

PEER REVIEW REPORT

ON COMPLIANCE WITH THE CODE OF PRACTICE AND
THE COORDINATION ROLE OF THE NATIONAL STATISTICAL INSTITUTE

LIECHTENSTEIN

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APRIL 2015

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY	3
2. INTRODUCTION	7
3. BRIEF DESCRIPTION OF THE NATIONAL STATISTICAL SYSTEM	9
4. COMPLIANCE WITH THE CODE OF PRACTICE AND THE COORDINATION ROLE WITHIN THE NATIONAL STATISTICAL SYSTEM	11
4.1 Strengths of the National Statistical Institute in relation to its compliance with the Code of Practice and to its coordination role	11
4.2 Issues and recommendations	12
4.2.1 Resources and efficiency considerations	12
4.2.2 Strengthening relevance and user orientation	14
4.2.3 Use of administrative data, statistical confidentiality	19
4.2.4 Methodology and quality of statistical production processes	23
4.3 National Statistical Institute views where they diverge from peer reviewers' assessment	26
ANNEX A: PROGRAMME OF THE VISIT	27
ANNEX B: LIST OF PARTICIPANTS	29

1. EXECUTIVE SUMMARY

The Office of Statistics Liechtenstein (OSL) is an autonomous and professionally independent institution and the only producer of European statistics in Liechtenstein. Its activity is based on the new Statistics Act, adopted in 2008 and in force since 1 January 2009. The Statistics Act stipulates the statistical principles which are to be applied when producing official statistics. These principles are fully in line with the quality framework of the European Statistical System (ESS) and the European statistics Code of Practice (CoP). The OSL cooperates actively with the National Statistical Institutes of neighbouring German-speaking countries.

Some strengths in implementing the CoP were identified in the course of the peer review: standardised process and professional criteria for the appointment of the head of the OSL and the organisation's Quality Guidelines based on statistical processes. The process of appointing the head of the OSL is based on clear professional criteria, which are defined in the job description and listed in the public advertisement. This practice could serve as an example for the national administrations in other countries, too. The OSL has a good reputation and its professional independence is unquestioned.

The Peer Review team identified four broad improvement areas that are related to the efficiency of the OSL and its resources, user orientation, the use of administrative data and methodology, and the quality of statistical processes.

There is a lack of human resources both in the OSL and in the Office of Information Technology (OIT) serving the OSL, which is the reason for some delays in accomplishing statistical projects and fulfilling European obligations. The shortage is mainly related to the lack of employees with the necessary scientific background and information technology (IT) experience. The OSL, in cooperation with the OIT, develops contemporary data collection systems; however, an existing initiative that aims at transferring data directly from the business accounts should be finalised.

The OSL provides good and reliable data, but their interpretation, range and quality aspects – notably regarding timeliness – should be improved. Users expect a more detailed explanation on the respective phenomena and would like Liechtenstein's data to be more accessible in European comparisons. The monitoring of user needs by using user satisfaction surveys has not been regular; nevertheless the most recent survey was conducted in 2014. Information on the use of the OSL website is currently unreliable due to technical reasons. User orientation should also be strengthened by elaborating and publicising the new long-term strategy programme. The OSL publishes a calendar of statistical releases on its website but, instead of exact release dates, indicative release periods are given. Since the exact release dates are not used, there is no possibility for proper measurement of timeliness and punctuality. The latter is an issue since nearly 20% of the annual publications exceed the final date of the indicative release period.

The web-based tools used for dissemination of statistical data meet user needs but are rather limited in the OSL. Although the OSL introduced a self-tabulation service very recently, its content is currently limited to population and housing data. Considering the very intensive overall development in data visualisation and dissemination of information by using "smart" devices, the OSL should take a more active approach and elaborate specific and detailed plans on data visualisation. Additionally, and also in connection with the latter, the OSL should give sufficiently high priority to presenting standardised metadata for users.

Tariffs for custom-designed analyses are based on tradition and are neither transparent nor publicly accessible.

Some legal provisions may limit the OSL's mandate to collect information for statistical purposes from administrative sources, i.e. the OSL may not be able to get administrative data without government consent. Due to the lack of human resources, the OSL has difficulty in keeping track of all set-ups and expanding information systems in the National Administration; it is not informed automatically about changes in data systems which are not yet used for statistical purposes. The OSL gives feedback to the owners of administrative data on errors in their datasets. No matter where data comes from, however, the principle of statistical confidentiality should always be respected. Liechtenstein legal provisions also stipulate that data collected for statistical purposes can be submitted to non-statistical authorities for non-statistical purposes.

The OIT is the essential service provider of IT services and also provides vulnerability scans of statistical IT systems. More sophisticated penetration tests, simulating threats to the IT-system from outside intruders and identifying security weaknesses, are performed too rarely.

Due to the lack of resources, quality control focuses on publication; a process-based quality management approach is not applied systematically. The OSL uses a variety of methodological handbooks for statistical surveys, but the updating of these documents is not systematic.

For the most part, the OSL is compliant with the CoP, but there is still some scope to enhance compliance.

RECOMMENDATIONS

Resources and efficiency considerations

1. The Office of Statistics Liechtenstein and the national authorities should consider providing additional human resources to strengthen professional capacity in methodology, quality, confidentiality and use of information technology. (European statistics Code of Practice, Principle 3, indicator 3.1.)
2. The Office of Statistics Liechtenstein should create a separate position responsible for general methodological questions. (European statistics Code of Practice, Principle 7, indicator 7.2.)
3. The Office of Statistics Liechtenstein should finish its ongoing project on the implementation of electronic data transmission from business accounts to the statistical information system. It should also monitor the response burden systematically. (European statistics Code of Practice, Principles 9 and 10, indicators 9.1, 9.3 and 10.2.)

Strengthening relevance and user orientation

4. The Office of Statistics Liechtenstein should diligently address unmet user needs (e.g. European and regional comparisons and deeper interpretations) by consulting actively the national Statistical Commission. (European statistics Code of Practice, Principle 11, indicators 11.1 and 11.2.)
5. The Office of Statistics Liechtenstein should introduce a more periodic user satisfaction survey and analyse downloads of data from its website in an appropriate way. (European statistics Code of Practice, Principle 11, indicator 11.3.)
6. After elaborating and adopting the new corporate strategy, the Office of Statistics Liechtenstein should publish it. (European statistics Code of Practice, Principle 11, indicator 11.2.)

7. The Office of Statistics Liechtenstein should provide users with a release calendar that includes exact release dates. (European statistics Code of Practice, Principles 6 and 13, indicators 13.1 and 13.4.)
8. The Office of Statistics Liechtenstein should, where feasible, gradually reduce the time lag between the reference period and the publication date. It should also introduce a systematic monitoring of data timeliness. (European statistics Code of Practice, Principle 13, indicator 13.1.)
9. The Office of Statistics Liechtenstein should introduce systematic and regular monitoring and publish information on punctuality concerning all statistical releases. (European statistics Code of Practice, Principle 13, indicator 13.4.)
10. The Office of Statistics Liechtenstein should consider introducing interactive tools for data dissemination, such as interactive maps, info-graphics and other modern tools (e.g. mobile applications) for statistical data dissemination. (European statistics Code of Practice, Principle 15, indicator 15.2.)
11. The Office of Statistics Liechtenstein should gradually expand the data available in the self-tabulation application on its website. (European statistics Code of Practice, Principle 15, indicator 15.2.)
12. The Office of Statistics Liechtenstein should improve access to definitions, descriptions of the statistical terms and concepts, and classifications in a searchable way on its website. (European statistics Code of Practice, Principles 14 and 15, indicators 14.3, 15.1 and 15.2.)
13. The Office of Statistics Liechtenstein should adapt and publish its pricing policy on custom-designed analyses and use of microdata for scientific purposes. (European statistics Code of Practice, Principle 15, indicators 15.3 and 15.4.)

Use of administrative data, statistical confidentiality

14. The legislative authorities of Liechtenstein should amend the Statistics Act to grant the Office of Statistics Liechtenstein access to administrative data for statistical purposes without requiring a government decision. (European statistics Code of Practice, Principle 2, indicator 2.2.)
15. The Office of Statistics Liechtenstein should conclude written agreements for the use of administrative data for statistical purposes with the owners of administrative data. (European statistics Code of Practice, Principle 8, indicator 8.8.)
16. The National Public Authorities of Liechtenstein should automatically give information on changes in administrative data and information on changes to existing databases to the Office of Statistics Liechtenstein. The Office of Statistics Liechtenstein should establish formal procedures of informing about changes in data collection. The draft laws changing administrative data should be reviewed and commented on by the Office of Statistics Liechtenstein prior to their adoption. (European statistics Code of Practice, Principles 2 and 8, indicators 2.2 and 8.7.)
17. The Office of Statistics Liechtenstein should give regular and systematic feedback to the owners of administrative data while respecting the principle of statistical confidentiality. (European statistics Code of Practice, Principle 8, indicator 8.9.)

18. The legislative authorities of Liechtenstein should amend the Statistics Act and the Statistics Ordinance so that data collected for statistical purposes shall not be used for administrative purposes. Also, use of the Statistical Business Register data in the public interest should be made fully transparent, i.e. data which is meant to be public should be stipulated in the Statistics Act and should be equally accessible to all users. The data providers should be informed about this when data are collected. (European statistics Code of Practice, Principle 5, indicator 5.1.)
19. The Office of Information Technology Liechtenstein should conduct penetration tests of the statistical information system at least once a year. (European statistics Code of Practice, Principle 5, indicator 5.5.)

Methodology and quality of statistical production processes

20. Process quality should be monitored in the Office of Statistics Liechtenstein by documented procedures. A strategy for the extended use of “end-of-process reports” should be elaborated and implemented. (European statistics Code of Practice, Principle 4, indicator 4.1.)
21. The Office of Statistics Liechtenstein should improve the process of updating the methodology and its monitoring. (European statistics Code of Practice, Principle 7, indicator 7.3.)
22. The Office of Statistics Liechtenstein should always test questionnaires for new or amended statistical surveys. (European statistics Code of Practice, Principle 8, indicator 8.2.)

2. INTRODUCTION

This peer review report is part of a series of assessments, the objective of which is to evaluate the extent to which National Statistical Institutes (NSIs) and the European Statistical System (ESS)¹ comply with the European statistics Code of Practice (CoP).

The CoP, which sets out a common quality framework for the ESS, was first adopted in 2005 by the Statistical Programme Committee and updated in 2011 by its successor, the European Statistical System Committee. The CoP – 15 principles and related indicators of good practice – covers the institutional environment, the statistical production process and the output of European statistics. The ESS is committed to fully complying with the CoP and is working towards its full implementation. Periodic assessments review progress towards reaching this goal.

The first global assessment, a round of peer reviews in 2006–2008, explored how the NSIs and Eurostat were progressing in implementing the parts of the CoP relating to the institutional environment and dissemination of statistics (principles 1–6 and 15). This resulted in reports for each NSI and Eurostat, available on the Eurostat website². These reports also include a set of improvement actions covering all the principles of the CoP; these informed the annual monitoring of the implementation of the CoP in the ESS in the period 2009-2013.

The scope of this second round of peer reviews is broader: the assessment of CoP compliance covers all principles; the CoP compliance of selected other national producers of European statistics (as well as the NSI) in each country is assessed; and the way in which statistical authorities coordinate the production and dissemination of European statistics within their statistical systems is explored.

It should be underlined that there is a fundamental difference between the reports in the previous round of peer reviews conducted in 2006-2008 and the reports from this round. In the 2006-2008 round compliance with principles 1 to 6 and 15 of the CoP was assessed by means of a four-level scale (fully met; largely met; partly met and not met) and improvement actions were agreed on all 15 principles. After five years of continuous development most of the improvement actions have been implemented and significant progress towards full compliance with the CoP has been made. Therefore, rather than stating the state of play for all principles of the CoP, the reports from the 2013-2015 round mainly focus on issues where full compliance with the CoP has not been found or further improvements are recommended by the Peer Review team.

In order to gain an independent view, the peer review exercise has been externalised and an audit-like approach, where all the answers to the self-assessment questionnaires have to be supported by evidence, has been applied. As in 2006-2008, all EU Member States, the EFTA/EEA countries and Eurostat are subject to a peer review.

Each peer review in the Member States and EFTA/EEA countries is conducted by three reviewers and has four phases: completion of self-assessment questionnaires by a country;

¹ The ESS is the partnership between the Union statistical authority, which is the Commission (Eurostat), the national statistical institutes (NSIs) and other national authorities responsible in each Member State for the development, production and dissemination of European statistics. This Partnership also includes the EFTA /EEA countries.

² <http://ec.europa.eu/eurostat/web/quality/first-round-of-peer-reviews>

their assessment by Peer Reviewers; a peer review visit; and the preparation of reports on the outcomes. The peer review of Eurostat has been conducted by the European Statistical Governance Advisory Board (ESGAB).

To test and complete the methodology, it was piloted in two countries, Iceland and Slovakia, over the summer of 2013.

The peer review of Liechtenstein was conducted by Priit Potisepp (chair), Jan Matejcek and József Kárpáti, who conducted a peer review visit to Vaduz on 26 – 30 January 2015. The programme of the visit is in Annex A and the list of participants in Annex B.

This report focuses on compliance with the CoP. The report highlights some of the strengths of National Statistical System of Liechtenstein in these contexts and contains recommendations for improvement. Improvement actions developed by Office of Statistics Liechtenstein (OSL) on the basis of this report will be published within the four-week period starting when the final report is sent to the OSL.

3. BRIEF DESCRIPTION OF THE NATIONAL STATISTICAL SYSTEM

General structure of the National Statistical System

The OSL is an office of the Liechtenstein National Administration and the only producer of European statistics at national level. Since Liechtenstein is a very small country, there is no need for an intra-statistical coordination role. Initially one department of the Office of Economic Affairs, the OSL has been an autonomous and professionally independent institution since 1 January 2009.

Main legal acts and underlying principles

The new Statistics Act was adopted in 2008 and entered into force on 1 January 2009. The renewal of the legal environment for production of official statistics was very important since the old Statistics Law (1976) did not cover many important aspects relevant to participation in the ESS, for example professional independence, statistical confidentiality, objectivity, relevance and accessibility of statistical products. The Statistics Act contains essential legal provisions governing, among other things, the responsibility of the OSL, statistical principles of the ESS, organisation of official statistics, data collection and data security.

Another regulation, the Statistics Ordinance of the Government, governs harmonisation of the population register of the municipalities and the registers of the OSL – the Liechtenstein Business Register (Statistical Business Register) and the Building and Housing Register. It also stipulates the list of statistical publications. Statistical activity is also influenced by the Data Protection Act (2002), and the Central Register of Persons Act (2011) with their respective ordinances. The tasks of the OSL are laid down in Articles 4 and 6 of the Statistics Act: The OSL shall provide national and municipal authorities, as well as the general public, with relevant, reliable and coherent statistical information about the society, the economy and the environment. In line with this goal, the OSL shall collect data, produce statistical publications and transmit statistical data based on obligations arising from international treaties.

Based on the Agreement on the European Economic Area (EEA Agreement), the Member States commit themselves to producing and disseminating coherent and comparable statistics for the description and monitoring of relevant economic, social and ecological aspects in the EEA. For that purpose, EEA members develop harmonised methods, definitions and classifications as well as shared programmes and procedures. Annex XXI of the EEA Agreement lays down the European legal obligations for Liechtenstein in the field of statistics.

Numerous EU statistical acts are applicable to Liechtenstein, but it also has many exemptions and derogations which are attributable to non-applicable sampling, the lack of data, cost-effectiveness, response burden and irrelevance. Most importantly, directly applicable European law includes Regulation (EC) No. 223/2009 of the European Parliament and of the Council of 11 March 2009 on European statistics, which has been recently amended.

The OSL is strongly committed to the statistical principles of the ESS. Two years before the adoption of the Statistics Act, the government had decided that the OSL's activities should be in line with the CoP.

The statistical work programme and publications

The multi-annual (two-year) statistical programme is adopted by the government, revised yearly and extended by one year at a time. The list of statistical publications includes 31 different publications whereas a number of publications appear several times a year. Due to the small size of the country (Liechtenstein has about 37,000 inhabitants), sample surveys can be

conducted to a very limited degree. Large surveys are the annual Business Register Survey and the Population and Housing Census (which is conducted every five years). Smaller surveys are those on banking, education, energy and the business cycle. Consequently, production of official statistics is based to a great extent on the use of administrative data. The main data sources are the Fiscal Authority, the Office of Public Health, the Office of Education, the Office of Economic Affairs and the municipalities.

The OSL disseminates statistics in the form of electronic (pdf) and printed publications, accompanied by predefined Excel tables for each publication. It recently launched an application for self-tabulation (eTAB) of statistical data available on the OSL website.

The OSL submits its statistical data to Eurostat, the United Nations, the United Nations Economic Commission for Europe, the United Nations Industrial Development Organisation, the European Free Trade Association and the Organisation for Economic Co-operation and Development.

The OSL and the Statistical Commission

The OSL has only 10 employees. It is located in Vaduz; there are no regional offices. The total 2015 budget for the office is €1.5 million. The organisation of the OSL consists of the divisions responsible for registers and international affairs, economic and education statistics and national accounts. The OSL is managed by the head of the OSL; the divisions are managed by division heads. The former is at the level of Director General at the National Administration, which is the highest level of civil servants. They report directly to the Prime Minister. The head of the OSL and the division heads are directly involved in the statistical production processes and the compilation of statistical publications.

The Strategic Programme 2009–2015 of the OSL focuses on the user-friendliness and relevance of statistical products, the efficiency of statistical processes, and the high quality of the products and processes. It underlines intensified cooperation with the data suppliers.

The OSL operates the Statistical Business Register and the Building and Housing Register. It also uses data from the Central Population Register and other administrative registers.

The OSL is supported by the Statistical Commission, which gives advice on important questions concerning official statistics such as the quality of statistics (including availability of Liechtenstein data in international statistical databases), the multi-annual statistical programme, measures arising from the ESS peer review, amendments to the legal acts, etc. The commission consists currently of eight members who are appointed by the government for a term of four years. The members of the commission represent users and respondents, municipalities and the scientific community. The commission is chaired by the head of the OSL.

The OSL cooperates actively with the Federal Statistical Office of Switzerland (FSO) and Statistics Austria. The ESS Census Hub has been implemented with the help of the former, whereas Statistics Austria has supported Liechtenstein in the development of quality reports. Close cooperation with the FSO is also illustrated by the organisation in 2012 of the Swiss Days of Official Statistics in Vaduz together with the FSO, the Conference of Regional Statistical Offices and the Swiss Statistical Society. It is also a peculiarity of the country that Swiss price indices are applicable for Liechtenstein since Liechtenstein uses the Swiss franc as its national currency and has no Central Bank of its own. These Swiss price indices are disseminated in Liechtenstein by the OSL with reference to the FSO.

4. COMPLIANCE WITH THE CODE OF PRACTICE AND THE COORDINATION ROLE WITHIN THE NATIONAL STATISTICAL SYSTEM

4.1 STRENGTHS OF THE NATIONAL STATISTICAL INSTITUTE IN RELATION TO ITS COMPLIANCE WITH THE CODE OF PRACTICE AND TO ITS COORDINATION ROLE

Standardised process and professional criteria for appointment of the head of the OSL

The OSL's reputation and the unquestioned professional independence of the institution and its head were underlined by different stakeholders during the peer review visit. Article 5 of the Statistics Act states clearly that OSL activities shall be guided by professional considerations with regard to statistical methods and procedures as well as to the content of statistical publications. The head of the OSL reports directly to the Prime Minister and has therefore high-level access to political and administrative bodies. The Law on Civil Servants (Article 10) sets standardised criteria and procedures and stipulates professional qualifications as a precondition for appointment as head of a National Authority. The job description of the head of the OSL includes not just general administrative or managerial duties but also very concrete tasks related to the production of statistics, for example elaborating concepts for new statistical surveys, controlling and assuring the quality of the statistical production processes and compiling statistical surveys. Expert knowledge of statistics, economic sciences or business informatics is required. Under the heading 'expected supplementary knowledge', experience in management, good knowledge of informatics, profound knowledge of statistical methods and analytical and conceptual ways of thinking are listed. Most importantly, several years' experience, necessary for performing statistical tasks, is required.

After the formation of the independent OSL in 2009, public advertisement for the post of the head of the OSL was launched. Requirements for applicants defined in the job advertisement were consistent with the job description. The practice described above can be seen as strength of the Liechtenstein national administration in relation to its compliance with the CoP and could serve as an example for other national administrations (CoP Principle 1, indicator 1.8.)

Concise quality guidelines based on a statistical business process approach

The principles set up by the Statistics Act include commitment to quality.

As an outcome of the first peer review in 2007 OSL developed quality guidelines. The respective framework of Statistics Austria served as an example. The Quality Guidelines of the OSL (hereafter called Quality Guidelines) serve as the central document for OSL employees and are intended to help ensure that the statistical products have the desired quality. The Quality Guidelines are published on the OSL website.

The strength of the Quality Guidelines lies in a clear, user-friendly and cohesive provision of the policies and procedures which are in line with the CoP and arranged according to the subsequence of the statistical production processes. The text describes concisely the essence of the business rules and defines specific practical instructions to perform particular tasks (CoP Principle 4, indicator 4.1).

4.2 ISSUES AND RECOMMENDATIONS

4.2.1 RESOURCES AND EFFICIENCY CONSIDERATIONS

The adequacy of financial, human and technological resources is essential for the good functioning of each NSI. There have been no substantial problems in financing the state statistical service in Liechtenstein so far. In a similar way, the OSL's information technology (IT) equipment (and that of the OIT) can be assessed as modern, updated and effectively used.

The situation in human resources is more complicated. The relation of the number of staff to population size is comparable with other smaller EU countries. But the workers of a small organisation with 10 people cannot specialise in niche areas of statistics; everybody has to cover several subject matter areas.

Two main measures for addressing the existing lack of human resources and its consequences for the quality of statistical processes and products are dealt with in this chapter. One is the assignment of methodological questions, including quality and confidentiality issues, to a separate position. The second is the need to further develop electronic data collection from respondents.

4.2.1.1 LIMITED HUMAN RESOURCES

Budgetary and staff restrictions are a problem in practically all NSIs. The OSL is not an exception but due to the extremely small size of this institution, it is a specific kind of issue. In spite of stagnation of the total annual budget, financial resources for operating expenses and conducting existing surveys, especially for the Population and Housing Census, are adequate. Despite general efforts to decrease public expenditures, there have been no deep cuts in the OSL's budget in recent years.

The more problematic situation relates to limited human resources. Because of the constraints on them, current national statistics needs cannot be fully met and there have been delays in statistical projects and even in the fulfilment of European obligations. The total OSL permanent staff is 10 or 9.1 in full-time equivalent. The situation is slightly better than five years ago but worse than it was two years ago. The OSL lacks human resources, notably those with scientific and IT backgrounds. The situation is similar in the OIT, the OSL's main governmental partner in all IT projects concerning data collection, data processing and dissemination.

The salaries of civil servants are competitive in comparison with the private sector. Therefore losing highly qualified staff is very rare for the OSL and the staff composition is extremely stable. On the other hand, under the existing conditions of frozen salaries and no recruitment of new staff, the age structure is getting problematic. At the meeting with junior staff, statisticians present had 6, 8 and 12 years of experience.

It has been underlined that data delivery in more complex statistics, such as the Population and Housing Census, are disproportionally time consuming in such a small NSI.

In order to enhance compliance with the CoP, the **Peer Reviewers recommend that:**

- 1. The Office of Statistics Liechtenstein and the national authorities should consider providing additional human resources to strengthen professional capacity in methodology, quality, confidentiality and use of information technology. (European statistics Code of Practice, Principle 3, indicator 3.1.)**

4.2.1.2 STRENGTHENING METHODOLOGICAL CAPACITY

Concepts, definitions, classifications, methods and standard tools applied by the OSL are in accordance with European legislation. The main pieces of legislation are stated in Annex XXI of the EEA Agreement and are directly applicable to Liechtenstein. Therefore, it is not necessary to transfer these into national legislation.

The Quality Guidelines follow the structure of the Generic Statistical Business Process Model (GSBPM) and serve as a standard methodological document. The main methodological issues are documented in Chapter C of all statistical publications; more detailed ones are found in the glossaries of the statistical publications, in internal handbooks for the production process of the statistical publications and in the documentation of statistical projects.

Due to the size of the OSL, there is no special unit for methodology, quality, confidentiality and information technology. Responsibility for these horizontal issues is placed with the division heads and first and foremost with the head of the OSL. This situation is assessed as a weakness and should be resolved.

The continuous vocational training of the staff is an integral part of the human resources policy. In recent years, the staff has attended seminars, European Statistical Training Programme courses and specific workshops organised by Eurostat on Government Finance Statistics, Statistical Disclosure Control, Statistical Data and Metadata Exchange (SDMX), International Standard Classification of Education (ISCED), etc. They also took part in vocational training programmes of the National Administration, for example statistics with Excel, data protection, Statistical Analysis System (SAS), effective writing, Adobe InDesign and Oracle Discoverer.

Hence, in order to enhance compliance with the CoP, the **Peer Reviewers recommend that:**

- 2. The Office of Statistics Liechtenstein should create a separate position responsible for general methodological questions. (European statistics Code of Practice, Principle 7, indicator 7.2.)**

4.2.1.3 INCREASING EFFICIENCY AND LOWERING THE RESPONSE BURDEN THROUGH ELECTRONIC DATA TRANSMISSION TOOLS

The reporting burden is not excessive for respondents in Liechtenstein. The majority of statistical surveys are conducted by extensive use of administrative data. In the Statistical Programme for 2015, there are only six surveys including the Population and Housing Census; none of them is a sample survey. Each year during the preparation of the statistical work programme, there is a thorough discussion in the OSL with the Statistical Commission and with ministries to avoid redundancy and duplication. According to Article 11, paragraph 2 of the Statistics Act, the OSL has to refrain from surveys if the required data are available in the form of administrative data that meet the required quality standards.

There are no sample surveys in the field of business statistics. The Statistical Business Register is updated by a regular comprehensive survey. It is available for respondents on the OSL website in an online form and used for submitting an electronic list of employees working in the enterprise. A new project has been started for all companies to further reduce the reporting burden on businesses by introducing electronic data transfer directly from their accounts. This application has not yet been implemented by the OSL.

A similar situation is observed in the field of demographic and social statistics; no sample surveys have been used with the exception of participation in the Swiss Health Survey. Furthermore, the number of questions in household surveys is constantly decreasing, for example three questions were deleted in the questionnaire for the next Population and Housing Census. All household surveys can be conducted in an electronic format.

The human resources of the OSL used for different statistical processes and products are measured by the software tool “Time Safe”, which has also been used in other governmental authorities both in planning and in evaluating phases. But there is no reporting system for the response burden and no systematic process aimed at further reducing it. Hence, the response burden should be counted and reported to make the process of reducing it more systematic.

In order to further enhance compliance with the CoP, the **Peer Reviewers recommend that:**

- 3. The Office of Statistics Liechtenstein should finish its ongoing project on the implementation of electronic data transmission from business accounts to the statistical information system. It should also monitor the response burden systematically. (European statistics Code of Practice, Principles 9 and 10, indicators 9.1, 9.3 and 10.2.)**

4.2.2 STRENGTHENING RELEVANCE AND USER ORIENTATION

The main purpose of statistics, in general, is to provide reliable information on the economy, society and the environment to different users. Statistics are considered valuable if they are used as widely as possible. Therefore, an NSI should examine users’ needs systematically and use the information gained to improve and enrich its products.

The Peer Review team received important feedback during meetings with different user groups. The general opinion was that the OSL provides good and reliable data, but their interpretation, range, quality aspects concerning time issues or the channels used for transmitting the information should be improved. The following assessment addresses these areas.

4.2.2.1 ADDRESSING UNMET USER NEEDS

In the case of Liechtenstein, Annex XXI of the EEA Agreement contains many exemptions and derogations from statistical data provision. There are several European surveys which are not carried out in the country at all. Reasons for the exemptions are mostly response burden, cost-effectiveness and non-applicable sampling due to the size of the country. These exemptions are the reason for not being able to deliver comparable data for benchmarking with other countries in several cases. But due to the size of Liechtenstein, users tend to put national statistical data in a broader context and like to look at details in comparison with other EU/EEA/EFTA countries, at least with those that are closer in size or are neighbours of Liechtenstein.

The users met by the Peer Review team stated that finding data comparisons with other countries is rather difficult. This issue was addressed in several meetings during the Peer Reviewers’ visit. Different user groups told the Peer Review team that there are unmet statistical data needs, as users would like to see Liechtenstein more and more in European comparisons. In most national statistical publications, country comparisons exist (standard chapter “Ländervergleich”, e.g. vehicle statistics), but quite often Liechtenstein data are not included in the publications and databases of international organisations. There are different reasons for this, for example that the data for comparisons are not being produced.

Different users also were of the opinion that the OSL in many cases publishes facts and minor statements instead of larger analyses. Users would find publications of the OSL more useful if a more detailed explanation of the respective phenomena was given. As an example, users noted that some statistical data are highly volatile, since the country is small and even minor fluctuations in the economy or society have much larger effects than in larger countries. It is a challenge to interpret the evolution of the volatile data in time or in a broader context. Therefore, in some publications, a more detailed professional explanation is required.

In order to prioritise the different user needs, the Statistical Commission – as there are members representing different users – should systematically take such subject matter topics on board at their meetings.

In order to enhance compliance with the CoP, the **Peer Reviewers recommend that:**

- 4. The Office of Statistics Liechtenstein should diligently address unmet user needs (e.g. European and regional comparisons and deeper interpretations) by consulting actively the national Statistical Commission. (European statistics Code of Practice, Principle 11, indicators 11.1 and 11.2.)**

Monitoring of user needs and user satisfaction is not carried out on a regular basis. The time lag between two last user surveys was seven years (2007 and 2014). Notwithstanding that the 2014 user survey tried to address really important topics on user behaviour, the data obtained cannot be considered completely representative as there were too few responses. The existing routine cannot be considered a systematic way of surveying user satisfaction.

The Peer Review team was also told that the data on visits and hits on the OSL website are currently unreliable, due to technical reasons. Since IT management and website maintenance are the responsibility of the OIT in Liechtenstein, further investigations and developments must be carried out in cooperation with them. Based on these obstacles, the OSL has only an indicative picture of the needs, priorities and behaviour of users.

In order to enhance compliance with the CoP, the **Peer Reviewers recommend that:**

- 5. The Office of Statistics Liechtenstein should introduce a more periodic user satisfaction survey and analyse downloads of data from its website in an appropriate way. (European statistics Code of Practice, Principle 11, indicator 11.3.)**

4.2.2.2 TRANSPARENCY OF THE STRATEGY

Strategic programmes assure users and other stakeholders that an organisation has a long-term perspective and clearly identifies development directions, goals and projects for the future. From a user point of view, strategic programmes are also tools for identifying how the organisation navigates among different user needs and which user-oriented developments have the highest priority. The OSL elaborated a strategic programme when it became independent in 2009, but it was intended for internal use. This long-term strategy programme reaching to 2015 has not yet been made available to the public. It has been exclusively used for internal purposes. Such a programme could have further served public confidence, built trust in statistics and informed users of relevance issues. The OSL management had just started considering the setup of a new strategic plan for the next mid to long-term period by the time of the Peer Review visit, but the content and timespan were not defined yet.

In order to further enhance compliance with the CoP, the **Peer Reviewers recommend that:**

- 6. After elaborating and adopting the new corporate strategy, the Office of Statistics Liechtenstein should publish it. (European statistics Code of Practice, Principle 11, indicator 11.2.)**

4.2.2.3 INDICATIVE RELEASE PERIOD

The OSL publishes a release calendar on its website and provides users with a list of statistical publications, the link to the currently available version of the publication and the release time of the next publication. The standardised daily release time (9 a.m.) is stated therein.

Although the exact release dates are not pre-announced, an indicative release period (beginning, middle or end of the month) is defined. Users are provided with standardised electronic newsletters, which are sent out simultaneously with the statistical publications.

The Peer Review team investigated the expectations of different user groups as regards the degree of accuracy of the release time. The ministries were of the opinion that a more precise release calendar would be useful for both the general public and the ministries. Some media representatives considered a more specific release calendar useful but underlined that the current situation also satisfies their needs. Representatives of the scientific community underlined that it would be very useful to see exact publication dates in the OSL's release calendar.

The OSL also announces changes to the dissemination schedule in advance as soon as they are known and ensures that amendments are included in Chapter C of the respective statistical publication.

It is the opinion of the Peer Review team that the existing practice of defining the release time of the statistical publications should be improved. It should be in line with the underlying principles of European statistics and expectations of the users of statistics. A more precise release calendar would be helpful for users in planning their work with statistical results. Introducing exact release dates would also enable measurement of the punctuality and timeliness of statistics.

In order to achieve compliance with the CoP Principles 6 and 13, the **Peer Reviewers recommend that:**

- 7. The Office of Statistics Liechtenstein should provide users with a release calendar that includes exact release dates. (European statistics Code of Practice, Principles 6 and 13, indicators 13.1 and 13.4.)**

4.2.2.4 TIMELINESS AND PUNCTUALITY OF STATISTICAL DATA AND RELEASES

Lack of timeliness in some areas was mentioned several times by representatives of the media and the scientific community. Users accept reasonable time lags between reference periods and publication times in national accounts and some other business data, but are less patient in other statistical areas.

Education statistics were cited as one example. Since the OSL almost exclusively relies on administrative data sources, the publication schedule mostly depends on when data are delivered to the OSL.

Since the OSL has very limited human resources, in some cases the responsible statistician gets parallel tasks and has to decide which of them has priority. The OSL claims that Chapter C

on methodology and quality, which is part of most publications, contains information on timeliness, but there is no systematic monitoring of the timeliness aspect of statistical surveys in general.

In order to further enhance compliance with the CoP, the **Peer Reviewers recommend that:**

- 8. The Office of Statistics Liechtenstein should, where feasible, gradually reduce the time lag between the reference period and the publication date. It should also introduce a systematic monitoring of data timeliness. (European statistics Code of Practice, Principle 13, indicator 13.1.)**

Since there are no exact release dates, currently it is not possible to monitor divergences within the indicative release period. Although the OSL treats release dates in a rather flexible way, top management stated that approximately 20% of the annual publications still exceed the final date of the indicative release period. Junior staff also confirmed this, adding that part of the punctuality issue is related to the heavy workload of the staff member who is in charge of the design and final layout of the statistical releases and publications.

The Quality Guidelines (Chapter 2.4.1) indicate that divergences from publication deadlines should be announced. In the case of most but not all publications, Chapter C contains data on the punctuality aspect.

In order to further enhance compliance with the CoP, the **Peer Reviewers recommend that:**

- 9. The Office of Statistics Liechtenstein should introduce systematic and regular monitoring and publish information on punctuality concerning all statistical releases. (European statistics Code of Practice, Principle 13, indicator 13.4.)**

4.2.2.5 INTERACTIVE TOOLS OF DATA DISSEMINATION AND IMPROVED ACCESS TO METADATA

Today, the main tool for ensuring easy access to data and statistics is generally the internet website of an NSI. Web-based tools used for dissemination of statistical data are rather limited in the OSL.

Modern presentation of information is becoming a key element and an indispensable part of modern official statistics dissemination, as well as of production processes. Whereas such forms of presentation would make statistical data easier for the general public to understand and could serve the OSL in reaching wider publicity in a popular way, currently the OSL has no specific plans on data visualisation, and it does not use info-graphics or interactive maps in dissemination.

It was stated by the OSL that currently the electronic newsletter subscribers gain direct links to the publications and other releases and can have access to the material via their e-mails. However, some more active users mentioned that they would rather welcome an easily usable, visually more attractive and frequently refreshed mobile application (“app”) to reach graphs or some data immediately. This could add to the quality level in presenting statistics.

The Peer Review team got the impression that there is consensus regarding the need for more popular and visually attractive data-presenting solutions. Mostly due to the lack of human resources, especially also because of the limited know-how of the IT components of the task in the OSL at present, these needs have not been widely explored. However, only a few steps would be required to achieve this since the website format of the Liechtenstein National Administration is already automatically adjusting the content to mobile phone and tablet screens and platforms.

In order to further enhance compliance with the CoP, the **Peer Reviewers recommend that:**

- 10. The Office of Statistics Liechtenstein should consider introducing interactive tools for data dissemination, such as interactive maps, info-graphics and other modern tools (e.g. mobile applications) for statistical data dissemination. (European statistics Code of Practice, Principle 15, indicator 15.2.)**

The OSL also introduced a self-tabulation service on its website in January 2015. This service is offered in two languages (German and English). The eTAB application allows a modern interactive data tabulation, but its content is currently limited to population and housing data. However, an impressive length of time series is presented in several topics.

An additional advantage of this new form of data presentation is that it allows the linking of metadata when tables are presented. However, this opportunity is not widely used by the OSL; only some basic metadata are linked to the results of the tabulation data.

In order to further enhance compliance with the CoP, the **Peer Reviewers recommend that:**

- 11. The Office of Statistics Liechtenstein should gradually expand the data available in the self-tabulation application on its website. (European statistics Code of Practice, Principle 15, indicator 15.2.)**

As already mentioned, Chapter C of publications plays the most important role in explaining specific methodology and quality aspects to the users. This part of the publications simultaneously tries to serve users who are more experienced and also those who are less experienced. However, sufficiently high priority has not been given to the metadata presentation for users. With constant pressure on time and resources, it is often difficult to give priority to improving the scope and validity of metadata. The depth and detail of this methodology description also varies between different publications. Although the descriptions of the most important concepts, definitions and methods are kept and updated in Chapter C of publications, they serve rather as subject matter reading material, instead of as a repository where users can easily look up keywords and reuse them.

Statistical notions and definitions are not easily accessible on the OSL website. A public repository of these notions and classifications would be a significant improvement for users.

In order to further enhance compliance with the CoP, the **Peer Reviewers recommend that:**

- 12. The Office of Statistics Liechtenstein should improve access to definitions, descriptions of the statistical terms and concepts, and classifications in a searchable way on its website. (European statistics Code of Practice, Principles 14 and 15, indicators 14.3, 15.1 and 15.2.)**

4.2.2.6 THE PRICING POLICY OF CUSTOM-DESIGNED ANALYSES AND MICRODATA ACCESS

The OSL provides almost all of its services free of charge, including electronic versions of publications, printed hard copies (except the statistical yearbook), print-on-demand and smaller-scale custom-made dataset provisions. Larger-scale custom-designed analyses are available on a standard cost-coverage basis. Although there is a chapter in the Quality Guidelines on the provisions of custom-designed data analyses and microdata provisions, microdata access has not been asked for by researchers since the release of the Quality Guidelines. So, as yet, there are no practical examples of these rules on microdata access.

The Peer Review team got the impression that the tariffs for paid services are based on tradition, and as such, are neither transparent enough nor publicly available. Even with regard

to the very small scale of the research community in Liechtenstein, a more transparent approach is desirable.

In order to further enhance compliance with the CoP, the **Peer Reviewers recommend that:**

- 13. The Office of Statistics Liechtenstein should adapt and publish its pricing policy on custom-designed analyses and use of microdata for scientific purposes. (European statistics Code of Practice, Principle 15, indicators 15.3 and 15.4.)**

4.2.3 USE OF ADMINISTRATIVE DATA, STATISTICAL CONFIDENTIALITY

Use of administrative data generates significant efficiency gains both to the data provider (by reducing the burden on business) and to the compiler of the associated statistics. Unobstructed use of administrative sources is particularly essential for Liechtenstein since sample surveys are almost non-applicable. Therefore, the involvement of the OSL in the design of administrative data with a systematic and transparent interaction between the parties is indispensable.

Although the OSL has no considerable problems with obtaining data from other national authorities, some issues were observed in the course of the Peer Reviewers' visit, particularly in relation to some legal provisions, which at least theoretically allow interventions in the OSL's general legal mandate to collect information for statistical purposes. When the statistical system depends heavily on administrative data, legal procedures should at best facilitate keeping the OSL updated on changes in administrative information systems. Transparency of interactions between the OSL and the owners of administrative data also safeguards sustainable use of administrative data.

The use of Statistical Business Register data for non-statistical purposes is also addressed in this chapter.

4.2.3.1 ACCESS TO ADMINISTRATIVE DATA

The Peer Review team was told that the OSL is not facing obstacles in getting data for European statistical requirements. From a legal point of view, Articles 11–14 of the Statistics Act give the OSL a mandate to collect information for statistical purposes. The Statistics Act also underlines that administrative data should be used if they meet required quality standards.

According to Article 14, paragraphs 1 and 3 of the Statistics Act, the OSL may use administrative data owned by national authorities for production of statistical publications whereas the national authorities shall provide the OSL with the necessary data by decision of the government. Consequently, the government entitles the OSL to use administrative data and the OSL's mandate to use them for statistical purposes is limited. The Peer Reviewers were told that government consent is needed only theoretically, i.e. in the case of a dispute.

Article 15 of the Statistics Act regulates participation of the municipalities in data collection. According to paragraph 2, the government, in consultation with the municipalities, assesses whether the latter's participation in certain statistical activities is required. This can be understood in the way that the government is entitled to instruct the municipalities to initiate cooperation with the OSL. Municipalities have high autonomy in Liechtenstein. Therefore, this particular legal provision contains a requirement to consult the municipalities before ordering them to participate in statistical data collection or in the submission of administrative data. In practice, the OSL has good direct relations without government orders — there was, for

example, a joint working group with the municipalities for setting up the Building and Housing Register and a municipality representative is a member of the Statistical Commission. The Population and Housing Census has been repeatedly cited as a good example of cooperation with the municipalities.

Although the aforementioned legal provisions seem not to limit the OSL's statistical activities at present, they are not in line with the principle of a broad mandate to collect information for statistical purposes and constitute a formal restriction (decision of the government) for use of administrative data.

In order to enhance compliance with the CoP, the **Peer Reviewers recommend that:**

- 14. The legislative authorities of Liechtenstein should amend the Statistics Act to grant the Office of Statistics Liechtenstein access to administrative data for statistical purposes without requiring a government decision. (European statistics Code of Practice, Principle 2, indicator 2.2.)**

4.2.3.2 ACCOUNTABILITY OF INTERACTIONS BETWEEN THE OSL AND OWNERS OF ADMINISTRATIVE DATA

The OSL has sole responsibility for the statistical processing of administrative data used for European statistics as there are no other offices of the National Administration delivering data to European Commission. However, the quality of statistical outputs depends very much on cooperation between the OSL and owners of administrative data.

The OSL has written or implicit arrangements with the offices of the National Administration concerning the use of administrative data for statistical purposes, for example with the Fiscal Authority on the use of administrative data for National Accounts, salary statistics and tax statistics. Such arrangements, however, are not always designed in the form of a conventional document.

A signed agreement is in place for direct electronic access to administrative data contained in the unemployment database with the Office of Economic Affairs. All other agreements with owners of administrative data are implicit, even if the OSL has direct electronic access to administrative data of other offices, for example data on tourism or social insurance.

The owners of administrative data, which are both data providers and data users, repeatedly confirmed that so far only inconsequential problems have arisen in sharing and transmitting administrative data. Nevertheless, formal written agreements would be preferred.

In order to achieve compliance with the CoP Principle 8, the **Peer Reviewers recommend that:**

- 15. The Office of Statistics Liechtenstein should conclude written agreements for the use of administrative data for statistical purposes with the owners of administrative data. (European statistics Code of Practice, Principle 8, indicator 8.8.)**

Likewise, the procedure of informing the OSL about changes in administrative datasets is of great importance. Based on Article 7, paragraph 1 of the Statistics Act, the owners of administrative data have to inform the OSL in advance about the set-up and expansion of their information systems, as well as about changes in data collection and classifications that are already used for statistical purposes. In relation to the same subject, according to Article 14, paragraph 2 of the Statistics Act, the owners of administrative data have to inform the OSL about their data capture upon request. It can be concluded that reporting on changes in these

administrative data, which are used for statistics, is the obligation of the owners of the data, whereas in all other cases the OSL should take the initiative.

The Peer Review team was informed that due to the lack of human resources, the OSL has difficulty in keeping track of all set-ups and expansions of the information systems in the National Administration. Therefore, it concentrates on changes in information systems which are already used for statistical purposes. Consequently, the OSL may miss information on databases that are not currently used and information on new initiatives, which may not be highlighted publicly. It was mentioned by a representative of the data providers that there are no formal provisions and no written way of informing the OSL about changes in data collection, apart from the legal provisions in the Statistics Act.

The Peer Reviewers were also informed that there are sector-based laws in place which regulate data collection and its purpose in a particular field of administrative or commercial activity. In this context, the data on tourism were offered as an example.

In the opinion of the Peer Review team, the involvement of the OSL in changes of administrative data collection should be strengthened. Though a general public procedure for obtaining the opinion on a public issue within the legislative process is in place (Swiss term *Vernehmlassung*), the systematic and comprehensive monitoring of all public initiatives is not efficient from the point of view of the statistical system. A more robust arrangement would include the OSL's right to pre-review and comment on the relevant draft laws.

In order to strengthen compliance with the CoP, the **Peer Reviewers recommend that:**

16. The National Public Authorities of Liechtenstein should automatically give information on changes in administrative data and information on changes to existing databases to the Office of Statistics Liechtenstein. The Office of Statistics Liechtenstein should establish formal procedures of informing about changes in data collection. The draft laws changing administrative data should be reviewed and commented on by the Office of Statistics Liechtenstein prior to their adoption. (European statistics Code of Practice, Principles 2 and 8, indicators 2.2 and 8.7.)

The OSL applies procedures for assessing and checking the quality of administrative data before they are used as the data source for the production of statistics. These procedures are generally specified in the Quality Guidelines. Specific quality-checking procedures are provided for the Statistical Business Register, National Accounts and population statistics. Differences in concepts and definitions between administrative and statistical data are studied in statistical projects.

Owners of administrative data are kept informed about the statistical use of their data. They receive a copy of the statistical publications for which data has been delivered. According to the Quality Guidelines, they are also informed about errors in their datasets, as based on the OSL's interpretation statistical confidentiality is not an issue when giving feedback about revised individual data. It has been argued that administrative data come from the administrative data owners and are not subject to statistical confidentiality. It is the opinion of the Peer Reviewers that statistical confidentiality has to be respected even if these data come from administrative data sources. This means that no feedback from the OSL to other administrations regarding individual data should be allowed.

In order to achieve compliance with the CoP Principle 8, the **Peer Reviewers recommend that:**

- 17. The Office of Statistics Liechtenstein should give regular and systematic feedback to the owners of administrative data while respecting the principle of statistical confidentiality. (European statistics Code of Practice, Principle 8, indicator 8.9.)**

4.2.3.3 USE OF STATISTICAL DATA FOR NON-STATISTICAL PURPOSES

Article 5 of the Statistics Act provides that official statistics is guided by the statistical principles of the ESS and lists the principles of the CoP. Based on this, confidentiality as a general rule is stipulated by law. Nevertheless, Article 16, paragraphs 1 and 2 of the Statistics Act indicate that data collected for statistical purposes can also be used for other, i.e. non-statistical purposes, if there is a legal basis for such use. Article 5 of the Statistics Ordinance, issued by the government on 7 July 2009 provides that the OSL operates the Statistical Business Register, which is used for statistical purposes and also for performing tasks in the public interest. It has to be mentioned that the Statistical Business Register obtains data from different sources (regular business register survey, administrative business register) and that its content also includes the list of employees working in the enterprise. According to Article 8, paragraph 1 of the Statistics Ordinance, the OSL may disclose the name and address of the enterprise where a person is employed to other national public authorities and municipalities, insofar as this is required for the fulfilment of tasks imposed by law. The Peer Review team has not been informed about the existence of such a law but the OSL admitted that theoretically a legal act can force it to provide collected data for non-statistical purposes; a clear exception seems to be Population and Housing Census data. The OSL states in its letter to respondents that these data are exclusively used for statistical purposes.

Moreover, Article 8, paragraph 2 of the Statistics Ordinance, in line with Article 5 adds that, in the public interest, the following data from the Statistical Business Register can be submitted to the authorities governed by public law and to private individuals: the name and address, the identifier and size class, type of economic activity, and legal form and structure (central and branch offices) of the statistical units (included local units). The OSL receives some data from the administrative business register and assigns values to the following variables: type of economic activity, the size class and the kind of activity unit. Consequently, the OSL may disclose data which are not available in other administrative registers.

The Peer Review team was told that the OSL considers and decides the presence of public interest in the case of a scientific study, the presence of a public service interest or general welfare questions. The Peer Reviewers were informed that in 2013 and 2014 data were disclosed to an engineering company working for the Office of Construction and Infrastructure, the Office of Environment and the research company working for the Office of Economic Affairs. The data have been used mainly, but not exclusively, for research purposes. The Office of Environment used the data obtained from the Statistical Business Register to update the list of companies which deal with hazardous substances.

It is the opinion of the Peer Reviewers that use of data collected by the OSL should be processed for research purposes according to the procedure set up in the Quality Guidelines. The existing legal provision issued by the government on the use of Statistical Business Register data for non-statistical purposes should be explicitly regulated in the Statistics Act. It should regulate which variables of the Statistical Business Register should be public. It is also the opinion of the Peer Reviewers that disclosing the name and the address of the enterprise where a person is employed to other National Authorities and municipalities is not in line with Principle 5 of statistical confidentiality.

In order to achieve compliance with the CoP Principle 5, the **Peer Reviewers recommend that:**

- 18. The legislative authorities of Liechtenstein should amend the Statistics Act and the Statistics Ordinance so that data collected for statistical purposes shall not be used for administrative purposes. Also, use of the Statistical Business Register data in the public interest should be made fully transparent, i.e. data which is meant to be public should be stipulated in the Statistics Act and should be equally accessible to all users. The data providers should be informed about this when data are collected. (European statistics Code of Practice, Principle 5, indicator 5.1.)**

4.2.3.4 SECURITY MANAGEMENT OF THE STATISTICAL INFORMATION SYSTEM

All measures applied in the OSL for security of its statistical information system are the same as for the entire National Administration, since all OSL IT infrastructure, as part of the IT infrastructure of the National Administration, is under the authority of the OIT. The IT Security Division of the OIT is involved in all statistical IT projects and their implementation during their whole lifecycle. Security operating procedures are written in the information security guidelines, available on the intranet. OSL staff was informed of IT security in a special workshop.

The OSL applies the terminal server environment, which means that there is no local storage and all data are stored in the OIT. Access rights and physical access to the computer (server) room in the OIT are strictly organised and controlled by the OIT division responsible for physical security.

Any access to the statistical databases is logged; log files are checked regularly and stored for one year. The Office of Human Resources and Organisation informs the OIT about all staff changes immediately so that user rights are kept up-to-date all the time.

The OIT provides periodical vulnerability scans of all the IT systems performed by an IT security officer. More sophisticated tests are done with external specialised IT companies once in two years. These tests include also penetration tests simulating threats to the IT system from outside intruders and identifying security weaknesses. It is the opinion of the Peer Review team that these tests are very important for the security of the statistical IT system and should be done more frequently.

In order to further enhance compliance with the CoP, the **Peer Reviewers recommend that:**

- 19. The Office of Information Technology Liechtenstein should conduct penetration tests of the statistical information system at least once a year. (European statistics Code of Practice, Principle 5, indicator 5.5.)**

4.2.4 METHODOLOGY AND QUALITY OF STATISTICAL PRODUCTION PROCESSES

The main theory behind the principles concerning statistical production in the CoP is that all aspects of an NSI's work shall be based on well-founded, documented and justified background information that can be retrieved, updated and re-used by the NSI or other parties anytime. It is of fundamental importance that the processes can be followed, checked and adjusted in a transparent way.

Appropriate and transparent documentation of statistical methods gives the essential proof of the quality of production.

The Peer Review team addresses three main issues in this context. Appreciating the current solutions, the recommendations address the size and resource constraints of the OSL and

highlight the most important requirements that will ensure higher compliance with these principles.

4.2.4.1 PRODUCT- AND PROCESS-BASED QUALITY MANAGEMENT

Due to the lack of resources, quality control is focused on the outcome: the statistical publication. Quality aspects are mainly considered from this point of view. The Peer Review team was told that the process is usually checked if there are some signals of errors in the end product. Based on this statement, it was confirmed that a process-based quality management approach throughout the statistical business process is not applied systematically. Quality checking of the outcome is applied on a regular basis by a second member of staff who controls the publication's content and data based on the Quality Guidelines' requirements.

Even if its product quality control cannot be considered as best practice, with regard to the small size of the OSL and the lack of a general quality controller or methodology expert, currently this is the only appropriate way to apply quality control methods, at least on the products (see also Recommendation 2).

The Quality Guidelines also cover some aspects of product and process quality in general, but some users claimed that they were not even aware of the existence of the Quality Guidelines. Some other users stated, however, that they constantly use Chapter C of the publications as their main source of information about quality of the data. Chapter C is widely considered as a user-oriented quality report for publications, but users can only evaluate the final product, hence they do not even look for more justifications of the processes. This made it clear to the Peer Review team that there are some shortcomings in the publicly available documentation on process quality.

As the Quality Guidelines are still rather new, they have not yet been updated. Some OSL publications do not yet have a Chapter C, especially quarterly publications which rely on the annual versions of publications. The methodological documentation of Chapter C is updated regularly and controlled by a second person (dual-control principle).

National Accounts and the Statistical Business Register data production process have annual "end-of-process reports" that describe the flow of the production procedure and the issues that were raised during the process. The Peer Review team examined these reports and it was explained that these documents are considered internal documents, although they could easily serve as process quality documents for public use, too. Currently their range of application is very narrow. With regard to resource obstacles, a wider use of these document templates could significantly improve the OSL's process quality documentation.

External audits on statistical product and statistical process quality are not carried out, either. This is explained to some extent by the size of the office and of the country, but an adequate frequency and scale of these exercises should be elaborated to support the OSL's quality commitment from an external point of view.

In order to enhance compliance with the CoP, the **Peer Reviewers recommend that:**

- 20. Process quality should be monitored in the Office of Statistics Liechtenstein by documented procedures. A strategy for the extended use of "end-of-process reports" should be elaborated and implemented. (European statistics Code of Practice, Principle 4, indicator 4.1.)**

4.2.4.2 SYSTEMATIC UPDATING OF THE METHODOLOGICAL DOCUMENTATION

The main methodological tool of the OSL is the Quality Guidelines, which serves as a reference book for all statistical operations. As stated under 4.2.1.2, methodological and quality questions are explained in Chapter C of statistical publications, in glossaries, in internal handbooks and in the project documentation.

Internal handbooks exist for OSL staff on almost all subject matter statistics areas. They contain detailed, practical information on implementing the specific statistical procedure from a technical point of view. These handbooks are maintained exclusively by the statistician who is responsible for the entire process and there is no public access granted because of their mostly technical content. In practice, staff members correct or improve the handbooks based on their daily work. Some staff members update them in a way that changes can be traced in versions; others just update them by saving changes in the same document without using track changes or version control. Currently, there is no generally applied rule on the maintenance of these handbooks. Even if we consider the size of the office, this way of handling the main documentation of processes does not seem to be completely safe and appropriate.

In order to further enhance compliance with the CoP, the **Peer Reviewers recommend that:**

- 21. The Office of Statistics Liechtenstein should improve the process of updating the methodology and its monitoring. (European statistics Code of Practice, Principle 7, indicator 7.3.)**

4.2.4.3 SYSTEMATIC TESTING OF THE STATISTICAL QUESTIONNAIRES

The present set of statistical surveys of Liechtenstein is based on administrative data and only six statistical surveys. The Population and Housing Census 2011 questionnaire was tested as well as the questionnaire for the next census, which will be conducted in December 2015. Clarity of the questions and time needed to fill out the questionnaire were tested. The results of the Population and Housing Census questionnaire test are documented and were taken into account for the final questionnaire (e.g. some questions were transferred, a barcode was added).

Other than the Population and Housing Census questionnaire, no other questionnaires have so far been tested. Even if some questionnaires are very simple and include only up to five questions, as a general rule their clarity, response burden and user friendliness should be tested.

In order to strengthen compliance with the CoP, the **Peer Reviewers recommend that:**

- 22. The Office of Statistics Liechtenstein should always test questionnaires for new or amended statistical surveys. (European statistics Code of Practice, Principle 8, indicator 8.2.)**

4.3 NATIONAL STATISTICAL INSTITUTE VIEWS WHERE THEY DIVERGE FROM PEER REVIEWERS' ASSESSMENT

Divergent view to recommendation 18:

Recommendation 18:

The legislative authorities of Liechtenstein should amend the Statistics Act and the Statistics Ordinance so that data collected for statistical purposes shall not be used for administrative purposes. Also, use of the Statistical Business Register data in the public interest should be made fully transparent, i.e. data which is meant to be public should be stipulated in the Statistics Act and should be equally accessible to all users. The data providers should be informed about this when data are collected. (European statistics Code of Practice, Principle 5, indicator 5.1.)

The Statistics Act specifies that the Liechtenstein Office of Statistics is guided by the statistical principles of the European Statistical System in the fulfilment of its duties. The principle of statistical confidentiality is expressly mentioned in the Statistics Act. The Statistics Act also specifies that the Government issues an ordinance governing the content and disclosure of data of the Statistical Business Register. In Liechtenstein, the implementing provisions required to execute a law adopted by Parliament are set out in Government ordinances.

The Statistics Ordinance exhaustively enumerates what data the Office of Statistics may disclose from the Statistical Business Register. Both authorities governed by public law and private individuals have equal access to this data, insofar as this serves the public interest. Like the Statistics Act, the Statistics Ordinance is published in the Liechtenstein Law Gazette and is thus part of the official compilation of laws. The Statistics Act and the Statistics Ordinance are also available on the website of the Office of Statistics. It is thus fully transparent what data in the Statistical Business Register are public.

ANNEX A: PROGRAMME OF THE VISIT

AGENDA

Peer review visit to Liechtenstein (26 January 2015 – 30 January 2015)

Time	Programme	Organisation	Participants
Day 1 - Monday 26 January 2015			
9.00 – 10.45	Peer Review team discussion to finalise preparations for the visit; in particular to share views on the information received		
10.45 – 11.00	Coffee break.		
11.00 – 12.30	Preparatory meeting with the NSI coordination team.	Office of Statistics Liechtenstein (OSL)	Wilfried Oehry, Christian Brunhart, Mario Schädler
12.30 – 13.30	Lunch.		
13.30 – 14.00	Welcome and introduction of the programme, organisational matters.	OSL	Wilfried Oehry, Christian Brunhart, Mario Schädler
14.00 – 15.00	General information session with a description on how the national statistical system is organised (bodies, distribution of responsibilities, relations between authorities).	OSL	Wilfried Oehry, Christian Brunhart, Mario Schädler
15.00 – 15.15	Coffee break.		
15.15 – 17.00	Cooperation/level of integration of the ESS.	OSL	Wilfried Oehry, Christian Brunhart, Mario Schädler
17.00	Stock-taking meeting (incl. outstanding clarifications or additional issues) and reviewing of remaining schedule.		
Day 2 – Tuesday 27 January 2015			
9.00 – 10.30	The statistical law, related legislation and statistical work programme (CoP Principles 1, 2, 5 and 6).	OSL	Wilfried Oehry, Christian Brunhart, Mario Schädler
10.30 – 10.45	Coffee break.		
10.45 – 12.00	Continuation: The statistical law, related legislation and statistical work programme (CoP Principles 1, 2, 5 and 6).		Wilfried Oehry, Christian Brunhart, Mario Schädler
12.00 – 12.45	Lunch.		
12.45 – 14.45	Programming, planning and resources (CoP Principles 3, 9 and 10)	OSL	Wilfried Oehry, Christian Brunhart, Mario Schädler
14.45 – 17.00	Commitment to quality (organisational structure, tools, monitoring ...). (CoP Principles 4 and 11 to 15)	OSL	Wilfried Oehry, Christian Brunhart, Mario Schädler
17.00	Stock-taking meeting (incl. outstanding clarifications or additional issues) and reviewing of remaining schedule.	OSL	

Time	Programme	Organisation	Participants
Day 3 – Wednesday 28 January 2015			
9.00 – 11.00	Methodology, data collection, data processing and administrative data. (CoP principles 2, 7 and 8)	OSL	Wilfried Oehry, Christian Brunhart, Mario Schädler
11.00 – 11.15	Coffee break.		
11.15 – 13.00	Dissemination and confidentiality. (CoP Principles 5, 6 and 15)	OSL	Wilfried Oehry, Christian Brunhart, Mario Schädler
13.00 – 13.45	Lunch.		
13.45 – 15.15	Meeting with main users – Ministries and other public/private institutions.	OSL	Josef Beck, Isabel Schädler, Norman Wohlwend, Markus Biedermann, Edgar Nipp, Wilfried Oehry
15.15 – 15.30	Coffee break.		
15.30 – 16.30	Meeting with main users – Media.	OSL	Günther Fritz, Holger Franke, Martin Frommelt, Peter Koelbel, Wilfried Oehry
16.30	Stock-taking meeting (incl. outstanding clarifications or additional issues) and reviewing of remaining schedule.	OSL	
Day 4 – Thursday 29 January 2015			
9.00 – 10.00	Meeting with junior staff.	OSL	Thomas Erhart, Franziska Frick-Kunz, Harry Winkler
10.00 – 10.15	Coffee break.		
10.15 – 11.45	Meeting with main data providers.	OSL	Eva-Maria Mödtagl, Stefan Tomaselli, Eva-Maria Schädler, Michel Schläppi, Thomas Gstöhl, Wilfried Oehry
11.45 – 13.15	Lunch.		
13.15 – 14.15	Meeting with users – scientific community.	OSL	Wilfried Marxer, Andreas Brunhart, Christian Frommelt, Wilfried Oehry
14.15	Stock-taking meeting (incl. outstanding clarifications or additional issues).	OSL	
Day 5 – Friday 30 January 2015			
9.00 – 10.00	Peer Review team discussion.	OSL	
10.00 – 10.15	Coffee break.		
10.15 – 11.15	Clarifications, remaining or additional issues and focus areas.	OSL	Wilfried Oehry, Christian Brunhart, Mario Schädler
11.15 – 12.45	Meeting with senior management: conclusions and recommendations.	OSL	Wilfried Oehry, Christian Brunhart, Mario Schädler
12.45 – 13.30	Lunch.		
13.30 – 14.30	Preparation of the report: task sharing.	OSL	

ANNEX B: LIST OF PARTICIPANTS

	Peer Review Team
1	Priit Potisepp, Chair
2	Jan Matejcek, Peer Reviewer
3	József Kárpáti, Peer Reviewer
	Eurostat observer
4	Luis del Barrio, Task Force Peer Reviews, Eurostat
	OSL management
5	Wilfried Oehry, Director General
6	Christian Brunhart, Deputy Director General
7	Mario Schädler, Head of division
	National coordinator team
	Wilfried Oehry, Director General
	Christian Brunhart, Deputy Director General
	Mario Schädler, Head of division
	Other OSL staff members
8	Thomas Erhart, Junior staff
9	Franziska Frick-Kunz, Junior staff
10	Harry Winkler, Junior staff
	Representatives of main users
11	Josef Beck, General Manager, Liechtenstein Chamber of Commerce and Industry / Member of the Statistical Commission
12	Isabel Schädler, Deputy General Manager, Liechtenstein Economic Chamber
13	Norman Wohlwend, Mayor of Schellenberg / Member of the Statistical Commission
14	Markus Biedermann, Secretary General, Ministry for General Government Affairs and Finance
15	Edgar Nipp, Senior Adviser to the Minister for General Government Affairs and Finance

	Representatives of media
16	Günther Fritz, Chief Editor, Liechtensteiner Vaterland
17	Holger Franke, Journalist, Liechtensteiner Volksblatt
18	Martin Frommelt, Chief Editor, Radio Liechtenstein
19	Peter Koelbel, Chief Editor, 1FL TV
	Representatives of main data providers/respondents
20	Eva-Maria Mödla, Supervision, Statistics and Hospitals Division, Office of Public Health
21	Stefan Tomaselli, Supervision, Statistics and Hospitals Division, Office of Public Health
22	Eva-Maria Schädler, Upper Secondary and Higher Education Division, Office of Education
23	Michel Schläppi, Tax Assessment Corporates, Fiscal Authority
24	Thomas Gstöhl, Location Promotion, Office of Economic Affairs
	Representatives of the scientific community
25	Wilfried Marxer, Director, Liechtenstein-Institut, Barend
26	Andreas Brunhart, Research Fellow Economics, Liechtenstein-Institut, Barend / Member of the Statistical Commission
27	Christian Frommelt, Research Fellow Politics, Liechtenstein-Institut, Barend