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SWEDEN: NATIONAL REPORT

by

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I. BRIEF DESCRIPTION OF THE SPATIALLY REFERENCED REGISTER SYSTEM

1. Inspired by experiences from our colleagues at Statistics Denmark, Statistics Sweden launched a spatially reference register project at the beginning of 1997. The envisaged system is built around a core of four main registers covering the demographic dimension: the labour market dimension, the economic dimension and the geographical dimension. Seventeen satellite registers, or register modules, on education, income, occupation, etc. orbit around the core.

2. Of particular interest in our context is that the register system has an explicit geographical dimension and a GIS module, meaning that practically all statistical data in the system will have a location expressed with x, y co-ordinates attributed to it. The development and implementation of a register-based system will take several years and there will be reasons to come back to this in future ECE conferences.

3. During 1997, the Swedish Official Statistics concept was redefined. Basic statistics is now a public domain available free-of-charge. It simplifies the dissemination through electronic media. A joint project with the National Land Survey is presently looking into the possibilities to present statistics and land information integrated on the Internet.

II. SPATIAL DATA FROM EXTERNAL SOURCES

4. The planned register-based population census in the year 2001 will be feasible with the creation of three new spatial system components, namely i) a central address register, built up with input from the municipalities, ii) the identity of single dwellings included in the register and iii) building co-ordinates that can be attached to population and enterprises. This is a mammoth task, involving stakeholders in ministries, municipalities and agencies and is touched upon in Working Paper No. 24.

III. OUTPUT FROM THE GIS SYSTEM

5. The major internal users of GIS at Statistics Sweden are found in units carrying out work at a regional and sub-regional level (for local authorities/municipalities and other clients) and in the field of statistics on land use, natural resources and environment. Furthermore, a wide range of GIS business applications has been produced for external clients.

IV. HARDWARE AND SOFTWARE USED

6. Mapinfo is the main software used for middle-end GIS at Statistics Sweden with around twenty licenses. For high-end purposes, one ArcInfo license and hardware has been acquired during 1997. Low-end users have lately had the option to create choropleth maps using Microsoft Excel and Data Map; this feature will shortly be installed in Statistics Sweden's office information system.

V. REVENUE, PERSONNEL AND ORGANIZATION

7. The revenue from the commercial sale of statistics with GIS elements is approximately at the same level as last years, i.e. about 10 million SEK per annum. The use of GIS has not increased during the last year and is still at a moderate level, rather far from its potential. Those using the technology regularly still belong to an exclusive group of maybe fifteen to twenty statisticians, out of a work-force of just over twelve hundred employees.

8. For this and other reasons, discussions regarding the organisation for GIS in Statistics Sweden have been in focus during 1996 and 1997. In order to develop, promote GIS based methods, Statistics Sweden has initiated a GIS project with the author of this paper as project leader. The project budget is 1.4 million SEK per annum and its tasks is to complement the commercial side of the agency's GIS with the necessary infrastructure and strategies.

VI. GIS CAPACITY BUILDING IN DEVELOPING COUNTRIES

9. It is also worth mentioning that Statistics Sweden is assisting several developing countries to build their GIS within the framework of institutional co-operation. In this respect, the administrative dimension becomes very prominent in countries where population censuses are based on data collection in the field.

10. In the pre-enumeration phase, a GIS is likely to focus on demarcation, involving hundreds of demarcators and assuring that coverage is complete and correct. During the enumeration phase, the work of up to maybe 90 000 enumerators and other census officials as well as the allocation and flow of questionnaires, manuals, vehicles, material, printed matter, etc. can be monitored. At the post-enumeration stage, publishing and dissemination of results are obvious task for a census GIS, and the creation and demarcation of electoral wards and districts based on census statistics, background maps and demarcated enumerated areas/polygons is a vital by-product.

11. Statistics Sweden has been involved in such GIS co-operation in a number of countries, notably in Zimbabwe, Namibia, Laos, and South Africa. Co-operation projects are pending in several ex-Soviet Union countries, e.g., Ukraine, Georgia and Belarus.

VII. PLANS FOR FUTURE DEVELOPMENT

12. We feel that the implementation of GIS has largely been technology-driven in the past. The feeling for the additional value of geo-referenced statistics has been difficult to establish, sometimes more difficult among colleague statisticians than among clients.

13. This has called for a new strategy that has been developed within the GIS project. Some of the components of the revised strategy are listed below and elaborations can be found in the paper referred to above. The main components are an active search for "most relevant GIS applications", a wider range of products and services, mainstreaming and co-operation with other stakeholders.

14. A bilateral co-operation with other countries and with GISCO/Eurostat is high on our agenda, in particular the long-term development of a European GIS beyond today's polygon-based approach.