



Statistics Canada

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Data needs for effective supply chains What could be StatCan's role?

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Presented by

Martin S. Beaulieu (Agriculture Division)



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Outline

- Data gaps in supply chain
- Filling data gaps and managing burden
- A new data ecosystem
- Challenges to overcome
- Possible StatCan contribution
- Enablers
- Conclusion

Data gaps in supply chain

- Agriculture Statistics Program focuses on primary production
- 2016 Census of Agriculture content consultation
 - [Search report “95-635-X” on StatCan.gc.ca](#)
 - Users want more details related to existing content
 - Users want new content on such as
 - Agri-tourism
 - Animal welfare
 - Value chain and marketing channels
 - GMO
 - Grain storage on farm



Data gaps in supply chain

- Strengthening Canada's Agricultural and Agri-food Business Data Systems Final Report
 - Trade data detail and accuracy
 - Market data
 - Price transparency
 - Supply and disposition for each commodity
 - Seafood sector
 - Organic
 - Interprovincial trade flows
 - Transportation and logistics (grain monitoring)
 - Sustainability indicators

Data gaps in supply chain

- Strengthening Canada's Agricultural and Agri-Food Business Data Systems Final Report
 - Traceability data for smaller sectors
 - Emerging issues
 - anti-microbial resistance/use
 - social licence / public confidence
 - surveillance of production for limiting diseases
 - Labour
 - Temporary Foreign Worker Program accuracy
 - Improve National Occupation Classification codes
 - 223 data gaps identified

Filling data gaps and managing burden

- “There are too many non-agriculture/non Statistics Canada organizations collecting survey information – this is what is creating respondent burden.” (Pulse Canada)
- “Most beekeepers acknowledge the value and importance of providing the data” (Canadian Honey Council)
- “Never hear from producers on the burden of the surveys. There is increasing burden from food safety and biosecurity reporting requirements.” (Mushrooms Canada)
- “If you can say it came from StatCan, you can generally hang your hat on it.” (Turkey Farmers of Canada)
- “Does not think that farmers are being burdened other than the odd person here and there.” (Canadian Grain Council)

Filling data gaps and managing burden

Guiding principles to manage response burden

- Foster good relationships with business respondents
- Use administrative data whenever possible
- Design user-friendly collection instruments
- Develop sampling and follow-up strategies that are respectful and take a holistic view of response burden
- Ask for required data only once
- Exclude operators of very small farms from collection

Filling data gaps and managing burden

- We have made significant progress in replacing survey data with administrative data, using remote sensing and reducing burden on smaller farms
- What else can be done?
 - data linkages
 - alternative data sources

A new data ecosystem

- A wave of technological changes
 - New ways of generating and sharing data – new technological platforms
 - New data sources – Big Data, satellite data and alternative data sources
 - New actors producing and consuming data – local, national, international, public, and private
 - New data governance models – Open Data
- More data at lower cost, accessible to more people, on common platforms/standards, from anywhere in the world

A new data ecosystem

- Alternative data sources to keep an eye on
 - Internet of Things (I-o-T) – “Things” are sensors and devices that capture data and flow data to other devices (e.g., biochip transponders on farm animals, steer and control equipment), manage inputs at very precise levels across fields and detect crop stress
 - Precision agriculture
 - Track food along supply chain – sensor-based technology
 - Smartphones “The [pioneer species](#) of the I-o-T is the smartphones. Every time we take a smartphone with us in a car, it beams information on our location and speed to Google. The result is real-time traffic information that can be used by everyone.”
Source: <http://qz.com/156075/internet-of-things-will-replace-the-web/>
 - Smart meters
 - Social media – food consumption behaviours, trends and attitudes

Challenges to overcome

- Learning how to use and structure new alternative data
- Accessibility
 - The Government of Canada has standards that may not be applied by third-party providers
- Acceptability and willingness to participate and share
 - voluntary
 - incentives to participate
- Security
 - Third service-providers' standards

Challenges to overcome

- Data quality and selection bias
 - Not every person has a smart phone, mobile devices, GPS
- Privacy and confidentiality protection
 - informed consent for research and statistical uses of shareable information
 - not for collecting sensitive information
- Building a business case for sharing
 - proprietary value of privately held data
- Finding resources

Possible StatCan contribution

- Data linkages
 - Record linkage implies combining two or more micro-records to form a composite record that combines information about the same entity (e.g., a business or an individual)
 - Linkages are potentially important sources of valuable statistical information. But, there are privacy concerns
 - Canada has developed a policy framework permitting data linkage

Possible StatCan contribution

- Data linkages
 - For business data (including farm businesses), the agency has developed a linkable file environment (LFE) that facilitates the linkage of pre-approved databases
 - The LFE brings together microdata holdings of Statistics Canada from both **administrative and survey sources**
 - At the core of the LFE, there is the Business Register, which is used to identify the Business Number and implement all linkages
 - Currently, LFE is intended to link records and to extract databases for analytical purposes

Possible StatCan contribution

- Define conceptual framework
- Participate in Value Chain Roundtables
- Offer expertise
- Get involved in data collection when requested by industry (develop partnership)



The enablers

- *Statistics Act*
 - Agreement under Section 12
 - “...enter into an agreement with any ...or other corporation for the sharing of information collected from a respondent by either Statistics Canada or ...corporation on behalf of both of them and for the subsequent tabulation or publication based on that information.”
- Single technology/system to collect data
- Partnership with industries
- Next policy framework and data needs

Conclusion

- Significant number of data gaps
- Industry involvement
- Explore, learn, adopt new technologies for data collection and to find alternate data sources
- StatCan roles
 - complement industry and other government initiatives
 - trusted party to certify alternative data quality
 - promote the use of best practices
 - partner and collaborate with other (private/public) data providers



Questions/contacts

Analysis and Outreach, Agriculture Division

Martin S. Beaulieu

martin-s.beaulieu@canada.ca