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(EUROSTAT)**

**CONFERENCE OF EUROPEAN
STATISTICIANS**

**FOOD AND AGRICULTURAL
ORGANISATION (FAO)**

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Meeting on Food and Agricultural Statistics
in Europe**
(Geneva, 2-4 July 2003)

**ORGANISATION FOR ECONOMIC
CO-OPERATION AND DEVELOPMENT
(OECD)**

NEW DATA COLLECTION AND DISSEMINATION TECHNOLOGIES IN HUNGARY

Invited paper submitted by the Hungarian Central Statistical Office*

1. Owing to the natural resources and tradition agriculture has played and still plays a decisive role in the economy of Hungary. The agricultural area amounts to nearly 63 percent of the territory of the country. Nearly 4 percent of the GDP is produced in the agricultural sector, with a further 6 percent added by the food industry. Six percent of the active earners are employed in the agriculture, and one third of the Hungarian households are involved in certain agricultural activities, in some cases for self-sufficiency or as a supplementary activity.

2. Due to the privatisation of land a large number of medium and small private farms came into being following the disintegration and transformation of the earlier collective and state farms. The changes taking place in the community of respondents and the EU-harmonization tasks of agricultural statistics constituted a substantial challenge for the Hungarian statisticians. The new solutions were developed using the latest advances of technology.

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3. For a proper groundwork in implementing a data collection system fitting the new requirements two comprehensive censuses were conducted at the turn of the millennium. New communications instruments were used in the preparatory phase of the censuses, and new tools were deployed in the implementation of censuses and also in the dissemination of results. These items make a long-standing impact on the work of statisticians.

4. The Agricultural Census 2000 was the sixth of its kind in Hungarian agricultural statistics. By the stipulations of the law decreeing it, the census was implemented between April 1st and 21st, 2000, followed by four sample-based surveys the same year. With a view to make the agricultural experts aware of the objectives and importance of the census a bilingual CD-ROM titled „Agricultural Census 2000” was prepared the first time in the history of Hungarian agricultural statistics. The CD-ROM presenting the information by the use of animation tools was delivered free of charge to everybody concerned. (For the contents of the CD-ROM titled Agricultural Census Year 2000 see Annex 1.)

5. The census covered 8500 businesses and 960 thousand households. With a view to expedite the release of results of the April census the preliminary results were announced at a press conference held in June 2000. A mere two months were available to prepare the preliminary results, so the one percent sample was used for this purpose. In the preparatory phase the mathematicians selected, on a random basis, the sample districts included in the one percent sample, and the relevant data were entered and processed before the processing of the complete data set. This method made possible the expeditious dissemination of the preliminary results.

6. The final results of the census were published in 15 volumes and five CD-ROMs. The first two volumes were published in the fall (September) of the year of the census, and the last one was published at the end of the next year. Of all the documents mentioned I should like to present only the CD-ROM titled „Hungarian agriculture 1851-2000”. Apart from the preliminary result of the agricultural census of year 2000 this bilingual CD-ROM including animated figures facilitates the work of users and analysts by the long time series of Hungarian agricultural production. Other peculiarities of the CD-ROM include a video clip of the census broadcasted frequently on TV channels, and the option to select a time interval for building diagrams using the long time series. (For the contents of the CD-ROM titled “Hungarian agriculture 1851-2000” see Annex 2).

7. The press conferences and professional meetings held to release the results of the census preceded the professional journal „Számvetés” (Reckoning) published subsequently. This is a quarterly published by HCSO with the support of a communications company. The Hungarian title of the quarterly (play on words: szám – number, vetés – sowing) indicates also its purpose: to provide information to experts and the general public interested in agriculture. The authors of articles using mostly agricultural statistics and concentrating on topical issues are agricultural statisticians and also agricultural experts outside the HCSO. Upon the request of users the “Reckoning” quarterly is now available via the Internet. (For the contents of the latest issue of the “Reckoning” quarterly see Annex 3).

8. The “Reckoning Almanac” was also published the first time after the census. In contrast to the experts targeted by the quarterly, the target group of the “Almanac” is

composed of the farmers, i.e. the respondents. The “Almanac” informs the readers in plain language about the objective and importance of statistical surveys, including the key results and their utilization in farming. The third issue of the “Almanac” for the previous farming year has been published recently, and all our respondents will receive a copy. (For the contents of the “Reckoning Almanac “ see Annex 4.)

9. After the agricultural census the overall surveys of vineyards and orchards took place in 2001. At the pre-accession talks Hungary undertook the implementation of this census prior to accession. This census was a major challenge for the statisticians due to the importance of the vineyard and orchard sector, and also due to the fact that the last census of this kind was implemented in Hungary forty years ago. The structural changes and also the changes in the ownership structure of the 1990’s were not always reflected in the land register, and the data concerning the territories of cultivation were not always up-to-date. Though the land register was also used in preparing the census, the task called for a brand new tool. Upon the request of HCSO the Institute for Land Surveying and Telemetry (FÖMI) prepared thematic “spot maps”. The thematic “spot maps” were prepared by the use of satellite surveys. The spot maps of 1:25000 scale were used for marking and distinguishing the vineyards and orchards from each other. The light green spots on the topographic maps mark vineyards, and the russet ones mark the location of orchards. The navy blue spots indicate mixed categories of vineyards and orchards that cannot be identified on the basis of the satellite surveys, and the light blue spots identify very small plantations producing for own consumption. (For a sample spot map see Annex 5.) A preliminary assessment of the size of territories under vineyards and orchards was prepared on the basis of the spot maps. The spot maps also helped the census-takers in identifying the plots, and they proved a valuable tool in quality inspections. After the completion of the census the vineyard and orchard territories assessed on the basis of the spot maps were compared with the figures of the land register and the result of the census by each settlement. In the case of significant differences the census takers investigated and reported on the reason to HCSO. These measures largely contributed to the high quality of the resulting data set.

10. The census of vineyards and orchards was implemented in two phases. In June the census takers visited the farmers to collect information on the location of the plantation and also about issues that could only be answered face-to-face. The expert census takers visited the plantations from the beginning of July until October 15th and recorded the predefined parameters. Expeditious coverage was a priority in the case of the plantation census, too. In this case the preliminary information was assessed on the basis of data collected in the first phase in June. The census documents of the first phase were designed with a purpose to produce preliminary information. The preliminary data were announced at a press conference in December of the same year (two months after the completion of the census). The results of the vineyard and orchard census have been published in three volumes so far, and on a CD-ROM.

11. Following the tradition the CD-ROM titled „Viticulture and wine-growing in Hungary” is bilingual: it is published in Hungarian and English. Apart from the statistical information this CD-ROM offers spectacular solutions to provide a comprehensive review of the Hungarian viticultural and wine-growing sector, including data and facts beyond statistics.

(For the contents of CD-ROM titled „Viticulture and wine-growing in Hungary” see Annex 6.).

12. The spatial (graphic) representation of the results of the vineyard and orchard census is also worth mentioning. The ÜST Graphic Information System for Plantation Statistics (üst in Hungarian means a large brass used for cooking) is a complex software application providing support in the tasks of agricultural statistics on the one hand, and an electronic map book (e-Book) on the other hand. This e-Book is a data collection on CD containing the geo-coded data of plantations and overview map images. The GIS application for plantation statistics uses the alphanumerical (technical) data of the plantation census and the map data.

13. The general objective of ÜST is to support the development of agricultural statistics. Two “products”: the digital map and the electronic map-book embody the features of ÜST. The digital map is a software application designed to:

- Generate various agricultural statistical reports;
- Design future statistical surveys;
- Produce statistics both for internal and external use;
- Update database in the background;
- Verify graphically on the screen the spatial data of the survey; and
- Provide an electronic map-book as a map background for the analyses using statistical data.

(For samples of the spatial representation of plantations see Annex 7.)

14. This introduction of the new tools would be incomplete without the database of agricultural statistics currently under construction. This storage of data collected for agricultural statistics - HOMBÁR - (meaning a granary) is designed as a database system for the processing of verified elementary data, and for assuring on-going updating of the data of farms involved in agricultural activity. HOMBÁR also provides support in the conceptual design and monitoring of the implementation of surveys.

15. The consistent database system of HOMBÁR consists of modules following the categorization of tasks in agricultural statistics, including database modules for the agricultural register, land area, cultivation of plants, animal husbandry, agricultural finance and organization. HOMBÁR offers a user interface specifically designed for statisticians for managing meta-data for generating custom-built task-oriented processing tables from data stored on ORACLE database and saving the same in ORACLE. The help features of the user interface flexibly follow the changes in the processing environment. Processing in HOMBÁR takes place by the use of the data revision principles; it uses a monitoring system for the modification of embedded processing steps. Any finalized data may only be modified through the modification of all processing steps affecting the said data. (For the structure of HOMBÁR see Annex 8.)

ANNEX 1**Agricultural Census (ÁMÖ) 2000
(Contents of the CD-ROM)**

1. Introducing HCSO
 - The President's Word of Greeting;
 - Brief history of HCSO;
 - Organizational structure of HCSO.
2. The history of agricultural censuses in Hungary
 - Censuses (1895-2000);
 - Data collection system (1950-2000);
 - ÁMÖ 1991: territorial parameters of small producer farms;
 - ÁMÖ 1991: key indices of small producer farms.
3. Agriculture in the '90s
 - The share of agriculture in the national economy (1990-1998);
 - The number of people involved in agricultural activities (1991-1999);
 - Distribution of the gross production value by the form of business of entities involved in agricultural activities, at current prices (1990-1998);
 - Distribution of the agricultural land area by the form of business of entities involved in agricultural activities (1990-1998);
 - Details of the key plants (wheat, barley, rye, corn, sunflower, sugar beet);
 - Details of the key animal species and products (cattle and pigs for slaughter, sheep, poultry, milk, eggs).
4. Agricultural census 2000
 - Legal background;
 - Role of FAO in the agricultural censuses;
 - Impact of the EU on the system of agricultural statistics;
 - Reporting obligations of businesses in year 2000;
 - The questionnaire of the April, 2000 agricultural census.
5. Compass
 - Directory: Departments;
 - Directory: Regional directorates;
 - Publications in 1999;
 - Dissemination calendar 2000;
 - Dissemination plan for year 2000.
6. Help

ANNEX 2

Hungarian agriculture 1851-2000 (Contents of the CD-ROM)

1. The President's Word of Greeting
2. Hungarian agriculture in the 20th century
 - Introduction;
 - Key social impacts affecting agriculture and the development of output;
 - Land area;
 - Cultivation of plants;
 - Animal husbandry.
3. Long time-series of Hungarian agriculture (1851-1999)
 - Population of Hungary, active earners;
 - Use of agricultural area in Hungary by types of cultivation;
 - Sown area and harvest of the main crops;
 - Animal stock, animal products;
 - Gross output of agriculture by branches of production;
 - Agricultural prices;
 - Purchase prices;
 - Production prices;
 - Key long time-series indices of agriculture;
 - Key indices of the agrarian population;
 - Key indices of crop production;
 - Key indices of the animal stock;
 - Key indices of the production of animal products;
 - Key indices of the gross production value of agriculture;
 - Key indices of agricultural prices.
4. Agricultural production in 1999
 - Summary;
 - Share of agriculture in the national economy;
 - Production output by branches;
 - Sales;
 - Productive forces;
 - Tables;
 - Gross production value of agricultural products;
 - Sown area;
 - Agricultural parity;
 - Commodity structure of the foreign trade of food economy;
 - Use of land by types of farming;

- Distribution of the arable and sown area of agricultural companies by size;
 - Distribution of the vineyard and orchard area of agricultural companies by size;
 - Number of people employed in agriculture, forestry, game- and fish-farming;
 - Number of people employed in agriculture, forestry, average wages
 - Sales of agricultural machines;
 - Equipment sales of the key distributors by groups of commodities.
3. Preliminary results of the Agricultural Census of year 2000
- Act XLVI/ 1999 On the Agricultural Census;
 - The role of FAO in the agricultural censuses;
 - The impact of EU on the system of agricultural statistics;
 - Questionnaire of the Agricultural Census of year 2000;
 - Advertising film of the Agricultural Census;
 - Hungarian Agriculture in 2000 (preliminary data of the Agricultural Census);
 - Introduction;
 - Summary;
 - The number of farms;
 - The basis of farming;
 - Use of the agricultural land;
 - Animal stock on March 31, 2000;
 - Some additional characteristics of the farms;
 - Other farming activities;
 - Composition of the individual farms;
 - Tables;
 - Number of farms;
 - Distribution of farms by the bass of farming;
 - Distribution of the farms and arable land by size;
 - Structure of the animal stock;
 - Structure of activities and resources of individual farms by the area of the arable land;
 - Structure of activities and resources of agricultural companies by the area of the arable land;
 - Share of farms involved in other activities.
4. Agricultural glossary
5. Compass
- Organisational structure;
 - Department for Agricultural Statistics;
 - Historical publications on agriculture.

ANNEX 3

Table of contents of the December 2002 issue of quarterly “Reckoning”

After the December EU summit in Copenhagen

Income measurement in agriculture conforming to the relevant regulations in the EU

The EU suggests a land reform

About HCSO from Brussels

The “greenhouse farmer” is born in Austria

Sárospatak and wine tourism

The unions and the Dutch broilers

Biotechnology

Publications of the Hungarian Central Statistical Office

ANNEX 4

Table of contents of the “Reckoning almanac”

Words of Greeting

Calendar

Relevant issues

Around the household - from the statistician's viewpoint

The sources of statistics

Crossword

Overbalance on the food market

Changes in the assessment of the parity

Around the household - from the farmer's viewpoint

The farmer's diary

Income-expense record

Changes in the animal stock

Production of animal products

Animal stock

Changes in the inventory of key plants

Use of land by types of cultivation

Sowing structure and crop of the arable area

Plant protection

Agricultural services provided to third parties

Useful hints

Around the household - from the housewife's viewpoint

Our traditions

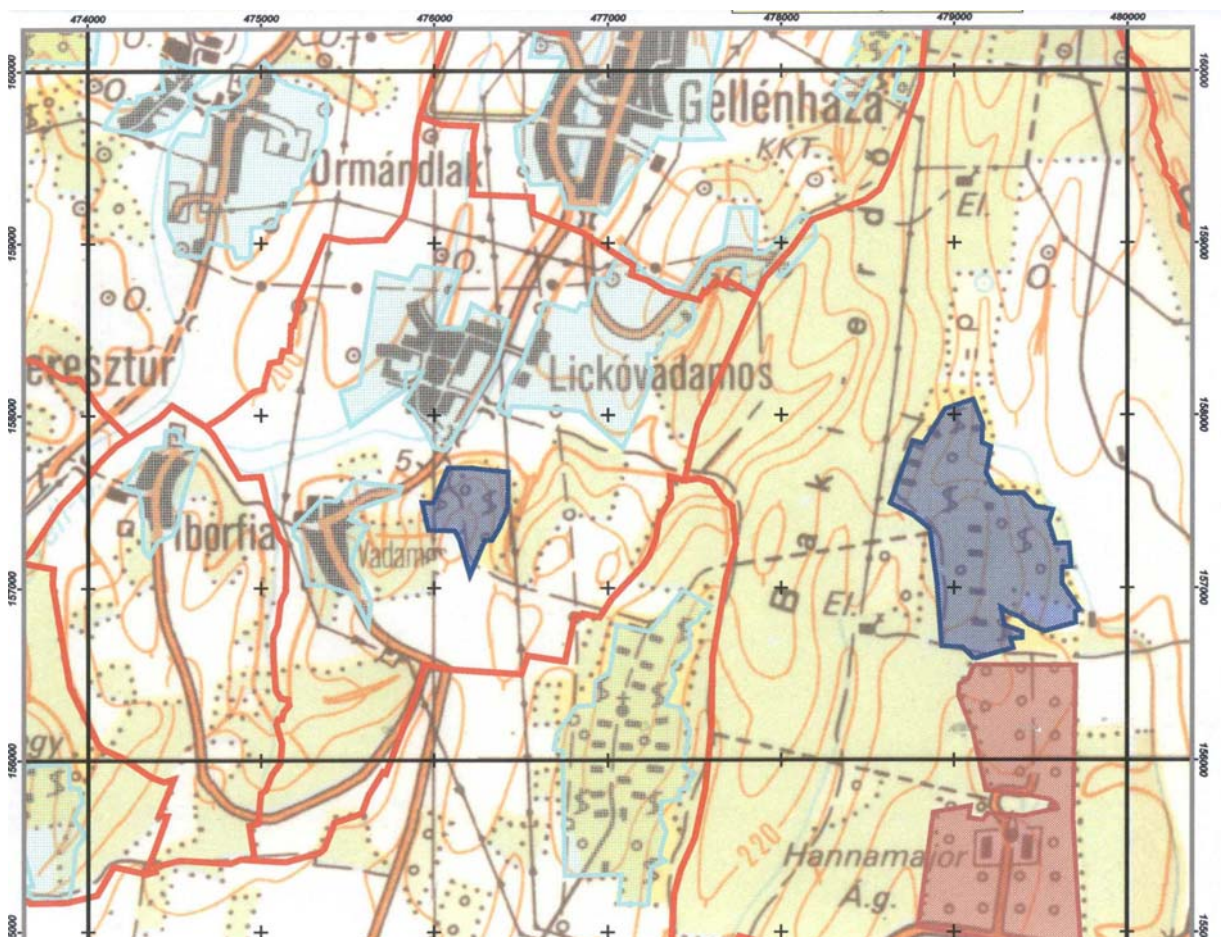
The housewife's record

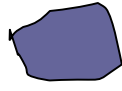
The festive board

Game

ANNEX 5

Spot map facilitating plantation census



-  Vineyard
-  Orchard
-  Mixed plantation
-  Small plantation

ANNEX 6**Grape and wine production in Hungary (Contents of the CD-Rom)**

1. Chronicle of wines
2. Vine varieties
 - Key varieties of white wine grapes
 - Key varieties of red wine grapes
 - Key varieties of table grapes
3. Plantations
 - Advertising film
 - Questionnaire of the vineyard and orchard census of year 2001
 - Area of the vineyards by size
 - Distribution of the area of vineyards by size
 - Distribution of the area of vineyards by groups of varieties
 - Area of the vineyards by age
 - Distribution of the area of vineyards by age
 - Area of the vineyards by method of cultivation
 - Distribution of the area of vineyards by method of cultivation
4. Wine-growing regions of Hungary
5. Viticulture
 - Vine lands and wine-production in the period between 1861 and 2000
 - Key figures of viticulture in the period between 1976 and 2001
6. Industrial processing of wine
7. Types of wine
 - White wines
 - Red wines
 - Rosé wines
 - Wine specialities of the Tokaj region
8. Sales
 - Domestic market
 - Foreign trade
 - Regulations
9. Add-on features
 - Glossary of terms
 - Institutional information

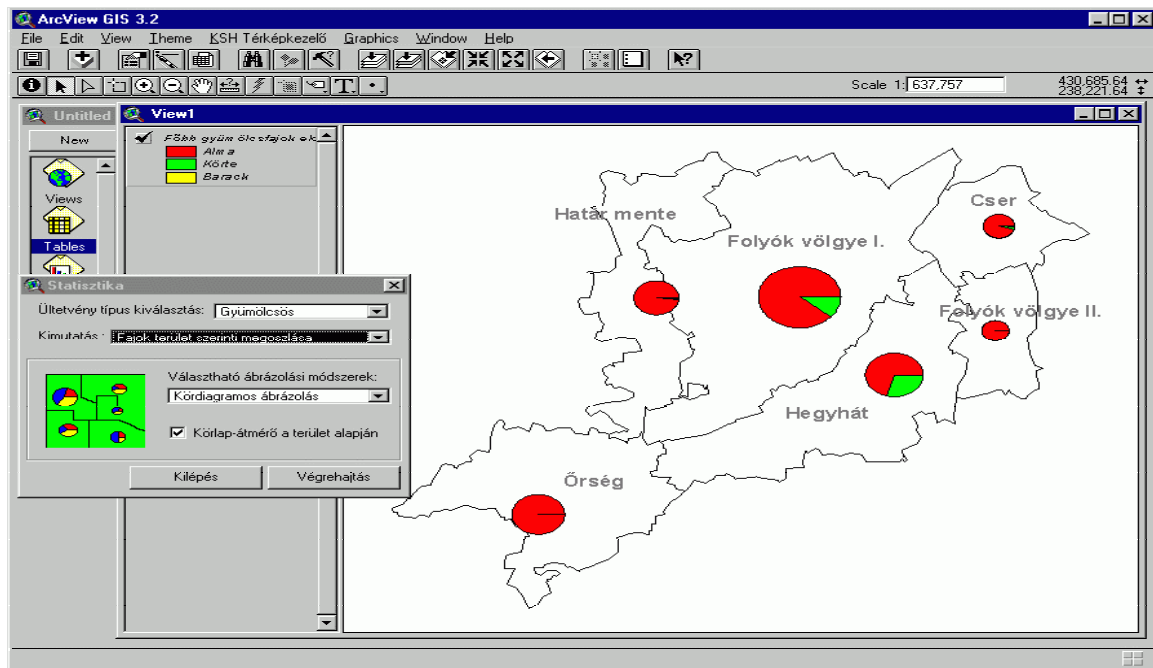
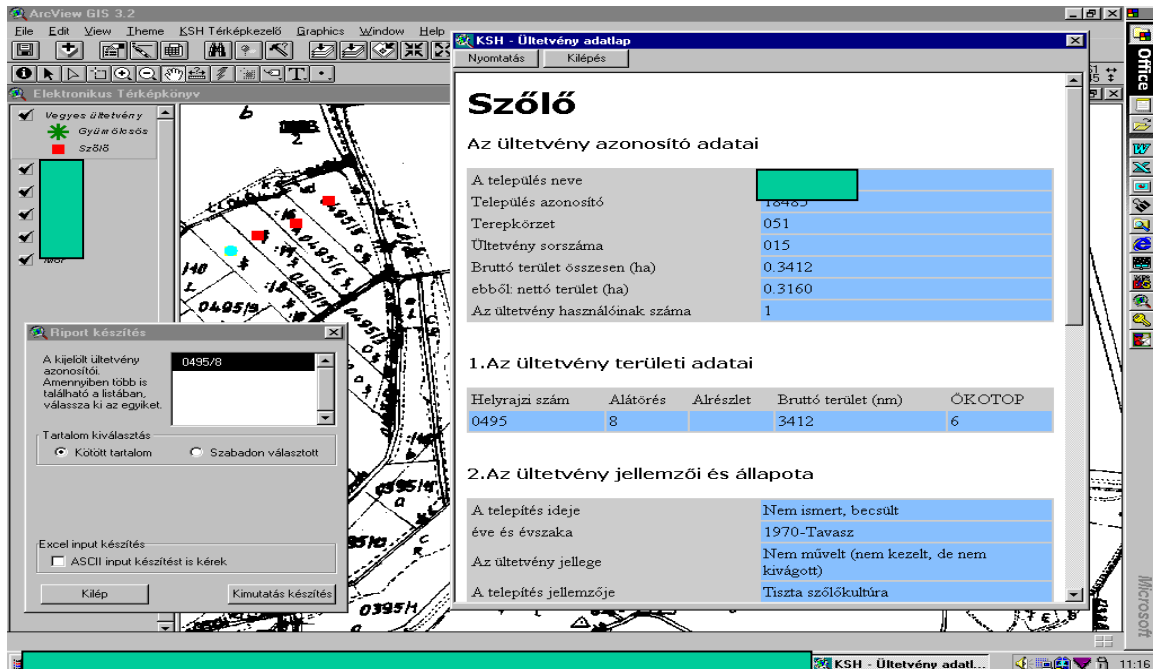
- Laws and regulations
- Publications

10. Game

- Liquid measures
- Jigsaw puzzle

ANNEX 7

Graphic representation of plantation data



ANNEX 8

The place of HOMBAR in the production process of agricultural statistics

