The Institutional Transformation of NSOs – New methods, services, and roles

STAFF SKILLS AND CAPABILITIES

BPS-Statistics Indonesia

INTRODUCTION

Discussion on future economic statistics could be seen from economic statistics as a science and data in the future state. From science side, possibly, economic statistics is still the science concerned with studying methods for collecting, processing, analyzing, and disseminating economic data. From data side, future economic statistics is expected to be more connected with other variables, particularly social and environment aspects (i.e. beyond GDP), more thematic, and more capable to depict dynamic and specific phenomena in timely manner.

The feature of future economic statistics has to consider new ways to produce estimates using new data sources (big data, AI, etc.), easier access for data dissemination, more interactive interface with data users, easier form to be analyzed and understood, and more interesting and entertaining visual. Ideally, it also educates data users to use data correctly so that they may find solution for economic issues.

In response to these dynamic features, NSOs have to update their vision, re-design their strategies, and re-orientate their role in delivering their services. In conducting these, one important part of statistical infrastructure that NSOs need to improve continuously is staff skills and capabilities.

STAFF SKILLS AND CAPABILITIES REQUIREMENT

1. Skills related to new data sources and methods (big data, AI, and machine learning)

BPS-Statistics Indonesia has used big data as the supplement of official statistics. For example, we use Mobile Positioning Data (MPD) for tourism statistics and population mobility behavior tracking. We also use crowdsourcing, online shops and Instagram for price nowcasting to check quality of CPI figures; satellite imagery data to estimate rice crop production and image analysis for crop planting pattern; twitter for happiness index and job vacancy monitoring, etc.

In order to capture, categorize and process the new data sources into meaningful information and statistics, NSOs need to have not only proper statistical infrastructure but also ***data scientists and advanced data engineers***. The nature of this work is totally different with the work done by statistician. Therefore, intensive capacity building is a must. How can we do it?

- Improve curriculum quality in Institute of Statistics by adding lectures on data mining.
- Provide scholarships to pursue higher degrees in data science.
- Develop special big data team and provide intensive training.
- Develop partnerships with private sectors which holds much of the technology and data such as Global Pulse Jakarta and Positium from Estonia.
- Cultivate strong links to networks of big data experts in academia, the private sector, **ministries/institutions** and the international statistical community and use the network

to provide international efforts on training, skills improvement, and capacity development in member countries.

2. Skills related to microdata access and linking

BPS has delivered micro data services since several years ago. List of microdata and metadata from censuses, surveys, and compilations available in BPS organized in microdata catalog and could be accessed through website. Microdata catalog consists of data collections and its documentations, such as questionnaire, technical guidebook, report, etc., which classified into social and economic data collection. Data users could access the microdata directly or by request, depend on its access policy.

There are some essential skills and capabilities that should be grasped by staff that has tasks related to micro data access and linking, i.e. *substance of the data, statistical analytical languages, statistical methods, computer science, and related regulations and ethics*.

3. Skills related to new roles as data stewards

Based on Statistics Acts 1997, BPS has roles as data provider and national statistics coordinator in Indonesia. As data provider, BPS has been producing various data, particularly economic, social, and environment data, while as national statistics coordinator, BPS has been coordinating with ministries and other institution to manage official statistics to be more effective and efficient (e.g. development of "One Data").
There are some essential skills and capabilities that should be mastered by staff that has tasks related to new role of NSO as data stewards, such as:

- national statistics system;
- international recommendations;
- international and national priorities;
- related regulations;
- data substance;
- statistical methods (include quality assurance framework);
- economics; and
- computer science.

4. Skills related to new products and services

The digital era creates many new products and services which does not exist before and difficult to measure. Some data users argue that the statistical frameworks used to measure the economy, such as the Balance of Payments and the SNA are could not fully capture economic activities related to the digitalization of the economy. In order to remain relevant, the conceptual frameworks of macroeconomic statistics have to be able to capture and measure these activities. For example:

- New products and services have to be added to classification systems and properly recorded.
- The framework has to be able to capture increasing households selling products and services through online transaction which has important measurement implications for the economy as well as the labor market.

5. Others Skills

Beside new methods, services and roles, there is an important aspect related to future economic statistics that we should consider, i.e. link between economic statistics with social and environment statistics. In linking between economic statistics with social and environment statistics, there are some more skills that staff should have, such as SEEA, use of SAM (Social Accounting Matrix) to monitor poverty (in addition of poverty analysis using micro data), etc.

In overall, staff should have various skills and capabilities, therefore their perspective would be broader. They should understand economic statistics they produced, know the story behind the number, know some related implications, and could communicate it clearly so they can sell the value of statistics and speak in the user data language.

Furthermore, staff is expectedly love his/her job, recognize that being a statistician is right choice in his/her life, they also enjoy in doing their tasks and eager to improve their attitude and skills and capabilities persistently, e.g. in communication, leadership and team building, and ability to manage the multiple problems. To achieve these, we should manage our potency properly by utilizing it optimally as well as keeping on improving it to answer the current and future challenges. We should also build conducive environment and improve the cooperation with competent institutions/experts.