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STATISTICAL COMMISSION and ECONOMIC COMMISSION FOR EUROPE**CONFERENCE OF EUROPEAN STATISTICIANS**Forty-eighth plenary session
(Paris, 13-15 June 2000)**SOME ASPECTS OF HARMONISATION OF AGRICULTURAL STATISTICS
IN ESTONIA**Paper submitted by the Statistical Office of Estonia¹**I. A short overview of the land privatisation process and the agricultural sector in Estonia**

1. The total land area of Estonia is 4,523 thousand ha. The area of agricultural land is 1,450 thousand ha (32 % of the total area), of which the arable area accounts for 78 %. Up until 1940, 3,179 thousand ha of land belonged to the private sector. Real estates numbered approximately 212,000, of which 40,000 were located in towns and 170,000 in rural areas. The area of land to be restituted or privatized is estimated at 2,600 thousand ha. Before the restructuring of the agricultural sector 1,900 thousand ha of land belonged to 360 big state agricultural enterprises or collective farms.

2. According to estimates, land restitution claims have been submitted for 50 % of all agricultural land. An estimated 20–25 % of the land will not be privatized. Such land will remain in public or municipal ownership and will be used by legal or natural persons on a lease basis.

3. The Republic of Estonia Principles of Ownership Reform Act and the Republic of Estonia Land Reform Act were passed by the Supreme Soviet of Estonia in 1991. These acts serve as a legal basis for the restitution of land to the former owners or their successors.

4. Approximately 212,000 applications for land privatisation have been submitted to local municipalities. At the beginning, land restitution proceeded slowly. However, amendments to the respective legal acts accelerated the process remarkably. This is reflected in an increase in the number of agricultural holdings (private farm holder is a natural person and agricultural enterprise holder is a legal person) (Table 1). Agricultural holding is defined as a production unit under a single technical and economical management whose area of agricultural land is over 1 ha or that is producing agricultural products that are mainly intended to be sold.

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Table 1. Agricultural holdings in Estonia, 1995–1999

	1995	1996	1997	1998	1999
Enterprise	983	873	854	803	734
Farm	13 513	19 767	22 722	34 671	41 446

5. It is most likely that the number of agricultural enterprises will decrease and that the number of private farms will increase and then remain at 70-75,000 by 2002-2003.

6. Unlike EU Member States, the share of household plots of agricultural production in Estonia is high (Table 2). A household plot is a unit that produces agricultural products mainly for the household's own consumption and whose area of agricultural land is under 1 ha. The estimated number of household plots in Estonia is 300,000 (on the basis of the "Land Balance of Estonia 1990", Ministry of Agriculture).

Table 2: Agricultural output (thousand kroons at 1995 prices), 1998

	Total	Crop production	Animal production
Total	5 230 717	2 312 369	2 918 348
Enterprises	2 477 301	685 294	1 792 007
Farms	1 543 395	1 053 437	489 958
Household plots	1 210 021	573 638	636 383

II. A short description of the Estonian agricultural statistics system

7. The Official Statistics Act serves as the legal basis for the production of agricultural statistics in Estonia. The work program (the list of official statistical surveys) is approved by the Estonian Government and the cost of conducting surveys is financed from the State budget or other sources. All changes to statistical questionnaires, like variables and the definitions, report submission deadlines, etc., are co-ordinated with users and confirmed by the Minister of Finance.

8. In view of the Official Statistics Act, the Statistical Office is the only agency in Estonia to produce official agricultural statistics.

Agricultural production statistics

9. The final annual data about crop and animal production and sales, use of mineral and organic fertilizers, number of animals and poultry, and agricultural machines and buildings are published 6 months after the accounting month (in June). Preliminary data on the sown area of field crops are published in July, and on harvested areas, crop yields and autumn sowing areas of winter rye and wheat are published in October.

10. Quarterly data on the sales of agricultural products, live weight of livestock for slaughtering, milk and egg production, and on the number of animals and poultry are published in January, April, July and October. Data on the stock, production, sales and use of cereals and cereal products are published in June.

11. Statistical data from enterprises and private farms are collected using separate samples. The data on household plots are estimated. The list of agricultural enterprises serves as the sampling frame for agricultural enterprises, and the list of farms serves as the sampling frame for farms (the Farm Register).

The list of enterprises includes all enterprises whose main activity according to the Estonian Classification of Economic Activities (EMTAK) is:

- 011 — field crop growing; fruit and vegetable growing; horticulture,
- 012 — livestock farming,
- 013 — mixed farming.

12. The Estonian Classification of Economic Activities (EMTAK) is based on the Statistical Classification of Economic Activities in the European Community, NACE Rev. 1, 1996. Enterprises have also been classified according to type of ownership and type of corporation.

13. The criteria for the sampling of agricultural enterprises are the type of enterprise ownership and number of employees. Enterprises with 5 or more employees and all state-owned enterprises are surveyed totally. For small enterprises (enterprises with less than 5 employees) a simple random sampling is made. The share of small enterprises of the total agricultural production of enterprises is low – under 1%. Statistical data are collected from enterprises by mail.

14. The Farm Register serves as the sampling frame for farms. Sampling is based on stratified sampling. The sampling frame was stratified into 105 strata. The stratification variables are the geographical location of the farm (15 counties) and the size of the land area (7 size classes). Simple random sampling was applied to each stratum (Table 3). Data on farms are collected by interviewers, in order to increase the response rate and decrease the measurement error.

Table 3: Sample of farms, 1999

Size group of farms by land area (ha)	Number of farms in the sample	Area of farms in the sample (ha)	Area of farms in the total population (ha)
1 – 5	401	1 231	19 935
5 – 10	435	3 246	53 727
10 – 20	701	10 255	168 073
20 – 30	456	11 260	178 042
30 – 50	405	15 369	244 623
50 – 100	439	28 433	172 301
Over 100	163	23 528	42 727
TOTAL	3 000	93 322	879 428

15. At the beginning of April interviewers visit farms and deliver seven different statistical questionnaires. The farms will fill in a special questionnaire (“Household picture”) containing general data about the farm: address of holder(s), type of farming, data on household members. If interviewers fail to find the farm holder at the address recorded in the Farm Register, they will ask neighbours or the local municipality for further information.

16. The data on the production of agricultural household plots are estimated on the basis of 1990 data on the total area of agricultural land of household plots, structure of production and crop yields of small farms. The processing of the data is carried out at the Statistical Office of Estonia.

Agri-monetary statistics

17. A macroeconomic description of the agricultural “industry” is based on Eurostat’s methodology EAA 97 (Economic Accounts for Agriculture). The official statistical surveys serve as the main data source for calculating different macro-economic indicators (total output, intermediate consumption, etc.).

The list of crop products, livestock and animal products which is used to calculate total output complies with Eurostat's requirements and has been adapted to Estonian conditions. Total output is estimated at basic prices (without taxes on products). At present, there are no taxes (except VAT) and subsidies on products in Estonia.

18. Data on the expenditure of agricultural holdings are received from FADN (Farm Accountancy Data Network, implemented by the Ministry of Agriculture of Estonia) and other sources. The calculation of macroeconomic indicators of the agricultural "industry" is performed in close co-operation with the Ministry of Agriculture.

19. The share of agriculture (with hunting) of the gross domestic product has decreased from 8.5% in 1993 to 3.8% in 1998 (at current prices).

Agricultural price statistics

20. Data on the selling prices of agricultural products and the purchase prices of agricultural inputs are collected to calculate agricultural input and output price indices, and also to be used in agricultural accounts. From major agricultural input sellers and agricultural product buyers, prices (without VAT) are asked on the 15th day of the second month of the quarter. If within the quarter the same product was sold or bought at different prices (wholesale prices, periodically discount prices, etc.), the weighted average prices are calculated and recorded.

21. The annual prices of specifications are calculated as an arithmetic mean of quarterly prices of these specifications (or substituted goods of similar quality, packaging, etc.) received from the same respondent. The main groups of goods and services in the weights of the input price index cover the costs of seeds for sowing, energy, fertilizers, pesticides, feeding stuffs, materials and small tools, repairs and the maintenance of building and equipment, and services. The list of specifications in each group of goods is representative under the conditions of Estonia. The weighting scheme of input price indices is calculated on the basis of the data collected via total survey on the expenditure on production inputs of agricultural holdings whose holder is a legal person, and via sample survey from agricultural holdings whose holder is a legal person. The base year for input price indices is 1995, and 1998 for output price indices.

22. The annual and quarterly agricultural input price indices are published in the monthly "Estonian Statistics".

23. The main groups of goods and services in the weights of the output price index cover the cost of cereals, forage crops, fruit, vegetables, seeds for sowing, flowers and plants, other crop products, animals for slaughtering, meat, poultry, fur animals, milk, eggs, other animal products.

24. The list of specifications of goods in each group of goods is representative under the conditions of Estonia. The weighting scheme of the output price index is calculated on the basis of the statistical survey on the sales of agricultural products.

25. The calculation of annual and quarterly agricultural output price indices started in 1998 and the results are published in the monthly "Estonian Statistics".

III. Assessment of compliance of agricultural statistics with the EU requirements

26. Agricultural statistics are very strictly regulated by legal acts of the EU (and by gentlemen's agreements). In recent years, the main responsibility has been to achieve compliance of agricultural

statistics with EU requirements. The National Plan of Adoption of the Acquis (NPAA) includes also statistics.

27. The data on the structure of agricultural holdings are received through different statistical surveys, and some (data on household plots) are estimated. The first complete statistical data on the structure of agricultural holdings will be obtained from the 2001 Agricultural Census.

28. The variables and definitions of plant and animal products, as well as livestock statistics are being harmonized with the Eurostat requirements. The methodology of agro-monetary statistics (Economic Accounts for Agriculture, Agricultural Price Statistics) complies with Eurostat's requirements.

29. The variable and definitions of agricultural labor input statistics have partly been harmonized with the Eurostat requirements. Annual data on the agricultural labour force of private farms are being collected.

30. The balance sheets of cereals and potatoes, meat, milk and eggs for the year 1998 are drawn up in accordance with the EU requirements.

IV. Main constraints to achieve compliance with the EU requirements

31. An important task is to develop the related standards, statistical classifications, nomenclatures, variables and their definitions, etc., the implementation of which is obligatory for all primary data providers and other institutions engaged in the compilation and processing of data. The continuing land privatization and errors made by authorities in the registration of land use makes the updating of the Farm Register difficult. Survey coverage and data quality are strongly influenced by the incompleteness and incorrectness of the farm list.

32. To compile crop and animal product balance sheets handbooks and usable conversion factors are needed. The lack of reliable administrative data is the reason why most data are collected through statistical surveys. Additional human and technical resources are needed to implement new surveys, supplement the existing ones and to comply with the quality requirements and data transmission deadlines of the EU.

V. Steps planned to address constraints

33. The intermediate objectives of the harmonization of the agricultural statistical system with the demands of the EU are:

- to improve survey coverage and data quality, continuously update the register of agricultural holdings (the Statistical Farm Register) on the basis of data sets of local municipalities, the Land Register of the National Land Board and administrative data of IACS, total mail surveys, and the 2001 Agricultural Census in particular;
- to improve data quality, making samples more representative by implementing economical size and Community typology as stratification factors and enlarging the sample size;
- to achieve full harmonization of variables and definitions of statistics with the legal acts of the EU; and compliance of the periodicity of surveys and data transmission deadlines with the requirements;
- to complement the weighting schemes and price recording system of agricultural inputs and agricultural products to calculate input and output price indices; to take 2000 as the base year of input and output price indices;
- to elaborate agricultural accounting according to EAA-97 (in co-operation with the Ministry of Agriculture) and to calculate agricultural income indicators; and
- to elaborate agricultural labor input statistics, conducting an annual survey on the labor input in

agricultural holdings, using labor force variables and definitions of the holdings structure survey.

34. The most important undertaking in the harmonization of agricultural statistics is the Agricultural Census that is to be conducted in 2001. The main objective of the Census is to receive data on the structure of agricultural holdings and to compile a complete register of agricultural producers. The latter will serve as the main tool for producing high-quality statistics.

35. The draft Agricultural Census Act has passed the first reading in the Parliament. The Census will cover all agricultural producers, including small producers (producing mainly for own consumption). The Census will be carried out with the help of enumerators. The total Census budget will be approximately 4 million EUR.

36. The Government Commission for Agricultural Census chaired by the Minister of Agriculture approved the questionnaire for the Pilot Census which was carried out from June 4 to 18, 1999. On the basis of the Pilot Census results, the Census questionnaire was compiled and it is now being coordinated with the Ministries.

37. The preparation for the Agricultural Census will involve the following intermediate tasks:

- to elucidate information needs of users and to elaborate and co-ordinate with users forms of output tables of the Census results;
- to elaborate the information system of the Census;
- to draft legal acts necessary to conduct the Agricultural Census;
- to build up the Agricultural Census organization on the basis of the Agricultural Census Act.

Main conclusions

1. To harmonise agricultural statistics with the *Acquis Communautaire*, no changes need to be made to Estonian statistical legislation, such as the Official Statistics Act and the Agricultural Census Act, or to the list of official surveys approved by the Government Decree to ensure compliance with the *Acquis Communautaire*.

2. The agricultural statistics system will be harmonized with the *Acquis Communautaire* by the moment of Estonia's accession to the EU without any derogation, and without a transition period.

3. To achieve timely and full harmonisation of agricultural statistics with the *Acquis Communautaire* additional resources will be required.

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