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CANADA: NATIONAL REPORT

by

Submitted by Statistics Canada¹

I. INTRODUCTION

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1. Statistics Canada is the core of Canada's socio-economic information system. It serves the information needs of all levels of government, of businesses and labour unions, of the media, of the academic sector and of the general public. The major challenges facing the country require not only good descriptive information on the issues at stake, but also information that will provide insights into the underlying realities and causalities, and thus permit decisions to be taken with the best possible factual understanding of what is involved. Providing such strategic information, albeit in a context of declining resources, is the priority for Statistics Canada.

2. Statistics Canada's centralised and integrated structure and strong technical infrastructure have won the Agency praise for its effectiveness, relevance and the quality of its products, as well as the highest professional esteem in Canada and abroad. Centralisation and integration are also efficient, and permit the production of additional information at a low marginal cost. Conversely, however, marginal resource reductions produce output reductions whose size and impact are considerable relative to the attendant cost savings.

3. In this context, Statistics Canada will strive to meet its challenges by:

- a) continuing the production of relevant, objective, high quality statistical information and strategically identifying outputs to be reduced so as to minimise information loss and protect the long-term integrity and viability of the National Statistical System;
- b) reviewing operational processes and methods in order to augment program efficiency and effectiveness through increased automation, methodological and systems refinements, as well as new and innovative ways of organising and carrying out operational and administrative activities, and of delivering information products; and
- c) improving, through innovative management practices and human resource development programs, staff competence and productivity, and facilitating the redeployment of those whose work is affected by organisational and program changes.

II. GEOGRAPHY DIVISION

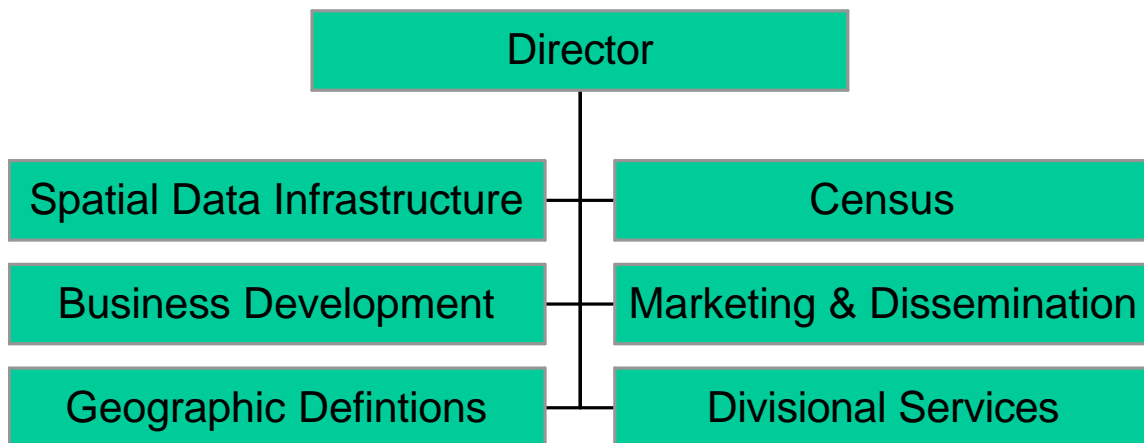
4. The mandate of Statistic Canada's Geography Division (GEO) is to develop spatial concepts and provide the spatial framework and tools to support the National Statistical System. The mandate includes the need to:

- a) collect and analyse data to search for solutions to a variety of spatial statistical problems related to economics and social activity in Canada for subject matter surveys, administrative data programs and censuses;
- b) study characteristics of population space, location and place in the broader context of how Canadians interact with both physical and human environments; and
- c) identify and analyse the patterns that shape Canada's spatial life;

5. As indicated on the organisational chart, the Geography Division is divided into six functional business units. The staff and management associated with each business unit are responsible for ensuring the timely delivery of products and services, as well as integrating their responsibilities with those of other units, divisions and departments when applicable.

6. At an operational level, the Geography Division actively serves two main groups of clients. First, internal to Statistics Canada, GEO provides services to other statistical Divisions such as Census, Agriculture and Health. Second, the Division also addresses the needs of a wide variety of external organisations. These include other federal departments, provincial and municipal bodies, educational institutions, libraries, the private sector, international organisations, non-governmental organisations and the general public. The Geography Division has an ongoing responsibility to ensure that the diverse needs of both

internal and external clients are met using a combination of standard and custom products and services.



III. RECENT ACTIVITIES

a) 1996 Census of Population

7. The most significant milestone for the Geography Division was attained successfully on April 15, 1997 with the release of the 1996 Census Population and Dwelling counts. The Census was the most successful in Canadian history, with the highest rates of return ever recorded and timely collection of all data. Geography Division's *Census Unit* was credited for a large part of this success since the collection maps were of a higher quality, and more timely, than ever before.

8. The 1996 Census counted 28,850,000 people in Canada, up more than 1.5 million (+5.7%) since 1991. This growth over the past five years was due to international migration and natural increase, to an almost equal extent. The population of Canada has doubled in 45 years from just over 14 million in 1951. Overall, the rate of population growth slowed between 1991 and 1996, compared to the previous five-year period. Although Canada's population growth rate has been slowing recently, we are still frontrunners compared to the rest of the industrialised world. Between 1991 and 1996, Canada's population grew at an annual average rate of 1.1%, the highest of all G-7 industrialised nations. Average annual increases for the others (between 1990 and 1995) varied from 0.1% for Italy to 1.0% for the United States.

9. Geography Division's *Dissemination and Marketing Unit* was responsible for the release of the population and dwelling count data on April 15. At the same time, we released a number of associated geographic products and services. The GEO products released on April 15, 1997 included the *National Overview* publication, two CD ROMs, entitled "GeoRef" and "Postal Code Counts", Digital Boundary Files, Digital Cartographic Files and paper Reference Maps. All of these products were delivered on time and within budget. A number of other geographic products are nearing completion and are scheduled for Fall 1997 delivery dates. These include the digital "Street Network File" (SNF) and our Postal Code Conversion File, (PCCF), which links the Statistics Canada geographic units with the Postal Code areas of Canada's Post Office.

b) Spatial Data Infrastructure

10. One of our most ambitious undertakings, which is targeted for implementation in time for the 2001 Census, is the creation of an integrated Spatial Data Infrastructure. This project

will combine all our existing digital, geographic information into one database, including the Address and Postal Code Registers. A new data model is being designed to reflect all our stakeholders requirements. The *Spatial Data Infrastructure Unit* oversees both the data and the systems that support the creation and updating of data. While the Census remains an important client, the objective of the SDI is to provide a national spatial data base for all Statistics Canada surveys and administrative data applications, as well as the Census.

c) **Marketing and Dissemination**

11. Providing an enhanced level of service to all Statistics Canada clients continues to be a priority for the *Marketing and Dissemination Unit*. Since the release of the 1996 Census data and geographic products, GEO has worked closely with the Regional Offices and private sector distributors to ensure that this new data is marketed and distributed effectively.

12. Building upon a long history of positive involvement with the academic community in Canada, the Data Liberation Initiative (DLI) was successfully launched in 1996. The DLI provides Canadian academic institutions with affordable access to Statistics Canada data files and databases for teaching and research. Since the DLI was implemented, the geographic files have been the most sought-after. GEO has provided additional support to the academic sector through training workshops and published user manuals.

13. In order to further improve access to Statistics Canada data, Geography Division has sharply reduced the prices of 1996 Census Geographic products and services from the levels that were established for 1991 Census. In addition, the Geography Division has pioneered significant changes to Statistics Canada's Licensing Policy to further remove the barriers associated with the acquisition and use of Statistics Canada geographic data.

14. Finally, Geography Division has broadened its range of product offerings with some innovative, Internet mapping tools. So far, two different mapping tools have been created but we anticipate many more applications of this technology in future.

15. Election Mapper is an innovative Web-based Election Results Mapping tool that was developed jointly by Statistics Canada's Geography Division and National Resources Canada's National Atlas Group. The tool allowed users to view and map the results of Canada's federal election as they came in on Monday, June 2, 1997. Users were able to construct customised Results Maps for their own region, and build thematic maps by Federal Electoral District using a sample of 1991 Census demographic data. The Election Mapper Web site received over 50,000 visitors over a 3 day period beginning the night of the election. Positive feedback on this initiative continues to be received from researchers, academics and special-interest groups across North America and around the world.

16. IntraMapper is a Web-based thematic mapping tool that allows a user to display 1996 population and dwelling data at national, provincial and local levels. The user is able to select from a various boundary, variable and classification options, and can quickly create customised maps based on their requirements.

d) **Geographic Definitions**

17. The *Geographic Definitions Unit* of the Geography Division maintains the geographic and cartographic framework for the collection and publication of census data by *legislative or administrative areas*, as defined by Canadian federal and provincial statutes, and *statistical areas*, as defined by Statistics Canada. In addition to incorporating the hundreds of ongoing changes to these geographic areas, the Unit is analysing and defining new geographic concepts to reflect the changing spatial patterns of Canadian life. We are continuing to

analyse the phenomenon of “edge Cities” and are defining new units called “Metropolitan Influence Zones”. These units will provide useful distinctions between different types of rural areas and better reflect the changing relationship between urban and rural Canada.

e) Partnership Development

18. The Business Development Unit focuses on the negotiation and implementation of partnership agreements with other federal departments, provincial agencies and the private sector. Such agreements allow us to create a broader and higher-quality geographic infrastructure than we could provide on our own. In addition to improving the efficiency and effectiveness of our operations, these partnerships generate new business opportunities for GEO.

19. The first example of partnership was an agreement with Canada’s federal election agency to share the work of creating a national digital street file. We are now actively exploring the extension of that partnership to include Canada Post, some provincial mapping agencies and even large municipalities.

20. Another example of partnership involves our work with the federal government Department of Industry on an initiative known as “Strategis”. Strategis is Canada's largest business information web site, providing a full range of timely information to Canadian businesses. The Geography Division is assisting development of the component of Strategis known as Canadian Business Map. This geographic search tool will provide internet users with useful links to other Canadian web sites, and allow a user to identify the location of Canadian businesses using an electronic map.

21. In order to ensure that potential partners are treated fairly and consistently by Geography Division and to ensure that quality standards are maintained, we have developed procedures that enable us to assess the inputs from external organisations wishing to share their data with Statistics Canada. These procedures will encourage the development of additional geographically-referenced data and products for use both internally and externally. Furthermore, the policy acknowledges that Statistics Canada is also willing to share the risk associated with data collection and manipulation, allowing for better integration of data from a variety of sources.

f) International Technical Consultation

22. The Geography Division continues to be involved in a variety of initiatives in the international arena. Following are three examples of the numerous projects that have been undertaken over the last year.

23. Geography Division provided Census geography consultation to several visiting representatives from the Czech Republic. This consultation included the sharing of knowledge related to the Canadian tools, methodologies and processing techniques.

24. The Geography Division continues its role in a three-year technical assistance project in Eritrea, Africa. GEO is responsible for providing a team to assist with the development of technical plans, training in geographic area delineation and the development of a GIS and GPS mapping program. This assistance project will allow Eritrea officials to better prepare for the collection, manipulation and use of data from the country’s first Census.

25. Finally, the Geography Division was recently involved with technical consultation and training activities in Benin, Africa. Staff from GEO assisted in the installation of hardware and software to facilitate automated cartographic production. GIS and database management

training was provided to facilitate the integration of data from the country's Census and production of thematic maps. GEO staff also assisted in the development of preliminary plans to facilitate the development of a digital base map, and also full GIS production facilities for the next Census.