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Topic (ii): Streamlining statistical production

Streamlining Statistical Production Processes in Eurostat

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I.   Introduction

1.   Eurostat plays a central role in the European Statistical System and, in this context, in the industrialisation of statistical production. Several initiatives are going in this direction, where established working methods have become part of projects aiming to change the landscape of many legacy systems into process-oriented centralised platforms.

2.   Eurostat's statistical production systems are being challenged by the increased need for rapidly available high-quality information. Responsiveness and reliability are now major requirements. The artisanal approach to producing statistics is no longer capable of following the new statistical trends that require statistics to be available anytime, anywhere and on any device. New interoperability standards require highly flexible metadata-driven systems. The increased complexity of data treatment means a business process approach must be adopted. The vast number of specific applications necessitates rationalisation, modularisation and industrialisation.

3.   This paper will focus on two on-going streamlining projects in Eurostat, the re-engineering of statistical production systems for agriculture and fisheries and for the wider area of national accounts.

4.   The paper will present the development and scope of these projects, the main challenges, proposed solutions and their added value, and roadmaps.

II.   Two projects integrated in the European systems method for statistics

A.   The Vision programme

5.   In August 2009, the Commission presented a proposal to change the production method of EU statistics to the European Parliament and the Council of the European Union.[1] Referred to as 'a vision for the next decade', the proposed programme was to change the ESS business architecture by replacing the traditional stovepipe model applied when producing national and European statistics with an integrated model.

6.   At the level of the national statistical institutes, the integrated model means producing statistics for specific domains as integrated parts of a comprehensive production system (the data warehouse approach), no longer independently from each other. At European level, the integrated model means moving towards the new European systems method for statistics. This method combines the horizontal integration necessary at national level with a vertical approach developing collaborative networks within the ESS.

7.   Based on legislation, technology and human capital, implementing the European systems method would be at the heart of Eurostat's Vision programme. It would be the trigger for several internal and ESS-wide initiatives in the three areas mentioned.

8.   Re-engineering the agriculture and fisheries statistical production processes together with the harmonisation and consolidation of the national accounts domains are two practical applications of the Vision programme. Both conducted to standardise and integrate production processes that were formerly separated, these projects underline the considerable technical and methodological challenges streamlining initiatives are facing.

B.   Introducing the agriculture and fisheries statistical production processes

9.   The Agriculture and Fisheries Unit covers several of the oldest statistics produced in Eurostat. The unit has some 30 people working in a variety of statistical areas: Farm Surveys, Agro-Environment Indicators, Animal Production Statistics, Crop Production Statistics, Fishery Statistics and Agro-Monetary Statistics. Each area is subdivided into statistical domains which are managed by a Data Collection Responsible Officer (DCRO).

10.   The unit deals with several statistics , many of which have been produced for more than 50 years and it has some of the most experienced staff in Eurostat. Many disaggregated approaches to produce statistics, together with related tools, have been created over time. This has led to a high degree of local optimisation for each very particular domain.

11.   Following some successive reorganisations, a variety of statistical areas together with their diverse approaches are now regrouped into a single unit inside Eurostat. This organisational set-up around the production of agriculture and fisheries statistics facilitates the streamlining work for these areas. In a joint project, the IT for Statistical Production Unit and the Agriculture and Fisheries Unit started implementing an ambitious three-year re-engineering plan (from the end of 2011 to mid-2014). The aim is to migrate all the domains still working with many disaggregated tools into a corporate system for managing multidimensional tables (MDT), to re-implement all the business logic and establish a fully streamlined business process, from collection to dissemination, in a single environment.

12.   The early stages of this project date back to 2009, when some analysis activities were started and some test databases were developed to assess its true complexity. Several problems were identified, such as the heterogeneous environment in which the client Unit operated, using several different applications to process data; or the classical stovepipe-oriented approach, with a lack of harmonisation in flags among domains,

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inconsistent code lists and ambiguous concepts; or even organisational issues, with the high turnover among non-statutory staff and the lack of reliable documentation to ensure the training of new colleagues.

C.   Introducing the national accounts statistical production processes

13.   The oldest national accounts IT processes in Eurostat were set-up in the middle of the 1990s following the implementation of the European System of Accounts (ESA) 1995 and its transmission programme. Since then, the number of independent national accounts statistical production lines has grown significantly. Yet, independently of their age and the datasets they covered, they all followed the same pattern: successive changes and enlargements often implemented locally and in a non-standard way, thus becoming more and more complex and difficult to maintain and develop.

14.   Today, Eurostat has twenty one active IT statistical processes covering statistical domains ranging from national accounts main aggregates and financial and government accounts to international trade in services and foreign direct investments. Due to successive reorganisations over the past three years, these domains are spread across three directorates and eight units.

15.   Characterised by a large number of fragmented processes and different IT systems and tools, none of these domains is currently making full use of the latest standard technologies and functionalities. They function as independent production lines, translating inter-domain data exchanges during production into a network of pull and push mapping and conversion channels.

16.   As the keystone of the wide-ranging re-engineering initiative under the Vision umbrella, in 2009 Eurostat launched a series of internal studies in different areas. In the area of national accounts, the purpose of the two-year analysis was to draw a fair picture of the IT situation in each production process analysed, to gather — where relevant — user requirements and propose different alternatives on how to best design and manage a harmonised, integrated national accounts production model.

17.   Its conclusions served as the basis for the National Accounts Production Systems project, NAPS2, launched in January 2012 to harmonise and consolidate the national accounts production processes in Eurostat.

III.   Two approaches

18.   Part of the same general initiative to go from the fragmented, local components of an important statistical area towards a standardised, integrated business model, the two projects described in this paper are complementary.

(a)   One project, covering agriculture and fisheries statistics, focuses on migrating the area's production processes into a fully streamlined model managed by a single information system. Its aim is to eliminate all the local tools and provide a common conceptual and technical framework.

(b)   The other project, covering national accounts statistics, will first harmonise those independent domains inside each information system. It will then focus on improving cooperation between the numerous in-house stakeholders and the data exchanges between domains.

19.   As described in the following subchapters, the first project, already reaching its implementation phase, will highlight the difficulties of harmonising at system level. It will also underline development choices and the problems to which these choices were the solution. The second project, currently in the analysis and planning phase, will stress the importance of intensive collaboration and a step-by-step approach when integrating several systems.

A.   Re-engineering the agriculture and fisheries statistical production processes

20.   The preliminary analysis stressed that the scope of such a re-engineering project would have to be ambitious. Twenty statistical domains were being targeted, comprising dozens of datasets of varying complexity with different data flows, granularities, timeliness and aggregation levels. It also appeared that defining a common conceptual framework and statistical business process would be difficult.

21.   The first wave for re-engineering was outsourced to an external contractor, grouping several domains together. This wave started at the end of 2011 and was divided into three phases:

(a)   December 2011 to February 2012 — Consolidation of Fishery, Poultry, Vineyards and Agro-Environment Indicators domains (all partially implemented in the earlier 2009 project);

(b)   March 2012 to April 2012 — Database Analysis and Design for Absolute Prices and Crop Statistics;

(c)   May 2012 to September 2012 — Implementation of Absolute Prices and Crop Statistics.

Though the final result was positive overall, the first wave suffered from major management difficulties, starting with the management of the stakeholders involved. They were the following.

Table 1: Project management organisation

Contractor	IT for Statistical Production	Agriculture and Fisheries
Project Manager (x1)	Project Sponsor (x1)	Project Sponsor (x1)
Project Team (3 to 5)	Project Manager (x2)	IT Coordination Team (x3)
	MDT Support Team (x1)	DCRO (x4)
		Other domain users (x5)

22.   As one can infer, the high number of stakeholders involved created coordination difficulties. The contractor, based abroad, came to Eurostat's headquarters every one or two months. This required a great deal of logistical synchronisation between all those involved. For each domain a meeting had to be arranged, often of eight to ten people, lasting up to three hours, during which exhausting technical discussions would take place.

23.   At the beginning of the project, the targeted reference business process was not entirely clear. It was therefore difficult to accommodate the needs of each domain and to agree to each one's demands, some of doubtful added value. Bearing in mind the higher goal of harmonising the approach among the domains and creating a standardised business process, the IT unit acted as supervisor, limiting the scope of the requirements. This was not always well perceived by the client unit, more focused on its particular needs.

24.   From the project management point of view, the results of the first 2011 wave led to a change in the approach from the end of 2012 onwards. Development work was moved in-house, by ending the engagement with the external contractor and capitalising on the experience acquired in previous years. The project team was changed and additional team members were hired to cope with the increased workload. The project structure also changed. Each domain would be covered as an individual project following the European Commission Project Management Methodology (PM[2]). An ambitious plan for the domains remaining to be reengineered was agreed between IT and client unit.

Table 2: Project planning

Area	Domain	2013												2014							
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8
Animal Production	Meat	A	D	I	I	T	P														
	Milk																AD	I	T	P	
Crop Production	Vineyards											AD	I	TP							
	Wine									ADI	TP										
	Orchards					AD	I	T	P												
Agro Monetary Indicators	Land Prices							AD	I	TP											
	Indices										AD	I	T	P							
	Labour & Unit Value													A	D	I	T	P			
Agro Environment Indicators	Pesticide	C	C														AD	I	TP		
	Gross Nutrient Balance														C	C	C				
Fishery	Fleet					ADI	TP														

Legend:	
Analysis	A
Design	D
Implementation	I
Testing	T
Production	P
Consolidation	C

25.   From early 2013, the intermediate results for the meat domain were promising. Several improvements were noticed, especially in terms of communication and coordination with the users. The distribution of documentation and deliverables also improved, thanks to the possibility to use the internal sharing platforms.

26.   The project management methodology was improved in order to better serve the goal of standardising the reference process. This means that the project was divided into intermediary steps replicating the elements of the statistical production process. This creates a modular approach, enabling the users to perfectly understand how to specify their requirements, what their added value is and what to expect.

The harmonised statistical production process

27.   The main output of the first wave of projects was the production of a harmonised statistical production process within the MDT tool. The process is already fully implemented for six domains, namely for Aquaculture, Catch, Landings, Poultry, Absolute Prices and Crop Statistics.

28.   The harmonised statistical production process within the MDT tool is divided into 10 major tasks (see Annex I for the Business Process Modelling Notation (BPMN) model), though some additional tasks could be considered upstream (pre-production) ones or downstream (post-production) ones, bearing in mind the corresponding stages of the Generic Statistical Business Process Model (GSBPM). The 10 tasks cover the *Process, Analyse* and *Disseminate* stages, as in the following figure.
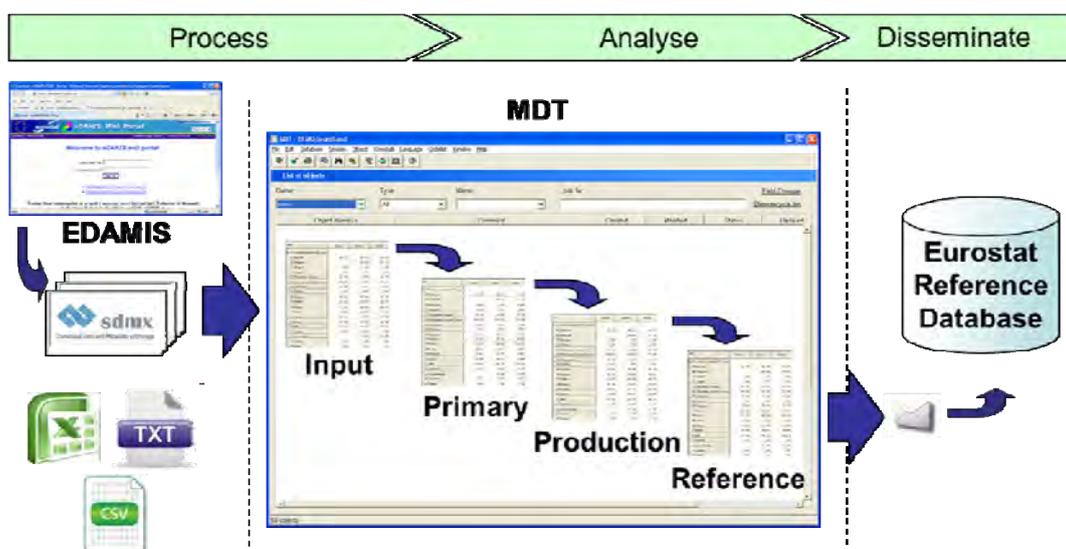

Figure 1: GSBPM stages corresponding to the MDT harmonisation procedure

29.   The *Process* and *Analyse* stages of the GSBPM correspond to the first six tasks of the process model. It is assumed that the *Collect* stage is finished in the EU Member States and that the data files submitted via Eurostat's Single Entry Point, EDAMIS, are available. An automatic loading component is responsible for the pre-processing. It validates the SDMX-ML[2] files submitted and converts and uploads them into input tables, verifying the data numeric fields and code lists. As the diagram above illustrates, some ad hoc file formats are still supported, although they always require manual intervention by the domain manager.

30.   When the data is available in the input tables (one table per data file) it is ready to be processed. The domain manager can start an automated process that will first validate the data according to the specified validation rules, detecting outliers and suspicious values. The tool also provides a graphical module to visualise the data in a chart. If the processing continues, the data is transferred and combined in a single primary table. After this, the aggregates are calculated (aggregates based on integrity rules, yearly aggregates and EU aggregates), their flags are computed and data are copied to production. The last step consists of copying the non-confidential data to reference tables.

31.   The *Disseminate* stage consists of the last four tasks of the BPMN model. An automatic export mechanism extracts the data to disseminate from the reference tables and sends them by automatic e-mail to Eurobase, Eurostat's reference database. The data is then post-processed to be accessed via Eurostat's website.

The main challenges

32.   The successful implementation of an end-to-end statistical production process within a single tool, serving several domains, could not be achieved without tackling some technical issues, some of them requiring temporary compromises while more generic solutions are being agreed on.

33.   One of the main difficulties was dealing with flags. Flags are used at different stages of the data production. They are used

   (a)   in the data files sent by the Member States (which are not always in SDMX-ML format);

   (b)   in the production systems;

   (c)   at dissemination stage.

For historical reasons, these flags are different. This implies that mappings are necessary at several stages in the chain to enable proper processing.

34.   A major initiative is being implemented in Eurostat to tackle this issue. To already provide a working solution while this initiative is being designed, the production system supports many of these mappings in several domains.

Figure 2: Mapping flags

35.   Confidentiality and disclosure control is also an issue that needs to be dealt with. Member States often send data classified as confidential, data that Eurostat can use to calculate European aggregates but that it cannot disclose. Methodological initiatives are on-going to ensure that no individual confidential data can be

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[2] One of the two basic expressions of the Statistical Data and Metadata eXchange standard, using XML syntax. The other expression is SDMX-EDI.

derived from different aggregates. Some domains use complex techniques to circumvent this and a common strategy is still being developed. In the meantime, our project adopts a more conservative approach whereby if a value is confidential, all the values within the hierarchy are considered confidential.

36.   Another problem was how to deal with revisions in the standard code lists of each domain during the implementation phase of the project. This problem was observed for the Poultry domain in 2011, when a new code list for animal products was defined in the middle of the re-engineering project. In the end it was decided that such a list would only be put into practice after the re-engineered domain was in production. Putting it into practice during the project would mean maintaining two parallel code lists to cope with data sent in the old and new structures. It would also have required changing the architectural decisions taken at the design stage.

37.   Perhaps the greatest technical challenge within the set-up of the statistical business process was defining a standard workflow, with four production phases (input, primary, production, and reference) shared by all the domains, having a common set of dictionaries, dimensions and functions and sharing the same database.
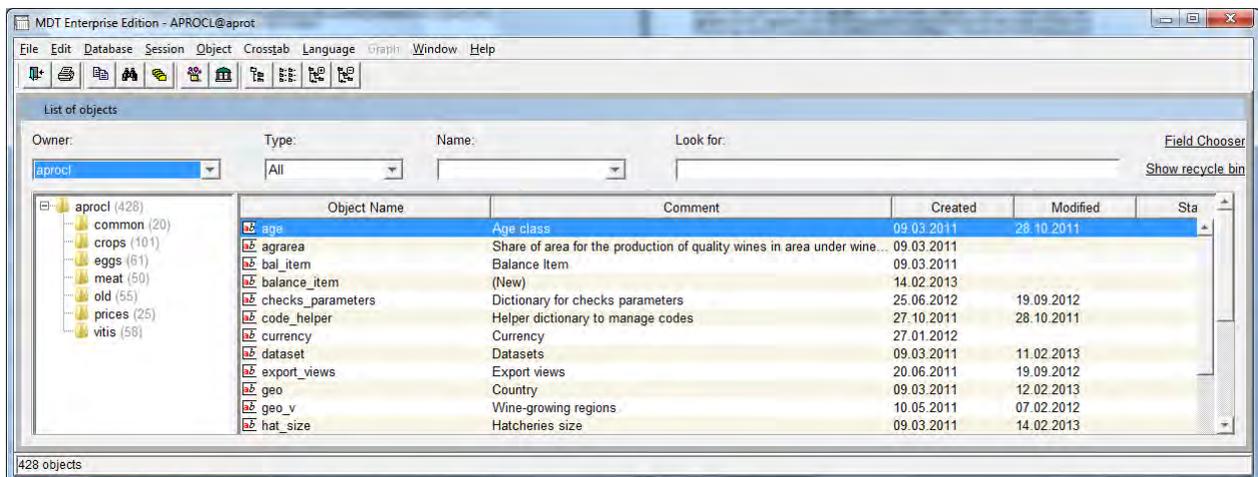

Figure 3: The MDT Interface

38.   Irrespective of the domain, the MDT tool operates in the same way, optimising its shared functionalities. Each domain manager can request specific configurations and developments. That said, the support unit responsible (the IT unit) must discuss it with the client's coordination team to assess whether the demands are too specific or are a general concern, thus guaranteeing inter-domain alignment.

B.   Harmonising and consolidating the National Accounts Production Systems — NAPS2

39.   The redesign of the national accounts production systems was jointly introduced by one of the national accounts client units[3] and the IT unit in May 2011. It was a response to the bleak picture drawn by the study previously conducted in the area. The rationale behind it was also to prepare for the challenges the national accounts production would face in the coming years (implementing a new transmission programme, a new entry data format etc.).

40.   Confirmed a few months later as a VIP[4], the project immediately benefited both from the input of the NAPS Steering Committee, — a high-level management body in charge of setting up the framework and coordinating the project — , and from the allocation of necessary resources. The project and business managers were hired at the end of the same year and the project was officially launched at the beginning of 2012.

41.   NAPS2 covers a wide range of processes and technologies:

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[3] "National and Regional Accounts Production; Balance of Payments"
[4] Vision Infrastructure Project - initiatives launched under the Vision umbrella.

(a)   twenty-one highly independent individual statistical domains;

(b)   four core applications with tailor-made implementations: FAME,[5] MDT, Eurocube[6] and MS-Excel;

(c)   a large number of local non-standard tools and procedures developed in technologies such as Visual Basic and Unix;

(d)   three GSBPM stages: *Process, Analyse* and *Disseminate*.

42.   With a timeframe of three years (2012–14), NAPS2 is expected to gradually re-engineer Eurostat's national accounts production processes through three main objectives:

(a)   to document the current state of the statistical workflows;

(b)   to harmonise the processes by standardising them inside each core information system;[7]

(c)   to consolidate the harmonised processes within a national accounts generic business process.

43.   Organised between May and October 2012, one of the first milestones of the NAPS2 project was *documenting* the current production processes. In line with the same project management methodology applied to the agriculture and fisheries re-engineering project, PM[2], this documenting step took the form of business cases, one per statistical domain. It was intended to

(a)   complete the overview already given in the earlier study of the status quo from a business point of view. In that earlier study, interviews were conducted only with some of the national accounts teams. The analysis also focused more on the flaws of the IT environment than on the conceptual and methodological gaps;

(b)   add the new workflows created after 2011, such as introducing the macro-economic adjustment programme under the European Financial Stability Facility;

(c)   provide written descriptions of all the local, often ad hoc, non-standard implementations.

44.   The *harmonisation* step, to be started in May 2013, will cover the alignment of the current production processes to the standards applicable to each information system already in use and, if relevant, to the applicable methodological concepts (such as Data Structure Definitions - DSDs, data formats etc.).

(a)   Manual operations[8] will be replaced by automated processes where relevant and if possible.

(b)   Local developments will be replaced by standard tools maintained centrally by the IT Directorate in Eurostat (Directorate B).

(c)   Each production process will be aligned with the standard workflow applicable to its core information system.[9] National accounts processes will become comparable within each system. All domains will benefit from the latest technologies available.

(d)   National accounts metadata will be harmonised. Common dimensions, codes and flags will be promoted across domains. Codification used in databases containing raw and validated datasets will be aligned with the ESA2010 transmission programme.

(e)   The structure of the production databases will be changed to improve data exchanges between statistical domains.

45.   The *consolidation* step, to be implemented partially while harmonising, will target the areas that need to be improved in the national accounts business model and will, case by case, reduce the number of superfluous

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[5] In-house built information system based on the SunGuard MarketMap Analytical Platform (formerly Forecasting Analysis and Modelling Environment – FAME).

[6] In-house built information system based on Oracle OLAP.

[7] In line with Eurostat's IT strategy and in terms of NAPS2, only Eurocube, Fame and MDT are considered corporate information systems.

[8] For some of the domains, over 15 manual operations have been identified in the production process.

[9] Eurostat's IT Directorate has produced applicable technical standards at information system level. The agriculture and fisheries re-engineering project is currently following the standards applicable to MDT.

components by merging or eliminating them. A common repository will be created to improve the speed, reliability, quality and traceability of the national accounts communication channels.

46.   The last NAPS2 objective will also focus on setting up the basis for a future migration of our national accounts environment towards a service-oriented architecture that will offer the optimum level of flexibility and agility required by such a rapidly changing business environment and the increased budgetary constraints we are facing.

47.   The general timetable is organised in six phases as shown below.

Table 3: NAPS2 planning overview

Phase	2012												2013												2014											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
1: Initiation - Identify	░	░	░																																	
and document				░	░	░	░	░																												
2: Analysis										░	░	░																								
and Planning															░	░																				
3: Harmonisation																	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒					
4: Test and Migration into production																					▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓		
5: Consolidation																						▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓		
6: Closing down - Target system																																			▨	▨

Harmonising the National Accounts Main Aggregates — the NAMA pilot

48.   In one of its first meetings at the beginning of 2012, the NAPS Steering Committee decided to launch a pre-harmonisation project and selected a pilot domain: the national accounts main aggregates statistics, currently referred to as AGGR95.

49.   The purpose of the sub-project was not only to serve as proof of concept, but also to help define as accurately as possible the steps that it will be necessary to streamline and standardise a national accounts statistical production process.

50.   The domain was therefore not chosen randomly. Although streamlining a business process inside MDT was already well defined thanks to the agriculture and fisheries project, standardising a national accounts production process developed in FAME needed to be more clearly defined.[10] From this perspective, AGGR95 was the perfect case-study: one of the least standard production lines within the national accounts system from a FAME implementation point of view, and a very complex statistical process covering a wide range of concepts from the so-called re-referencing dealing with different base periods of indices, and seasonal adjustments to disaggregation and estimations.

51.   Begun in March 2012 and scheduled to be migrated into production in May 2013, as described below, the harmonisation of AGGR95 will be known as the NAMA pilot.

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[10] At the time the sub-project started, the FAME team was finalising the general framework and set of rules to be followed when working in a domain using this information system.

Table 4: NAMA pilot planning overview

Pilot domain	2012												2013											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
NAMA			A	A	D	D	D	I	I	I	I	I	T	T	T	T	P							

Legend	
Analysis	A
Design	D
Implementation	I
Testing	T
Production	P

52.   While some of the problems faced in this project are similar to those described for agriculture and fisheries, this one was faced with an extremely high turnover of statutory staff. What is more, the high pressure and visibility under which national accounts statistics are produced has to be balanced with the involvement of business stakeholders in our project. In this challenging context, the importance of our streamlining project, which aims at ensuring business continuity and optimisation in the long run, is sometimes perceived as conflicting with day-to-day needs for ensuring the very next release of statistics. Considerable communication effort, at all levels, and management support proved to be essential in driving this change.

IV.   Lessons learned

53.   These two projects are valuable lessons in how to make a harmonisation happen and can be used as case-studies.

54.   Several important conclusions can be drawn from both projects.

(a)   Setting up a strong foundation based on thorough knowledge of the statistical processes is essential in setting out the guidelines for streamlining initiatives. Even though providing thorough documentation is lengthy and difficult, it pays off in the long run.

(b)   In a large statistical production process, knowledge is concentrated at process step level. When gathering the necessary information, the big picture is sometimes ignored, generating gaps in the work planned. Delays may occur as essential requirements are not identified in the early stages.

(c)   Defining common ground, even when only a small number of stakeholders is involved, is very difficult and requires a considerable amount of negotiation. Sometimes compromises have to be accepted to achieve a streamlined business process. The authority role of a supervising body therefore becomes critical to ensure that collaboration does not get stuck or derailed.

(d)   Streamlining projects often get tangled up in the web of daily activities. The impact that project-related tasks might have on daily activities has to be carefully monitored and vice versa. Changes in daily activities might require unforeseen changes to be made to projects. Technical solutions must therefore be flexible and project managers sufficiently experienced in assessing whether or not it is necessary to make the changes.

(e)   Migrating from a non-standard, tailor-made process towards a corporate harmonised approach requires effective change management. Very tight communication channels and short feedback cycles of step-by-step, gradual approaches proved to have a real impact on the success of such initiative.

V.   Next steps

55.   With a common process skeleton already defined, the next steps in re-engineering agriculture and fisheries statistics will involve following the established project plan for the remaining domains to be migrated until mid-2014. The incorporation of new domains is now standardised, meaning that each domain will largely

reuse the established structure. For those processes covered by MDT, NAPS2 will also rely on the same statistical business process model.[11]

56.   In parallel, it is very likely that the on-going initiative of harmonising the use of flags in Eurostat and improvements in disclosure control methods will have an impact on both projects.

57.   Meanwhile, it is expected that by the end of 2014, SDMX-ML will become the standard input format for tabular data transmissions. This inter-organisational project will mean improvements will have to be made upstream and downstream of the statistical production chains in agriculture and fisheries and national accounts. Uploading and disseminating data in the production systems will most probably need to be updated.

58.   Changes in concepts and code lists scheduled for the two years will have to be incorporated in the planning of both projects. In the case of national accounts, revised international guidance manuals, specifically the ESA2010 and Balance of Payments and International Investment Position Manual (BPM6), will be made available in the next few months. Production processes must be ready to receive data under the new transmission programme as early as the beginning of 2014.[12]

59.   All statistical areas in Eurostat are constantly changing. In the light of the current economic situation, more than ever they require flexible, highly reactive, automated production chains to keep up with the rapid change in policies and the ever greater need for more and better results. It is necessary to streamline and consolidate the current production environments to be able to move towards a service-oriented architecture. Preparatory work for follow-up projects is already under discussion or even scheduled in the case of national accounts.

VI.   References

[1] On Eurostat's Vision programme:
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http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2009:0404:FIN:EN:PDF

[2] On GSBPM:
http://www1.unece.org/stat/platform/display/metis/The+Generic+Statistical+Business+Process+Model

[3] On agriculture and fisheries:
http://epp.eurostat.ec.europa.eu/portal/page/portal/agriculture/introduction

[4] On national accounts main aggregates:
http://epp.eurostat.ec.europa.eu/portal/page/portal/national_accounts/introduction

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[11] See Annex 1.

[12] SDMX-ML transmissions following BPM6 are expected at the beginning of 2014 for the balance of payments. SDMX-ML transmissions following ESA2010 are scheduled for September 2014.

ANNEX I — BPMN Statistical Business Process in MDT

Eurostat (EN)

SDMX data files from MS received (EN)

EDAMIS file storage (EN)

Loading Set Up (EN)

SDMX data file [validated] (EN)

Data file conversion (EN)

MDT compliant data file (EN)

Data load in MDT (EN)

MDT (EN)

Data [Non-validated] (EN)

Data [Validated] (EN)

Data [Processed] (EN)

Eurobase (EN)

Data validation (EN)

Data processing (EN)

Processed data submission to reference (EN)

Data validation (EN)

Comext (EN)

Reference data submission to dissemination (EN)

Data publishing (EN)

End of the statistical process (EN)