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Items for discussion and decision: Transformative Agenda for Official Statistics

**Report of the European Statistical System (ESS) Conferences on a Transformative
Agenda**

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Introduction

The continuation of the joint Eurostat-United Nations Statistical Division (UNSD) initiative on a Transformative Agenda for Official Statistics on a regional level builds on the outcome of the Global Conference on the Transformative Agenda held on 15 and 16 January 2015 in New York and the recognition of the Statistical Commission at its 46th session for the need to strengthen the coordination of work streams between the global and regional levels.

The Statistical Commission supported the call for the modernisation of statistical systems taking into account, but not limited to, the following thematic areas: (i) coordination at and between the global and regional statistical systems; (ii) communication and advocacy; (iii) integrated statistical systems: data collection, processing and dissemination of integrated statistics; (iv) innovation and modernisation through standards-based statistical business architecture; and (v) training and capacity building.

The continuation of this initiative is based on a series of regional and sub-regional conferences organised in close consultation with the member states, the regional commissions and agencies and other partners. The Regional Conferences on the Transformative Agenda aim at: a) raising awareness and sharing information about transformative initiatives at the national, regional and global levels; b) setting priorities for actions for the five thematic areas identified by the Global Conference and considering additional thematic areas; and c) reflecting on existing and new coordination mechanisms and considering needs for capacity building.

The regional conferences are organised as high-level forums for senior managers of statistical agencies with the purpose to seek a broad consensus on the above-mentioned five thematic areas, to identify recent initiatives that have emerged in each region, and to discuss best practices implemented at national level.

In May 2014, the European Statistical System (ESS) agreed on the ESS Vision 2020 as a guiding frame for working together in modernising the production and dissemination of European statistics during the years up to 2020. The Vision embraces a portfolio of modernisation initiatives ranging from technical projects to organisational frameworks. Since then, as a substantial number of initiatives and events took place in the ESS in 2015 and are continuing in 2016, it was considered that they provided a sufficient number of ideas, proposals and priorities that can form the basis of a report on the transformative agenda within the ESS. Therefore, this report presents the conclusions and recommendations of several initiatives within the ESS in the five thematic areas of the Transformative Agenda for Official Statistics. These initiatives were targeted to Heads of national and regional statistical agencies, but also at experts in the respective domains, in order to enrich the exchange of both views and experiences.

The EU member states national statistical offices also cooperate very intensively in the context of the High Level Group on Modernisation of the production and dissemination of Official Statistics (HLG-MOS). This group of modernisation initiatives operates under the leadership of the UNECE and, in addition to the EU member states, also involves non-EU countries as well as non-European members of the ECE. There are numerous synergies between the ESS Vision 2020 initiatives and the activities of the modernisation committees under the HLG-MOS, therefore at several of the thematic areas described in this report the initiatives reach out for the whole ECE region.

Conclusions and recommendations by thematic area

I - First thematic area: Coordination at and between the global, continental and national statistical system

The considerations on coordination relied on the discussions and outcomes of several initiatives within the ESS focused on integration, coordination and cooperation. Coordination is vital within national statistical systems: effective coordination of national institutions is an enabling factor in the national implementation of integrated systems, the introduction of innovative tools, a comprehensive national planning process, the implementation of international statistical standards and principles, and the achievement of synergies.

Different contexts may require different coordination models, existing models may need to be strengthened or adapted, or new ones may need to be established. Therefore, the Task Force on Cooperation Models created by ESS Resource Directors Group debated¹ the options and the underlying elements required to develop innovative and flexible ESS cooperation models, with a view to increasing efficiency and coordination.

The Task Force focused its work on the ESS, though best practices outside the ESS in statistics and non-statistical domains have also been explored. It undertook a stock taking exercise of cooperation practices in the ESS. Indeed a number of successful cooperation initiatives are already in place at national and European level, contributing hugely to the coordination of initiatives at European level and to avoid duplication of efforts.

Based on the findings of a survey on challenges and constraints conducted among ESS partners, the Task Force reflected on the conditions needed for any successful cooperation model – flexible enough to accommodate the needs of potentially over 30 members, while at the same time agile enough to respond to current or new challenges. It was highlighted that promotion of results and knowledge sharing are crucial to reap the benefits of cooperation.

While the ESS Committee (ESSC) plays a vital role in the coordination of the ESS, the DGINS (Directeurs Généraux des Instituts Nationaux de Statistique) Conference is the highest level conference of the Heads of ESS statistical offices and of the enlargement countries, providing an occasion for informal discussion on topics of general interest. It also provides a unique opportunity to coordinate work and initiatives of the different countries.

In this framework, in September 2015² the Heads of national statistical offices debated how to coordinate their efforts towards implementation of the ESS Vision 2020. They agreed on a list of identified implementation risks and the proposed mitigation actions. It was suggested to give priority to enhancing capabilities to implement the ESS Vision 2020 at the national and European level in terms of skills and resources, and reinforcing the communication on its objectives and implementing measures to stakeholders within the ESS and beyond.

¹ Sprint session of the Task Force on Cooperation Models, 15-16 June 2015, Luxembourg

² 101st DGINS Conference, 23-25 September 2015, Lisbon, Portugal

Participants also recognised that national circumstances would need to be taken into account, implying that coordination of activities would need to be adapted to national situations too. Moreover, systematic monitoring of risks and mitigation actions should take place, notably to provide timely response to the continuously changing ESS environment.

In addition, the coordination of initiatives in the context of work on indicators was also discussed. It was acknowledged that the importance of indicators for policy making at regional, national, European and global level is increasing; that the different stages in policy cycles may require appropriately adapted quality of indicators and indicator sets (thus highlighting the need to accommodate the fit-for-purpose approach); and that in a rapidly evolving world, producers of official statistics should be in a continuous exchange with their stakeholders and react quickly to new policy demands. All this requires strong and sound coordination.

The main conclusions and recommendations for this thematic area can be summarised as follows:

- The success of any cooperation model depends on strong coordination and a clearly defined set of rules between participating members from the outset. These elements should be taken into account when considering future models;
- It is recommended to make available to the ESS a general tool box of different instruments (legal, financial and governance tools) accessible for any of the cooperation models chosen, so that depending on the purpose of the cooperation the most suitable, tailor-made model can be established;
- Underpinned by a clear business case, the coordination or cooperation model to be selected in a given case would be based on four building blocks or dimensions: the specific purpose of such cooperation, the most efficient legal and financial instruments, and the adequate governance structure to meet that given purpose;
- There is a need to ensure high level political commitment on strong coordination, so that national statistical offices can be recognised and supported in their roles of national coordinators;
- It is important to have a clear distribution of roles between policy makers and statisticians when it comes to statistical work. Close cooperation between policy making and statistical spheres needs to be ensured, with policy makers assessing the relevance of proposed indicators for a given policy and statisticians assessing the measurability of policy targets. This should be an iterative process with statisticians being involved from an early stage;
- Call for closer cooperation between official statisticians and other analysts;
- The statistical community needs to commit to promoting training, workshops and exchange of experience on using statistical indicators to convey knowledge, understanding, experience, insight and contextualised information.

II – Second thematic area: Communication and advocacy

The communication and advocacy of official statistics are essential pillars for any statistical organisation. They reflect the outreach as well as the impact and value added of statistics for managing a society and policy making. In a competitive market for statistics, dissemination of information to users is a growing area for innovation and modernisation.

The discussions under this thematic area focused on the main drivers for the modernisation of statistical systems, especially aiming at improving communication, involving users and harnessing the power of ICT in this domain.

The domain "Dissemination and communication" is one of the five priority areas of the ESS Vision 2020. To this end, one of the main ESS initiatives in the communication and advocacy domain is the launching of the DIGICOM³ project at the beginning of 2016, expected to close at the end of 2019. DIGICOM stands for Digital communication, User analytics and Innovative products. The project's goal is to create new, innovative dissemination products, tools and services for ESS statistics. Main areas of work will be on easy access to data, (linked) open data, modern visualisation tools, innovative user interaction and dissemination.

DIGICOM aims to enhance the capacity of the ESS to be agile and responsive to its users' needs. To do this a two-pronged approach will be used; on the one hand, measures will be undertaken to better gauge the unmet needs of current and future users and, on the other hand, actually develop the innovative solutions to meet those needs.

However, DIGICOM not only considers users' expressed needs, but also essentials such as policymakers' needs for reliable evidence and citizens' needs for information to support "life decisions". For this reason, the DIGICOM project includes promoting and communicating the value of European statistics as a reliable basis for evidence-based decision making and an unbiased picture of society.

The idea is that Eurostat and the national statistical offices across Europe work together to develop solutions in four fields: user analytics to have a better insight into our users; innovative and shareable products and tools, to customise existing tools and tailor new products and services; open data dissemination, to develop the potential for the (re-) dissemination of official statistics, and communication and promotion to create a new dissemination and communication strategy.

This project should enhance the relevance of statistics, improve the flexibility of statistical products and increase user satisfaction. By increasing the availability of European statistics as open data, it will also allow re-disseminators to enrich European statistics with other data sources to create new statistical products. A key feature of the DIGICOM project is that it will contribute to building capacities, skills and networking in the ESS in the areas concerned. The general recognition of European statistics should also improve.

In deploying efforts to have an enhanced dialogue with users of official statistics, ESS members have expressed the wish to receive support from Eurostat for strengthening

³ Approved at the 27th meeting of the European Statistical System Committee (ESSC), 19 November 2015, Luxembourg

direct contacts between national statistical offices and users. As a consequence, Eurostat proposed to fund the organisation of national conferences with users of European statistics, and to focus in 2015 on two conferences to be organised by the statistical offices of the member states in charge of the Presidency of the Council of the European Union: the CSB in Latvia (first semester) and STATEC in Luxembourg (second semester). Each conference should give the possibility for both producers and users of European statistics to get to know each other better and to discuss data availability and quality.

The first conference was organised in Riga on 24 April 2015 and gathered around 50 participants representing all groups of users: national administration (ministries, central banks), academia, enterprises, journalists and researchers. For both the CSB and Eurostat the conference was considered a success, providing an ideal opportunity to promote the value of European statistics in line with the objectives of the ESS Vision 2020 and to show the strong cooperation between the NSI and Eurostat.

Subsequently, the conference titled "Knowledge to act: public statistics at the service of the citizens"⁴ was held in Luxembourg on 20 October 2015, the World Statistics Day. Co-organised with Eurostat, the goal of this conference was to bring together official statisticians and the different user groups of these statistics in order to identify the strengths and weaknesses of the national and European statistical output, of the clarity and the accessibility of data and the service provided to the users.

The agenda was divided in two main sessions. The morning session started with the presentation of the newly created Luxembourg statistical society, followed by two presentations on big data. The afternoon session started with three short presentations on the following topics:

- The Luxembourgish statistical office's (STATEC) user satisfaction and reputation surveys,
- The European Statistical Advisory Committee's (ESAC) view on "What users want (and what they need to know)",
- Eurostat's approach to "strengthen the dialogue with users".

The highlight of the day was a round table, moderated by a journalist, with five representatives from the areas of education, research, consulting, private sector and media. During the round table, the audience of about 100 participants contributed actively to the discussion.

To improve the way in which modernisation activities are communicated within the official statistics community, the HLG-MOS⁵ established a Cross-Cutting Task Team on Communicating Modernisation. The Task Team proposed the following communication strategy: to increase awareness and understanding of the modernisation process related to statistics; to better inform audience on future developments; and to promote understanding to how these developments impact on the work of national statistical organisations.

⁴ "Savoir pour agir: la statistique publique au service des citoyens", 20 October 2015, Luxembourg

⁵ Workshop on the Modernisation of Official Statistics, 24-25 November 2015, The Hague, The Netherlands

The Task Team has produced a number of materials, including the “Modernstats” logo, interactive videos on YouTube, and materials to explain the work of the HLG-MOS to generalist audiences (webinars, information on social media, articles and ready-to-use presentations).

Communicating the value of official statistics was also considered by the ESS as a vital aspect of statistical production. The ESS entered into a partnership with UNECE, participating in the Task Force on Value of Official Statistics, established by the Bureau of the Conference of European Statisticians (CES Bureau) in March 2015 to define what users, stakeholders and society value in official statistics, and develop ways for its measurement that will allow for better understanding and communication of this value to society.

The aim of this exercise is not only to help the statistical community reach a common view on the assets – and weaknesses – of official statistics but also ultimately to launch targeted actions towards policy-makers to raise political awareness and possibly attract more resources. The Task Force felt that there was a need to support efforts towards a better measurement of the value of official statistics and the proposed framework with a set of indicators based on a combination of objective and subjective indicators.

Participants in that Task Force also agreed on the importance of further pursuing work on methodologies to value/monetise official statistics (for instance, through asking users whether they would be willing to pay or give up some other services to be able to have the statistical services).

Communicating the value of official statistics is very closely linked to quality. The ESS has a well-rooted quality framework which is built in particular on the primary and secondary EU law, the ESS common quality framework (the European Statistics Code of Practice and the general quality management principles) and the underlying Quality Assurance Framework of the ESS.⁶

The recent amendments of the legal framework (amended Regulation 223/2009 on European statistics) and the current version of the European Statistics Code of Practice represent a very high level of awareness and commitment to quality in European statistics. On the other hand, the ESS recognised that, although the term 'European statistics' is well established and largely recognised within the European statistical system, the designation 'European statistics' is not particularly well known by users and the public at large.

These issues of image of European statistics in the public should be properly reflected upon. This is particularly true in a context of the data deluge and, related to that, of increasing confusion of the intrinsic quality of quantitative information, where users are not sufficiently aware (or in some cases even not interested) in the quality of the statistics they are using. Official statistics must therefore be more actively promoted and where necessary defended in this ocean of information in a way that conveys to actual and potential users the fundamental quality characteristics attached to them. Users must be convinced that these delivered characteristics are precisely what makes official statistics unique information that they can safely rely upon and that this public good provides high value for money for our societies.

⁶ European Statistical System Committee (ESSC) Workshop on Quality of European Statistics, 10-11 February 2016, Luxembourg

Branding and labelling of statistics could help clarifying the positioning of official statistics in the information market. This would further promote trust among users in a sustainable way.

For the ESS, quality is one of its key assets and there is a common understanding that it needs not only to be continuously improved but to be better explained and communicated to the stakeholders. This would help them recognise and appreciate the value of official statistics as compared to other data available on the information market. The ESS found equally important to enhance the common understanding of the quality concept inside the system (quality is multidimensional). Finally, participants also mentioned that appropriate interaction with stakeholders is important.

The main conclusions and recommendations for this thematic area can be summarised as follows:

- When communicating with any stakeholder, the comparative advantage of official statistics should be adequately put forward: official statistics are produced in full professional independence based on scientific methods, rigorous quality criteria and the United Nations Fundamental Principles of Official Statistics;
- Begin with a firm focus on the customer/user and his/her needs (put customers truly at the centre), and place stress on design of products and services to meet those needs, based on continuing innovation (innovate to remain valuable);
- Measure outcomes to achieve greater impact;
- Elaborate an ESS Quality declaration to explain the quality management applied to European statistics. The declaration would also be the basis for an enhanced communication of the quality of European statistics, duly taking into account the different types of users as well as both European and national needs;
- Invest in brand recognition and promotion so that well designed and innovative services are well known and trusted;
- Promote closer cooperation between project experts and the communication teams and to prepare standard, ready-to-use materials that can be used by the experts when communicating about official statistics.

III – Third thematic area: Integrated statistical systems: data collection, processing and dissemination of integrated statistical systems

An integrated national statistical system encompasses the various organisations and departments in a country being involved in the production of official statistics and working collectively together on the basis of commonly agreed and applied principles and standards for official statistics. Integration depends on the legal environment, coordination mechanisms of the statistical system, the ICT infrastructure as well as the availability of human and financial resources. Integration is taking place both inside a national statistical system but, to an increasing extent, also across national statistical systems of different countries. Integration starts with the application of international

methodology, nomenclatures and guidelines, and standards such as the SNA and SEEA have significantly contributed to an integrated measurement of different aspects of the economy, society and environment. But integration can and should go further, for instance through the harmonisation and coordination of business and household surveys, central and harmonised metadata so that the macro level is complemented by integrated sets of business and household statistics. In this respect the currently still very present "silo" organisation of data collection, processing and dissemination can be addressed through the creation of shared or harmonised registers and frames, common sampling, collection and processing methodology and an increasing use of secondary data sources.

In the ESS, various projects in this direction – integration of registers, development of enterprise architecture and sharing of services and data – are under way to increase efficiency of statistical production. These projects are implemented within the framework of the ESS Vision 2020, and are managed through an appropriate governance structure. One pillar of this governance structure is the Vision Implementation Group (VIG), which oversees, on behalf of the ESS Committee, the ESS Vision 2020 implementation. It advises the ESSC and prepares recommendations for its Vision-related decisions. The VIG comprises senior managers from nine EU member states, one EFTA country and Eurostat. As an extension of the VIG to all member states the Vision Implementation Network (VIN) has been established as well. Numerous meetings take place among the statisticians directly managing the projects, but also within the governance structure, including project steering groups, Directors' Groups, the VIG and the ESS Committee.

From those meetings it becomes evident that important directions of work have been taken and are already providing results. One important milestone has been reached with the deployment of the EuroGroups Register (EGR) 2.0 in Eurostat's IT secure environment for confidential micro-data (SICON) in December 2015. The EGR 2.0 is the central part of the European system of interoperable Statistical Business Registers (ESBRs), developed under the ESBRs project. The ESBRs consists of the EGR in Eurostat and the national statistical business registers (SBRs) in 28 EU Member States and 4 EFTA countries. EGR 2.0 gathers and consolidates data on multinational enterprise groups (MNEs) received from the national SBRs and from commercial data providers and releases a frame to national statistical authorities for statistical purposes. The EGR 2.0 represents the first concrete realisation of online collaborative statistical production in the ESS, using secure data exchange and remote access to confidential micro-data. Another focus of the project is on the interoperability in the ESBRs, which is needed to improve automation, reduce manual workload and optimise data exchanges between EGR and national SBRs. In addition, as national SBRs and EGR data contain inconsistencies due to the different practices and methods, interoperability can help in upgrading the overall organisation of the ESBRs with benefits in terms of quality. However, the ESBRs project deals only with organisational and semantical interoperability while legal and technical interoperability are also needed but are covered by other projects.

One of them, the ESDEN project (secure infrastructure for data exchange) was set up in 2013 with the aim of modernising data exchange services across the ESS. The project foresaw the creation of a secure network for the micro-data transfers among ESS partners for the purpose of the Single Market Statistics (SIMSTAT) pilot exchange of micro-data and at a later stage the upgrade of the single entry point at Eurostat (EDAMIS). In particular, the ESDEN project is unprecedented in terms of enabling infrastructure to share, within a secure framework, large amounts of data for both production and dissemination purposes.

Another ongoing project on the exchange of trade data among the EU member states was considered a good test case for ESDEN and in April 2015 the pilot data exchange started and proved that exchanging micro-data among the EU member states is possible. The test has shown that the used data transmission and exchange system was sufficiently robust and secure to handle a large volume of data traffic.

A third example of a project directed at increased integration of statistical systems is the SERV project on sharing statistical services across the ESS⁷. The project started recently and aims at the definition of a catalogue of common statistical services, such as software solutions, that could be shared across the ESS and at providing support to the implementation of shared and reusable statistical services (e.g. structural validation, content validation, time series, questionnaire generation) through guidelines and recommendations describing service definitions. It will thus define the way forward in how to share common functionalities in the ESS. The project builds on the groundwork of the Common Statistical Production Architecture (CSPA) sponsored by the HLG-MOS.

On the other hand, the ADMIN project is working on the integration of administrative sources in the production of official statistics. It aims to tackle the most typical challenges faced in the use of these sources: limitations to data access, methodological issues related to the processing of the data and the integration of data from several sources, the assessment of quality of the output based on a combination of sources. It is also important to ensure that the European statistics produced using administrative data are comparable across member states and are of sufficient quality.

The project has several strands of work that aim to improve the access to administrative sources, to enhance methodological knowledge needed for integrating administrative data in statistical production and to provide tools for assessing the quality of outputs based on administrative sources. It will also support the member states in implementing these theoretical outcomes in specific statistical areas. An additional area of work includes pilot initiatives to obtain access to administrative data already collected by the European Commission services. This would avoid collecting some data twice from member states.

The Big Data Action Plan and Roadmap⁸ follows the request of the Scheveningen Memorandum⁹ from September 2013 to effectively examine the potential of Big Data sources for official statistics. The BIGD project implements the action plan as part of the ESS Vision 2020 with specific focus on harnessing new data sources enriching the pool of data sources of the statistical system. The ultimate objective of exploring big data corresponds to the goals of the ESS Vision: responding more dynamically to user needs, extending the portfolio of official statistics while increasing efficiency, and reducing burden on respondents. The specific goal of the BIGD project is to prepare the conditions for step by step integrating big data sources into production of official statistics. In this context, a newly created cooperation activity via an ESSnet is exploring selected big data sources. It analyses conditions for integrating multiple (big data) sources into statistical production and develops frameworks for methodology and quality. The project is guided

⁷ 8th meeting of the Vision Implementation Group (VIG), 19-20 January 2016, Rome, Italy

⁸ Endorsed at the 22nd meeting of the European Statistical System Committee (ESSC), 26 September 2014, Riga, Latvia. Available via:
<http://www.cros-portal.eu/content/ess-big-data-action-plan-and-roadmap-10>

⁹ Adopted at 18th meeting of the European Statistical System Committee (ESSC), 27 September 2013, The Hague, Netherlands:
<http://ec.europa.eu/eurostat/documents/42577/43315/Scheveningen-memorandum-27-09-13>

by work on ethical and legal issues related to big data, analysing skills requirements and developing an education strategy. Partnerships with data providers and academia play a key role successfully integrating big data sources.

In this respect, the ESS is collaborating with similar initiatives at UN level. The big data project of the UNECE HLG-MOS¹⁰ is an international collaboration project on the role of big data in the modernisation of statistical production¹¹. The Statistical Commission supported the creation of a global working group (GWG) on Big Data for Official Statistics at its 45th session in 2014. The GWG conducts pilot projects and focuses on general guidelines related to the above mentioned issues. The use of big data focuses on monitoring achievement of the Sustainable Development Goals.

Other developments are taking place in the framework of the HLG-MOS, which decided in its meeting in November 2015 that one of the priorities for 2016 will be data integration in respect of survey and administrative data, new and traditional sources, geospatial and statistical information, micro versus macro integration, validation of official statistics, methodology, quality and architecture.

In this sense, these projects are demonstrating the possibility to work towards the integration of statistical systems through the creation of common frames and exchanging data even on the level of micro-data, as well as the possibility to share certain statistical services and to integrate other data sources for the purposes of producing official statistics.

The main conclusions and recommendations for this thematic area can be summarised as follows:

- Integration in official statistics is the way forward for official statistics to stay valuable and relevant and to be able to cope with increasing demands for information in times of reduced resources;
- Integration can take various forms such as integration of standards and methodology at international level but can also mean integration of sampling frames, data exchange and sharing of services;
- Integration of statistical production can also benefit from harnessing the richness of data contained in big data and administrative data sources;
- Projects tested and implemented in the ESS have demonstrated that the potential for further integration exists and should be exploited. They have also demonstrated that integration efforts need sufficient time and resources, and that quick wins are seldom attainable;
- Integration efforts on the level of frames, data and services will continue bringing results that could be shared in other regions and environments, but this level of integration also needs an appropriate governance mechanism and structures as well as a strong will for integration;

¹⁰ High-Level Group for the Modernisation of Statistical Production and Services: <http://www1.unece.org/stat/platform/display/hlgbas/High-Level+Group+for+the+Modernisation+of+Statistical+Production+and+Services>

¹¹ See: <http://www1.unece.org/stat/platform/display/bigdata/Big+Data+in+Official+Statistics>

- New projects will be launched addressing the challenges of integration at the level of dissemination of data including the sharing of visualisation tools, flagship products and a strategy to communicate together on the value of official statistics.

IV – Fourth thematic area: Innovation and modernisation through a standards-based statistical business architecture

The swift technological development is challenging the way data are collected, processed and disseminated. In an increasingly digital and data-rich environment, statistical organisations are struggling to remain relevant: the current processes and methods are relatively rigid, the costs of traditional data collection methods are increasing, organisations are not able to quickly respond to emerging information needs, they are slow to harness new and alternative sources of data, and they find it increasingly difficult to attract and retain skilled staff in a competitive labour market.

Therefore, the official statistical community should take this opportunity to modernise and fully harness the transformational potential of modern information and communication technologies (ICT).

The transformative agenda calls for more integration and modernisation of statistical systems. The discussions under this thematic area relied on the outcomes and achievements of various initiatives within the ESS and the HLG-MOS. In this context, it is worth mentioning a project to implement the Common Statistical Production Architecture (CSPA) in the ESS.¹²

The CSPA provides a template architecture for official statistics, describing what the official statistical industry wants to achieve, how the industry can achieve this (i.e. principles that guide how statistics are produced), and what the industry will have to do. Moreover, the CSPA enables sharing. Statistical organisations already participate in many international engagement activities that facilitate sharing. The marginal cost of doing this in a way that supports collaboration and complies with CSPA is relatively low, but the potential savings enabled by such a standard approach are high.

The project to implement the CSPA has three main objectives:

- To extend the support offered for the implementation of CSPA-compliant statistical services.
- To have a plan in place for continued investment in the development of CSPA services.
- To facilitate the transitioning of CSPA governance from HLG project governance arrangements.

Key outcomes of this project include new services, a Logical Information Model, an investment planning tool (successfully piloted), a new catalogue of capabilities and investment intentions, and new CSPA governance arrangements.

¹² Workshop on the Modernisation of Official Statistics, 24-25 November 2015, The Hague, The Netherlands

The transformation and modernisation of official statistics also requires the setting up of an adequate Enterprise Architecture (EA). EA fosters a proactive and holistic management of an enterprise's assets to support the enterprise in realising its business vision.¹³ Organisations including national statistical offices put an EA function in place to:

- Ensure that projects deliver a service aligned with the objectives of the enterprise as a whole, e.g. by aligning IT investment to business objectives and integrating technological innovation;
- Ensure business agility and transformation through flexible solutions;
- Deliver cost and efficiency improvements by enabling long term planning;
- Maximise investments through sharing and reusing services;
- Enable Business Capability development and Quality improvement planning by providing frameworks.

The need for an ESS-wide EA is explicitly stated in the ESS Vision 2020. Therefore, the ESS decided to intensify the collaboration on the production of European statistics through the sharing of methodologies, data and statistical services. The ESS Vision 2020 suggests establishing common platforms for data storage, processing, and analysis to render production processes more efficient and effective at the European scale.

In this context, it is considered that EA can act as an enabler for the ESS collaboration by defining a common language and a common reference to what the business does and wants to do in the future and which IT systems and services are needed to create the conditions for sharing components and gradually better integrate production systems.

A Task Force bringing together EA experts from nine statistical offices and Eurostat produced an ESS EA Reference Framework (ESS EARF), which aims at supporting the design of ESS Vision 2020 projects and the development of project-specific solution architectures. Participants acknowledge that at strategic level the ESS EARF supports industrialisation. It strives that the ESS processes and systems evolve in a standardised, interoperable and modular way helping to improve the ESS' capacity to respond to an increasingly global, fast-evolving landscape of statistical data providers and ever increasing user demands. At operational level, it supports ESS project managers to design and manage their project, substantially simplifying contextual analysis of ESS-wide/Vision issues and guiding them through a comprehensive and complementary set of Business and IT focus areas.

This transformation requires sufficient resources and investment. To be able to understand the pressure felt by national statistical offices in this context, the ESS¹⁴ launched a survey to assess the costs of production of official statistics in the EU member states and EFTA countries. The main objective of this survey was to better calculate the resources used for production of official statistics and to follow the overall trend of budget allocated, also in the context of further modernisation and innovation initiatives. Due to the considerable differences in the calculation methodologies used by the countries, a second round of the cost assessment survey will be launched later in 2016 on the basis of guiding principles prepared by Eurostat to be followed by all countries.

¹³ 7th meeting of the ESS Vision Implementation Group (VIG), 9-10 December 2015, Ljubljana, Slovenia

¹⁴ 4th meeting of the ESS Resources Directors Group, 15-16 December 2015, Luxembourg

The outcomes of these discussions are feeding the debate within the ESS on the need for sharing statistical services and supporting their integration in statistical production processes at national, ESS and European Commission level. This is also the objective of the Shared Services project (SERV) mentioned in the previous section.

In order to improve efficiency and find synergies in the production process, the ESS has also discussed the outcomes of the ESS Vision 2020 Validation project¹⁵, whose objective was to provide the methodological and architectural frameworks necessary to achieve the medium-term goals:

- Ensuring the transparency of the validation procedures applied to the data sent to Eurostat by the ESS member states through a common validation policy focusing on the attribution of validation responsibilities among the different actors in the production process of European statistics;
- Improving the interoperability between Eurostat and member states through the sharing and re-use of validation services across the ESS on a voluntary basis.

The Validation project delivered an ESS methodological handbook for validation; the contribution to the creation and piloting of version 1.0 of the Validation and Transformation Language (VTL) validation syntax; a proposal for a Business and IT architecture for validation in the ESS; and the creation of two early prototypes for possible ESS validation services.

The focus of the Validation project was the modernisation of the data sent by member states to Eurostat. In this context, the deployment of the deliverables provided by the project will lead to a higher standardisation and transparency of the validation process and will ultimately result in efficiency gains. Member States may also choose, on a voluntary basis, to use the deliverables of the Validation project to modernise their internal validation processes.

Statistical Data and Metadata eXchange (SDMX) is widely recognised as a global standard for data exchange. Building on the positive experience of the previous action plan and in response to the needs expressed by users, the SDMX sponsors – the Bank for International Settlements (BIS), the European Central Bank (ECB), Eurostat, the International Monetary Fund (IMF), the Organisation for Economic Cooperation and Development (OECD), and the World Bank and the United Nations Statistics Division (UNSD) – have decided to develop a "Roadmap 2020"¹⁶ presenting a vision of where SDMX is heading in the next few years.

In this Roadmap 2020, which describes strategic goals and expected results, the SDMX sponsors outline a series of strategic objectives:

- Strengthening the implementation of SDMX;
- Making data usage easier via SDMX (especially for policy use);
- Using SDMX to modernise statistical processes, as well as continuously improving the standards and IT infrastructure;
- Improving communication in general, including a better interaction between international partners.

¹⁵ 28th meeting of the ESS Committee, 11 February 2016, Luxembourg

¹⁶ https://sdmx.org/wp-content/uploads/SDMX_roadmap2020_FINAL.pdf

The main conclusions and recommendations for this thematic area can be summarised as follows:

- Continue supporting ESS Vision 2020 projects to develop in an "architecture way" and consolidate this approach whenever possible;
- Deploy efforts towards attracting and retaining skilled staff;
- In order to achieve the medium-term goals for validation in the ESS, the deliverables provided by the ESS Vision 2020 Validation project must be deployed into production and, when required, developed further;
- Implement a governance structure to enable sharing of statistical services in the ESS;
- Provide guidelines and recommendations for the ESS enabling national projects to realise technological solutions for industrialisation and integration of processes and for the rationalisation of information systems;
- Provide implementation of real-life statistical services, based on priority business needs, to be re-used by ESS members.

V – Fifth thematic area: Training and capacity building

Modernisation and integration of national statistical systems is a challenge for all statistical offices and systems and require highly qualified staff to manage the continuous process of adapting to a fast evolving technology environment, reviewing the ways data are collected, processed and disseminated and adjusting institutional and organisational frameworks. Moreover, the deliberations on the post-2015 agenda brought statistical capacity building, and thus also training, to the forefront of the development agenda; however the statistical systems of the more developed countries will face similar challenges.

Modernising statistical systems as well as re-organising and re-engineering the production processes of official statistics take time and upfront investment of resources, as well as high involvement of scarce expertise. These investments will bring important efficiency gains in the medium or long term, but in the meantime regular statistical production has to continue to provide the society with data needed for policy design and monitoring. At the heart of all modernisation and re-engineering processes are the skills and knowledge of the staff driving these processes forward.

In the ESS several process are ongoing on how to address the challenges brought by the post-2015 agenda and the modernisation process. While it is recognised that modernisation and transformation focus very often on the IT infrastructure, there is equally a need to assess the skills and knowledge needed by staff for this transformation process and to develop profiles of employees of national statistical offices, as well as the training programmes needed to achieve the desired profiles of staff.

In terms of skills profiling and development some work has been done by Eurostat and the ESS to define competency profiles for dealing with big data but this is work in progress. It is evident that different skills are required for dealing with big data and re-training of staff will be needed. As a consequence, Eurostat has organised new courses in the context of the 2016 European Statistical Training Programme (ESTP) to provide training in the methodological skills required for work with big data. Examples of these new courses are: "Introduction to big data and its tools", "Can a statistician become a data scientist?", "Big data sources – Web, social media and text analytics", "Advanced big data sources – Mobile phone and other sensors" and "Nowcasting".

Furthermore, the ESS has also developed the European Master in Official Statistics (known by the acronym EMOS) and considers it as an infrastructure project aiming at developing a programme for Training and Education in Official Statistics. In broad terms, the EMOS provides certified training and education in methodologies, statistical surveys, statistical production, analysis and statistical law and is offered by a network of National Statistical Institutes (NSI) and Universities. The main goal of the project is to establish a quality label for university 'European Official Statistics' programmes that meet agreed standards in education.

EMOS complements the internal ESS training with around 30-40 courses throughout the year benefitting statisticians from the entire ESS aiming at the transfer of skills and knowledge in institutional aspects, statistical production and new areas such as big data, new data sources, business architecture, modelling, composite indicators and others.

The main conclusions and recommendations for this thematic area can be summarised as follows:

- Continue supporting modernisation and transformation through reflections on the profiles of employees needed to implement modernisation and transformation activities;
- Review and develop training programmes to enable employees to acquire new skills and knowledge;
- Continue involving universities into education programmes for the new generation of statisticians educated in official statistics;
- Join forces to develop competence profiles and respective training programmes.

Final remarks

The ESS Vision 2020 builds upon a holistic approach to achieve quality and efficiency gains. It elaborates the European systems' method to statistics embracing the opportunities provided by the digital transformation and emerging data sources; putting quality as an overarching element in the statistical production process; suggesting new modes of collaboration; and emphasising the importance of dissemination and user engagement to drive continuous improvements.

All this is only possible because the ESS is a partnership between the European Union's statistical authority (Eurostat) and the national authorities, with a long tradition of cooperation and getting together at different hierarchical levels to develop, produce and disseminate European statistics. One of the main elements underpinning this collaboration is the organisation of numerous meetings and conferences to achieve efficiency gains, share knowledge and exchange best practices. In the framework of the Regional Conferences on the Transformative Agenda, the following examples could be mentioned:

- 2nd Vision Implementation network (VIN) workshop, Bucharest, 15 March 2016;
- 2016 ESS Modernisation Workshop, Bucharest, Romania, 16-17 March 2016;
- European Statistical Advisory Committee (ESAC) seminar on indicators: user requirements, methodological issues and communication challenges, The Hague, Netherlands, 10 May 2016;
- European Conference on Quality in Official Statistics (Q2016), Madrid, Spain, 31 May-3 June 2016;
- Workshop on Human Resources Management and Training: Developing Capabilities for the Future, Krakow, Poland, 7-9 September 2016;
- DGINS Conference on Income, Consumption and Wealth, Vienna, Austria, 26-27 September 2016;
- Conference of European Statistics Stakeholders, Budapest, Hungary, 20-21 October 2016.