

CONFERENCE OF EUROPEAN STATISTICIANS

Approved

Meeting of the 2019/2020 Bureau  
Geneva (Switzerland), 16-17 October 2019

Item 2 (c) of the Provisional  
Agenda

**FOLLOW UP TO THE IN-DEPTH REVIEW OF USING SATELLITE IMAGERY  
/ EARTH OBSERVATION TECHNOLOGY IN OFFICIAL STATISTICS**

**Prepared by the Secretariat**

*In October 2018, the CES Bureau conducted an in-depth review of using satellite imagery and earth observation technology in official statistics based on a paper prepared by Statistics Canada and INEGI, Mexico. The Bureau identified several potential follow-up activities, and asked that the in-depth review should be discussed at the CES plenary session in June 2019. CES also identified several possible follow-up activities. **The Bureau discussed the proposed activities and decided on further actions.***

**I. BACKGROUND**

1. There is a growing interest in the use of geospatial information for official statistics over recent years. This is fuelled by the requirements for statistics for the Sustainable Development Goals (SDGs), but also by the 2020 round of population censuses, and developments in various other areas of official statistics.
2. The use of satellite images and Earth observation data is a specific example of this. Satellite images are already used in several countries for agriculture and land-use statistics. New uses are being investigated, such as estimating poverty, pollution and public green spaces in cities.
3. The in-depth review paper provided a summary of the activities of several national and international organisations related to the use of satellite and Earth observation data. It emphasized the need for on-going research to maximise the benefits of these data sources for official statistics, and stressed the importance of greater collaboration both within the international statistical community, and with the geospatial community.
4. The Bureau discussed the in-depth review paper at its October 2018 meeting, and raised the following issues:
  - (a) The paper gives a very good summary of the use of satellite imagery and Earth observation technology in official statistics, and the related challenges;
  - (b) Satellite and Earth observation data are becoming essential sources for official statistics. For example, SDGs provide a driver for increased use of these data;

(c) Satellite and Earth observation data are increasingly being made available for free and in open format, but they require new skills to process effectively. This will require capacity development and new partnerships with data providers. “Analysis ready” datasets reduce the need for processing but are often expensive and should be well documented with proper user guidance;

(d) A cost-benefit analysis of the use of satellite and Earth observation data would be useful;

(e) The official statistical community needs to reflect more on its requirements for satellite and Earth observation data. This could start from identifying what questions could be answered using these data, and what key statistical products could be prepared. These can be different in countries with different level of development. Looking at what data are available on the market and what applications are needed would be also useful. A “sprint” session could be organised to clarify these requirements;

(f) More work on developing common standards between the statistical and geospatial communities is needed;

(g) Machine learning and artificial intelligence techniques can help to make sense of large amounts of data, but these are new for many statistical organisations and require new skills;

(h) International cooperation would be useful to contact big geospatial tools providers as a community to get discounts or special types of licences;

(i) Various groups are working on related topics and a summary of all activities would be useful. The Coordinating Committee of Statistical Activities (CCSA) is conducting a stock taking exercise of the reference data sets and tools used by international organizations. UNSD is creating a UN system network on geospatial information. The private sector is very active and has formed a world council of corporations on geo-spatial information;

(j) It will be useful to systematically document and share case studies of national practices in using satellite and Earth observation data (for example, from the recent Helsinki Conference).

5. The Bureau concluded that the in-depth review paper should be updated to reflect their discussion and submitted to the CES plenary session in June 2019.

6. CES discussed the paper in June 2019 and raised the following issues:

(a) More opportunities for NSO experts to build up skills in the field of geospatial data are needed. Some training courses have been provided by the European Statistical System Training Programme, Statistics Norway and EFTA;

(b) International organizations should support smaller countries in getting access to geospatial data;

(c) A seminar for experts to build knowledge in using satellite image and Earth observation data would be useful.

7. CES also noted the growing importance of integrating statistical and geospatial data, particularly in the context of statistics for SDGs, and that implementation is now moving forward quickly in many countries. This means that improving skills and access to data is an essential requirement for progress. To achieve this, CES called for greater coordination

of international activities in this field and reaffirmed its support for the work of the Secretariat to develop closer partnerships between the statistical and geospatial communities, in collaboration with the UN Committee for the Coordination of Statistical Activities, Eurostat, the Global Working Group on Big Data, the project of High-Level Group for the Modernisation of Official Statistics (HLG-MOS) on machine learning, and the United Nations Statistics Division.

8. CES asked the Bureau to reflect further on this at its October 2019 meeting.

## **II. FOLLOW-UP ACTIVITIES**

9. The Secretariat has consulted with the groups and initiatives working in this field. The joint UNECE / UN-GGIM: Europe / Eurostat / EFTA Workshop on Data Integration identified further priorities for joint activities between the statistical and geospatial communities, including relating to satellite data and the creation of a shared computing environment (“sandbox”) to facilitate further collaborative projects.

10. The UN Global Working Group on Big Data already has active task teams on the use of satellite image data, led by Statistics Canada, and countries from the UNECE region with an interest in that topic have been invited to join those teams. The Global Working Group on Big Data has also agreed to make its “Global Platform” available as a “sandbox” for interested countries and projects, and a new task team is being formed under the Global Working Group to facilitate this. Countries involved in preparing the Eurostat-funded GEOSTAT 4 project have expressed an interest in using the sandbox for that project.

11. UNECE is continuing to develop its partnership with UN-GGIM: Europe, including plans for a back-to-back plenary sessions of CES and UN-GGIM: Europe in 2020, with a joint day on topics of mutual interest.

12. The HLG-MOS machine learning project is continuing, and contacts have been established with the Global Working Group on Big Data regarding the use of satellite data.

13. UNSD, UNECE and EFTA are organizing a joint capacity development workshop on Implementing Geospatial Information Frameworks to Support Statistics for the Sustainable Development Goals, in Minsk, Belarus, on 26-28 November. This will be in collaboration with UN-GGIM at the global and European levels, and will target the countries of East and South-East Europe, the Caucasus and Central Asia.

## **III. ACTION REQUESTED FROM THE BUREAU**

14. **The Bureau is invited to note the follow-up activities presented in section II, and to decide what further actions are required.**

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