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IV. New opportunities in the face of global crisis

Coordination and the role of quality and standards in the implementation of the Sustainable Development Goals (SDG).

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Abstract

There is an urgent need for reliable information for handling the climate change and other global challenges. The work on implementing the SDG's has provided us with a way to collect, process and disseminate reliable information, guided by common global goals, targets and indicators and methodology.

It is the experience of the authors that many countries are facing problems on planning and implementing a coherent system with smoothly running production of SDG indicators. The challenge is especially on coordination of work processes within the NSS where indicators are based on data from data providers outside the National Statistical Organisations.

This paper argues that a new approach on coordination is needed, using quality frameworks and standards to support a common understanding. This approach should use supporting tools that are flexible and easy to use. The paper is closed with a presentation of the tool *SDG Coordinator*.

The paper claims that:

1) There is a need for a better understanding of coordination in the National Statistical System.
2) Quality frameworks and statistical standards should help in conceptualising and creating models for the work processes involved in the production of the SDGs.
3) There is a need for simple and flexible tools based on the a coherent understanding of processes and the flow of information. The tool should enable the coordination agreed by stakeholders.

Keywords: coordination; communication; SDG; quality.

Introduction

There is an urgent need for reliable information for handling climate change and other global challenges. The work on implementing the SDG has provided us with a way to collect, process and disseminate reliable information, guided by common global goals, targets and indicators and methodology.

The *Cape Town Global Action Plan for Sustainable Development Data* provided us with six strategic areas[1] focusing on the improvements on monitoring the SDG goals. The importance of coordination in the National Statistical System is stressed in several places. The *Handbook on Management and Organization of National Statistical Systems in section 2.1.*[2] gives a good introduction and stresses the importance of coordination. The publication *Road Map on Statistics for Sustainable Development Goals* gives detailed guidance in chapter 3, *National Coordination Mechanisms*[3]. Paris21 has provided a detailed publication with good models, case studies, etc: *Coordination capacity in National Statistical Systems* [4] . The UN Statistics Division is providing detailed support to a number of countries[5]. In addition, a number of tools have been prepared. See later in the paper.

Thus, a number of initiatives have been taken to deal with the complex issues in connection with the production of indicators related to SDGs. However it is the experience of the authors that many countries still are facing problems in planning and implementing a coherent system with smoothly running production of SDG indicators. The challenge is especially on coordination of work processes where indicators are based on data from data providers outside the National Statistical Organisations.

This observation is confirmed in a recent global survey about the implementation of the Cape Town Action plan[6]. The main results on coordination showed that

- Only 6% of the NSOs in low, lower and middle income countries consider that coordination capacity of the NSO with partners inside the NSS is satisfactory, as opposed to 43% of NSOs in high income countries.

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[1] The six areas are as follows: 1. Coordination and strategic leadership, 2. Innovation and modernisation of national statistical systems, 3 Strengthening the monitoring of the needs of 2030 Agenda, 4. Dissemination of data, 5. multi stakeholder partnership, 6. Mobilisation of resources for statistical capacity building. https://unstats.un.org/sdgs/hlg/cape-town-global-action-plan/

[2] https://unstats.un.org/capacity-development/handbook/index.cshtml

[3] *Road Map on Statistics for Sustainable Development Goals,* Link: https://unece.org/statistics/publications/CES-roadmap-sdg-2

[4] *Coordination capacity in National Statistical Systems. Background Report*, (2021), PARIS21. https://paris21.org/news-center/news/co-ordination-capacity-national-statistical-systems-background-report

[5] UNSD-FCDO Project on SDG Monitoring, https://unstats.un.org/capacity-development/UNSD-FCDO/

[6] Cape Town Global Action Plan Implementation Review. https://paris21.org/sites/default/files/2021-11/CTGAP%20Implementation%20Review%20Survey%2020211108.pdf

- 18% of NSOs in low, lower and middle income countries, and 26% of NSOs in upper middle-income countries, consider that coordination with partners in the wider data ecosystem remains unsatisfactory.

Need for a better understanding of coordination

The first claim in the paper is that there is a need for better understanding of coordination in the National Statistical System[7].

Coordination of the national statistical system (NSS) in many countries is often informal and the NSO has limited authority over other producers of official statistics (OPOS). In several countries, the NSO's do not have the coordinating role it is supposed to have according to the European Statistics Code of Practice (ESCoP). In practice, this means that the overall NSS does not live up to the quality standards necessary for solid policy-making.

It is the experience of the authors that the usefulness of complicated models and guidelines is often limited. They typically have an idealized view of the world (present and future) focusing on a limited set of aspects in the national statistical system. Coordination is often seen as just a top-down process via creation of strategies, policies and workplans followed by subordinates doing what is written in the workplans.

In contrast, this paper states that coordination when building NSS, is always situation specific. "One size fits all" does not work. There are simply too many factors that influence the coordination and the decision making in each country. These can be positions of various stakeholders in the NSO and across the NSS, stories from the past, ways of doing things, various views on the goals, etc.

Thus, there is no general recipe. The work on building an NSS must take place with via communication and decision-making in each case, aiming at a well-functioning NSS.

The role of quality frameworks and statistical standards

The most important frameworks and standards are: principles for the production of statistics (e.g., ESCoP[8] and UN Fundamental Principles of Official Statistics), quality

[7] Annex 1 contains some considerations for readers interested in coordination seen in a systems theory perspective

[8] European statistics Code of Practice, https://ec.europa.eu/eurostat/web/quality/european-quality-standards/european-statistics-code-of-practice

frameworks (e.g. UN-NQAF[9], ESS-QAF[10]), models and standards (e.g. GSBPM[11], SIMS[12], SDMX[13], DDI[14]).

In some places it is assumed that these frameworks can be imposed from the top as decisions on how to move on. This is a naïve understanding, ignoring that coordination and communication is situation specific. Introducing the frameworks and standards must be customized to each country and make sense for the staff using the standards and frameworks. This is an important aspect when incorporating statistics producing organisations in the NSS that do not, like the NSO, have production of statistics and their main task.

The frameworks and standards can be helpful at several levels going from general principles (e.g. ESCoP) and quality assurance framework (e.g. ESSQAF) to more detailed standards like GSBPM for processes, and the Single Integrated Metadata Structure (SIMS), SDMX and DDI for metadata.

An example is the introduction into the European Statistics Code of Practice of a new principle 1b about coordination.

Simple and flexible tools and *SDG Coordinator*

We believe that there is a need for simple and flexible tools for assisting the coordination of NSS, based on a coherent understanding of processes and the flow of information. The tool must enable the coordination agreed upon by stakeholders.

The *SDG Coordinator Tool* is flexible and seeking to reflect that information storing and sharing for coordination must be agreed by stakeholders.

The tool must help on the following needs:

1. Need for *clear responsibilities* on who is doing what, and when
2. Need to *standardize the templates for data exchange*
3. Need to agree upon a *calendar* for data collection from data providers and calendar on release of SDG indicators
4. Need to agree upon the *data collection methods* and validation with data providers

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[9] United Nations National Quality Assurance Frameworks Manual for Official Statistics, https://unstats.un.org/unsd/methodology/dataquality/un-nqaf-manual/

[10] Quality Assurance Framework of the European Statistical System. https://ec.europa.eu/eurostat/web/quality/european-quality-standards/quality-assurance-framework

[11] Generic Statistical Business Process Model, https://statswiki.unece.org/display/GSBPM/GSBPM+v5.1

[12] *European Statistical System (ESS) handbook for quality and metadata reports* https://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/ks-gq-19-006

[13] SDMX, Statistical Data and Metadata eXchange, https://sdmx.org/?page_id=2561

[14] DDI, Data Documentation Initiative. https://ddialliance.org/Specification/DDI-Codebook/2.5/

There are tools available focusing on these aspects. Examples are ADAPT, EPIC and StatAct (see references). They help with several aspects on planning, resources, etc., which are not directly part of SDG Coordinator. However, the tools are not sufficiently flexible.

The problem is that the information content to be put in and shared in a tool is often complex, it does reflect the information that a country needs for coordination and it is not possible to change what kind of information you put into the tool. Following the ideas above on coordination, a tool must be easy to use, and it must be easy to change according to wishes in the NSS. E.g., just putting another column in excel.

SDG Coordinator is an endeavour in this direction.

- It is a *simple tool* with excel workbooks and a web-application (cloud service) to support coordination in a National Statistical System
- The workbooks contains shared information about *statistical programs, SDG indicators and dataflows* to be used across organisations in the NSS
- It only requires some basic *knowledge about terms and standards* and *how to update excel*

The tool has some fixed elements: e.g., SDG indicators and templates for reporting to UN. It has proposal for simple descriptions of responsibility following the GSBPM phases Collect, Process, Analyse and Disseminate. It also proposes to use the SIMS model at the statistical program level.

The core in the tool is the Excel workbooks implemented with some checks to ensure integrity. The web-application is built using R shiny. The application loads excel sheets and provides an overview that can easily be shared among stakeholders.

The tool can be used in various ways.

1. It can be used 'as-is' with the existing excel workbook and web-app content
2. The Excel workbook and web application can be customized to country specific needs
3. It can be used with only Excel and reporting facilities. The reporting scripts in the tool can be executed from R reading the content of the Excel workbook

It is recommended to get some basic guidance to relevant statistical standards and models and how they are implemented in the tool. This could take place at workshops aiming at common understanding and coordination among involved actors.

The tool is developed by Mogens Grosen Nielsen. It is based on experience and needs identified by Lars Thygesen and Mogens Grosen Nielsen. The cost for using the tool "as is" is minimal and will cover hosting and maintenance.

Main aspects of *SDG coordinator*

Figure 1 below places SDG coordinator in context.

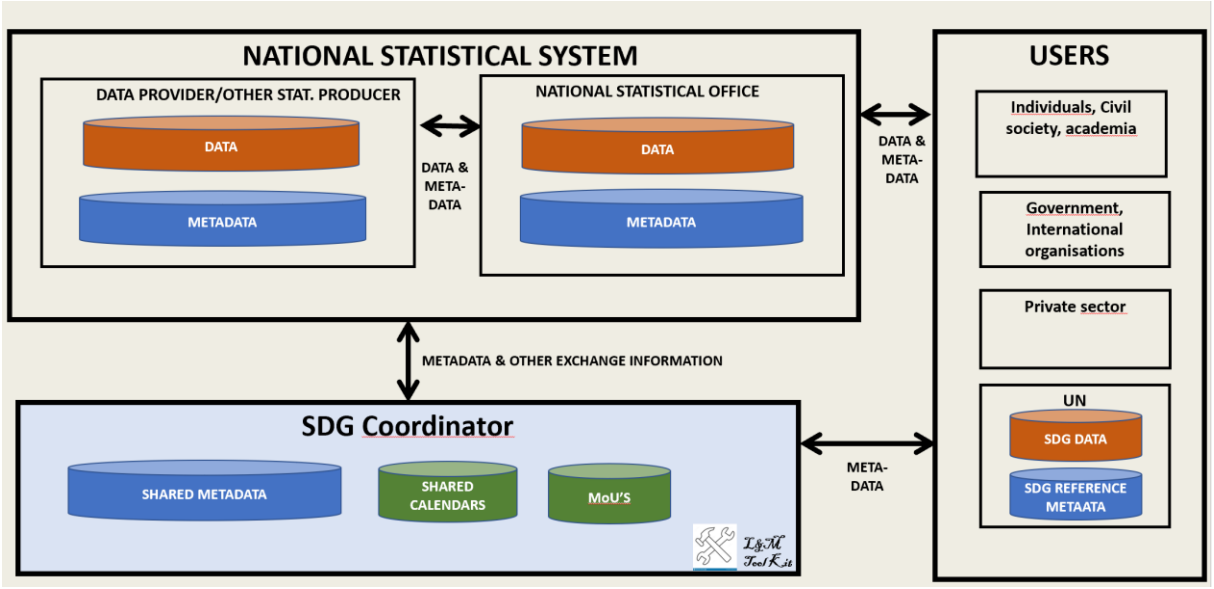

Figure 1. SDG Coordinator in context

The main focus in SDG coordinator is to support the exchange of data and metadata inside the national statistical system and between the national statistical system and users. This includes shared calendars and MoU's. The MoU can be generated in SDG Coordinator using information about metadata and calendars.

Figure 2 below shows the two main uses of SDG Coordinator. Plan and share.

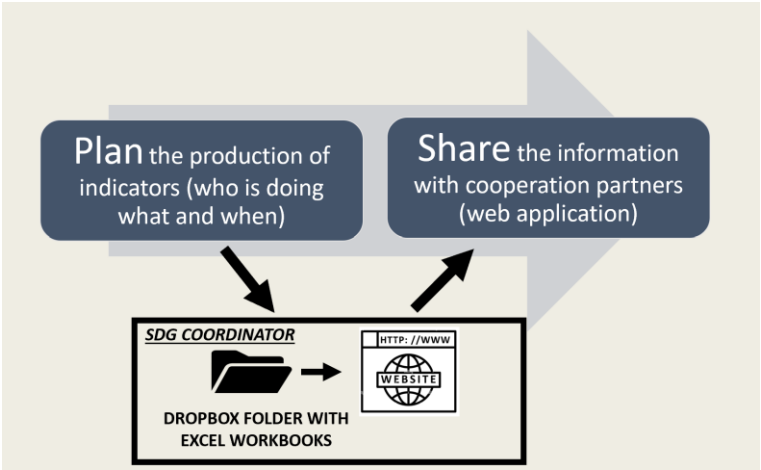

Figure 2. Plan and share

The planning involves all stake-holders and the descriptions are put into excel and uploaded to a shared dropbox-folder. The sharing happens via a simple web-application presenting the content in the excel sheet and enabling various perspectives on the information in the spreadsheets.

Figure 3 below shows the web-application with shared information.

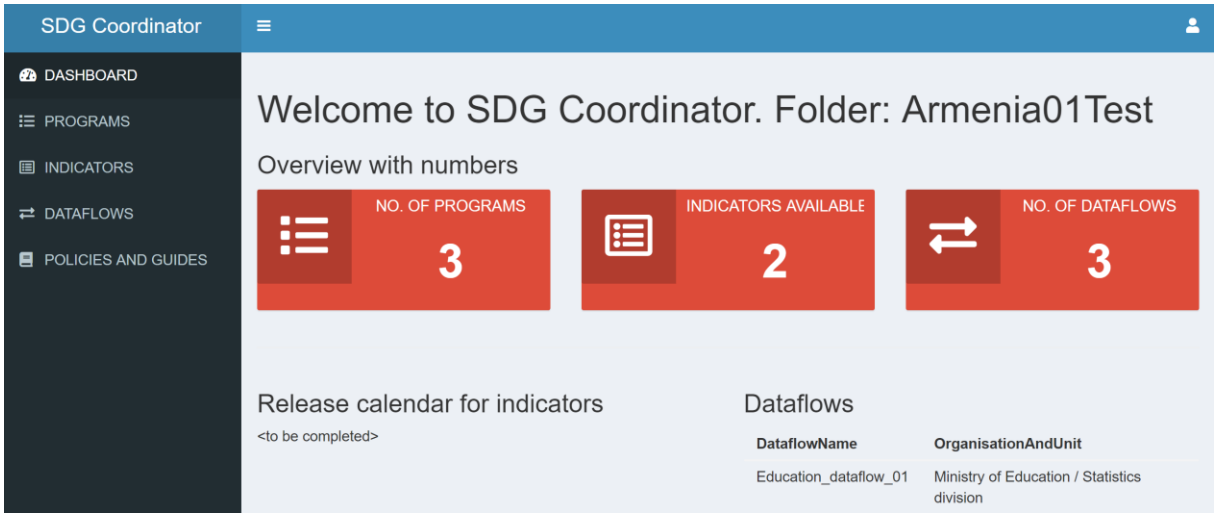

Figure 3. Web-application with shared information

In addition to the dashboard with overviews, it is possible to see details about statistical programs, indicators and data flows

Figure 4 below shows the content in Excel. The boxes with green titles show the content of the sheets in the main Excel workbook. The folders in the bottom contain Excel workbook with metadata associated with each statistical program, each indicator and each dataflow.

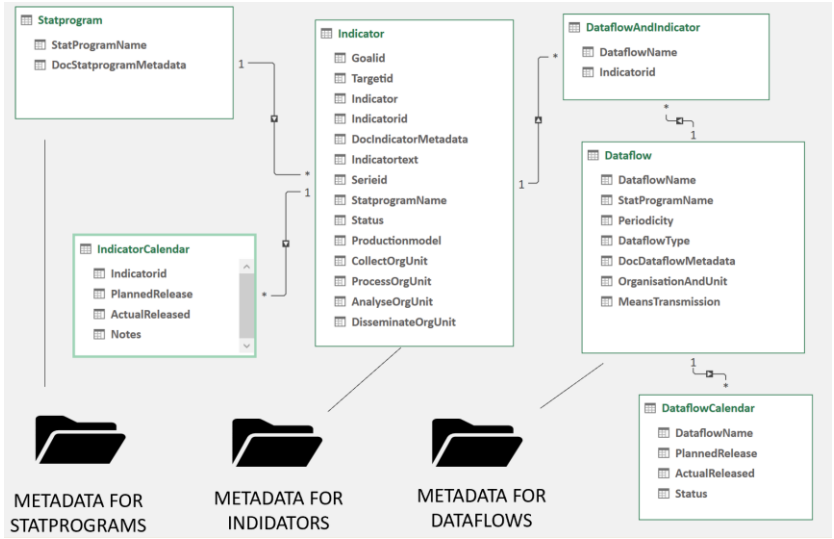

Figure 4. Content in Excel

It is proposed to use SIMS as reference metadata description for statistical program. For indicators the UN standard for reference metadata is suggested. For dataflows it is proposed to use DDI codebook structure for reference metadata and structural metadata, respectively.

The background for choosing exactly this content in Excel is expressed in the four needs described above (clear responsibilities, standards for exchange, calendar and methods)

Figure 5 below shows a simplified version of GSBPM.

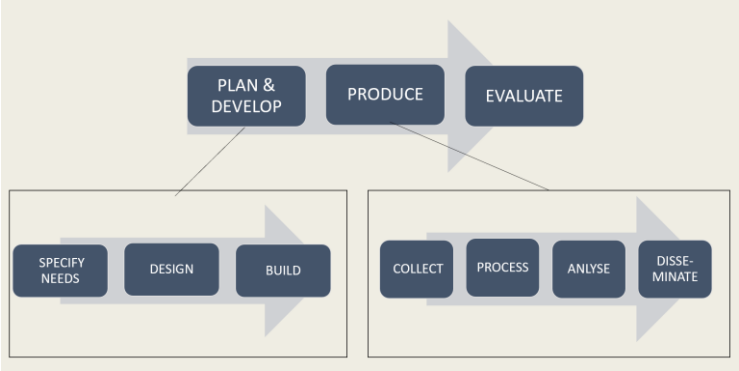

Figure 5. GSBPM simplified.

As can be seen on the box with indicators in figure 3 above, one can insert those responsible for GSBPM phases: collect, process, analysis and disseminate, respectively. These phases correspond to the phases in the lower left corner in figure 5.

Regarding plan and develop, we can also get some guidance from GSBPM. This part is divided into three parts: specify needs, design and build. Figure 6 below shows the plan and develop phases and how to use SDG Coordinator for these.

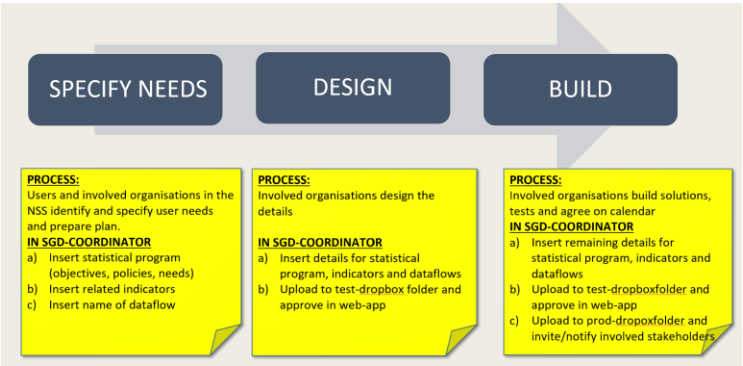

Figure 6. Plan and develop phases and how to use SDG coordinator

Conclusions

The paper had the following three claims

1) There is a need for a better understanding of coordination in the National Statistical System.
2) Quality frameworks and statistical standards should help in conceptualising and creating models for the work processes involved in the production of the SDGs.
3) There is a need for simple and flexible tools based on a coherent understanding of processes and the flow of information. The tool should enable the coordination agreed by stakeholders.

The paper introduced the on-going work on coordination and subsequently the three claims were discussed and closed with the following conclusions:

Need for a better understanding of coordination

Coordination when building NSS is always situation specific. “One size fits all” does not work, because of the many factors that influence the coordination and the decision making in each country. These can be positions of various stakeholders in the NSO and across the NSS, stories from the past, ways of doing things, various views on the goals, etc. Thus, there is no general recipe. The work on building an NSS must take place via communication and decision-making in each case aiming at a well-functioning NSS.

The role of quality frameworks and statistical standards

Quality frameworks and standards can play a role in coordination via conceptualisation and description offered by the frameworks and standards. However, introducing the frameworks and standards must be customized to each country and make sense for the staff using the standards and frameworks.

Simple and flexible tools and SDG Coordinator

There are tools supporting coordination available. They help with several aspects on planning, resources, etc., which are not directly part of SDG Coordinator. However, the tools are complex and not sufficiently flexible. The SDG coordinator is flexible and seeking to reflect that information storing and sharing for coordination must be flexible and agreed by stakeholders.

The tool has some fixed elements: e.g., SDG indicators and templates for reporting to UN. It has proposal for simple descriptions of responsibility following the GSBPM phases Collect, Process, Analyse and Disseminate. It also proposes to use the SIMS model at the statistical program level and DDI codebook metadata for dataflows. In this respect the tool suggests to use some statistical frameworks and standards.

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Annex 1. Coordination and system theory

Traditional system theory

As a system the National Statistical System (NSS) is the combination of statistical organisations and authorities within a country that jointly collect, process and disseminate official statistics on behalf of a national government[15]. In system theoretical terms the NSS is a whole consisting of organisations and units as elements and as relations between the elements (organisations and units).

In traditional system theory coordination is often seen as the main function of business management, denoting practices that enable or support goal-oriented interventions. As decisions about the concrete *design* of processes and structures within organizations form the main task of business management, it is the *coordination* of these processes and structures that is the core task of management. Management via coordination can be described via the "cybernetic circle" / "thermostat circle" of planning (definition of goals, formulation of plans), implementation of plans (breaking down strategic plans into operational programs), realisation (without the possibility of any discretion on behalf of the task performing actors), and control (with the result of a feedback towards plan definitions or towards a search for possibilities to enhance performance). [16]

This type of coordination takes place, but it is too rigid and does not take the observations by the authors into account: stakeholder interests and communication initiatives via meetings etc. And to be more specific. The theory sees the these as deviations that must be removed so that one can move towards a rational model described in the cybernetic circle.

Social systems as an alternative[17]

Social system consists of communications, which are the "elements" of the system, and references between communications, which are the "relations" between the "elements".

Communication is defined with three parts, namely, selection of information, selection of the utterance of this information, and a selective understanding or misunderstanding of this utterance and its information.

In contrast to traditional communication theories this definition of communication does not consist of a substantial "transfer" of information from sender to receiver. The sender does not hand anything over (or give away something) to the receiver.

[15] PARIS21 (2021)
[16] Tobias Scheytt (2006)
[17] The introduction is based on Tobias Scheytt (2006) , Luhann (1992), Seidl (2006)

All information in social systems is selected and processed based on the criterion meaning. Thus, coordination as communication in the social system perspective only succeeds if communication if followed by further communications.

Social systems can be classified into interactions, organisations and societies. Interactions (conversations), these are fleeting systems with a limited capacity to process environmental complexity. Organizations are social systems with clear boundaries reproducing themselves by means of decisions. Societies are social systems, not delineated by membership but by the specificity of their perspective. Law, economy, politics, religion, science and education are examples of function systems that each play a role in the reproduction of society as the encompassing social system.

All social systems are self-referential. Each social system internally produces a construction of itself and the outside world, that is, other social systems and the world at large, in terms of unique basic distinctions, concepts and procedures and it recursively produces its communications from the network of its communications.

In this perspective, the NSS is viewed as a social system consisting of communications, which are the "elements" of the system, and references between communications, which are the "relations" between the "elements".

Recalling observations the authors had as consultants at national meetings about establishing an NSS: There was first informal communication about goals, etc. This was followed by communication of models by the consultant. The models was agreed in advance. This communication was continued in communications about advantages and disadvantages and ended with communication with agreements and decisions.

Two main points: All communications must give meaning and make sense for the participants. The contributions from consultants had to fit into the situation as descriptions related to the problems faced. There is no room for general recipes. "One size fits all do not work" [18].

I will not dive further into to theory of social systems. It has a lot other elements that could be useful for the understanding of coordination.

Detail about coordination, quality frameworks and standards

The important frameworks and standard are as follows: principles for the production of statistics (eg ESCoP, Fundamental Principles of Official Statistics), quality frameworks (e.g. UN-NQAF, ESSQAF) models and standards (e.g. GSBPM, SDMX, DDI)

The PARIS21 publication on coordination has a section on what co-ordination means in the national statistical systems. It lists the following three dimensions:

1. *Co-ordination as dialogue*: Afristat, defines statistical co-ordination as "a dialogue between [...] producers and users to better manage their needs and rationalize

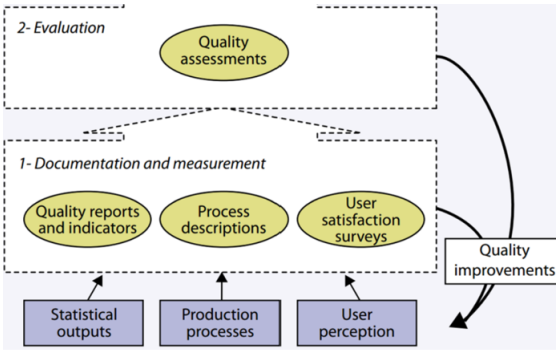
[18] Luhmann,2006

the production of data and [...] (for) producers of statistics to optimize resources and obtain adherence to conceptual and methodological tools" [19].

2. *Co-ordination through standards and classifications:* Co-ordination is about the issuance of "procedural standard and guidelines, on areas such as survey design, questionnaires, terminology, classifications, methodologies, shared data portals, dissemination policies, transmission and exchanges of data between Producers of Official Statistics, confidentiality, access to microdata for academic research and collaboration with stakeholders" (CEPAL)[20]
3. *Co-ordination as quality monitoring:* Co-ordination includes "the set of activities of a single organisation which ensure that the activities of a different member of the system meet the relevant quality standards" (Eurostat)[21].

When focusing on coordination and the role of quality frameworks and standards all three dimensions of coordination are relevant. Seen in a social system perspective they all provide conceptualising of quality frameworks and standards, that can be introduced as premises in communication and decision making.

Starting with *Co-ordination as quality monitoring* quality the drawing below shows the ideas that the coordination and decisions can be based on description of quality.



The central point is that documentation and measurements provides self-description that that can work as premisses for decisions on quality improvements and thereby support coordination.

Co-ordination through standards and classifications focuses on the issuance of procedures and guidelines to be followed. These are descriptions that are communicated across the NSS and can be used in communication and form the premises for decision in the NSS.

Co-ordination as dialogue sees dialogue between users and producers focusing and needs and internally between producers focusing on optimisation of resources. As for the other two dimensions adhering to standards and procedures could work as decision premisses, both in in formal or informal decisions.

[19] Afristat, 2020
[20] CEPAL, 2019
[21] Eurostat, 2013

Thus, all three dimensions can provide premises for decision via conceptualisation of quality frameworks and standards in the communications in the NSS.

When looking into dimension two and dimension three above, it is often assumed that these frameworks just are imposed from the top as decisions on how to move on. This reflects the traditional system view on coordination and do not take into account that the role of these frameworks and standards must make sense for the staff using the standards and frameworks. Therefore the framework and standards must be carefully selected and customized in order to work as premisses for decision-making in concrete use. And note the this selection and customization of standards and framework is in itself decision processes that must make sense for a NSO or a whole NSS. This is an important aspect when incorporating statistics producing organisations in the NSS that do not, like the NSO, have production of statistics and their main task.

It can be concluded that quality frameworks and standards can play a role in coordination as premisses for decisions via conceptualisation and descriptions they offer. However they can only serve as input after being selected and tailored to each specific country. In other word: they must make sense for the participants in the communications.

Detail about the tools

There are tools available to support coordination. Examples are ADAPT, EPIC and StatAct (See references). They can help with several aspects on planning, resources, etc., However, the tools are often complex and not sufficiently flexible. Based on the reflections above the tools must support communications and decisions. This must take place via situation specific use of standards and frameworks.

SDG Coordinator is an endeavour in this direction. It is simple tool, with data stored in excel. It is easy to customize based on decision in the NSS.