





Quality Review of Energy Data:

Country Practice - Canada

Presentation to OG9
Abu Dhabi, United Arab Emirates
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Quality Assurance Reviews – Overview

- Common strategy used for all programs at Statistics Canada – coordinated by the Department's Quality Secretariat
- Quality assessment
 - Peer review
 - Compliment to formal program audits
- Internal
 - Not self assessment
- Low cost
- Flexible, adaptable
- Wide-spread benefits

Quality Assurance Reviews - Overview (continued)

- Independent review of 5 or 6 statistical programs every year, since 2006
- Conducted through meetings and gathering of documentation
- Look at risks to the program delivering its usual outputs
 - Example of a risk: obsolete software system
- Highlight good practices and make recommendations
 - Example of a good practice: system renewal plan

Mandate and objectives

- Demonstrate how quality is being managed
- Demonstrate how risks are being controlled
- Spread knowledge of effective quality assurance practices and the risks they can mitigate
- Identify where resources should be used to reduce risks to quality – part of the on-going financial planning cycle

Scope

- When initially implemented, only looked at processing steps
- Later, expanded to include implementation and analysis steps
- Programs
 - Sample surveys, administrative data based programs
- Functions
 - Knowledge transfer, classification/coding methods, seasonal adjustment practices, institutional review practices

1 Specify Needs	2 Design	3 Build	4 Collect	5 Process	6 Analyse	7 Disseminate	8 Archive	9 Evaluate
1.1 Determine needs for information	2.1 Design outputs	3.1 Build data collection instrument	4.1 Select sample	5.1 Integrate data	6.1 Prepare draft outputs	7.1 Update output systems	8.1 Define archive rules	9.1 Gather evaluation inputs
1.2 Consult and confirm needs	2.2 Design variable descriptions	3.2 Build or enhance process components	4.2 Set up collection	5.2 Classify and code	6.2 Validate outputs	7.2 Produce dissemination products	8.2 Manage archive repository	9.2 Conduct evaluation
1.3 Establish output objectives	2.3 Design data collection methodology	3.3 Configure workflows	4.3 Run collection	5.3 Review, validate and edit	6.3 Scrutinize and explain	7.3 Manage release of dissemination products	8.3 Preserve data and associate metadata	9.3 Agree action plan
1.4 Identify concepts	2.4 Design frame and sample methodology	3.4 Test production system	4.4 Finalize collection	5.4 Impute	6.4 Apply disclosure control	7.4 Promote dissemination products	8.4 Dispose of data and associated metadata	
1.5 Check data availability	2.5 Design statistical processing methodology	3.5 Test statistical business process		5.5 Derive new variables and statistical units	6.5 Finalize outputs	7.5 Manage user support		
1.6 Prepare business case	2.6 Design production systems and workflow	3.6 Finalize production system		5.6 Calculate weights				
				5.7 Calculate aggregates				
				5.8 Finalize data files		eric Statistical Bu ht UNECE/Eurosta		

Structure - Participant Roles

Reviewers

- Experienced middle managers
- Work in pairs
- Review any program other than their own
- Typical workload 12 working days, spread over an 8 month period



Steering Committee

- Senior managers
- Responsible for the programs under review
- Ensure relevant and timely information is shared
- Guide and facilitate the review process
- Support findings

Information Gathering

- Minimal burden on program being reviewed
- 3-5 meetings
 - Program manager
 - Team members
 - Service providers (collection specialists, methodologists, IT specialists)
 - Internal clients
- Tools:
 - Generic Statistical Business Process Model
 - Existing documentation

Key Deliverables

- Summary presented to Department's Executive Management Board
- Formal report (strengths, weakness, recommendations) submitted to Program Director
- Catalogue of risks, quality assurance practices and recommendations
 - Maintained by Department's Quality Secretariat

Benefits

- Reviewers
 - On-the-job training, networking
- Programs being reviewed
 - Constructive advice from resident experts
 - Exposure
 - Improve program robustness
- The whole organization
 - Management training
 - Commitment to quality
 - Shared best practices
 - Reduce/manage risks

Review of Energy Program – Overview

- Energy Statistics Program manages 20+ surveys
 - Small population surveys or census over a threshold (<50 units)
 - Use of administrative sources
- Users of data
 - Internal Macroeconomic Accounts Branch (e.g., GDP, input/output tables, various environmental indicators)
 - External Environment Canada, Natural Resources Canada, National Energy Board, International Energy Agency
- Current challenges identified
 - e.g. Transition to new corporate processing system in 2015

Review of Energy Program - Strategy

- Mandate to review the entire energy program
- Generalized, overall review, but focused efforts
 - Identified cross-cutting issues through a more extensive review of two "representative" surveys
 - 1. Monthly Crude Oil and Natural Gas Survey
 - Data obtained from other surveys and administrative data
 - 2. Industrial Consumption of Energy Survey
 - Annual, largest sample survey

Review of Energy Program - Results

- Evaluation was effective at identifying risks and providing various mitigation strategies
- Areas of evaluation covered a broad range of aspects.
 For example:
 - Maintaining Program Relevance
 - Human Resource Management Maintaining Expertise
 - Managing Data Sources (e.g. use of external administrative information)
 - Use of Processing Best Practices (Quality Assurance Techniques)

Review of Energy Program – Results

(continued)

- Evaluation resulted in a number of improvements to the program. For example:
 - Transition to a common processing system (Integrated Business Statistics Program)
 - Improved subject matter training (e.g. series of workshops)
 - Improved data validation activities
 - Data Analysis Hub (i.e. centralised repository of supporting material/data)
 - Checklists
 - Better documentation (i.e. up-to-date, complete and accessible)

Quality Review Process – Overall Benefits

The Quality Review Process has led to the reinforcement of best practices for all programs. For example:

Human Resource Management	Corporate Staffing PlansDevelopment of Training Strategies				
Project Management	Departmental Project Management Office				
Systems and Processing	 Corporate Business Architecture (e.g. use of common systems and centralised processing capacities) 				
Standardization	Harmonised Questionnaire ContentSystems Review Board				
Documentation	Management of Microdata FilesInformation Management Strategy				





Questions/Comments?