEM

Legislation

Statistics Estonia is a governmental authority, operating under the auspices of the Ministry of Finance, which produces official statistics, coordinates data governance, leads the system of classifications, provides data sharing services and exercises state and administrative supervision on the basis of and to the extent prescribed by the Official Statistics Act adopted by the Parliament of Estonia in 2010, as amended in 2019.

Official statistics are produced according to the statistical principles and quality criteria as laid down in EU regulations – notably Regulation (EC) No 223/2009 of the European Parliament and of the Council on European statistics (OJ L 87, 31.3.2009, p. 164), as amended in 2015.

The main national legal acts regulating statistical and related activities in the country are the following:

- Official Statistics Act
- Personal Data Protection Act
- Public Information Act
- List of statistical actions (works) – approved by order of the Estonian Government
- Statutes of Statistics Estonia
- Procedure for the dissemination of confidential data for scientific purposes
- Procedure for the protection of the data collected and processed by Statistics Estonia
- Civil Service Act

The vision of Statistics Estonia is built on four important elements – efficiency, innovation, user-friendliness and reliability. It states that by 2022, the office will be the most effective and innovative producer of reliable and user-friendly statistics in Europe.

The mission of Statistics Estonia is to provide reliable and objective information about Estonia while observing three core values that underlie the decision-making process and communication with stakeholders: reliability, cooperation and innovation.

Organisation and resources

Statistics Estonia has 388 employees and operates in three locations: the headquarters is in Tallinn and two regional offices are in Tartu and Viljandi. Statistics Estonia is managed by a Director-General, who is directly responsible for the Development Department, the Marketing and Dissemination Department, the Personnel and Support Services Department, as well as the offices of the Financial Manager and Quality Manager.

There are two Deputy Director-Generals, one responsible for Statistics, who heads the Data Acquisition and Processing Department, the Interviewers Network Department, the Economic and Environmental Statistics Department and the Population and Social Statistics Department. The other Deputy Director-General is responsible for Data Governance and Data Science.

Statistics Estonia is financed by the state budget, income from gainful activities and also from other national and international bodies. In 2020 the total budget amounted to EUR 14.6 million, of which EUR 9.2 million (63%) was related to staff. About EUR 2 million of the total expenditure was financed from income from gainful activities and EU support. The IT investment and costs are in the IT Centre budget of the Ministry of Finance, which provides services to Statistics Estonia.

Appointment procedure of the Head of Statistics Estonia

The procedure for the appointment and dismissal of the Head of Statistics Estonia is described in the Official Statistics Act and in the Civil Service Act.

A public competition to fill the post of Director-General of an executive agency specified in the regulation of the Government of the Republic is to be conducted by the Civil Service Committee for the Selection of Top Managers. The committee conducting the competition for the post of Director-General of Statistics Estonia should seek the opinion of the Statistical Council on the suitability of each candidate. After the Committee for the Selection of Top Managers makes the selection, the Government of the Republic shall appoint the Director-General of Statistics Estonia to office for a period of five years at the proposal of the minister responsible for the area (the Minister of Finance).

The main responsibilities of the Director-General of Statistics Estonia are listed in the Official Statistics Act.

Statistical programmes

The official statistics programme is a list of demographic, social, economic and environmental statistical activities which is compiled each year for the following five years on the basis of national strategic development documents and international demand for statistics. The list is approved by order of the Government of the Republic. The official statistics programme consists of two parts: a list of statistical activities approved by the Government of the Republic and a list of statistical activities approved by the Governor of Eesti Pank (Bank of Estonia), which at present is the only other producer of official statistics.

Statistics Estonia communicates directly with central and local government authorities on the preparation and implementation of the official statistics programme. The programme is prepared on the basis of public interest, the existence of data sources, the response burden of respondents and the cost-effectiveness of the production of official statistics. Additionally, both the state budget strategy and the draft state budget for the following year are taken into account.

When reporting on the implementation of the official statistics programme, the Director-General of Statistics Estonia submits a report within the limits of its competence to the Statistical Council and to the Ministry of Finance (as the responsible ministry). The annual report is also published on Statistics Estonia's website. The minister responsible for the area submits the annual report to the Government of the Republic together with a report on the activities of the Statistical Council.

The annual report includes an overview of: the implementation of the programme; the existing and additional administrative burden of respondents; user satisfaction with official statistics; the quality assessments of databases pursuant to the right provided for in the Official Statistics Act as well as a list of major statistical activities to be added to the official statistics programme within the following four years, the justification for the need thereof, and the estimated cost.

The other producer of official statistics, Eesti Pank, provides an overview on the implementation of the programme within the limits of its competence in the annual report of Eesti Pank.

The government has introduced the 'once-only' principle for public administration, which in the case of Statistics Estonia implies that it has to check - before starting a collection of new data - whether there is a data source available involving less administrative burden but guaranteeing a sufficient level of quality, i.e. using data generated through activities of central and local government. Hence, the Statistics Estonia portfolio covers register-based statistics and data (e.g. agricultural registers and information boards, employment register), survey-based and mixed mode statistics.

Advisory bodies

As foreseen in the Statistics Act, the Statistical Council contributes to fulfilling the purpose of official statistics by giving advice and delivering opinions to the producers of statistics (Statistics Estonia and Eesti Pank) and to the Ministry of Finance. The Statistical Council is set up by order of the Government of the Republic for a mandate of four years following the proposal of the minister responsible for the area. The Statistical Council consists of 11 members and a few observers.

Coordination of the National Statistical System

The role of Statistics Estonia as coordinator of the national statistical system is set out in the Official Statistics Act, which also identifies Statistics Estonia as the body in charge of coordinating the Data Governance System and leading the system of classifications. Legislation and well-defined procedures are in place as regards the coordinating role at both national and European level. Cooperation with owners of registers and other statistics producers is governed by a substantial set of formalised and well-structured Memoranda of Understanding.

In accordance with the Official Statistics Act, the producers of official statistics in Estonia are Statistics Estonia and Eesti Pank. The Act states that the producers of official statistics are independent in their choice of statistical methodology.

Relation with users/dissemination of statistical products and services

Statistics Estonia disseminates official statistics in an objective and impartial manner, pursuant to the release calendar published on its website. It never disseminates official statistics prior to the due date indicated in the release calendar.

With a broad range of products and activities, Statistics Estonia not only targets professionals (media, academia, businesses, public administration, governments, international organisations, non-governmental organisations) and frequent users, but also promotes statistical literacy to a wide range of users (including students and the general public) and the strengthening of cooperation with users in general. Statistical products are disseminated through a range of very diverse channels aimed at different user groups: traditional newsletters and publications, the main online database, different social media, video channelling, various applications (e.g. dashboards, Trees of Truth, statistics map applications), as well as other instruments (e.g. marriage applications, population pyramids, purchasing power calculators, etc.).

To prevent erroneous interpretation and misuse of official statistics, and keep in line with other national statistical offices, Statistics Estonia has developed specific procedures, including guidelines for presenting data and metadata, and increasingly promoted statistical literacy through the development of specific products and services (e.g. e-learning) for users.

Statistics Estonia disseminates microdata collected to produce official statistics in two ways. First, they are provided as public-use files that do not allow any direct or indirect identification of a statistical unit. Second, Statistics Estonia gives access under strict conditions to data that, in principle, allow indirect identification of a statistical unit without the consent of the person, if the data are used for scientific purposes pursuant to the provisions of the Official Statistics Act. The dissemination of confidential personal data for scientific purposes is permitted on the basis of and pursuant to the procedure laid down in Regulation (EU) 2016/679 of the European Parliament and of the Council and the Personal Data Protection Act, taking into account the specifications presented in the Official Statistics Act.

4. PROGRESS/ADVANCEMENT IN THE LAST FIVE YEARS

The previous peer review exercise took place in 2015 and led to a range of recommendations grouped under three main headings:

- Ensuring the availability of adequate resources to meet the requirements for European and national statistics
- Strengthening the institutional environment
- Further developing quality procedures and the service to users and data providers

In response to the recommendations, several improvement actions were identified, and the present section describes progress on these throughout 2020, organised under the original three main headings. It should be underlined that in the particularly dynamic setting of Statistics Estonia, progress on the improvement actions represents only part of overall progress.

Ensuring the availability of adequate resources to meet the requirements for European and national statistics

The process of assuming obligations, in particular costs, to produce European statistics has been described and served as a vehicle to better explain the resource situation of Statistics Estonia. The description was presented to the management of Statistics Estonia and published on its intranet for all employees and subsequently published on the public website in February 2017. Possibly in response, the Ministry of Finance secured the necessary resources for all obligations and initiatives relating to European statistics. Indeed, it is reported that cooperation with the Ministry of Finance improved significantly during 2017-2019.

A new salary strategy was created, and trends were agreed with senior management. Strategic objectives for salaries were also included in the strategy of Statistics Estonia. The salary strategy was updated and revised in 2017-2018. However, compared with the general wage level, the objective was not achieved because overall labour market developments implied strong wage growth elsewhere. The requested additional funding to make up for the shortfall did not receive approval from the Ministry of Finance.

A Service Level Agreement (SLA) between the Information Technology Centre of the Ministry of Finance and Statistics Estonia was signed on 28 July 2017, with an ongoing development project to replace SAS with open-source analytics software R, planned to be finished by the end of 2021.

The main principles of an internal training programme were developed, and the classification of posts was updated in December 2017. Preferable competencies including education levels and experience required for each post were analysed and agreed on. In 2019, a succession plan, mapping the strengths of employees and mapping employees with management potential was started.

Strengthening the institutional environment

In 2016, Statistics Estonia collected proposals for amending the Official Statistics Act. Part of these amendments were discussed with the Ministry of Finance, who is responsible for presenting such amendments to Parliament. Unfortunately, the amendments to consider all public authorities producing European statistics (i.e. including the National Institute for Health Development) as producers of official statistics did not find approval.

Statistics Estonia signed a cooperation agreement with Eesti Pank (Bank of Estonia) in 2016. Cooperation with Eesti Pank works well.

Commissioned work is one of the services provided by Statistics Estonia, which is regulated by the Official Statistics Act. Amendments in this area took effect in 2019 and imply permission to perform statistical activities outside the official statistics programme, provided these do not interfere with the preparation or implementation of the programme and subject to restrictions on how the data collected for such activities can be used. Since the amendment of the Official Statistics Act, activity in this area has expanded significantly.

Further developing quality procedures and the service to users and data providers

A quality policy was published in 2016 and updated in 2020 and is available on Statistics Estonia's website.

In 2019, the descriptions of all sub-processes of the Generic Statistical Business Process Model (GSBPM) were updated. A systematic assessment process in Statistics Estonia had been worked out and was implemented in 2020. The main quality indicators were published in Eurostat quality reports and in the statistical activity descriptions (following the Euro SDMX Metadata Structure (ESMS) standard) on Statistics Estonia's website or in the main database. However, a planned IT solution for improving the process of their calculation and publication was not implemented due to lack of resources. This means that not all standard quality indicators are computed and published and the time lag between computations and publishing was not fully satisfactory.

The Statistical Council has been meeting four to five times a year, with frequency and regularity depending on topics. The Statistical Council reviewed all statistical activities, also including activities of Eesti Pank, and gave regular feedback to the Government of Estonia.

The profile of the target groups for the most important products and services was described in the dissemination policy, which was translated into English and published on the website in February 2017. In 2020, Statistics Estonia defined eight statistical services to create what is called the Eight Statistical Services programme. This is a group of activities offered against payment to clients and users of Statistics Estonia. Based on its considerable experience in visualisation, Statistics Estonia also drew on modern visualisation techniques (e.g. R Shiny and Flourish) to illustrate a range of socio-economic developments in the context of the COVID-19 situation.

A dissemination strategy of products and services was compiled. Initially, it was published on the intranet of Statistics Estonia in February 2017 (only in Estonian). In 2020, the Principles of Dissemination of Official Statistics were published and the Eight Statistical Services programme mentioned above was described and published. The Development Plan of Statistics Estonia contained actions to develop and promote statistical literacy. Database software was made API-readable and was proactively used in social media to promote statistics. Administrative data registers and variables were described in a meta information system.

In Statistics Estonia's development plan, one major activity is the promotion and development of innovative methods for collecting and processing data. Many survey questionnaires have been abandoned or shrunk because of the use of administrative data sources. Statistics Estonia has implemented the general government principle of 'once-only' data collection, always checking whether a source involving less administrative burden is available and assessing the quality of the data in it, before the collection of new data.

Overall, the impression of the peer review team is that Statistics Estonia has delivered on the vast majority of improvement actions and where this has not been the case, the reasons have been related to the external environment.

5. COMPLIANCE WITH THE CODE OF PRACTICE AND FUTURE ORIENTATION

5.1 STRENGTHS OF THE NSI AND THE PARTICIPATING ONAs IN RELATION TO THEIR COMPLIANCE WITH THE CODE OF PRACTICE

On the basis of the review of the current state of the Estonian statistical system, the peer review team is impressed with the manner in which Statistics Estonia is making progress towards its vision ‘to become the most effective and innovative producer of reliable and user-friendly statistics in Europe’, stipulated in the Development Strategy 2018-2022. A substantial number of strengths suggest that further progress is in store.

A strong legal basis

Statistics Estonia has a particularly strong legal basis for official statistics and other activities. Indeed, professional independence, broad data access and a strong role in data governance are underpinned by the Official Statistics Act, most recently updated in 2019. The Act explicitly states that official statistics must be produced ‘according to the statistical principles and quality criteria prescribed in Regulation (EC) 223/2009 of the European Parliament and of the Council’, underlining the professional independence of the producers of official statistics and granting them widespread access to data, including privately held data.

The Act clearly states, among other things, that: (a) the producers of official statistics shall be independent in their choice of statistical methodology; (b) the Director-General of Statistics Estonia decides on the use of statistical methods, standards, dissemination time and data; (c) the appointment of the Director-General follows public competition rules and the dismissal conditions are reflected in the Public Service Act; (d) an important independent advisory body on both statistics and data governance is the Statistical Council, which advises and gives its opinion both to producers of official statistics and to the Ministry of Finance; and (e) a five-year rolling work programme updated annually is prepared and reported to the Government.

Statistics Estonia’s mandate is particularly striking in the area of data governance, for which the Official Statistics Act describes its duties, including the duty ‘to coordinate data governance and lead the system of classifications’.

Effective partnerships

Another main strength of Statistics Estonia is its continuous effort to establish more effective partnerships between itself, the other official statistics producer, Eesti Pank (Bank of Estonia), the National Institute of Health Development (NIHD) and providers of administrative data. On the basis of formalised agreements that describe the principles of cooperation, the obligations and rights of the parties involved, requirements for confidentiality, data security, timeliness, punctuality, details of data and procedure, etc., Statistics Estonia plans its official statistics work programme, provides statistics for overarching national strategies (Sustainable Development Goals, Estonia 2035, etc.) and acts as a contact point for user ministries.

Statistics Estonia has strengthened its bilateral consultations with ministries as users of official statistics. There are ad hoc meetings with senior management and regular contacts at expert level, as

well as regular exchanges of information in some cases (e.g. for the Human Development Index). Moreover, in April 2021 a ministerial working group was initiated by Statistics Estonia, tasked with early monitoring of additional sectors of the economy and society and needs for regional statistics, as well as with aligning the production and dissemination of official statistics with priorities deriving from Estonia's strategic goals and development needs.

The Memorandum of Understanding (MoU) between Eesti Pank and Statistics Estonia regulates data exchange and divides tasks. Additionally, working meetings between specialists from the two institutions are held on a periodical basis and further consultations are carried out if necessary.

Statistics Estonia promotes partnerships with academia by encouraging the development of common projects, internships, student group visits, and offering master trainee positions. It also engages in cooperation with European advisory bodies, e.g. European Statistical Advisory Committee. There are regular contacts to attract input from academia in the form of ideas, advice and recruits. For example, a partnership with the Tartu University has been used to discuss and work out the methodology for the upcoming population and housing census.

Recent activities strengthening the basis for progress

Recent activity by Statistics Estonia in the following domains represents a good basis for further progress.

Recent, and still ongoing, work to create greater transparency on the quality of administrative datasets is essential to identify weaknesses that need to be remedied to allow further progress towards the 'once-only' objective. This is both at the overall level of government and at the level of Statistics Estonia, allowing the latter to rely further on administrative data and hence reduce the reporting burden and increase efficiency.

The Eight Statistical Services programme, in place since end of 2020, allows Statistics Estonia to undertake work outside of the official statistics programme (provided that such work 'does not interfere with the preparation or implementation of the programme' and is carried out in compliance with the same quality criteria laid down in the Official Statistics Act for official statistics compiled as part of the official statistics programme). This programme allows other institutions to benefit from some of the capabilities of Statistics Estonia and has already met a substantial uptake. There are potential synergies to be gained from undertaking such additional activities on a regular basis, including potentially to the related expansion of Statistics Estonia's resource base.

Recent activities in the field of experimental statistics (e.g. data linking, new data sources, new methods, modern visualisation solutions) identified new ways of producing statistics that allowed users quick and convenient access to relevant and necessary information. They have been useful for the analytical insights they have created and the added attractiveness of Statistics Estonia they have generated for other stakeholders and potential recruits and can therefore be considered a strength of Statistics Estonia, on which it can build.

The increased process organisation of the institution, with clear procedures in place, strengthens efficiency, flexibility and quality. Statistics Estonia uses the Generic Statistical Business Process Model (GSBPM) 5.1 as a basis for the main processes. There is a strong focus by Statistics Estonia on quality issues, tools, methods and related documentation as part of a comprehensive self-assessment of the statistical procedures and products. An infrastructure is in place to maintain updated documentation on quality with a structure that follows GSBPM and the Generic Activities Model for Statistical

Organisations (GAMSO). The Euro SDMX Metadata Structure (ESMS) has been implemented for the description and public dissemination of metadata reports for all statistical activities and a project has been initiated to switch from ESMS to the Single Integrated Metadata Structure (SIMS) standard for 2023.

A recently strengthened and well-designed communication and dissemination approach is built on the understanding by Statistics Estonia that users have expectations to receive quick information in a simple and clear format about more and more phenomena. Against the backdrop of rising competition between official statistics and alternative data sources, Statistics Estonia has added to the classic dissemination practices by adopting dissemination channels for different user groups that include indicators relevant for them (social media: Facebook, Instagram, LinkedIn, Twitter; video channelling; tools and applications like dashboards, Trees of Truth, statistics map applications, etc.).

Staff

The greatest asset of Statistics Estonia is its committed, engaged, dynamic and highly educated staff, that works in a modern environment. The workplace has developed a very participative culture. Development opportunities are offered to the young generation of statisticians and their cooperation is promoted. Employees with management potential are identified in order to support their career planning and development. While the salary level of Statistics Estonia is low compared with other institutions from the public or the private sector, endeavours are being made to increase employee satisfaction and commitment, which are measured through an employee satisfaction survey regularly conducted by Statistics Estonia.

Societal attitudes

Estonia has embraced new technology and there is a strong societal commitment to digitalisation and e-government. Convinced that the strongest foundation of a smart state in the very near future consists of timely data of high quality, Statistics Estonia is taking several innovative actions. For example, there are already plans to adopt machine learning tools that enable business processes to be automated, with the objective of enhancing statistical operations, reducing costs and strengthening compliance with the ES CoP.

Innovative practices

The peer review team identified a number of innovative practices that are noteworthy and possibly applicable in some way in other national settings. The following important aspects are worth highlighting:

- The strong legal mandate for Statistics Estonia to engage in public-sector data governance and to have access to different sources of data, including privately held data.
- The systematic mapping of administrative datasets and their quality as a basis for increased use of administrative data in statistics production and, hence, making further progress towards the national “once-only” objective, according to which enterprises and citizens should submit specific information items to the public sector only once.
- Production of a wide range of experimental statistics based on explicit needs expressed by users.
- A well-developed system for dealing with respondents including, inter alia, a specific portal on the website with instructions and guidelines, prefilled questionnaires with dynamic response properties, automatic reminders and targeted contact information.

5.2 ISSUES AND RECOMMENDATIONS

5.2.1 Strengthening the system of official statistics including perceptions of its independence

Budgetary funding of Statistics Estonia has been a long-standing concern and was also the subject of a recommendation in the previous peer review. In its 2020 report, the Statistical Council, an important advisory body, characterised Statistics Estonia as under-funded and found it likely that if the budget was left uncorrected, activities related to national (i.e. not European) statistics would have to be cut.

Among the factors that have put and are putting pressure on the funding of Statistics Estonia are new activities related to its role in data governance, additional statistical demands arising from EU legislation, and internal modernisation efforts in areas such as communication, data collection and data processing. To that is added the costs associated with the population and housing census to be carried out in 2021. Each of these activities is clearly necessary and desirable and they affect resource demands with different time profiles. At the same time, they are only partly matched by compensating revenue flows – principally related to EU grants and budget allocations to finance the population and housing census. Moreover, these revenue flows have a finite duration. Hence, the rise in budget allocations in recent years should not be interpreted as a solution to underlying budgetary pressures.

As an example, the rise in the staff budget (which makes up more than 60% of the total budget) by around 25% over the period 2018-20 was attributable for about half to the population and housing census, for which transitory funding is made available. Spending needs will of course also decline once the census is over, but the example illustrates that the recent increase in funding should be interpreted with care.

There is also some evidence that funding pressures act to retard modernisation – even though the latter remains rapid. One channel for this is related to IT spending. Statistics Estonia receives IT services from the Ministry of Finance IT Centre (RMIT) and has a budget in that institution to cover IT investment. However, Statistics Estonia needs to pay part of the associated personnel spending out of its own budget, and there are examples where RMIT funding has been available for IT investment, but Statistics Estonia has not been able to take it up because of difficulties in meeting the associated personnel spending.

Faced with budgetary pressures, Statistics Estonia has responded in a number of ways. The amount of contract work, related to a large extent to what is called the Eight Statistical Services programme under which Statistics Estonia performs statistical services against payment, has been boosted from about 5% of the staff budget in 2018 to more than 10% in 2020. Of course, activities related to contract work also imply larger costs but in net terms, greater reliance on contract work is likely to help dealing with Statistics Estonia's funding squeeze. The team heard evidence to the effect that this development may continue, and hence further contribute to easing budgetary pressures.

To the extent this development implies line ministries having to pay for statistical services which they previously received financed from the general budget allocation, there is of course resistance. But at the same time, this development could be seen as revealing which statistics meet with a demand so real that it is backed up with funding. Countering this however, some may see it as a concern that ability to pay rather than the social value of statistics determines what statistics is produced.

Nonetheless, the peer review team's view is that as long as the main statistical public good is paid for out of the general budget allocation, this may be a minor concern.

Statistics Estonia has also worked hard to create greater internal transparency on its cost structure and to link costs to different phases of the statistical production process as described by the GSBPM so as to better plan its finances, prioritise its efforts to enhance efficiency and explain its prices for services sold.

Last but not least, Statistics Estonia continues its efforts to rely more on administrative registers in statistics production, thereby being able to cut back on costly surveys. At the same time, data collection through surveys is being streamlined and there is scope for efficiencies also by automating internal data processing to a larger extent. These efforts have more mileage left, but it must be recognised that while they eventually will generate efficiencies, there is a need for investment in an intermediate period.

Overall, Statistics Estonia is therefore contributing and can contribute to resolving the budgetary pressures but if Statistics Estonia is to be able to continue its own rapid modernisation, to fulfil its potential as an innovative statistics producer, and contribute to driving the modernisation of data use in the general public sector, increased budgetary funding seems necessary.

To improve beyond compliance with the ES CoP, the peer review team recommends:

R1. The Government should increase budgetary funding for Statistics Estonia in the light of new activities and to avoid the institution having to cut back on its work programme and on output quality – even though some relief could also come from internal efficiencies and additional resources outside the main budget. (Improvement related: ES CoP, Indicator 3.1)

Salary levels at Statistics Estonia have traditionally been low, not only compared with the private sector but also relative to other parts of the public sector. This is not necessarily a problem for recruitment and retention of staff. Staff responds to the full 'package' of circumstances around their job. In the case of Statistics Estonia, this also includes flexible working time practices, possibilities for working at home, the meaningful nature of work that contributes to a greater social good, etc. Indeed, it is a tribute to efforts made in Statistics Estonia that internal surveys show increasing staff satisfaction with many aspects of work over recent years. Overall, dissatisfaction with low salary levels also appears to have declined. Hence, there may not necessarily be a generalised problem with low salary levels.

Nonetheless, work at Statistics Estonia is evolving in line with its modernisation and tasks. This implies increased demand for analytical skills and skills in fields such as data science. These skills are also in high and rising demand outside Statistics Estonia, implying a strengthening competition for specific talent. In these circumstances, it can become a real handicap that salaries at Statistics Estonia for the work families of Analyst, Leading Analyst and Expert are some 15-20% lower than in the public sector in general and some 25-40% lower than in the private sector. It should also be mentioned, that the staff profile has changed over time, with more than half now having completed education at a master's level or above.

It might be argued that Statistics Estonia can live with a lower salary level to an extent as it hires young recruits straight out of education, trains them and retains them for a period, after which they go somewhere else to earn a higher salary. However, overly rapid turnover also carries costs and the learning curve in many posts in Statistics Estonia is seen as being relatively long, implying a risk that

Statistics Estonia will invest significantly in new recruits that may yield only a meagre return on investment to the institution.

Statistical evidence on turnover is somewhat difficult to interpret, with voluntary turnover at a historically high level in 2019, when private sector activity was also strong, but dropping sharply in 2020, most likely as a by-product of the pandemic. Nonetheless, more impressionistic evidence suggests that turnover may be on the rise again. Indeed, the peer review team noted convincing evidence on the current difficulties in recruitment and retention of some categories of staff. Against this background, the salary gap may be too large for these staff categories. Whether in fact higher salary levels for only some categories of staff will solve issues related to recruitment and retention of these at the price of generating increased internal tensions between different categories of staff and, if so, what to do about it, is not something on which the peer review team has taken a view.

Statistics Estonia is in the fortunate situation of having considerable leeway in setting its own salaries, but even if adjustments are targeted to the categories of staff for which there is a recruitment and retention problem, overall salary costs will go up, which will imply a budgetary burden. Hence the recommendation to adjust salary levels is contingent on having the necessary budgetary room for manoeuvre.

To improve beyond compliance with the ES CoP, the peer review team recommends:

R2. Contingent on available funding, Statistics Estonia should adjust salary levels for staff categories that are difficult to attract and retain. (Improvement related: ES CoP, Indicators 3.1 and 7.5)

The Statistical Council performs a very important independent advisory role in the statistical and data governance system and also has statutory duties related to the process of appointment of the Director-General of Statistics Estonia and the annual setting of the official statistics work programme. Its membership comprises academia, public and private sector statistics users and respondents as well as experts on data protection and data governance. The membership also comprises high-level representatives of the two producers of official statistics, Statistics Estonia and Eesti Pank, and observers from the NIHD and the State Chancellery. The Council is serviced by Statistics Estonia.

In light of the high Estonian ambitions on e-government and on statistics, it is important that the Statistical Council has – and is seen to have – a strong and independent voice on matters within its purview. Popular recognition that the Council represents the views and concerns of all relevant actors will help to create confidence that these are indeed taken on board in decision-making, which will ultimately help achieve the high Estonian ambitions.

It is obviously important that the Council should hear the views of Statistics Estonia and Eesti Pank (the other producer of official statistics). However, when the producers are also members of the Council an impression may be created that they may in effect be providing advice to themselves. When, as in the case of Statistics Estonia, this role is combined with the provision of logistical services to the Council, such impressions may be strengthened. This could potentially weaken the Council's authority, which may have happened in the matter of Statistics Estonia's funding, where, as mentioned above, the Council has taken a strong, and in the view of the peer review team, appropriate position. Against this background, it may be worth giving consideration to potential changes to present institutional structures.

To improve beyond compliance with the ES CoP, the peer review team recommends:

R3. The Government should consider ways to enhance the reputation of the Statistical Council in terms of its independence, e.g. by reconsidering its membership and responsibilities for its servicing. (Improvement related: ES CoP, Principle 1)

The emerging data landscape includes a proliferation of statistical information of sometimes uncertain validity and issued by interested parties, sometimes in direct competition with official statistics. In these circumstances, official statistics need to maintain a strong reputation for quality and professional independence. Even for Statistics Estonia, with a strong legal and institutional framework for professional independence and strong internal processes, there is a need to reflect on possibilities for further strengthening these aspects. It is also important to recognise that this is not just about facts but also importantly about perceptions.

The peer review team has not come across any hard evidence to criticise the quality of output and professional independence of Statistics Estonia. The evidence from customer satisfaction surveys is however, somewhat more ambiguous. For example, in a 2021 satisfaction survey, only 58% of the respondents found data to be reliable, and 56% rated Statistics Estonia as completely or mostly independent of politics, while surveys of peoples' trust in institutions have placed Statistics Estonia some distance from the top. Any concerns about professional independence are hard to reconcile with the very clear and explicit legal framework in the Official Statistics Act. But, irrespective of whether any perceptions about lack of professional independence are well founded or not, such perceptions are a problem.

Addressing perceptions of lack of professional independence is not easy, especially when any such perceptions are not well understood. If, indeed, there are such perceptions, their background could possibly be found in the fact that the Government effectively approves the annual official statistical programme of Statistics Estonia (given that it approves the list of so-called statistical actions), whereas the work programme of the other producer of official statistics, Eesti Pank, is approved by its Governor. In principle, there is nothing inappropriate about Government approval. Indeed, the principle of professional independence is perfectly compatible with the 'what' being politically decided and the 'how' being decided by Statistics Estonia. Still, in popular perception the two roles may be confused.

Against this background, it may be worth considering whether direct political approval of the official statistics programme could be diluted to some degree. This could also help insure against the risk that at some point in time, the programme could be used politically in an undue manner to put political pressure on Statistics Estonia. In other countries, the task of approving the official statistics programme has in some cases been devolved to the Director-General or to a board of the institution in question. Devolution to the Director-General may raise concerns about governance and Statistics Estonia has no board, but in the Estonian context perhaps an option might be to let the Statistical Council, which is in any case appointed by the Government, be responsible for approving the official statistics programme.

To improve beyond compliance with the ES CoP, the peer review team recommends:

R4. The Government should consider ways of setting up the programme for official statistics that involve less direct influence from the political level e.g. by devolving responsibility to the Statistical Council. (Improvement related: ES CoP, Principle 1)

When considering more 'constitutional' issues it may also be worth pondering whether the present point of administrative attachment of Statistics Estonia to the Ministry of Finance remains the appropriate one. There are in particular two considerations that could drive such a reflection. First, as discussed previously, it is desirable for Statistics Estonia to be clearly seen as professionally

independent of politics so as to safeguard trust in official statistics. This could argue in favour of its administrative attachment being to an institution without a strong party-political leadership. Second, the increasing role of Statistics Estonia in data governance and related whole-of-government activities in the quest for e-Government may call for a point of attachment with a whole-of-government role and/or a strong role in the digitalisation agenda.

Set against these considerations, in most countries ministries of finance are indeed seen as both 'strong' ministries, able to support agendas of subordinate institutions, and ministries with a strong transversal role.

Perhaps reflecting that there is no uniform one-size-fits-all answer to the question, practices differ significantly across EU countries, with attachment to ministries of finance, economy or interior or to heads of state or parliament. In the Estonian context, relevant options might include Parliament, the State Chancellery, or the Ministry of Economic Affairs, the latter having a strong role in data governance and e-Government. The peer review team does not have a fixed view on the most appropriate point of attachment but feels that, in the light of the rapid evolution in the tasks and operations of Statistics Estonia and the need to safeguard trust in statistics, it is useful to reflect on the issue.

To improve beyond compliance with the ES CoP, the peer review team recommends:

R5. The Government, jointly with Statistics Estonia, should reflect on the administrative anchoring of Statistics Estonia in the light of potential effects on perceptions of professional independence and considering its role in whole-of-government data governance (Improvement related: ES CoP, Principle 1)

The Official Statistics Act identifies two producers of official statistics – Eesti Pank and Statistics Estonia. However, they are not the only producers of statistics in Estonia. Of particular interest from a European perspective, the NIHD produces and provides European Statistics. Nonetheless, its position implies that it is not treated as an other national authority developing, producing and disseminating official statistics (ONA). Hence, although it delivers European Statistics, its position relative to the ES CoP is not being assessed in a national peer review process, nor is it the subject of the EU peer review process. It does, however, take part in certain working group meetings organised within the ESS. Statistics Estonia has signed an MoU with the NIHD allowing for cooperation in the production of official statistics. Not being a producer of official statistics, the NIHD's statistics do not enter the official statistics programme.

The team met with representatives of the NIHD who indicated that the institution respected the ES CoP and the peer review team has no grounds for doubting that but also no basis for accepting the claim.

The situation is clearly not in conformity with the ES CoP. There is no legislation in place to ensure coordination between Statistics Estonia and the NIHD (indicator 1bis.1) and there are no national guidelines beyond the European standards applied to official statistics and, indeed, no process for monitoring of implementation (indicator 1bis.2). Furthermore, in theory, albeit contradicted by the statements heard from NIHD representatives, the NIHD and the European statistics it produces could be in breach of a range of provisions under the ES CoP.

The anomalous situation was already discussed in the previous peer review of Estonia and formed the basis of recommendations. This makes it even more regrettable that the situation still persists. In the

meantime, a proposal to amend the Official Statistics Act to include NIHD statistics as official statistics had been prepared but was not presented.

The peer review team heard different options for rectifying the situation. One approach would continue the attempt to include NIHD statistics in official statistics and the corresponding official statistics programme. This would also imply conferring an ONA status on the NIHD and instituting a national review process. Another approach would integrate statistical activities of the NIHD into Statistics Estonia. This would achieve the same ends though without creating an ONA and the need to establish a review process. Thirdly, it may be considered whether specific rules, regulations and agreements could be established, ensuring that NIHD statistics are governed by the ES CoP, are reviewed on this basis by Statistics Estonia and with the NIHD officially designated as an ONA. To the peer review team, the priority goes to the end result of achieving a normalisation of the situation with the exact instrument being of lesser concern, though some of the above options may seem more elegant than others.

To comply with the ES CoP, the peer review team recommends:

R6. The Government should take action to ensure that statistics from the NIHD are included as part of official statistics, to ensure conformity with the ES CoP and to avoid duplication of work. (Compliance-relevant: ES CoP, Indicators 1bis.1 and 1bis.2 but also a vast number of other indicators on which little is known for statistics produced by the NIHD)

5.2.2 Making the most of the evolving data landscape

The Official Statistics Act gives Statistics Estonia the right to access administrative datasets from other parts of the public administration for use in statistical production. The Act also specifies that administrative data should have primacy as a source of data for statistics production, provided that statistical quality criteria can be fulfilled in this manner. This is also consistent with Statistics Estonia's implementation of the 'once-only' principle according to which, before other sources of data for new statistics are considered, the potential use of administrative data should be explored.

Against this background, use of administrative data for statistics has increased substantially but it remains a minority share of statistics (some 30%), that are based exclusively on administrative data. There are many reasons for that, including that the information contained in administrative records may not conceptually match the statistical needs. However, a reason has also been insufficient quality of administrative datasets or just absence of information on quality and metadata describing the contents of administrative datasets. This is regrettable as the use of administrative data sources avoids some of the drawbacks of survey-based statistics related to e.g. costly data collection, heavy and unpopular response burden, lack of representativeness, declining response rates, etc. As the response of Statistics Estonia to the pandemic has shown, administrative data in many cases also allow for faster and more high-frequent statistics.

As part of Statistics Estonia's role in national data governance, it has, in conjunction with administrative data holders, made a major effort to establish transparent information on the quality of different administrative data, an initiative which is now close to fruition. This represents a major breakthrough that can lead to greater use of administrative data both directly and indirectly because shortcomings of datasets are becoming more transparent, thus increasing pressures on data owners to improve both data and metadata. At the same time, Statistics Estonia has a key role in influencing classifications

across the various databases, allowing it to shape classifications in ways that make datasets suitable for statistics production. Furthermore, work is in progress on the regular provision of standardised metadata by the administrative data owners, which would represent a clear improvement on the present situation, where metadata are compiled by Statistics Estonia based on the data owner's input. In addition, the Official Statistics Act stipulates that Statistics Estonia should be heard before changes are made to administrative data which, to some extent, mitigates the risk associated with administrative data that their content can change at short notice as a result of policy changes.

Against this background, it is important that Statistics Estonia continues its current efforts to achieve improvements across the board in the quality of and information on administrative datasets. In addition, Statistics Estonia should use its position in data governance to limit the risk related to changes in the contents of administrative datasets as a result of changes in policy and administration. Assuming these efforts are successful, Statistics Estonia will also need to take a more strategic approach to the use of administrative datasets than hitherto, when it made sense to apply a somewhat opportunistic approach of utilising what was known to have sufficient quality. Going forward, it will be useful for Statistics Estonia to establish its own vision of where it wants to go on using administrative data together with priorities among datasets and engage with data owners as function thereof.

To improve beyond compliance with the ES CoP, the peer review team recommends:

R7. Statistics Estonia should continue to prepare the ground for increased use of administrative data sources in statistics production, including by pushing forward with the initiative on data governance. In this regard, Statistics Estonia should build on its work together with administrative data owners to increase the transparency on the quality of administrative data to develop a vision and a prioritisation for use of these data. (Improvement related: ES CoP, Indicators 2.2 and 10.3)

As mentioned above, it is important not only to create transparency about the quality and the content of administrative data, but also to use such transparency as a springboard to enhance the quality, if it is currently deficient. In so doing, it needs to be recognised that for administrative data holders such efforts represent additional expense. Set against that, it is an important whole-of-government priority to ensure that data are being re-used across the government sector. Nonetheless, it may be useful to reflect on the incentives for different institutions to engage in the desired upgrading of datasets and consider how incentives can be strengthened.

One vehicle for providing impetus may be to create transparency not just about the state of administrative datasets, but also about their rate of improvement. This may allow institutions to inspire each other in making progress and could possibly be formalised in a process of peer reviews. However, Statistics Estonia also needs to reflect on how it can best help institutions seeking to improve their datasets. In this regard, the stated aim of Statistics Estonia to serve as a data governance competence centre being backed by a financial plan of EUR 7 million from 2021 to 2025 may be a useful step forward.

To improve beyond compliance with the ES CoP, the peer review team recommends:

R8. Statistics Estonia, together with relevant institutions, should jointly build on increased transparency on the quality of administrative datasets and put in place mechanisms, such as peer reviews, that could add further impetus to efforts to boost data quality, e.g. in terms of convergent standards and classifications. (Improvement related: ES CoP, Indicators 8.7 and 10.3)

The Government could also contribute to creating the right impetus for making progress on the quality of administrative datasets. Indeed, the drive to ensure a linked-up public administration, including the

re-use of information provided by citizens and enterprises, comes from the Government. Yet, the Government has not set out in law the responsibilities of individual institutions for achieving this vision. A clearer statement in this regard would obviously put Statistics Estonia in a stronger position when trying to push the process of improving administrative data forward.

To improve beyond compliance with the ES CoP, the peer review team recommends:

R9. To help strengthen the quality of administrative datasets, the Government could usefully clarify the definition of different actors' responsibilities in data governance. (Improvement related: ES CoP, Indicators 8.7 and 10.3)

The Official Statistics Act provides Statistics Estonia with access to 'data generated or collected in the course of the activities[...]of legal persons in public law and private law'. This very wide data collection mandate has provided Statistics Estonia with opportunities not yet enjoyed by many other statistics offices in the ESS. Given the practical difficulties of accessing what are often weakly structured datasets and the gains from a cooperative process, Statistics Estonia has applied this mandate in the context of negotiated agreements. The coverage of such agreements includes data from the national electricity data hub, data from a private supplier of tickets for concerts and other cultural events, and scanner data from supermarket chains. In the context of the pandemic, Statistics Estonia also agreed with a number of mobile phone operators on the supply of data for mobility analysis, though subsequently most of the operators have pulled out of the agreement because of concerns about their legal responsibilities vis-à-vis customers under the General Data Protection Regulation (GDPR).

Going forward, privately owned data may become increasingly important for statistics producers for a number of reasons. They often shed light on new activities not covered by other existing data collections, and they often allow the production of high-frequency indicators. To that should be added that traditional survey data collection is increasingly challenged. Hence, having access to privately held data is set to become ever more important. Against that background, it is a concern that although the Official Statistics Act and the Electronic Communication Acts are specific laws, some specific laws do not contain the right of data access for producers of official statistics. Thus, this could seriously compromise the ability to use mobile phone data. Likewise, the law on credit institutions may also threaten the access of Statistics Estonia to various kinds of payment data.

It seems ironic that customers, who need financial and telecoms services, are forced to provide their data to private enterprises, which can use them for their own analytical purposes, while the risk is that the data cannot be used for the public good of producing official statistics. Hence, it is important that the Government does not let sectoral laws hollow out the right of access to privately held data for the purpose of official statistics as set out in the Official Statistics Act.

To improve beyond compliance with the ES CoP, the peer review team recommends:

R10. The Government should ensure that sectoral laws do not impinge on the access rights of official statistics producers to privately held data in particular sectors, such as mobile network operators and credit institutions. (Improvement related: ES CoP, indicators 2.4 and 9.4)

Statistics Estonia has been very active in developing and presenting experimental statistics with the aim to seek and test new ways of producing statistics and, in particular, to provide users with interesting novel or fast information beyond the traditional and regular statistical production. New data sources have been acquired, new methods have been applied, data have been linked and combined, and modern visualisation solutions have been used for presentation. This kind of work

requires necessary competencies and conditions, and therefore a special unit was created for this purpose, presently consisting of seven experts (four scientists and three analysts).

Among the substantial number of projects that have been implemented, a dataset including 141 variables from 15 registers in Estonia was used in conjunction with the tax-benefit microsimulation model EUROMOD (developed by the Institute for Social and Economic Research, University of Essex) to calculate the effects of taxes and benefits on household incomes and work incentives for the population of Estonia and the whole EU. Likewise, the so-called earnings application, inspired by public and business interest and based on the employment register and data of the Tax and Customs Board, shows differences in the monthly gross earnings of full-time employees by sex, county and occupation, and is used for example, for graphic presentation of median earnings. A final example concerns the use of electricity consumption data from the electricity data hub in combination with the dwellings register to identify seasonal patterns of occupancy of dwellings across the country. Information related to these and other projects is presented on the website of Statistics Estonia.

During the COVID period, experimental statistics responded to the new need for more timely data. For example, short-term labour market statistics using weekly data from the employment register reported changes in employment by economic activity. Similarly, statistics on turnover or labour costs of enterprises were based on data from administrative declarations. High-frequency death statistics were based on the population register. Statistics Estonia also analysed, in cooperation with mobile phone operators, on the basis of anonymised mobile phone data, the mobility of people before and during the pandemic emergency situation (the exceptional possibility to use this source of data resulted from the emergency conditions).

Much valuable experience has been gained during the three-year existence of this team. The input for experimental activities differ from traditional statistical sources. For example, new data sources (e.g. privately owned data) are usually not well-structured for statistical processing or data linking and must be adjusted. The output of experimental statistics may also diverge from traditional official statistics in terms of their harmonisation, coverage, comparability (geographical and over time) and tested methodology.

In addition to this accumulation of knowledge, the activity on experimental statistics has raised awareness and attractiveness of Statistics Estonia to stakeholders and potential recruits. Hence, the activity clearly needs to continue, also because of the ongoing developments in the data landscape described above, where traditional sources of data such as surveys are under pressure. However, so far experimental statistics have had only a limited impact on ongoing statistics production. This is natural during a period of learning but going forward it will be important to keep a focus on mainstreaming the results and methods deriving from experimental statistics into ordinary statistics production. As the knowledge base on experimental statistics becomes increasingly consolidated, it will also be important to think more strategically on these activities and make the necessary prioritisations.

To improve beyond compliance with the ES CoP, the peer review team recommends:

R11. Statistics Estonia should pursue its efforts on experimental statistics, with a focus on their exploitation in regular statistics production. In due course, experiments with new data sources should be embedded in a more strategic approach. (Improvement related: ES CoP, Indicator 11.1)

5.2.3 Further strengthening cooperation with stakeholders

Statistics Estonia has succeeded in building close cooperation with academia which is useful, in particular, at a time of rapid developments in the data landscape and associated analytical requirements. Good practices include the delivery of lectures by senior management of Statistics Estonia for Tartu University, Tallin University of Technology and Tallin University and, the other way around, university professors being invited to provide inputs to Statistics Estonia on important topics, such as the upcoming population and housing census and data and analyses on dwellings. In addition, Statistics Estonia also receives input from academia via the Statistical Council, which includes university professors as members on behalf of users of statistics.

Each year, Statistics Estonia offers internships and hosts student groups, visiting the office and participating in lectures on the use of statistics. In addition, master's students use Statistics Estonia data under the supervision of the statistical office's senior staff who act as mentors. Furthermore, Statistics Estonia sometimes provides proposals for master's/PhD themes that help address innovative data analytical issues. An important activity is also that Statistics Estonia presents job opportunities at university career days. A particularly important contribution to the research community comes from access given to Statistics Estonia's microdata (see below).

Overall, Statistics Estonia enjoys good relations with academia but possibly reflecting the small size of the country, these relations have been built and maintained over time through personal contacts. This entails a certain fragility in the relationships and may also partly explain why the intensity of cooperation diverges somewhat across different topics.

To ensure continuity and homogeneity of approach across subject areas, a higher degree of institutionalisation of cooperation may be called for, though obviously without creating overly bureaucratic procedures.

To improve beyond compliance with the ES CoP, the peer review team recommends:

R12. Statistics Estonia needs to build on the generally good, albeit unequal and often person dependent, relations with academia to both achieve a higher degree of relations with institutions and a strengthening in areas, where such relations are currently relatively weak. (Improvement related: ES CoP, Indicator 7.7)

The Official Statistics Act states that the 'dissemination of confidential personal data for scientific purposes is allowed in accordance with Regulation (EU) 2016/679 and the Personal Data Protection Act'. On that basis, a procedure for access to microdata for scientific purposes has been established by the Director-General of Statistics Estonia.

All data categories are in principle available (social surveys, business data, census data, data derived from administrative data sources and other databases) and may be accessed for scientific purpose. Data can be accessed in two forms. Public use files are prepared by applying statistical disclosure control methods to preclude the possibility of direct or indirect identification of a statistical unit. However, in practice, these files are not particularly helpful for research, as only a few variables can be included before it becomes possible to indirectly identify persons or enterprises.

Alternatively, data that allow indirect identification of a statistical unit without the consent or permission of the data supplier can be accessed, if data are used for scientific purposes, and subject to stringent provisions imposed by Statistics Estonia to protect confidentiality.

Microdata can be used for research purposes by researchers working on approved projects and from approved institutions, which may be legal persons or agencies (including analysis departments of ministries). Students pursuing a master's/PhD degree can also be considered researchers. Currently, the user base consists of more than 200 researchers and over 40 research institutions.

Approval procedures are stringent. Only researchers from approved institutions can apply, with those approved based on their capability of providing adequate data protection and subjecting themselves to a sanctions regime. Statistics Estonia's Confidentiality Committee (an internal body) considers each individual research purpose separately, usually within 10 working days from receipt of an application.

If an application is accepted, Statistics Estonia signs an agreement with the users of the data stating the purpose of research, the persons entitled to use data for research, the procedure for processing and accessing data and the obligation to ensure the organisational, physical and IT-related data protection. Commitments on confidentiality are signed by each researcher specified in the agreement. Statistics Estonia stores all microdata disseminated to users for scientific purposes for 25 years in the form they were made available for the particular research.

The researchers are working on dedicated local workstations, located in the safe centre of Statistics Estonia (six workplaces), if data are more sensitive, or remotely (via VPN), an option for less sensitive data.

The peer review team heard demands for more efficient and user-friendly access to microdata, referring also to smoother procedures in other countries. Special attention could be given to reducing the time needed before granting access to data.

In addition, the generalised use of remote access would facilitate research but could be contingent on measures to avoid data being seen by researchers, such as automatic filtering and constraints on output retrieval or metadata driven access, where researchers have no possibility to see data. There may also be a need to strengthen IT infrastructure, including server capacity.

To improve beyond compliance with the ES CoP, the peer review team recommends:

R13. Statistics Estonia should take initiatives to increase the user-friendliness of researcher access to microdata. (Improvement related: ES CoP, Indicator 15.4)

The Official Statistics Act stipulates that Statistics Estonia can undertake statistical work under commission outside the scope of the official statistics programme, provided that such activities do not interfere with the programme and are undertaken under the same principles and quality criteria.

On this basis, eight statistical services have been identified for potential contract work, including obtaining more detailed data and information in different statistical domains than is available in news releases, in the statistical databases or in different other applications, as well as obtaining data that require additional processing or analysis of data.

Contract work can also take the form, inter alia, of advising and project management; data collection and/or acquisition; data processing; data linking; data analysis; data dissemination (including visualisation solutions or the publication on the web or on other channels of clients); organising training sessions on statistical methodology or visualisation, etc.

Contract work is a fee-based service. Prices are calculated using a costing model based on the GSBPM.

Revenues from such activities amounted to EUR 347 000 in 2018, almost doubled in 2019 to EUR 621 000) and increased to EUR 1 138 000 in 2020, indicating the demand for these services. Currently,

there are more than 80 clients paying for statistical services. In 2018 the amount represented 4% of the staff budget, in 2019 7% and 12% in 2020.

These activities appear to have further potential, which may in particular be the case when it comes to demand from government ministries. If there is an outside willingness to pay the associated costs of Statistics Estonia, such an activity will enhance the welfare of society. In addition, it may help ease the difficult financial situation of Statistics Estonia to the extent it generates economies of scale or if certain parts of the present official statistics programme can be shifted on to this basis.

To improve beyond compliance with the ES CoP, the peer review team recommends:

R14. Statistics Estonia should build on the successes of the Eight Statistical Services programme to expand the delivery of statistical services against payment. The purpose would be, not least, to address demand from government ministries. (Improvement related: ES CoP, Indicator 11.1)

In accordance with the Official Statistics Act, each year and not later than 1 July, Statistics Estonia prepares and presents the official five-year work programme to the Ministry of Finance. The programme is a list of demographic, social, economic and environmental statistical activities, which is then approved by an Order of the Government of the Republic.

When preparing this programme, Statistics Estonia directly communicates with central and local government authorities. Statistics Estonia also publicly consults with respondents about the composition of data and the terms of submission. The Statistics Council has a statutory role in commenting on the draft programme.

As a result, coordination with the governmental sector and with respondents is ensured when preparing the programme, but non-governmental users, in particular academia, are not formally and regularly involved in activities to identify needs to be reflected in this programme. In practice, Statistics Estonia closely cooperates with academia, as described above, and may hear about upcoming needs in that context. Nonetheless, there would seem to be some scope for strengthening the input into the official five-year work programme process from both academia and the general public.

R15. Statistics Estonia could usefully consult stakeholders more widely in the preparation of its official five-year work programme, allowing more input, e.g. from the general public and academia. (Improvement related: ES CoP, Indicator 11.1)

Several mechanisms are in place for Statistics Estonia to coordinate with government ministries. In addition to regular contacts at the expert level, a working group on national statistics was recently established (April 2021) with the tasks of: (a) early monitoring of the sectoral statistical needs and creating awareness of the necessary phenomena and indicators; (b) prioritising among competing demands within the timetable for the development of legislation; and (c) agreeing on the need for national statistics to be included in the national budgetary strategy, with the aim of ensuring the necessary funding.

Furthermore, bilateral ad hoc meetings at senior level allow the capturing of emerging demands, though it is not a fixed item on the agenda and the meetings are not held at regular intervals. Also, with a view to strengthening cooperation, a new position was created in Statistics Estonia in February 2021 as leader of the partnership relations in the national statistical system.

Despite the generally good relations and channels of communication, the question arises whether more could be done to allow Statistics Estonia to be aware at an early stage of emerging policy needs for statistics and hence be prepared when the actual demand emerges. Likewise, incorporating data

and statistics into government policy at an early stage may allow some gains to be reaped that may otherwise not be attained.

To improve beyond compliance with the ES CoP, the peer review team recommends:

R16. Statistics Estonia should make use of the increased interactions with ministries to obtain an early sense of upcoming policy needs for statistics to help anticipate future demands on the official statistics programme. (Improvement related: ES CoP, Indicator 11.1)

5.2.4 Strengthening internal processes and information flows

To improve the quality of products and to strengthen internal processes and information flows, Statistics Estonia has developed a system of quality assessments of statistical activities and products based on two main pillars: light assessments and in-depth assessments.

The statisticians responsible for statistical activities or product groups are obliged to evaluate annually the processes of data collection, processing and dissemination as well as the quality of output, taking into account problems encountered in the course of the year and feedback from actors involved in the process (e.g. processing team, respondents, interviewers and users). For this purpose, an internal tool (JIRA) is used to continuously collect comments and problems related to statistical production.

Where aggravating circumstances are revealed during this light evaluation (or if there is a perceived or externally imposed need for changes) an in-depth assessment is carried out. Evaluation meetings are organised according to the GSBPM phases (development, collection, processing, analysis, dissemination, and communication) or according to the volume of comments/proposals received. The actors participating in relevant sub-processes are involved. Recommendations resulting from the assessment serve as a basis for development projects.

Full coverage of statistical activities or product groups by regular evaluations is thus ensured only in the case of the light assessments. In-depth assessments which are more detailed and more thorough, are performed only if necessary, with the judgment in many cases made by 'the owner' of the respective statistical activity or product group. If such a need is not perceived, part of the statistical production may not be subject to deep evaluations for years.

In-depth assessments allow a more profound examination of processes and products in terms of quality and effectiveness. They involve wider participation of the employees involved in respective phases of statistical production, which is important for a broader assessment of the issue. The contributions by experts who use the output of the evaluated process can bring helpful findings and suggestions. The input of statisticians responsible for preceding or similar statistical processes can also be mutually beneficial. Improved communication and cooperation between departments may occur as an accompanying effect, also contributing to higher satisfaction of staff working in Statistics Estonia.

Similarly, and according to international recommendations, contributions by external partners can be another fruitful element of quality assessments. Participation from academia or by other users experienced in statistical analysis or in statistical production may provide new input. Input by relevant experts from other NSIs may also be useful.

The benefits of in-depth assessments should therefore be extended to all statistical activities and product groups. Setting the optimal periodicity of such regular evaluations should, however, take into account the burden imposed by this extended task.

To improve beyond compliance with the ES CoP, the peer review team recommends:

R17. Statistics Estonia should ensure that in-depth quality assessments cover all statistics at regular intervals, hence giving a view external to the production process on individual statistics, and possibly including input by experts from outside the institution e.g. academia and other National Statistical Institutes. (Improvement related: ES CoP, Indicator 4.4)

Statistics Estonia relies significantly on administrative data sources and efforts are made to continue in this direction. Nonetheless, statistical surveys remain an important activity of Statistics Estonia. While approximately 30% of statistical activities are based exclusively on administrative data sources, most other activities use a combination of administrative and survey data. Most questionnaires are intended for businesses, substantially less for households.

As regards surveys, responding units are not asked to fill in data which are already available from administrative data sources, to conform with the 'once-only principle'. When possible, those figures are pre-filled in the questionnaires to shorten the time needed for respondents to provide answers. Selected checks are incorporated in the data collection tool to help respondents avoid unnecessary errors. Questionnaires and related information (deadlines etc.) are easy to find on the webpage of Statistics Estonia. To increase the response rate, a sophisticated system of automatic reminders has been introduced, with positive results.

The main complaint in the continuous respondent satisfaction survey relates to the tool used and has confirmed the need to redesign the data collection service which is taking place during 2020-2024. This is based on designing clear and simple questionnaires allowing easy orientation, involving respondents in the design phase of the reports, and increasing awareness of why information is collected. The aim is to reduce the response burden and dissatisfaction with the questionnaires.

The use of machine-to-machine data delivery is seen as another possibility to meet these goals. The direct data transfer from accounting systems to statistical production would replace manual work for respondents. Use of such progressive methods might also have positive consequences on the sample size used in statistical surveys. Particularly in the conditions of a small country, where response burdens can become high, measures that contribute to a high response rate can help to decrease the burden of responding units by reducing sample sizes.

Internal modernisation of processes has been focused on standardisation and automation, respectively data processing and calculations of output. As regards data processing, standardisation is based on using common tools, e.g. for editing, imputations, dataset structures for surveys and administrative data sources. Such standardisation presently covers approximately 70% of statistical production. Other surveys are for the time being treated differently because of their specific characteristics.

Further progress on data processing would consist mainly in automating these processes and requires demanding and skill-intensive preparatory work in the form of methodological developments, such as defining precise rules for selective editing, including automating certain logical checks, validation, imputation, aggregation, quality measurement etc.

As regards the calculation of output, standardisation and automation at present covers approximately 35% of output variables.

The necessary conditions for further standardisation and for extended automation include detailed and thorough documentation and metadata. This very challenging task will also require the

cooperation of all relevant experts. In the end, however, investments made during the introductory phase of the present plan are the basis for further strong increases in effectiveness as a result of automated statistical production.

R18. Statistics Estonia needs to continue efforts to standardise and automate data processing and to update software and questionnaires used in data collection. (Improvement related: ES CoP, Indicators 9.3, 10.2 and 10.4)

The activities of Statistics Estonia in the area of experimental statistics were described above in the context of recommendation 11. As already mentioned, the activity has been centred around a dedicated team responsible for experimental statistics. However, involvement in experimental statistics has not been limited to this specific team. The data available in the usual statistical databases and knowledge of statisticians working in traditional production lines have also been used in experimental projects. Experts from traditional statistics have been involved according to their specific specialisation and interests, though of course subject to the time constraints resulting from their role and responsibilities in the production line.

The experimental statistics oriented to emerging specific needs and interests, have contributed to a higher respect and attractiveness for Statistics Estonia by other stakeholders and potential recruits. Similarly, inside Statistics Estonia, experimental statistics is being considered by active and interested experts in traditional statistical production as an opportunity for personal development and potential career opportunities.

The lessons learned so far will be useful for future activity in experimental statistics which, as mentioned above, could usefully contribute more strongly to traditional statistics production. In the future, the knowledge and results obtained during experimental projects could be spread more within Statistics Estonia both to inspire colleagues in non-participating departments and to underscore that such new activities benefit the institution as a whole, not just those directly involved. Such spreading of knowledge and information does not need to involve extensive resources and vast infrastructure. Potential benefits could also include closer working relations between statisticians involved in the production of experimental and traditional statistics, further improving mutual cooperation between departments, and staff satisfaction.

R19. Statistics Estonia should take initiatives to spread knowledge in-house of outcomes of research projects and experimental statistics. (Improvement related: ES CoP, Indicator 7.6)

5.3 VIEWS OF THE NSI, AS THE NATIONAL COORDINATOR OF THE NSS AND THE PEER REVIEW, ON THOSE RECOMMENDATIONS WHERE THEY DIVERGE FROM PEER REVIEW EXPERTS' ASSESSMENT

None

ANNEX A – AGENDA OF THE VISIT

Timing	Topic	Participants
Day 1		
09:00-09:45	Preparatory meeting with the national coordination desk and, possibly, other national participants attending the visit. This meeting aims at facilitating communication among the participants, discussing, in an informal way, practical aspects of the visit and getting to know each other.	The peer review expert team: All <u>Statistics Estonia:</u> National Coordinator (NC); Communication Officer (CO)
09:45-10:00	Welcome and introduction to the programme, adopting the agenda and organisational matters.	The peer review expert team: All <u>Statistics Estonia:</u> Senior Management; CO
10:00-11:00	Presentation of the National Statistical System General information session with a description of how the national statistical system is organised (bodies, distribution of responsibilities, relations between authorities, etc.), including the Data Governance System as well as the Role of Administrative Data.	The peer review expert team: All <u>Statistics Estonia:</u> Deputy Director General; Director General; Deputy Director General for Data Governance and Data Science; NC; CO
11:00-11:15	Coffee break	
11:15-12:45	Professional Independence, including the Law on Official Statistics and related legislation.	The peer review expert team: All <u>Statistics Estonia:</u> Deputy Director General; Director General; NC; CO
12:45-13:45	Lunch	
13:45-15:15	Coordination and cooperation	The peer review expert team: All <u>Statistics Estonia:</u> International Relations Advisor; Head of Partnerships;

		Deputy Director General for Data Governance and Data Science; Head of Economic and Environmental Statistics Department; Head of Population and Social Statistics Department; NC; CO
15:15-15:30	Coffee break	
15:30-17:00	Use of Administrative data and data governance.	The peer review expert team: All <u>Statistics Estonia:</u> Head of Development Department; Team Lead of Data Acquisition and Data Processing Development; Team Lead of Population Statistics; Team Lead of Agricultural Statistics; Deputy Director General for Data Governance and Data Science; Data Governance Expert; Team Lead of Experimental Statistics; NC; CO
17:00-18:00	Peer review expert team discussion (the national peer review coordinator/national coordination desk should be available at this time in case any questions arise).	
Timing	Topic	Participants
Day 2		
09:00-10:15	Quality (organisational structure, tools, monitoring). Methodology, standards, classifications, registers, metadata, data collection, data processing, (including explanation of software used to produce statistics).	The peer review expert team: All <u>Statistics Estonia:</u> Quality Manager; Head of Development Department; Leading Analyst of Enterprise Statistics Team;

		Team Lead of Foreign Trade Statistics; Leading Analyst of Macroeconomics Statistics Team; Team Lead of Education and Culture Statistics; CO
10:15-10:30	Coffee break	
10.30-12:00	Access to and statistics based on privately held and new data sources, experimental statistics (including COVID-19 statistics).	The peer review expert team: All <u>Statistics Estonia:</u> Head of Development Department; Team Lead of Experimental Statistics; Head of Economic and Environmental Statistics Department; NC; CO
12:00-13:00	Lunch	
13:00-14:15	Resources and skills shortages	The peer review expert team: All <u>Statistics Estonia:</u> Head of Finance; Head of Personnel and Support Services Department; Deputy Director General; Director General; NC; CO
14:15-15:45	Response burden and internal efficiency	The peer review expert team: All

		<u>Statistics Estonia:</u> Head of Development Department; Head of Interviewers Network Department; Head of Data Acquisition and Processing Department; Leading Analyst of Enterprise Statistics Team; Team Lead of Well-being and Labour Market Statistics; NC; CO
15:45-16:00	Coffee break	
16.00-17:00	Meeting with junior staff only (staff with 2-5 years' experience in the NSI)	The peer review expert team: All <u>Statistics Estonia:</u> Leading Database Specialist; Development Manager; Leading Analyst of Macroeconomics Statistics Team;
17:00-18:00	Peer review expert team discussion (the national peer review coordinator/national coordination desk should be available at this time in case any questions arise).	
Timing	Topic	Participants
Day 3		
09:00-10:15	Programming, planning and services	The peer review expert team: All <u>Statistics Estonia:</u> Head of Partnerships; Deputy Director-General for Data Governance and Data Science; Project Manager of Population and Social Statistics Department; Head of Economic and Environmental Statistics Department; Head of Population and Social Statistics Department; NC; CO
10:15-10:30	Coffee break	

10:30-11:30	Meeting with National Institute of Health Development (NIHD)	<p>The peer review expert team: All</p> <p><u>National Institute of Health Development:</u> Director; Senior analyst at the Department of Health Statistics; Head of Health Statistics department; Analyst at the Department of Health Statistics;</p> <p><u>Statistics Estonia:</u> Head of Population and Social Statistics Department; Director General; NC; CO</p>
11:30-12:15	User engagement	<p>The peer review expert team: All</p> <p><u>Statistics Estonia:</u> Head of Marketing and Dissemination Department; NC; CO</p>
12:00-13:00	Lunch	
13:00-14:15	Interaction with academia	<p>The peer review expert team: All</p> <p><u>Statistics Estonia:</u> Deputy Director-General for Data Governance and Data Science; Team Lead of Experimental Statistics; International Relations Advisor; Team Lead of Environmental Statistics; NC</p>
14:15-15:15	Progress and plans for the future (Pandemic response)	<p>The peer review expert team: All</p> <p><u>Statistics Estonia:</u> Director General; Deputy Director General;</p>

		Deputy Director-General for Data Governance and Data Science; Head of Development Department; NC; CO
15:15-15:30	Coffee break	
15:30-17:00	Meeting with Ministry of Finance	The peer review expert team: All <u>Ministry of Finance:</u> Secretary General; Deputy Secretary General for administrative policy; <u>Statistics Estonia:</u> Director General; Head of Economic and Environmental Statistics Department; NC;
17:00-18:00	Peer review expert team discussion (the national peer review coordinator/national coordination desk should be available at this time in case any questions arise).	
Timing	Topic	Participants
Day 4		
09:00-10:00	Meeting with Central Bank	The peer review expert team: All <u>Central Bank:</u> Head of the Statistics Department; Head of the Economic division; <u>Statistics Estonia:</u> Head of Economic and Environmental Statistics Department; Team Lead of Macroeconomics Statistics; International Relations Advisor; NC
10:00-11:00	Engagement with external users, communication and dissemination	The peer review expert team: All

		<p><u>Statistics Estonia:</u> Head of Marketing and Dissemination Department; Team Lead of Communication and Marketing; Customer Support Supervisor; NC</p>
11:00-11:15	Coffee break	
11:15-12:00	Meeting with business representatives	<p>The peer review expert team: All</p> <p><u>Business representatives:</u> 3 representatives of companies</p> <p><u>Statistics Estonia:</u> Head of Economic and Environmental Statistics Department; NC</p>
12:00-13:00	Meeting with media representatives and economic commentators/bank economists	<p>The peer review expert team: All</p> <p><u>Media representatives and economists:</u> 3 representatives from media and 2 economic commentators/economists</p> <p><u>Statistics Estonia:</u> Head of Economic and Environmental Statistics Department; Media Relations Manager; NC</p>
13:00-14:00	Lunch	
14:00-15:00	Meeting with representatives of academia	<p>The peer review expert team: All</p> <p><u>Representatives of academia:</u> 3 representatives from universities</p> <p><u>Statistics Estonia:</u></p>

		Deputy Director-General for Data Governance and Data Science; Team Lead of Experimental Statistics; NC; CO
15:00-16:00	Meeting with representative owners of private data sources used by Statistics Estonia	The peer review expert team: All <u>Representatives of private data owners:</u> 4 representatives from private companies <u>Statistics Estonia:</u> Head of Economic and Environmental Statistics Department; Team Lead of Experimental Statistics; NC
16:00-16:15	Coffee break	
16:15-17:15	Meeting with Statistical Council	The peer review expert team: All <u>Members of Statistical Council:</u> 2 members of the Statistical Council <u>Statistics Estonia:</u> NC; CO
17:15-18:15	Peer review expert team discussion (the national peer review coordinator/national coordination desk should be available at this time in case any questions arise).	
Timing	Topic	Participants
Day 5		
09:00-10:30	Peer review expert team discussion	The peer review expert team: All
10:30-10:45	Coffee break	
10:45-12:45	Time blocked for clarifications, remaining or additional issues and focus areas.	

12:45-13:45	Lunch	
13:45-16:00	Meeting with the senior management of the NSI: conclusions and recommendations	The peer review expert team: All <u>Statistics Estonia:</u> Senior Management

ANNEX B – LIST OF PARTICIPANTS

<p>Statistics Estonia</p>	<p>Urmet Lee (Director-General, member of Senior Management)</p> <p>Kaie Koskaru-Nelk (Deputy Director-General, member of Senior Management)</p> <p>Andres Kukke (Deputy Director-General for Data Governance and Data Science, member of Senior Management)</p> <p>Maiki Ilves (Head of Development Department, member of Senior Management)</p> <p>Ivar Pae (Head of Economic and Environmental Statistics Department, member of Senior Management)</p> <p>Heidy Roosimägi (Head of Population and Social Statistics Department, member of Senior Management)</p> <p>Karin Veski (Head of Personnel and Support Services Department, member of Senior Management)</p> <p>Ave Sepik (Head of finance, member of Senior Management)</p> <p>Maarja Kirtsi (Head of Marketing and Dissemination Department, member of Senior Management)</p> <p>Epp Karus (Head of Interviewers Network Department, member of Senior Management)</p> <p>Heidi Pellmas (Head of Data Acquisition and Processing Department, member of Senior Management)</p> <p>Kristi Lebin (Quality Manager, National coordinator)</p> <p>Riina Kerner (International Relations Advisor, Communication Officer)</p> <p>Kaja Sõstra (Leading Analyst, Team Lead of Experimental Statistics)</p> <p>Kadri Kütt (Media Relations Manager)</p> <p>Liis Meriküll (Communications Partner and Team Lead of Communication and Marketing)</p> <p>Katrin Karhu (Customer Support Supervisor)</p> <p>Jaana Tael (Head of Partnerships)</p> <p>Laura Kalda (Project Manager of Population and Social Statistics Department, responsible for commission work)</p> <p>Evelin Ahermaa (Leading Analyst, Team Lead of Macroeconomics Statistics)</p> <p>Merike Põldsaar (Leading Analyst of Enterprise Statistics Team)</p> <p>Anet Mürsoo (Leading Analyst, Team Lead of Well-being and Labour Market Statistics)</p> <p>Evelin Puura (Leading Analyst, Team Lead of Foreign Trade Statistics)</p>
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	<p>Kaire Raasik (Leading Analyst, Team Lead of Education and Culture Statistics)</p> <p>Kaia Oras (Leading Analyst, Team Lead of Environmental Statistics)</p> <p>Kristin Karolin Nõlvak (Leading Methodologist, Team Lead of Data Acquisition and Data Processing Development)</p> <p>Terje Trasberg (Leading Analyst, Team Lead of Population Statistics)</p> <p>Eve Valdvee (Leading Analyst, Team Lead of Agricultural Statistics)</p> <p>Veiko Berendsen (Data Governance Expert, Team Lead of Data Governance)</p> <p>Gerli Õunapuu (Leading Database Specialist of Dissemination Team)</p> <p>Marika Korka (Development Manager, Team Lead of Data Collection Development)</p> <p>Pauliine Kommer (Leading Analyst of Macroeconomics Statistics Team)</p> <p>Kati Coleman (Translator, Dissemination Team)</p>
National Institute of Health Development	<p>Annika Veimer (Director)</p> <p>Mare Ruuge (Senior analyst at the Department of Health Statistics)</p> <p>Jane Idavain (Head of Health Statistics department)</p> <p>Ingrid Valdmaa (Analyst at the Department of Health Statistics)</p>
Ministry of Finance	<p>Merike Saks (Secretary General)</p> <p>Raigo Uukkivi (Deputy Secretary General for administrative policy)</p>
Central Bank	<p>Jaanus Kroon (Head of the Statistics Department)</p> <p>Ulvi Saks (Head of the Economic division)</p>
Business representatives	<p>CEO of Warmeston AS</p> <p>Finance accountant at Transferwise Eesti filiaal AS</p> <p>Chief accountant of Hoolekandeteenused AS</p>
Media and economic commentators/bank economists	<p>Journalist at Delfi News portal</p> <p>Journalist at Eesti Päevaleht (daily newspaper)</p> <p>Journalist at Postimees (daily newspaper)</p> <p>Chief economist of Luminor Estonia (commercial bank in Estonia)</p> <p>Chief economist of Swedbank (commercial bank in Estonia)</p>
Academia	<p>Vice Rector for Academic Affairs (Tartu University)</p> <p>Chair of Economic Modelling, Associate Professor in Applied Econometrics (Tartu University, virtually)</p> <p>Head of Department of Mechanical and Industrial Engineering (Tallinn Technical University)</p>

Private data owners	<p>CEO of Skriining OY, (programmer of standardizing transaction data of business)</p> <p>Elering AS, Energy Markets' Analyst (electricity data)</p> <p>CEO of mobile operator company Tele2 (mobile data)</p> <p>Mobile operator company Telia Eesti AS, Head of Analytics (mobile data)</p>
Statistical Council	<p>Hede Sinisaar (Ministry of social affairs, Head of Analysis and Statistics Department, representative of users)</p> <p>Allan Puur (Tallinn University, Professor of Demography, representative of users)</p>