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### The value of data in the implementation of Agenda 2030

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The official statistics is decisive as to themes where indicators for sustainable development have been identified and have to respond to the challenges and risks in a highly dynamic global framework, characterized by new needs and modes of production, dissemination and communication of data.

The NSIs have the opportunity to increase awareness of the value of data of official statistics, making available the information and services, driving the modernisation of official statistics, enhancing the capacity to make decision on the basis of evidence and promoting a dialogue with other national producers and users.

Keywords: Agenda 2030; sustainable indicators; Partnership; Modernisation.

#### 1. Main pillars to enhance the value of data: Trust and Partnership

The increasing complexity of modern societies and multidimension phenomena (globalization, competitiveness, well-being and sustainable development) require a continuous expansion of statistical information to meet new and more information needs: in several domains (economic, social, environmental), with spatial detail (from the global to the local level), the type of information produced (micro, macro data, simulations, longitudinal studies, etc.).

Data cannot replace the choice of policies and responsibilities, but constitute a major support of knowledge of past trends and possible future scenarios. Official statistics has to be ready to commit and engage itself in increasing the awareness of the value of data produced and in striving for the decisions of public interest to be taken on the basis of relevant and reliable evidence. In a world where the growing trend is to use instantaneous information available, the commitment to quality of statistics is a key element for the credibility and trust in official statistics.

The value of data is related to our capacity to recognize challenges and risks to be addressed, in a highly dynamic global context, characterized by new questions and modes of production, dissemination and communication of data.

Information needs are growing fast. World statistical capacity is increasing too, and data producers are requested to keep the pace with the agreement reached on the Sustainable Development Goals (SDGs) for monitoring the implementation of Agenda 2030. The SDGs represent a challenging opportunity to strengthen the statistical institutional framework, to support governments' decisions, to enhance capacities, to foster co-operation, to share experiences and to reduce inequalities. In fact, statistics plays a central role in the implementation of 2030 Agenda for Sustainable Development and official statistics are decisive for the themes where indicators for sustainable development have been identified.

The new challenges faced by official statistics are numerous and substantial. The development and dissemination of new digital technologies have brought down many obstacles, primarily the costs for the production, storage and analysis; other entities, both public and private, are now able to collect, process and communicate statistical data than ever before. The statistical institutes and the overall system compete with other producers often able to disseminate more timely data, but with lower quality standard levels and, more importantly, without having - in most cases - a conceptual framework internationally agreed. Furthermore, the difficult conditions of the public finances are forcing the statistical community to find new solutions to ensure high levels of quality typical of official statistics with an eye on budget constraints.

Challenges, risks, responsibilities that we have seen so far offer many opportunities to drive the renewal of a process - for producing high-quality statistics – that is essential for the democratic life of a country.

The trust that we have to build is based on the clear recognition of the limits of our data: whether it is sample data or administrative data originally collected for other purposes, they form the basis for statistical estimates, based on an appropriate treatment of sources available and accessible at that time. However, it is right to consider those data as the source of the best possible estimates. Therefore, the good and transparent management of statistical information gaps is an integral part of the process of trust building. The treatment of secondary data according to the highest professional standards implies the knowledge of errors and their consequences, the ability to point them out and describe them explicitly and in an understandable way, as well as the explanation of a precise perimeter of the quality of information produced and disseminated.

To be recognized as guarantors of quality statistical information it is necessary to enhance the ability to generate reliable information, with the information to be used for decisions, and strengthen awareness of the value of official statistics.

As stressed by Constance Citro “we can and must move from a paradigm of producing the best estimates possible from a survey to that of producing the best possible estimates to meet user needs from multiple data sources”. In order to achieve this goal, we need to develop several capacities in different directions, by integrating knowledge and methods and experimenting and co-operating with many national and international partners.

Being part of the European Statistical System (ESS) and Global Statistical System (GSS) is a value for the producers of official statistics. The statistical systems are built up upon the partnership and they are the comfort zone in which NSIs can easily exchange experiences and benefit of partnership by reusing tools already available to produce high quality data and better respond to information needs. The implementation of the ESS Vision 2020 is a proof of possible partnership within ESS making available by projects standards, guidelines, experimental products and process. The development of a renovated strategy beyond 2020 could be an occasion to enhance this partnership also related to the reinforcement of statistical capacity, better to respond to the implementation of Agenda 2030 and in particular to the SDGs.

Any process of change and modernization requires the development of synergies with all public and private entities involved in data collection, treatment and dissemination. Aiming at building up as much integrated information systems as possible to enrich the information and improve quality of the official statistics, it is necessary to break away from the proprietary-driven logic of data and to establish partnership with entities collecting administrative information and with those who can contribute to the study of relevant phenomena in our society. Closer collaboration between administrations will produce a significant reduction in costs and will help increase the efficiency of public administration and, at the same time, the availability of higher-quality statistical information. The need for transformation and modernization of official statistics implies the demand for exploiting innovative sources. In this respect strategic partnership with academies, public institutions - included

those not belonging to the National Statistical System - and private companies it is a way forward. Istat is moving into this direction by implementing its modernization program and establishing several partnerships. Beyond this, the challenge is to build a collaboration network between public and private sectors to ensure access to big data mostly of private ownership. Public-private partnerships for official statistics are becoming a key tool to get new sources of data. The proliferation of innovative new sources (e.g. Big Data) has increased the need to conduct analysis jointly or through a partnership agreement with the private sector. In the last few years, several National Institutes of Statistics (NSIs) have supported initiatives to explore the potential of non-official data sources.

Along this line, over the last three years, Istat has established a fruitful dialogue with selected Italian private companies to make their data accessible for statistical use, in particular:

- with large scale retailers on scanner data for improving the quality of the Household Index Consumer Prices (HICP)
- with Mobile Network Operators to produce new information in a variety of areas, including urban population and inter-city mobility, the planning of urban services or emergency plans in critical areas, as well as statistics on domestic outbound and inbound tourism flows. The aim is to integrate the existing population and flow statistics on individual mobility, mainly based on administrative sources, by means of constant up-to-date estimates obtained from mobile phone data provided by the MNOs. These data would permit higher accuracy in space and to collect information on the frequency and time of individual mobility.
- with the National Independent Roads Corporation- Association of Concessionaries of Highways and Tunnels and the private company for the Use of webcam images for road traffic flow estimation.

For a National Statistical Institute it will be crucial to obtain access to new and detailed sources of data. In fact, we hope that the availability of mobile phone data can be granted; in such a case their use for official statistics purposes will be been introduced in the National Statistical Plan. Over the last ten years, Istat has developed a great deal of experience in managing personal data in the use of administrative sources. Certainly, we need to enlarge our competences and to progress in managing and treating great sources of data. However, we are already moving in this direction. The use of Big Data shows some areas of concern related to data access and privacy issues, real costs, a shift in IT requirements, the impact on consolidated methods and data processing.

Cooperation with public research centers, academies and other government institutions is essential to make the best use of new techniques and provide reliable results. In April 2016, Istat set up a new Big Data Committee, bringing together academic researchers, the Italian Data Protection Authority, the main mobile network operators, and representatives of national and international statistical institutes, to receive guidance for the management of Big Data sources. A priority list for the Committee is: to move from experimental projects to the dissemination of official statistics products based on the use of Big Data sources by the end of 2020; to tackle data access and privacy issues; to foster the sharing of expertise across national and international organizations (such as NSIs, universities and other institutions).

Strengthening public awareness on the use of Big Data and emphasizing the potential for the well-being of citizens stemming from the use of new sources is also fundamental.

## 2. Modernisation: the way forward

The value of data has to benefit from the optimization and enhancement of available information assets, as well as to improve research and move towards experimental statistics.

The challenge posed by new emerging demands of information and processes has to be faced keeping in mind the ultimate goal of statistics: producing high quality data. Data quality basically refers to the compliance with agreed international standards: the professional independence of statistical authorities, the adoption of sound methodologies, the accuracy and precision of estimates, their timeliness and punctuality, their coherence, comparability, accessibility and clarity. Moreover, official statistics is facing human and budget constraints, all over the world: in this way, also efficiency becomes a necessary condition to meet our responsibilities. However burdensome, quality standards should refer to each step in the data chain, from the statement of objectives, to data collection and processing, to dissemination. Modernization of the statistical systems is a strategy for the integration of sources, technologies, methodologies and competencies strengthening the quality of data.

All these factors push towards an enlargement of the methodological toolbox and a re-thinking of the organization that Statistical offices traditionally implement. New methodological and technological instruments, together with the international best practices should drive the change; new possibilities for collecting, processing, integrating and disseminating high quality statistical data in a more efficient way, should be explored. We refer to all these different improvements with the term modernization.

Administrative data are more and more important in the framework of official statistics. The acquisition of administrative data may have lower costs for the statistical offices and timeliness is normally satisfactory, but it may widely vary among sources. Strong capacity is required for setting up the infrastructures for storing and computing data and the methodologies for exploiting them in official statistics production. Accuracy measurement is also a complex issue to be managed; stability and efficiency of national statistical systems are key issues to ensure the capability of using these data for statistical purposes.

Experts' estimations are very often used for hard-to-measure phenomena. These estimates should be periodically benchmarked with more robust measurement tools. Statistical models and small area estimations are also needed when very detailed or rare phenomena are going to be measured. They enhance overall quality by leveraging spatial and time correlations of data. Finally some best practices are rapidly growing and examples of application show the potential use of these new data sources to respond to growing information needs which national statistical offices are facing.

Increasing efforts have to be targeted at fully integrating administrative data with existing surveys. Statistical institutes in Northern European countries have shown that a "register-based statistical system" can be a powerful approach for fully exploiting all statistical information in an integrated way. Data sources integration and the joint observation of the related populations allow to measure several issues related to indicators. Techniques should be "sustainable" for Statistical offices. Sustainability depends on human skills, technical development, financial support and specific strategies. The answer to these strategic, thematic and methodological challenges lies in the modernisation of statistical systems. Key elements of the modernisation process could be summarized as follows:

- Assessing user needs is the first stage for tailoring products and services
- Giving incentives to the development and exploitation of methodological, technological and organizational innovation
- Integrating and linking sources to boost coherence
- Guaranteeing a sound legal framework to manage the existing trade-offs among confidentiality, open access to microdata and IT security
- Enhancing and reorienting staff skills

- Moving away from the traditional ‘silo’ approach of statistical agencies towards the setup of horizontal services (for management, methodology and IT services that would drive the integration process)
- Reducing the response burden through the reuse of available data and information
- Increasing the use of technology, resulting in significant efficiencies and reducing time lags

The adoption of a “register-based statistical system” represents a milestone for a modernization strategy of official statistics. It is a structure based on the integration of administrative and survey data which are organized into a system of statistical registers, linked together on the basis of defined keys. Such a system may be achieved in terms of less costs and response burden, while keeping on ensuring data quality. It represents a long-term objective to be progressively implemented according to country specific characteristics, although its adoption should be based on best practices and institutional support from Statistical offices already engaged in such a process.

It is clear that modernization initiatives need to be shaped according to the maturity of the national statistical system and the awareness of the institutional setting. Countries are at different stages in terms of use of administrative records and innovation methodologies. In addition, statistics production on different thematic areas may be at different stages within the same country. Partnership within global statistical system is essential and the first UN Data World Forum would be a occasion to foster dialogue with other producers walking further steps toward partnership in and out of our statistical systems.

### 3. Statistical information assets to better respond to the SDGs

The overall informative asset can be increased and better used by integrating administrative information and information from surveys. The integration of data from the archives with data on characteristics, events, behaviours and attitudes - collected through surveys - gains an important value added from the synergy of different sources. The countries will be called to monitor progress with respect to objectives and targets and an important step is devoted to mapping the availability and ownership of the data within the national statistical system, in which in most cases- as in Italy- the NSIs are the coordinator. The SDGs are therefore first and foremost a challenge for statistical production.

The measurement of the progress in the implementation of the Agenda 2030 raise again the value of data to be used for the indicators identified and affect every country whether industrialized, emerging or developing adhering to a global dimension of the sustainability of the world system as a whole. The universality of the SDGs requires an effort of interpretation and of methodological activities using international standards and classification for comparability but at the same time the national framework has to be duly taken into account to better decline the sustainability indicators in detail and in their breakdowns. In this framework, the National Statistical Institute (NSI) play a significant role for its methodological and technical know-how, for its capacity to enhance the value of data by adhering to statistical principles, following quality dimension in the production of statistics and in the use of other sources and for leading initiatives to enhance statistical capacity. Besides the commitment of the global statistical system on SDGs in which Istat contributes<sup>1</sup>, the main effort has to be done at the national level. Since the endorsement of the SDGs by the UN Statistical Commission in March 2016, Istat has initiated the mapping of the indicators identifying those that can be made available and disseminated and those that need further actions to ensure the availability and timeliness. The framework on SDGs also gives a benchmark for many already developed conceptual

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<sup>1</sup> Istat is a member of the UN High level group for partnership coordination and capacity building for statistics and member of the UNECE Steering Group on statistics for SDGs

frameworks at both the national and international level on the topics of wellness, quality of life, sustainable development. Even in Italy, the introduction of SDGs has highlighted the need to analyze how to align the SDGs with previous experiences, such as the multidimensional approach to measure equitable and sustainable well-being (Bes)<sup>2</sup>. The concept of Sustainable development adopted by the United Nations also includes the progress in living conditions of the populations, and this opens up interesting perspectives in terms of alignment and mutual reinforcement of the two frameworks.

The BES and SDGs are two different frameworks but having contiguous areas which can be comparable in some cases finding possible intersection in some domains: while the measures of Bes are outcome oriented relating to different domains relevant to people's and society well-being, the SDGs are input oriented also refer to the key factors of development calling explicitly policy initiatives to progress in the social, economic and environmental target.

In the Italian budget law a clear reference is made to the equitable and sustainable well-being indicators adopted at international level, and clear definition of Istat's role. In this respect a Committee for equitable and sustainable well-being indicators has been recently established according to the law, in which the President of Istat is member. Every year a special report, drafted by the Minister Economy and Finance and based on data provided by Istat, will present to the concerned parliamentary committees the trend and evolution of equitable and sustainable indicators identified at national level. For Istat this means comparing the SDGs indicators with results already achieved by Bes and disseminated annually and initiate to disseminate SDGs available in our statistical asset. This year in December Istat will present for the first time the annual report on equitable and sustainable well-being together with a set of Sustainable Development Goals Indicators available as the preliminary results of mapping already carried out.

The start of a new process is now running and it will include also the statistical capacity of the national statistical system as a whole. The production of SDGs has to be part of the National statistical Program. In this respect Istat has recently renovated the quality circles, which provide input to define the statistical activities of the National statistical Program, including a focus group devoted to BES and SDGs in which producers can work together for the development of activities enabling to produce indicators needed to affect the planning of the statistical production for all the national statistical system.

#### 4. Conclusions

Quality, transparency and independence of statistical authorities are crucial to build trust in NSI's work; quality is based on the competences of researchers and analysts that support day by day data production. Research in the development of new techniques and methodologies is crucial to foster improvements, define new processes, create new products and experimental statistics. Modernization asks for strong partnerships among public and private sectors and the scientific community, in order to enrich information and improve data quality. Efforts to modernise official statistics are crucial to provide those tools that are essential to address issues and monitor advancements on the sustainable development agenda. NSIs have to be ready to clearly inform citizens about the current statistical informative asset available and potentiality of new data sources and experimental statistics. Enhancing the communication tools to explain complex phenomena and the use of indicators would be a great challenge for NSIs. Now we must avoid sending wrong messages if we want to enhance the dialogue with citizens, stakeholders and civil society moving towards the production of integrated releases.

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<sup>2</sup> [www.istat.it/en/well-being-measures](http://www.istat.it/en/well-being-measures)

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