Distr.
GENERAL

CES/AC.61/2001/39
23 August 2001

ENGLISH ONLY

STATISTICAL COMMISSION and ECONOMIC COMMISSION FOR EUROPE

CONFERENCE OF EUROPEAN STATISTICIANS

Joint ECE/EUROSTAT/FAO/OECD Meeting on Food and Agricultural Statistics in Europe
(Geneva, 17-19 October 2001)

COMMISSION OF THE EUROPEAN COMMUNITIES (EUROSTAT)

FOOD AND AGRICULTURAL ORGANISATION (FAO)

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (OECD)

STRATEGIES FOR PUBLISHING AND DISSEMINATING AGRICULTURE STATISTICS IN CANADA

Invited paper submitted by Statistics Canada*

Summary: Publishing and/or disseminating statistics through various mediums constitutes one of the most essential phases of the statistical program of any statistical organization. Carefully planned strategies are intended to help clients access easily and use effectively the collected data to shed light on policy issues or help analyze important changes in the areas of interest. It is essential that dissemination strategies be flexible enough to satisfy the needs of different users and take into account the requirements of various situations. This paper summarizes basic principles that play a critical role in the final selection of an appropriate dissemination strategy. It describes the different publishing and dissemination strategies the Agriculture Division of Statistics Canada has selected to meet the needs of its clients in various market sectors and

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provides examples of the different methods it uses to monitor the effectiveness of its dissemination program. It highlights the need to promote the availability of collected data and its accessibility to optimize their value. Finally, it gives insights as to several future strategic initiatives that will be undertaken by Agriculture Division in the coming years to serve its clients and remain relevant and innovative in the area of data dissemination.

I. Introduction

1. Data dissemination by various mediums is an essential element of any effective statistical organization in this new information age. In the past, dissemination of statistical results was often limited to the timely publication of statistical tables. This situation has evolved significantly. Users of statistical information now submit much more complex requests and technological advances has given them more flexibility to analyse and handle large volumes of data for their work. These changes highlight the need to have carefully planned and flexible publication and dissemination strategies. These strategies also need to be well supported by subject matter experts who can answer requests for clarification and help clients understand the limitations of the data for its planned use.

2. The dissemination program for Canadian agriculture statistics has changed substantially over the years. Paper was at one time the standard dissemination medium and the "public good" information was made available to citizens through the media, libraries and Statistics Canada's nine regional reference centres. The substantial costs of printing and distributing publications under budgetary constraints was an ongoing challenge. To control costs and increase revenues, an effort was made every year to further reduce the number of titles and pages and raise subscription prices. As publication prices increased, subscribers became more discriminating in what they purchased. In response to the demand, improvements were made to the content of the publications and quality of the data. There were changes in the type of products and services the Agriculture Division of Statistics Canada provided and an increase in the number of data series disseminated as "public good" information.

3. Today, dissemination programs must do more than just provide access to statistics. They must be intended to provide a service to the public and make a positive contribution to public debate and informed decision-making by ensuring the information is presented in a manner that is easy to understand. An effective dissemination program should adhere to basic dissemination principles normally associated with official statistics. The selected strategies should be flexible, able to meet the changing needs of users, and they should be comprehensive in order to address the varied requirements of the different groups of users. This paper describes different publishing and dissemination strategies adopted by the Agriculture Division of Statistics Canada for its varied clientele. It also summarizes several future strategic initiatives that Agriculture Division believes are important to service clients and to remain relevant in the area of data dissemination.

II. Basic Principles to Guide Dissemination Strategies

4. Statistical organizations have a variety of clients to satisfy. While numerous options are available to disseminate the data and promote the use of available statistical information, the selected dissemination strategy for official statistics should incorporate most, if not all, of the basic principles listed below. These principles should be given careful consideration when releasing regular data series, adapting to changes in the environment and providing data to the community of users. Some of the broadly defined basic principles are:

a) Relevance – The outputs should meet evolving users' needs. They should be timely and address current needs in the face of changing circumstances and user priorities.

b) Accuracy – The released data should provide a correct estimate or description of the item it was meant to measure within acceptable quality levels.

c) Timeliness – The data should be released within an acceptable timeframe. The latter would normally be established in consultation with the key users of the information. The value of the data will be maximized if the elapsed time between the reference period and the release date is minimized.

d) Impartiality – The released data should be objective and non-political. It should foster open and honest discussions of the issues of interest.

e) Cost-effectiveness – The chosen dissemination medium should provide the best value for the expenditures it entails. The choice of medium would be influenced by the number of users and their needs.

f) Accessibility – The data should be provided to users in a user-friendly fashion. Availability of statistical information should be promoted to foster its use and user fees should be monitored to avoid creating barriers to their use.

g) Interpretability – Definitions, concepts and data limitations should be well documented and easily available to the users. The users should be able to establish how well the statistical information responds to the question that they are trying to answer.

h) Coherence – The released data should be collected and processed in a consistent manner from year to year. The use of standard definitions, subject matter concepts, variables and classifications should be fostered to ensure valid comparisons with other national and international data sources, and over time periods.

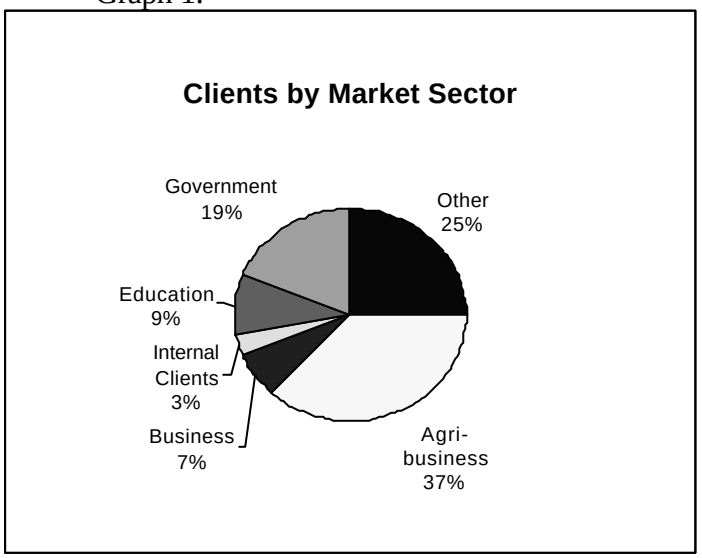
III. Establishing and Monitoring Client Needs

5. As the ultimate objective of any information system is to satisfy the needs of the clients, it is important to establish mechanisms to obtain the users' feedback necessary to adapt the dissemination program to their needs. The statistical outputs (contents, format and medium) and the required timeliness should be determined early in the survey development process with the input of the clients to ensure that the designed survey and data collection method will address their identified requirements.

6. The Agriculture Division of Statistics Canada has established a comprehensive process of regular formal and ad hoc consultations with its users, which helps define and refine its dissemination program. Formal consultations on data dissemination are held at meetings of the Federal-Provincial-Territorial Committee on Agriculture Statistics, the Statistics Canada Advisory Committee on Agriculture Statistics and the Interdepartmental Liaison Committee with Agriculture and Agri-Food Canada. The larger user community also participates in the consultations through the Census of Agriculture content workshops which are held every five years in all regions of the country. These forums provide valuable input to help define the dissemination strategy that will be adopted for various regular and specialized products. All users also provide valuable input through their ad hoc data requests.

7. In addition to these consultations, Agriculture Division recently conducted a Client Satisfaction Survey to obtain feedback on its products and services. The survey collected information from a sample of known subscribers and users of agriculture statistics products and services. Pie Graph 1 below provides an overview of the distribution of clients surveyed by market sector.

Graph 1.



8. A key objective of the survey was to establish benchmarks on client satisfaction to monitor trends over time. One of the stated government goals is to improve performance in the delivery of government services by 10% over the next four years. The survey results will provide a valuable input as to the areas where Agriculture Division's services and products should be improved.

9. In order to evaluate the current dissemination mediums, the surveyed clients were asked to indicate how important each type of product or service was to them. Table 1 below provides a summary of the findings.

Table 1. Percentage of clients according to the importance given to the product or service

Product or Service	Percentage of Clients According to the Importance Given to the Product or Service		
	Important	Neither Important nor Unimportant	Unimportant
Internet publications/bulletins	78.3%	16.3%	5.4%
Paper publications/bulletins	77.9%	16.0%	6.1%
CD-ROMs	24.3%	31.5%	44.3%
Fax services	45.0%	24.8%	30.2%
Custom data requests	47.7%	20.3%	32.0%
Consultative services	30.2%	35.9%	33.9%

10. The results showed that 78% of clients now consider the Internet publications/bulletins and the paper publications/bulletins to be equally important. The extent of importance given to the Internet publications/bulletins was impressive considering that this new medium was introduced only recently. This finding is consistent with the annual increases in the number of visits registered on Statistic Canada’s Web site. The survey results also showed that although there were not many regular users of the consultative services, 30% of all users thought that they were important.

11. The importance users give to the different groups of data sets released by Agriculture Division was also assessed. The findings are summarized in Table 2 below.

Table 2. Percentage of clients according to the importance given to the data sets

Data Sets	Percentage of Clients According to the Importance Given to the Data Sets		
	Important	Neither Important Nor Unimportant	Unimportant
Census data	77.6%	17.2%	5.1%
Whole farm data	63.0%	25.3%	11.8%
Farm income and prices data	72.6%	18.8%	8.6%
Crop data	73.5%	19.6%	6.9%
Livestock/aquaculture	74.6%	8.0%	17.4%
Rural data	68.1%	25.9%	6.1%
Spatial analysis and geomatics applications	35.3%	39.1%	25.6%

12. The Census data are considered important by approximately 78% of all clients while livestock/aquaculture, crop, and farm income and prices data were considered to be almost equally important with 74.6%, 73.5% and 72.6% respectively. Spatial analysis and geomatics applications have more specialized users and 35.3% of them consider this service important for their work. The survey also revealed that clients who often used a particular agriculture data set also used other data sets. For example, 68% of frequent users of Census data also used at least four other data sets.

13. With respect to the various aspects of the services provided that were important to the users, the survey yielded the following results for key service aspects.

Table 3. Importance of service aspects (all clients)

Service Aspects	**Rated Important**
Time required to deliver the service	92%
Number of contacts to receive the service	85%
Fairness of the service	77%
Instructions for problem solving	73%
Competency of service staff	87%
Courtesy of service staff	85%
Helpfulness of service staff	90%
Ease of understanding service staff	86%
Consistency of the information	82%
Choice of language offered	77%
Ease of finding out how to get the service	74%
Information received to get the service	73%
Overall accessibility of the service	83%
Overall cost of the service	78%

14. The time required to deliver the service, helpfulness of service staff and their competency were rated the highest in importance. This finding highlights the fact that service staff play a key role in an effective dissemination strategy.

IV. Use of Various Dissemination Mediums

a) The Internet

i) Statistics Canada's Web Site

15. The Internet is becoming the major dissemination mechanism for Statistics Canada's products and services. There has been an unprecedented growth in the number of visits and in the use of data made available through its Web site – www.statcan.ca. This growth in access has often been achieved at the expense of other dissemination mediums.

16. In order to adapt to these changes, Agriculture Division has been among the first divisions to embrace this new form of dissemination. The initial objectives were as follows:

- Convert low circulation publications to this new dissemination vehicle when it was practical. The conversion was done for publications that had less than 50 paying customers on their circulation list. The Internet was a more cost effective method of distribution to clients and it avoided manuscript, printing and distribution costs;

- Provide data users with more timely access to agriculture data series. The increased flexibility and convenience of the Internet were key benefits that were greatly appreciated by users;

- Use this new medium to promote the availability of Agriculture Division's products and services. The Internet was an efficient tool to make the catalogue of products and services available to the public for consultation.

ii) *The Daily* – Statistics Canada's Official Electronic Publication

17. *The Daily* is a prime dissemination publication available in electronic form on Statistics Canada's Internet site. Agriculture Division uses *The Daily* to inform the media and the general public of all its data releases. *The Daily* is aimed at the media who relies heavily on this communication tool to plan new articles. They greatly appreciate the posted release dates of all major releases and the short analyses that highlight important economic and social developments.

b) Regular Program Publications

18. In the current transition period to electronic dissemination, all but 2 of the 16 agriculture statistics publications are now available on the Internet. The publications continue to be printed on paper, as a substantial number of subscribers still prefer a print copy. A few of the printed publications have been discontinued because the subscription list was too short to sustain them; they are available on demand only. The Internet is now the sole means of dissemination for those publications.

c) CD-ROMs

19. Agriculture Division uses CD-ROMs for the release of specialized products which normally involve large volumes of data. They often include a user-friendly extraction software to assist the user. Agriculture Division CD-ROM products are offered for a fee to its clients.

d) Fax Services

20. The Division currently offers several products to users by fax. This method of dissemination complements releases by other mediums. It is available on a fee basis as it is considered a specialized service. Currently, some of the statistical series offered by fax include the Field Crop Reporting Series, Farm Cash Receipts, National Supply and Disposition Tables and Agriculture Economic Statistics.

e) Custom Requests

21. Custom requests remain an important part of Agriculture Division's dissemination strategy as they cover the production of specialized reports and tabulations. Answering custom requests is also a valuable service to users who need more detailed reports. This service is available on a cost recovery basis, as custom requests are not funded through the basic statistical program.

V. Specialized Statistical Products and Services

a) The Internet and Canadian Socio-economic Information Management –(CANSIM)

22. CANSIM is Statistics Canada's comprehensive electronic data warehouse which is available through the Internet. It contains most of the Agency's published data. It is a singularly efficient device for storing and enabling users to access and use data in a variety of forms and through a variety of mediums. CANSIM serves both internal and external users. The CANSIM data base is updated in a timely manner and published statistics are available on this data base at the same time as the print publications are released. Currently, CANSIM carries over 700,000 time series of which approximately 21,000 are agriculture data series.

23. It is expected that CANSIM will remain a fee service in the foreseeable future.
At the same time, highly aggregated data of broad interest and derived from this data base will be made available free to the public on the Web through the Canadian Statistics module of the Web site and through other government portals.

b) Products for the Education Sector

i) E-STAT
24. This new and innovative interactive learning research tool is accessible on Statistics Canada's Web site. E-STAT offers a comprehensive warehouse of reliable and timely statistics. It is made available free online to teachers and students of Grades 6 to 12. E-STAT hosts articles from the *Canada Year Book* and *Canadian Social Trends*, census data, *Farming Facts* as well as

approximately 450,000 CANSIM time series. Agriculture Division has been an active participant to this new initiative. The Division also participated in the development of teacher's kits in order to promote the use of key agriculture data series of which the Census of Agriculture is a key component.

ii) CANSIM University Base

25. The development of this specialized data base project was initiated to provide post-secondary institutions with a more affordable access to Statistics Canada data. Use of the data base is restricted to teaching and academic research. Over 70 academic institutions have access to this specialized product which is jointly funded by the participating institutions. Most of the 21,000 agriculture data series are available through this service. They include detailed Census of Agriculture tables at the sub-provincial, provincial and national levels.

c) Specialized CD-ROM Products

26. i) The 1996 Census of Agriculture data were made available to the general users on CD-ROMs. A pre-packaged CD-ROM with a user-friendly extraction software was available to users at a set fee. Other CD-ROMs were custom designed to include selected variables by geographic area. In these cases, the fee charged was based on the quantity of information included on the CD-ROM. The CD-ROM could contain farm and operator variables as well as selected data from the 1996 Agriculture-Population Linkage Database and historical databases.

ii) For the 2001 Census of Agriculture, the adopted dissemination strategy is to develop simultaneously outputs for CD-ROMs and the Internet. The development of print publications will be a sub-set of these electronic products and they will be initially available on demand only.

iii) The Extraction System of Agriculture Statistics (ESAS) features a menu-driven software program that allows access to an extensive series of tables featuring the most commonly requested disaggregated physical and financial farm data. The software also allows users to generate their own custom made tabulations or produce their own sub-sets of the data for transfer to another software.

iv) The Food Statistics Data Base is a new product that is currently in the design phase. This user-friendly and menu-driven data base will be available on CD-ROM and it will provide access to various data series related to food consumption in Canada. The CD-ROM will provide a comprehensive data base of historical data series for the specialized as well as regular users of food statistics.

v) Other specialized CD ROMs include the detailed historical agriculture economic data series. These series serve as a base for the farm income estimates and are available at the provincial and national levels. The other data series that are conveniently released through CD-ROMs are the remote sensing products, the integrated geographic information products and digital images. The latter products

are created by the Spatial Analysis and Geomatics Application Section of Agriculture Division.

d) Contributions to Specialized Statistics Canada Products

27. i) Articles for *The Daily – The Daily* is Statistics Canada's electronic publication for the official release of all its data. Agriculture Division strives to produce releases that are accompanied by a highly readable analytic summary of significant new findings and insights. These short analyses aim to provide an objective perspective on a particular issue to inform the readers of the press. They are aimed at the general public and provide important feedback to the respondents of the surveys when the media reproduce the short analyses.

ii) *Canadian Agriculture at a Glance* – The flagship publication of the Census of Agriculture provides a detailed portrait of the current state of Canadian farming every five years. The publication includes more than 40 articles covering people involved in Canadian agriculture as well as farm finances, farm resources and other information to give a clear picture of agriculture in Canada.

iii) Other Specialized Products. Agriculture Division produces specialized material as part of the work of its Spatial Analysis and Geomatics Application Section. It also contributes regularly specialized tabulations to other Statistics Canada high profile or flagship publications such as: *Canada Year Book*, *Canada a Portrait*, *Human Activity and the Environment*, and the *Canadian Economic Observer*.

e) Research Articles and Working Papers

28. Agriculture Division has increased its research and analytical work in the last few years to help users get better insights into new developments in the industry and illuminate issues for an informed public debate. The produced research articles and working papers are distributed free of charge on the Agency's Web site. This work is also published in summary form in two divisional bulletins; one specialized in agricultural issues and the other in rural and community issues. One of the indirect benefits of such analytical work is that it helps staff stay better attuned to the needs of the external users.

VI. Important Elements of the Dissemination Strategies

a) Official Public Release of the Information

29. The official release of all Statistics Canada data (including agriculture data) takes place through an announcement in *The Daily*. Until official release, the data remain confidential in order to give equal accessibility to all parties. *The Daily* refers to the printed publication and its electronically disseminated equivalents released Monday to Friday, excluding holidays, by Internet, email and fax. The release time is 8:30 a.m., Eastern Time, for all agriculture releases including the Census of Agriculture.

b) Single Access Points for Servicing Clients

30. Having a single point of access is clearly important for nearly all clients, particularly for the large majority who do not have a detailed knowledge of the internal roles and responsibilities of the various components of the statistical system. A single access point may be an organizational entity that performs the necessary search on behalf of clients, sometimes for a fee, and gathers the needed information for them. Another practical version of the single access point may be thought of as an overall bank, which holds all the non-confidential data of the statistical system and has a good search capability. Many statistical offices have for example, a single data bank covering all frequently used time series.

c) Development of the Meta Data Base

31. In recent years, the issue of information about data holdings (metadata) has received increasing emphasis by statistical organizations. Well-developed statistical systems often hold far too much information to be effectively searchable in an ad hoc manner by external users (i.e. users who do not work with the data base on a regular basis). Metadata constitutes an essential complement to the statistical data. They provide a record of the statistical activity, including the underlying concepts, definitions, classifications and methods used in the production of the data over time.

32. The availability of a comprehensive metadata system with complete functionality for easy references is an essential element of statistical databases that are to be accessed by external users or clients. Statistics Canada, and by extension Agriculture Division, has embarked on a major documentation exercise of its metadata. Internet users who access Statistics Canada's Web site can now access a meta data base. It is linked to the statistical database and access to the metadata is offered as an option. In developing the meta data base, it was important to plan its maintenance. The meta data base needs to be continually updated if it is to remain an effective tool for helping data users.

d) Marketing Products and Services to Clients

33. An integral part of a comprehensive data dissemination strategy is a marketing plan to promote availability and access to the different statistical products and services offered. Statistics Canada provides online access to its Information Products and Services catalogue. It provides a description of all products and services available at Statistics Canada including agriculture statistics. Agriculture Division produces a sub-set of this publication for the agriculture specialists. It is entitled *People, Products and Services* (PPS). The PPS is available in print and in electronic form over the Internet free of charge. It is an important marketing and reference tool, which also provides access to the calendar of Agriculture Division's data releases in the coming year. For 2002, the PPS will update the list of products and services offered and it will put emphasis on the proposed 2001 Census of Agriculture products and services as well as the new Food Desk Database that will be released later in 2001.

e) Monitoring Performance Measurements

34. The development of performance measures is an important element of the dissemination program of Agriculture Division. These measurements permit the monitoring of various components of the dissemination strategies as well as client satisfaction for the different products and services offered. They help the organization focus its attention on priority areas.

35. Three indicators are presented below as examples of performance indicators that will help monitor the products and services offered to the public and specialized users. As a first example, Table 4 on the next page provides information on the frequency of use of different services as reported on the Client Satisfaction Survey conducted earlier this year.

Table 4. Percentage of clients according to how frequently they use each product or service

Product or Service	Percent of Users According to Frequency of Use		
	Never	Occasionally	Frequently
Internet publications/bulletins	5%	59.6%	35.4%
Paper publications/bulletins	11.3%	34.4%	54.3%
CD-ROMs	52.5%	34.4%	13.3%
Fax services	32.0%	47.7%	20.3%
Custom data requests	35.7%	54.4%	9.8%
Consultative services	42.8%	52.2%	5.0%

36. The table shows that the service used by most clients is the Internet publications/bulletins since 95% of them said they used it (from occasionally to frequently). CD-ROMs are used less frequently. However, they are mostly used by specialists and the services are provided on a cost recovery basis because of their specialized use.

37. As a second example, comparing the actual release date of regular releases in relation to the planned release date over time will form the basis of a key indicator that can be used to monitor performance over time. Table 5 presents the comparative measurements of actual versus planned release dates over a four-year period.

Table 5. Actual versus planned release dates

	1995/96	1996/97	1997/98	1998/99	1999/00 Major	Other	Total
As scheduled	109	114	107	111	14	112	126
Less than 5 days late	8	10	8	4	0	0	0
5 or more days late	6	5	0	1	0	1	1
Total releases	123	129	115	115	14	113	127

38. In a typical year there will be between 115 and 130 separate releases of agricultural data, 14 of them considered to be major releases. A major release covers data on crop area, production, stocks, farm sales or farm income.

39. Finally, Table 6 below provides, as an example, an indicator of a second aspect of the timeliness issue. This indicator measures the time that elapses between the reference date and the planned date for selected monthly releases.

Table 6. Elapsed time between reference period and planned release date in days

Program releases		1996/97	1997/98	1998/99	1999/00
		Number of days			
Monthly Publications	Cereals & oilseeds review	59	58	57	57
	Dairy review	44	43	43	44
	Egg production	40	37	39	39

40. This table shows that there has been little change in the elapsed days of these monthly agriculture statistics releases over the past four years. There are some minor differences between years but they are related strictly to the calendar of the respective year.

VII. Future Strategic Initiatives for Disseminating Canadian Agriculture Statistics

a) Expand Internet Dissemination

41. Statistics Canada is moving towards the Internet as the standard medium for publishing and disseminating data. It is moving from predominantly paper to Internet dissemination, with the rate of change being set by subscribers and data users. For the subscriber, there is access to statistical releases at the time of release, with no need to wait for a fax or other delivery

mechanisms for the information. The Internet is clearly a cost effective strategic direction that Agriculture Division will foster for its products and services.

b) Promote Single Access Points

42. A single access service does not happen automatically. It needs to be planned carefully and resourced with knowledgeable staff. Several years ago, Statistics Canada's Agriculture Division set up a single access service. It can be reached through a widely advertised toll free telephone number and Internet address. For general inquiries, the Internet address is agriculture@statcan.ca. This service will continue to be heavily promoted by Agriculture Division to answer general requests related to agriculture, rural and food consumption data. The service is designed to improve the accessibility of data by users who have little advance knowledge of the Division's databases and related outputs. This service is expected to gain importance as the number of visitors to Statistics Canada's Web site increases. It will also be able to play a key support role for requests channeled through the new Federal Government Online service being introduced in Canada.

c) Foster Closer Client Relations

43. Agriculture Division will foster closer relations with its users to address different aspects of client services. The objective is to remain relevant and optimize the use of the collected agriculture data. The different forums available to Agriculture Division will continue to be used to obtain feedback on products and services. In addition, the results of the recent Client Satisfaction Survey will be analyzed and used as a basis to improve different products and services.

d) Monitor and Improve the Effectiveness of the Marketing Strategy

44. In order to maintain a comprehensive and effective dissemination program, efforts will be devoted to monitor performance measurements, improve marketing efforts and focus them on areas where it is important to increase awareness of the Division's products and services. The performance measures and the client satisfaction survey results will provide valuable information on the areas that need attention.

e) Foster Analytical and Research Work

45. In the past few years, Agriculture Division has increased its resources devoted to the analysis of the collected data and to research work related to agriculture and rural issues. These efforts will be maintained as this analytical work will help the Division better understand the limitations of collected data and the requirements of external users. This work will also shed light on topical issues in an objective and neutral manner. It will also exploit the Agency's advantage in terms of its access to micro data.

f) Optimize the Use of *The Daily* to Reach Respondents

46. *The Daily* is a prime communication tool for the general public and our respondents. Efforts will be devoted to improve the short insightful analyses released in *The Daily* and to prepare articles that are easily printable by the media. This will serve to provide an important feedback to our respondent if the media prints articles based on the provided data. The short analyses will also highlight the availability of data series to specialized users.

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