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Europe - Agric.



CENTRE FOR
EUROPEAN AGRICULTURAL STUDIES

EEC AGRICULTURAL STATISTICS:
PROBLEMS IN THEIR
INTERPRETATION AND USE

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CENTRE FOR EUROPEAN AGRICULTURAL STUDIES

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To developing countries

Recognition of the special problems of countries whose agricultural economies are linked with Europe

To other countries

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To other European universities and research organisations

Opportunities to develop the exchange of personnel and information, and to collaborate in the development of linked research projects and teaching programmes

To all participants in its work

The advantages of a strong university establishment, providing an impartial forum for the exchange of information and ideas

Ian G. Reid

Director

CENTRE FOR EUROPEAN AGRICULTURAL STUDIES

EEC AGRICULTURAL STATISTICS:
PROBLEMS IN THEIR INTERPRETATION AND USE

Proceedings of a Seminar held at Wye College
14th-16th June, 1977

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Acknowledgement is made to Eric Snowdon of SOEC and David Andrews of CEAS for their work in the preparation of these papers for publication.

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FOREWORD

The Centre for European Agricultural Studies arranged this Seminar in conjunction with the Agricultural Division of the Statistical Office of the European Communities (SOEC).

The objective was to give the users of the data published by the SOEC the opportunity to meet Professor Louwes (Head of Agricultural Directorate, SOEC) and members of his staff, and to discuss with them at first hand the strengths and weaknesses of this data and its proper interpretation for particular uses.

The Seminar also afforded the opportunity to explore the possibility of improvements in this data and its presentation.

It is hoped that the publication of these proceedings will engender further discussion of this activity which is of fundamental importance to all those concerned with the study and the administration of EEC agriculture.

IAN G. REID
Director, CEAS

December 1977

THE STATISTICAL OFFICE OF THE EUROPEAN COMMUNITIES:
ITS TERMS OF REFERENCE AND RELATIONSHIP TO THE EEC COMMISSION

Professor Stephanus Louwes

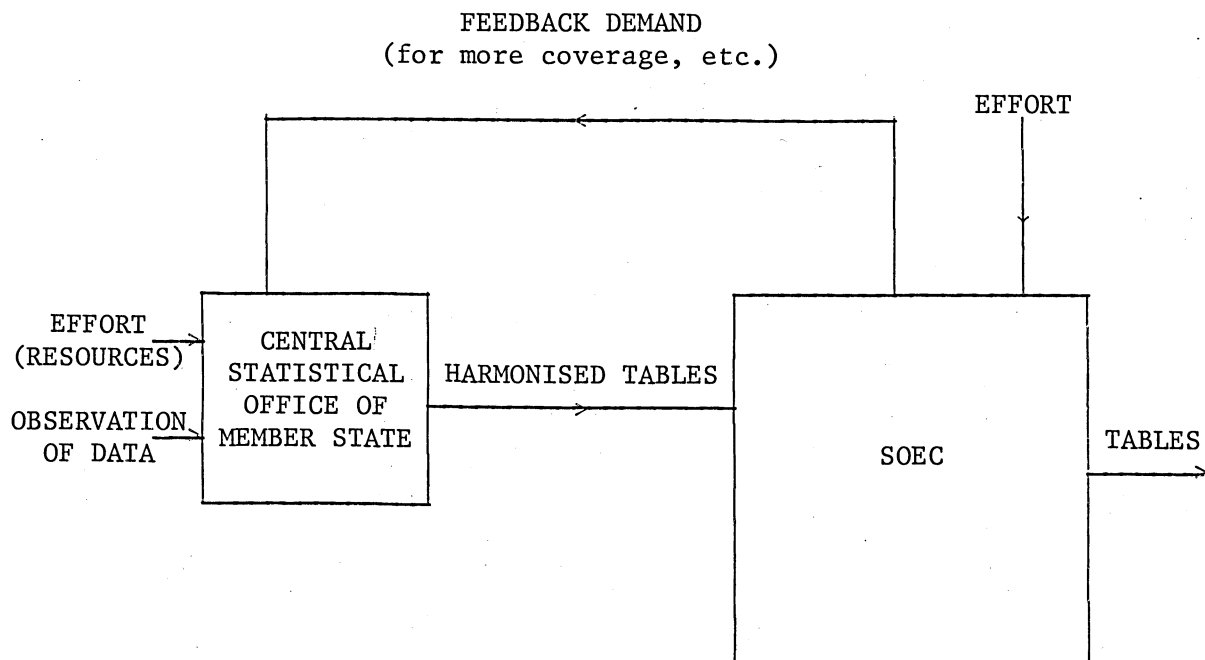
FUNCTIONS

The function of the Statistical Office of the European Communities (SOEC) is to harmonise the statistical systems of each member state in order to produce sets of comparable tables of statistics for its users - government, politicians, academics and businessmen. The three inputs to each statistical system are:

1. Observations by member states' statistical offices on farm and market activities.
2. Efforts by member states' data collectors and statisticians (including analysis and interpretation).
3. Feedback demand for different methods or wider coverage of 1.

The one output from each system is: Statistical Tables.

RELATIONSHIP BETWEEN THE STATISTICAL SYSTEMS OF MEMBER STATES AND THE SOEC



The main user of the statistical output of the SOEC's Agricultural Directorate is the Directorate General for Agriculture (DG VI) in Brussels. The SOEC's Agricultural Directorate consists of 19 graduate level staff, 16 executives and 14 secretaries. This high proportion of graduate to secretarial staff in comparison with most statistical offices is due to the fact that the SOEC carries out much less direct data collection and processing than do most official statistical offices in member states.

Representatives of the central statistical offices and Ministries of Agriculture in each state meet once or twice a year in the Agricultural Statistics Committee (ASC) to discuss problems of harmonising data and other conceptual problems, and to debate SOEC's proposed work programme.

Ideas and proposals are then discussed in separate working groups of the ASC by statisticians from member states and representatives of the services of the Commission. If a legal instrument (Regulation or Directive) is deemed necessary by SOEC, DG VI is closely consulted. Regulations are needed for the launching of major surveys while Directives are usually concerned with product definitions, lists of products to be surveyed, sample plans, maximum allowable sampling errors and the methodology of result presentation (frequently the content and lay-out of tables and computer tapes are specified). The consent of DG VI to the draft instrument is required before the proposals are submitted by the Commission to the Council of Ministers who will refer them, for further technical discussion, to a working group of its own. If the proposals require finances to be approved (e.g. for new surveys), a budgetary working group will consider these implications. The formal agreement of the Committee of Permanent Representatives (COREPER) and the Special Committee on Agriculture is also required before the draft instrument is sent to the Council for final approval. Because the Regulation or Directive has to be translated into six languages, statisticians are involved in ensuring meaningful and consistent translation of technical terms. At every stage procedural safeguards are present to ensure that proposals are not passed hastily. On some matters the Council of Ministers will consult with the Social and Economic Committee and with the European Parliament before approving the instrument which then enters the Official Journal and becomes law.

Although the Council has political power, financial resources and machinery to produce and enforce its legal instruments, nevertheless, in matters of statistics there is no desire to use the ultimate sanction, and throughout all the various procedures leading to the approval of a Regulation or Directive a spirit of gentlemanly cooperation usually prevails. Member states' statisticians are very keen to improve the effectiveness of their national offices, and the existence of Community legislation assists them when seeking additional resources from their national treasuries.

PROBLEMS

Initially, the SOEC's objective was limited to obtaining as much data covering as many fields as possible in order to permit comparisons to be made, no matter how crude; now it is very much concerned with maximising the quality and the degree of harmonisation of the data collected. Definition is an important aspect of quality: a common definition for a product to which a single average price in each country must refer is almost impossible to specify when countries have different grading systems or when tastes for high quality (defined in terms of freshness or lean/fat ratios) vary so greatly. The quality aspect, therefore, must be taken into account when comparing data; observations must be made at the same point in the distribution chain (or at some agreed point where systems differ); and a sufficiently large sample of markets must be observed. As a further example of the problems of harmonisation, comparisons of live-stock production based on carcass weights must take account of variations in killing-out percentages.

The acquisition of more reliable statistics, however, once definitions have been decided, costs money, and the extra costs must be justified. A rational user will use past data to forecast the situation in which his decisions will be made. This forecast will have a probability distribution (determined partly by uncertainties surrounding the phenomena being investigated, partly by observational error, and partly by sampling error), from which the decision-maker will construct a loss function giving him a set of costs for each strategy within a range of all possible situations. A decrease in the expected loss brought about by a reduction in the probability distribution around the forecasted situation through reductions

in sampling and observational errors should not be less than the marginal cost of the extra data collection and improved interviewing techniques necessary to reduce these errors. This approach gives, in theory, an optimal solution which in practice, however, can in most cases only be achieved approximately, and then only if the SOEC has a good idea of who its users are, what precision they demand from the statistics, and what they will use the statistics for. The problem is that the SOEC does not know how precise it needs to be and therefore how much to spend on acquiring precision. It would help the SOEC to know to what extent users construct loss functions in their decision-making, and what degree of precision they feel they require.

QUESTIONS

Several questioners emphasised that a table of statistics does not just reveal comparisons between countries but also shows comparisons within countries over time; consequently the second of these two comparisons may well be invalidated by attempts to improve the first. In situations where the user wishes to look at directions and rates of change, the accuracy of absolute levels may (up to a point) be less important than maintaining constant the definitions already in use. Estimates of trends, cycles, seasonalities and elasticities can all be acquired with samples which might give very biased estimates of absolute levels. So far as the econometrician is concerned, the observational error inherent in a time series (due, for example, to farmers giving inaccurate answers in a postal survey) is multiplied by a change of definition. Professor Louwes replied that the effects of definitional changes can often be indicated by "linking" the old and the new data. This rightly puts the responsibility for explaining such changes on the statistician rather than the user.

Another questioner felt that the SOEC should be asking whether the statistics collected do actually measure the concepts and variables which are going to play a part in the decisions made by users, and should be striving less hard for harmonisation per se. The answer given was that it is up to the user to inform the SOEC through the feedback mechanism bearing in mind that statisticians are in a good position to know the kinds of questions likely to elicit accurate answers from farmers and to judge whether it is possible to measure the variables required by the

decision-maker. (For example, the coverage of farm incomes and part-time farming is inadequate at present because of member states' reluctance to include questions of finance in their surveys).

In reply to a further question, Professor Louwes stated that the SOEC has very little day-to-day contact with users, apart from politicians, students and a few companies which usually ask highly specific questions. Commercial users are not represented on the working groups of the SOEC but, at least in the UK, can make their views known at the annual users' conference of the CSO. Ideas generated here are fed back to the SOEC.

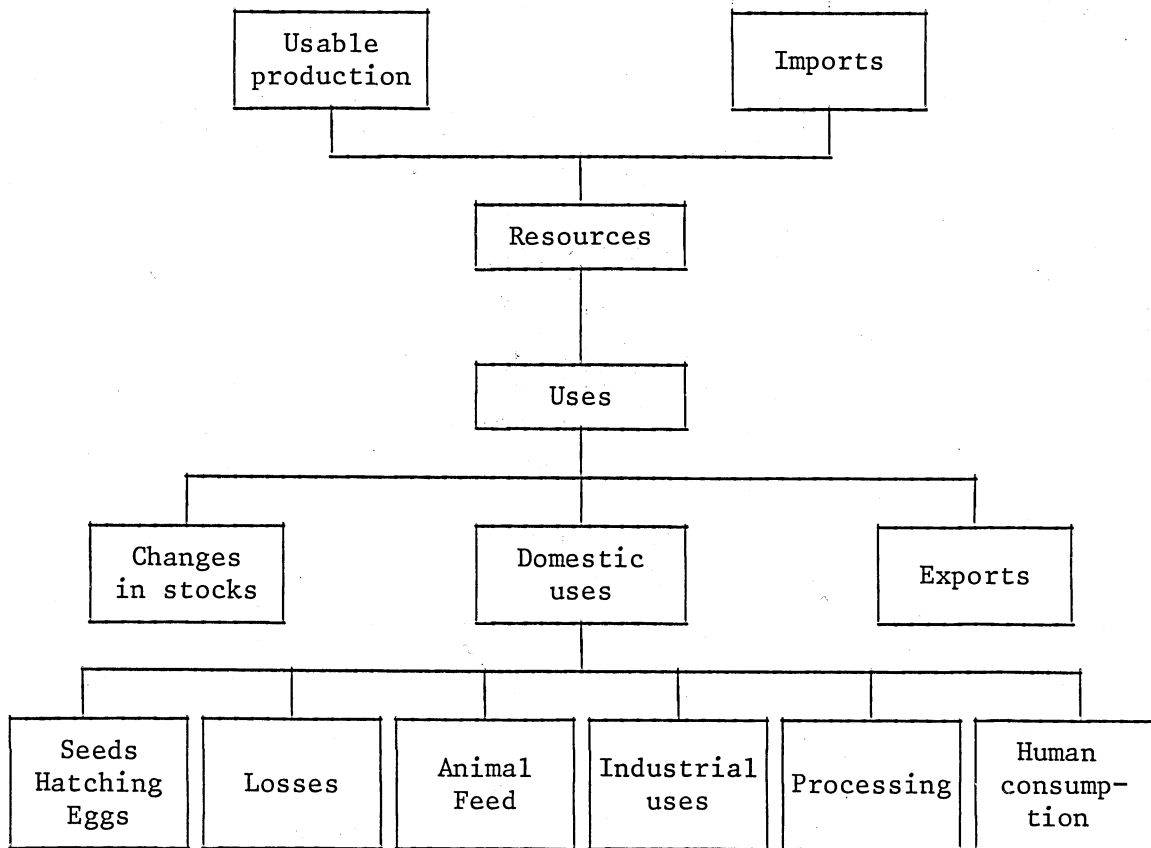
The Director of the Economics Division of the NFU (Mr. Strauss) congratulated the SOEC for its success to date in achieving comparability in the statistics, and for timeliness in their publication. The only gaps he could see were in the farm income and accounts data which made it very difficult to see trends by groups of products. Seasonal reporting and 7-month ahead forecasts of net farm income are made by the UK Ministry of Agriculture, but he had seen no comparable SOEC forecasts, and no calculation beyond net product of the various agricultural product groups. Professor Louwes replied that DG VI had responsibility for farm incomes data through the Farm Accounts Data Network. So far as the SOEC were concerned, they were now compiling estimates of the aggregated net product three months before the end of the calendar year in anticipation of member states' submission of their agricultural accounts in July of the following year. In addition, "pipe-line" forecasts are made for those agricultural reproduction processes already in motion, "Short term projections" of past trends, and "Forecasts" for one or two years ahead. The extent to which SOEC should be involved in longer term forecasting is under debate at present. One difficulty is that politicians and commercial users differ in their requirements: commercial users generally need more individual product data than politicians. Furthermore, politicians might place excessive reliance on forecasts and try to evade responsibility if the forecasts were proved inaccurate. Again, the SOEC cannot ensure that member states are providing truthful rather than self-serving data. In conclusion, the Chairman cast an envious eye on the United States Department of Agriculture's Statistical Service with its huge entourage of model builders and statisticians and seemingly few problems of feedback and communication with users.

BALANCE SHEETS: CROP PRODUCTION, ANIMAL PRODUCTION, FEEDNiels Ahrendt

The compilation of large-scale, harmonised supply balance sheets (SBS) was started by the OEEC (later OECD) in the period of food scarcity immediately after the Second World War. Since the OEEC was mostly concerned at that time with food supplies and actual per head intake of food in countries such as Germany, France and the UK, its work concentrated on the preparation of food balance sheets and nutrition calculations. The SOEC began work in 1958 using the same data as were supplied to OECD, but since the more important aims of the common agricultural policy are "fair and stable" incomes for farmers, "reasonable" consumer prices and stable supplies for member countries, the SOEC has concerned itself more with agricultural output, trade and the processing of agricultural products than with food consumption and nutrition values. About 180 balance sheets are compiled covering a very wide range of agricultural products including non-food products, and their preparation has involved industrial as well as agricultural surveys, as can be appreciated by a glance at the list of some of the products covered: e.g. not just raw milk, but its derivatives - cheese, skimmed milk powder, butter and its substitute, margarine. In the past, six to eight annual publications were produced, each showing basic statistics (area, livestock numbers etc.) as well as the supply and demand situation for a particular group of products within the EEC. More recently, however, a range of monthly publications has been issued each covering a particular sub-sector of agriculture (crops, meat, milk, eggs etc.); each volume contains monthly and yearly production data as well as the supply balance sheets.

A schematic presentation of the construction of supply balance sheets is given on page 7. It will be seen that on the Supply side, Usable production plus Imports make up Total Resources, which by definition equal Total Uses (Demand). Total Resources less Stock Changes and Exports equal Total Domestic Uses. It should be noted that the convention of subtracting Stock Changes from Total Uses is employed rather than OECD's method of adding opening stocks to the supply side and adding closing stocks to demand. The SOEC provides estimates of area, yield, "official" production, self-sufficiency ratios in particular products (obtained by dividing

SCHEMATIC PRESENTATION OF THE CONSTRUCTION OF SUPPLY BALANCE SHEETS



This general scheme is capable of modification depending on the balance sheet under consideration.

Resources = Usable production + imports

Uses = Exports + Changes in stocks + Domestic uses.

Usable Production by Total Domestic Uses), and consumption per head per year. No calculation is made of nutritional intake per head per day, or calculations in calories, proteins and fats, because the SOEC considers that the statistics for human consumption are not sufficiently accurate since, although they are, in principle, obtainable at the wholesale stage, they have often to be derived by subtraction of the other five uses from Total Resources.

The aim of the SOEC is to produce a SBS for the whole Community as a trading area, but there have sometimes been difficulties in obtaining individual member countries' trade figures showing trade with other members

and with third countries. The least accurate of the statistics are stocks held on farms and the figures of different domestic uses. The advantage of collecting both supply and usage statistics is that this provides a check in the form of the definitional identity of the two. Harmonisation problems still exist, with statistics of animal products based on calendar years and those for crops on harvest years. Differences between countries in the treatment of the production figures by the SOEC is explained in the preamble to the statistical tables.

Some users have asked the SOEC to calculate figures for EEC self-sufficiency for groups of different products by summing together quantities expressed in some standard characteristic such as nutritional value, feed units etc.; routine calculations of this nature, however, are dangerous especially for farm products, a large proportion of which are further processed into different forms and enter different markets. There are also demands to produce supply balances for particular qualities of wheat, barley and beef and the SOEC is now producing market balance sheets for a few commodities where figures on total production are difficult to get.

The problem of compiling information for all nine countries holds back publication of data for at least six months after the end of each calendar year, but it is hoped that this will be speeded up in future. It is also hoped that updated tables in computerised form will become available on demand. In recognition of the fact that many countries have had their own time series destroyed by the SOEC's demand for harmonisation, the SOEC is now engaged in producing balance sheets for the past twenty years, using current production definitions, in order to obtain longer time series than the last three years which is the period over which most of the products have been specifically defined. It has proved extremely difficult to fit past years' data into the context of the SBS, and the SOEC has had to estimate production and human consumption for some products. Long time-series of per capita consumption figures are, however, now available. The SOEC cannot be accused of needless harmonisation, since most of the current definitions are those adopted by DG VI in Brussels for defining agricultural products for price-fixing purposes.

QUESTIONS

In response to a request from Mr. Ashby for the reasons behind the total disparity between the MAFF and SOEC production figures, Mr. Ahrendt said that since member states' agricultural departments are quite free to continue their national time series according to their own preferred definitions, disparities would certainly occur; however, this development may be by no means undesirable, since each table may have its own uses. The imposition of a single nomenclature at both Community and national levels is indeed being planned for the foreign trade records, but not for national production data.

In reply to another question, it was stated that the SOEC is making every effort to produce balance sheets as quickly as possible but speed could sometimes be at the expense of adequate explanations on how the national figures are adjusted (for comparability with other member states' figures) to make aggregation possible. Professor Louwes (in reply to Mr. Ashby, who requested more foot-notes in the EEC tables) stressed the difficulty of annotating every statistic in the production figures, although in principle more explanation could be given. The point was made, and accepted by Mr. Ahrendt, that since national governments collect the raw data and process it according to the SOEC's definitional specifications, it is they who should publish the reasons for differences. The SOEC is not in a position to make the necessary conversion back to national figures. He disagreed, however, that it was the SOEC's responsibility to put pressure on member states to publish the methods by which they calculated the harmonised data.

FARM STRUCTURE STATISTICSDavid Heath

Mr. Heath referred to his article: "The 1975 EEC Farm Structure Survey" (Journal of Agricultural Economics, Vol. XXVII, no. 3 - 1976). The difficulties of achieving harmonised Community figures can be illustrated by the various legal processes which lead up to a Community survey. Such legal procedures are not used for all statistics but have certain advantages. The implicit (small) measure of coercion helps achieve harmony; a Community financial contribution is facilitated; a very clear record of commitments entered into is provided; member states' statistical services can use the Community requirement as a claim on resources. On the other hand, legal procedures are cumbersome, time consuming and inflexible. Among the procedural elements involved are: discussions with member states in the SOEC's Agricultural Statistics Committee and its working groups, co-ordination of ideas with DG VI and approval by the Commission of draft legislation; formal submissions to the Council and to the European Parliament, technical and financial discussions in the appropriate working groups of the Council; consideration of unresolved points in the Special Agricultural Committee and the Committee of Permanent Representatives; consideration by the Parliament of a Parliamentary Committee's report on the draft legislation and reply to the report by a Commissioner; delegated legislative activities (flowing from Council legislation) in the form of decisions by the Commission following formal opinions of the Standing Committee on Agricultural Statistics.

There are wide differences in methods used to collect data on farm structure. The Benelux countries and the three new members of the EEC have annual surveys which provide crop, livestock and structure information. However, France, Germany and Italy have traditionally obtained their annual crop and livestock statistics by independent surveys yielding no structural information. In 1975 Germany introduced a system whereby three separate surveys are collated to give a biennial structural survey. In France, 1975 saw the start of a continuing sample of holdings. In Italy, structural statistics have to be obtained by separate surveys at irregular intervals. Good Community structural statistics imply considerable efforts in harmonising member states' practices.

Although for crop and livestock production statistics it is possible to specify error limits, for the farm structure surveys this is not possible because of the large number of variates involved. Problems of harmonisation begin with the definition of a farm holding and whereas Italy, France and Germany prefer low minimum farm sizes in their surveys since they are concerned with the social and political problems of agriculture, and the role of part-time farming in regional economies, the UK and the Netherlands, on the other hand, are interested in those farms contributing significantly towards total production. On the whole, the statistics collected in each country reflect the agricultural policies followed in that country.

"Agricultural labour force" has been a difficult concept to harmonise. In the 1975 Farm Structure Survey there is double counting of those workers employed part-time on separate holdings since the survey is explicitly measuring labour input, not number of workers. The concept of family worker causes problems also. In Germany and the Netherlands the emphasis is on the farm family - all those living in the farm household including even non-relatives. If one considers that any relative working on the farm, even though he lives elsewhere, is likely to have a relationship to farm operations that hired workers do not have, one is led to a different definition.

In 1975 a large survey on farm structure was carried out using an attempt at harmonised definitions. In 1977 a small survey is being carried out on a part of the 1975 questionnaire using material normally available in member states' own surveys. In 1979 a large survey is planned to coincide with FAO's World Agricultural Census. During the 1980's it is hoped to introduce a system of smaller scale biennial EEC surveys. Work is currently in hand to see if elements of an approach using a continuing sample (i.e. a panel) can be included. A further large survey might be appropriate in 1985. Efforts will need to be made to mount the structural surveys in the context of regional policy and this might involve collecting statistics which have up till now been considered outside the scope of direct agricultural surveys, such as data on book-keeping and off-farm income which touch on sensitive issues. Problems of confidentiality can apply more and more - even to data regularly collected. The German

statistical authorities are especially reluctant to reveal any disaggregated figures which might enable large units to be identified.

A working group (SOEC, DG VI, member states) is looking at the possibilities for instituting a common farm classification system. This would be used for the 1975 survey so that meaningful (as regards structural problems) cross-tabulations can be made. Non-government users of the statistics are not able, at present, to demand the cross-tabulations they want, but the SOEC is considering how best the statistics acquired at great cost can be disseminated.

DISCUSSION AND QUESTIONS

Professor Louwes asked for comments on what users would like the structural statistics to show, and the methods to be employed in collecting the data. The first point Mr. Heath dealt with was that of specific definitions. In the collection of cow numbers, for example, animals are required to be split between "dairy cows" and "other cows" (whose milk is not intended primarily for human consumption); the distinction is not, however, completely clear in practice. Another distinction that some countries find difficult to make is between rough grazing and permanent grazing. Some suggestions were made as to the criteria which might be used for this in the 1979 survey. These included stocking rate and fertilizer usage. In order to maintain a degree of harmony, compromises are sometimes reached which oblige the SOEC to qualify and make more "flexible" its definitions, with such phrases as "principally" or "intended for".

Conscious of the need to show developments over time, the SOEC hopes to reprocess 1966 and 1975 structural data according to the standard tables used for reporting data in 1970. Mr. Heath hoped that this might go some way to meet the needs of academics, expressed by Professor Britton during the discussion.

The representative of Unilever (A. Ashby) stressed the importance of time series to commercial firms which often wish to know the number, size and wealth of potential customers 5 or 10 years ahead. But their demands are often fairly specific and they might need to know more about the sample

design and in particular the raising factor used. In reply it was stated that the raising factors would be available on demand from the SOEC.

In reply to another question it was admitted that, as yet, there is no agreed classification of farms, so no data based on farm classes have yet been published. When agreement is eventually reached, there would, for example, be a category of pig holdings within a general category of pigs and poultry, which should give all the characteristics of pig holdings demanded by users.

Later in the discussion an NFU spokesman (M. Strauss) said that until we knew more about the degree of specialisation by region and farm type, we would not be in a position to predict the effects of changes in price ratios.

On the question of farm capital and the absence of any data on farm indebtedness, Mr. Heath said that because this is a delicate topic in some countries, a measure of indebtedness had not been proposed for inclusion in the 1977 survey. The idea of including questions as to the value of farm inputs and outputs in the surveys has generally been resisted by member states' statisticians despite their successful introduction by the USDA. It is argued that to include such questions might jeopardise the response to those other parts of the questionnaire not of a financial character. The accuracy of answers to financial questions would in most cases be poorer than answers to physical questions because finance is a flow over time rather than a point in time stock concept. It was suggested (by I.G. Reid) that the banking sector might provide financial data more readily than farmers, although on the basis of total lending to agriculture rather than to individual farmers. Since around 60% of farm working capital is provided by merchants, bank loans to agri-business in general would have to be measured. Although the amount of short, medium and long term credit extended by financial institutions in each region of the UK is published in the Monthly Digest of Statistics, this does not reveal the distribution of indebtedness by farm size and type (which is relevant to policy changes). A suggestion was made that since questions on ownership and tenancy of farms are included in the structure survey it would not be too difficult to pose qualitative questions on the ownership of capital. It was recognised by all present that measures of capital expenditure only

give a partial view of resources - although questions regarding the age of farm machinery might prove helpful. A practical problem in measuring sources of capital was raised by a spokesman for the MMB (R. Williams) who said that in a continuing sample of producers maintained over a period of four to five years, it was found that substantial inter-farm transfers of capital must have taken place in order to finance the capital expenditure of these farmers. Lastly, it was announced that a study of European agriculture's sources of credit has recently been published by DG VI in the context of an investigation into the existence of hidden subventions (i.e. cheap credit) in the various regions. This does not, as was pointed out by one or two participants, meet the need for a linking of indebtedness to farm type.

An interesting result of the application of the theory that it is better to have some classification of farms rather than no classification, arises in the case of the corporate identity of farmers. Even within Great Britain there are differences between the definition of a company and a cooperative, yet in principle they must be isolated and summed together to avoid including them, for example, under some classification in which farmers are asked to give, say, their off-farm incomes, or their wife's occupation. The translation of the definition of ordinary individual farmers is "natural persons" so presumably corporate farmers are "un-natural persons"!

AGRICULTURAL PRICES

Eric Snowdon

Unlike the collection of structural data, there is no legislation compelling member states to furnish the SOEC with agricultural prices data; it is DG VI and not the Statistical Office which is responsible for monitoring and implementing the CAP. There are, however, three reasons why member states are encouraged to supply price quotations:

- (i) they represent an important area of basic statistical data which the SOEC has a duty to publish for the benefit of governments of the member states and the general public in the world at large;
- (ii) they are one of the essential ingredients in the formulation of Community agricultural policy through the annual price-fixing exercise;
- (iii) they are necessary because they form the essential link between, on the one hand, the available data on quantities of production, output and input, and, on the other, the resulting value statistics used, for example, in the compilation of the economic accounts for agriculture.

CRITERIA AFFECTING COLLECTION

To harmonise the data submitted, the SOEC insists on the greatest possible degree of uniformity concerning the definitions of the products and the point in the distribution chain at which prices are recorded. The number of price observations and the spatial distribution of the recording points must also be sufficiently great to give reliable averages. As far as possible, ex-farm prices (for sales) and delivered farm prices (for purchases) are collected, although some prices are measured at other points in the distribution chain.

EXCHANGE RATES

A major problem faced by SOEC once it has collected harmonised prices is to convert them from national currencies to a common unit of account.

The Commission is currently introducing a new European unit of account (EUA) which is constructed from a fixed basket of the nine national currencies, and agricultural prices will in future be expressed in this common unit. The EUA is only one of a number of such units, however, and it would also be possible to utilise exchange rates which measure the purchasing power of national currencies.

AGRICULTURAL PRICE INDICES

With the assistance of member states, the SOEC compiles base weighted price indices for agricultural products and groups of products to permit comparisons of trends both within and between countries, as well as to provide indices for the whole Community. For this work, the harmonisation of product definition and price measurement already mentioned must be supplemented by harmonisation of the concepts and methods to be employed in constructing the indices. To date agreement has been reached on the construction of annual indices for sales of agricultural products, and, with the exception of fruit and vegetables, on the corresponding monthly indices. For price indices of purchases by farmers of the means of production, work is still proceeding and the first calculations should be available shortly.

By 1979 it is hoped to have rebased the indices from 1970 to 1975 (both as reference year and for weighting purposes), and also to produce indices both inclusive and exclusive of VAT. (At present VAT is excluded).

MECHANISATION AND PUBLICATIONS

Index calculations are currently performed on a small computer but this work as well as the storage of absolute prices is being transferred to a much larger machine. Eventually it is hoped that SOEC agricultural prices and price indices may be printed directly by photo-composition from magnetic tapes; in this way the availability of our publications (some 18 volumes were issued in 1976 alone) should be considerably improved. A further advantage of full mechanisation will be SOEC's ability to meet requests for specific price data of limited coverage by computer print-outs, microfiches or microfilms.

CONCLUSION

Despite all efforts to achieve comparability it remains true that agricultural price statistics, like many other price series, are better indicators of price variations than of absolute price levels. Price indices and other forms of comparison over time, and percentage comparisons made spatially are, therefore, in most instances, more reliable and meaningful and hence more useful to the statistician or economist than simple quotations of average prices which should be regarded at best as no more than approximate reference points. To obtain more accurate measurements of absolute prices, it would be necessary to adopt very much more rigorous methods of observation, and above all to increase significantly the number and geographical distribution of the observation points at which prices are recorded; cost-benefit appraisals and the availability of resources frequently weigh heavily against the introduction of such improvements.

MAFF AND OTHER UK STATUTORY BODIES AS SUPPLIERS/USERS OF
AGRICULTURAL STATISTICAL INFORMATION

L.J. Angel

MAFF is not only a supplier of data to SOEC but also a collector of data from other UK departments, with harmonisation problems of its own. Requests from SOEC for more or modified data are considered by MAFF with regard to the aim in view and how best it can be achieved. Because MAFF supplies many other users it is finding that often it has to run parallel series which can only be merged at the expense of one or other user. It constantly tries to adapt existing series to meet SOEC's new requirements and, because of the limited availability of resources, to keep down the workload of Government and of those supplying the Ministry. However, in line with the UK's decision to take on the responsibilities of EEC membership, resources of specialist bodies such as the MMB and MLC have been expanded to meet some of the demands for more price data and forecasts.

Mr. Angel assured the meeting that the UK Agricultural statistics are highly reliable both because of the high degree of farmer cooperation in postal surveys and also because of the ability to check census data against other information, for example, production figures against data for disposals. A continuation of the high response rate by farmers would be at risk if financial questions were included in the censuses. Manpower reductions in MAFF make a large-scale interview-type survey impracticable even if EEC funds were available for such a survey. But the possibility of mounting some kind of financial survey was not entirely ruled out for the future.

One area in which MAFF has advanced greatly towards harmonisation is in the provision of the same set of statistics on supply balances to both SOEC and OECD. Full methodological descriptions explaining why there are differences between various published statistics would greatly increase the value to users of SOEC's figures. At a time when resources are scarce, MAFF is constantly reviewing the relevance of all the series collected. In view of the welter of statistics sent to FAO and OECD, harmonisation becomes a means towards avoiding duplication. MAFF welcomes the fact that the SOEC and working groups have increased methodological discussions with

member states' statistical offices and agricultural departments; this has increased the chances that the best practices will be widely adopted. The cost of additional series in manpower terms as well as the financial aspect is constantly reviewed. There are areas in which harmonisation per se should not be an immediate goal. The intricate calculations and depth of knowledge needed to calculate self-sufficiency ratios and nutritional levels make it necessary to leave these kinds of statistics for national purposes in the hands of member states. One area in which MAFF is keen to move towards full harmonisation is that of farm classification.

H.F. Marks

MLC AS A SUPPLIER OF STATISTICS TO SOEC

Mr. Marks outlined the governmental functions of MLC and its function as a supplier and user of SOEC's statistical information. MLC supplies fatstock and wholesale meat prices to the Commission and to SOEC via MAFF. Insofar as the prices required by the Commission are concerned the reference prices for fat cattle and calves and the reference price for pigs are the two important series. For cattle, price data are collected from auction markets in GB and meat plants in N. Ireland (Irish deadweight prices are converted to a liveweight basis). Pig prices are collected and reference prices calculated, on a deadweight basis. The requirement that the reference price should be on a deadweight basis necessitated the creation of a new statistical series. A sample of abattoirs provides the price information, most of which requires further processing by MLC. The provision of very accurate averages of pig weight, probe measurement and deadweight price is only possible because MLC provide a pig classification service. The system of collection is, however, complex and results in a great deal of work. It is to be hoped that if there is a requirement for cattle and sheep reference prices on a deadweight basis, that it will be possible to evolve a simpler system of calculation.

MLC AS A USER OF STATISTICS

SOEC's published information is extremely useful to MLC. Meat statistics in the "9" have been harmonised as far as is possible, and the census figures are now equally up-to-date for all the member states.

Price statistics for Belgium and Italy, with a few exceptions, are only to be found in the SOEC publications. Slaughtering forecasts are often available before they are published by national governments and, despite definitional differences, have proved very useful in speeding MLC's own forecasts. The statistics are used for research and in the case of Italy, for market information purposes. The SOEC information is less useful for shorter term marketing decisions, although the Rapid Information Service is a major exception to this and MLC would like to see more information presented in this way. The trade is finding SOEC's statistics, as incorporated in MLC's special publications, more and more interesting. The industry, however, have a more immediate requirement and MLC now have "ears and eyes" to obtain the latest information on happenings in the main European centres; UK traders and farmers are now only a phone or telex message away from the information and are as well briefed as their European competitors in such matters as actual and forecast sluiceway prices, import levies or availability of markets. The information is gathered and analysed by MLC's European Information Service but is not easily acquired, and there might be a case for SOEC itself providing some of this day-to-day information.

R.E. Williams

THE MMB AS A USER OF STATISTICS

The MMB places great importance on the use of statistics to solve economic problems such as the measurement of the size of surpluses in the milk products market. In measuring and formulating solutions to problems, a careful analysis of available statistics is as important as collecting a large volume of high quality data. Since the five MMB's are responsible for selling all the milk produced in the UK, they need to forecast short-term milk supplies to determine what price to pay producers, and long-term milk supplies to ensure outlets for the product. An extensive intelligence system and close cooperation with dairy companies ensures that all the milk is marketed optimally from both consumers' and producers' viewpoints. Market research is commissioned to collect data not normally available to the Board through its administrative operations (such as consumption patterns), in order to plan sales promotion campaigns. These surveys also help to interpret current market situations. The Board is enthusiastic

about the SOEC's activities in providing a better view of the European milk situation and would like to see a much quicker turn round and extension of the weekly data.

THE BOARD AS A SUPPLIER OF STATISTICS

The MMB supplies statistics to the SOEC via MAFF and also publishes a large amount of data about its own activities. Most of the data emerge from the Board's administrative activities in buying and selling all milk sold off farms. These administrative activities determine the form in which data are available to the Board. The Board supplies the following information:

PRODUCTION

- 1) The quantities of milk sold monthly and weekly by all producers.
- 2) The number of producers each month selling milk from their farms.
- 3) The numbers of new entrants and leavers can be estimated from a sample annually.
- 4) Monthly numbers of inseminations of cows by breed of sire through the Board's AI service, which covers about 70 per cent of all dairy cows inseminated in England and Wales.

CONSUMPTION

- 5) The size of the liquid milk market (milk for drinking) each month, by the deduction of milk sold to processor-buyers from milk purchased from farms.
- 6) The total utilisation of milk for butter, cheese, skimmed milk, etc. monthly and weekly. Estimates only are made of tonnes of butter and cheese by applying conversion factors to data on milk utilised for these products by creameries. Weekly figures for butter and skimmed powder are sent to the SOEC.
- 7) Data on stocks of milk products in private and public cold stores are collected by MAFF. From an addition of statistics (6) and (7) and net imports, a figure for Total Domestic Disappearance is reached. Total consumption is difficult to measure because of fluctuations in retailers' and wholesalers' stocks. (Data on household consumption is available to the Board through market research, but is copyright and not published).

QUALITY

- 8) Half-yearly average figures for milk composition are available on the basis of monthly tests carried out by the buyers. (Milk is not sold by the Board on the basis of composition, mainly because of the predominance of the liquid market with milk sold "as from the cow").

PRICES

- 9) Producer prices and by subtraction from Government regulated retail prices, distribution margins.
- 10) The MMB's first-hand selling price.

STRUCTURE, INCOME, CAPITAL

- 11) Structural data on producers and buyers, using panel data.
- 12) Income studies based on milk costings of the Provincial Agricultural Economists Service at the University Departments of Agricultural Economics.
- 13) Dairy farm costings carried out regionally by the Board's LCP advisory service.
- 14) Capital expenditure and financial data from panel of dairy farms.

The data from all five MMB's are collectively published in "UK Dairy Facts and Figures". There has been a definitional problem in that "sales of milk off farms" is not the same as the EEC definition of "milk delivered to dairies" because of the existence of producer-retailers, some of whom do not deal directly in the way implied, and in fact are dairies with their own herds. The borderline is difficult to draw and in practice 40 per cent of producer-retailer sales are assumed to be "deliveries to dairies", and is added to that of wholesale producers and to the milk of farmhouse cheese-makers (which is usually not bought in, but owned milk paid for by the Board). A re-working of the statistics on this definition for the last ten years would only reduce the Board's figures of "sales off farms" by about 1 per cent.

QUESTIONS AND DISCUSSION

On a question concerning the relationship between events in the market place and the Board's ability to maintain its data base - in particular, whether high cheese prices could ever direct milk away from dairies

altogether - Mr. Williams stated that the Board would always maintain a premium on milk delivered to dairies for use in the liquid market as long as the pattern of demand stayed the way it was. On a question addressed to MAFF about whether the 1973 Treaty of Accession superseded the 1958 Agriculture Act and its provisions vis-à-vis the Census, Mr. Angel stated that this will not be the case unless a directive is issued to that effect, and that the difficulties of changing the contents of the Census are too well appreciated in Brussels for that to happen. Some participants considered that farmers ought to be willing to supply financial information to MAFF in view of the support they receive from the Government. The case for asking financial questions was accepted by the MAFF spokesman, but their application would be safer outside the normal annual Census. Professor Louwes considered that the SOEC is not close enough to the trade to provide the day-to-day market information requested by the MLC spokesman. He also asked Mr. Williams if the MMB had considered using its knowledge on the insemination dates of 70 per cent of UK cows to forecast the national herd. Mr. Williams replied that the dairy cow forecast is normally made by combining a trend analysis of in-calf heifers (a series that has been shunned by the SOEC, much to the Board's dissatisfaction) and slaughter rates, but a model using a moving average of AI servicings over an average calving interval is used as a check. The servicings are raised in the model by the proportion of AI to total servicings, which varies cyclically and irregularly over the year. The MMB is concerned about the speed of throughput of SOEC statistics and the lack of weekly information on skimmed milk production. Professor Louwes explained that this is due to the large proportion of milk not sold to dairies in Italy and France, and therefore inadequately observed. After the 1976 drought, France saw the usefulness of such statistics and so pressure has been brought to bear to speed their collection in France. Italian figures might have to be guessed or omitted to reach a weekly record of total production for at least most of the Community.

FARM INCOMESEric SnowdonTHE PURPOSE AND BASIS OF COMPILATION OF AGRICULTURAL ACCOUNTS

The purpose of any system of national accounts is to give the fullest possible systematic and comparable picture of the activity of an economy as a basis for analysis, forecasting and political decision making. This is achieved by classifying all the individual economically relevant transactions and the units involved in them on the basis of standard criteria, and then by representing them in a clear and meaningful form, in a coherent set of self-contained accounts. More particularly, the aim of the agricultural accounts is to give an overall view of economic transactions leading to or resulting from agricultural production thus providing a basis for an examination of the interdependence between the branch "Agriculture" and other areas of economic activity. In addition, and more specifically, the agricultural accounts are an important element in the basic material needed for the annual review of the agricultural situation in the European Community and thus play a part in the considerations which lead to the annual fixing of agricultural commodity prices and to the formulation of Community agricultural policy. Lastly, as they form part of the national accounts, the economic accounts for agriculture also have a rôle, indirectly, in considerations of more general Community economic and fiscal policy.

The economic accounts for agriculture are compiled by member states according to the European Integrated System of Economic Accounts (ESA). This is the framework on which the accounts for the rest of the economy are presented by SOEC, but it has been suitably modified to cover the particular requirements of agriculture and forestry. These relate to the fact that, because there is no legal requirement for farms to present annual accounts in the way that industry has to, there is, consequently, a lack of systematic accounting at farm level. Aggregation by farm is thus impossible, so physical data on the production (or disposal) of different commodities must be combined with the appropriate price data to get an aggregate valuation of the marketed output and purchased inputs of agriculture.

CRITERIA AFFECTING COMPILATION

For meaningful compilation and presentation, the accounts demand (a) good harmonisation between member states of the greater part of their agricultural statistics - both price and quantity; and, (b) adaption of the basic agricultural account to the concepts of the ESA as modified (see above). Only if these two criteria are sufficiently respected is it possible to make valid "between country" comparisons, construct EUR 9 totals and permit the economic accounts for agriculture to be incorporated in the National Accounts.

NET FARMING INCOME

A skeleton outline of the construction of the agricultural accounts is as follows:

- Final production
- Intermediate consumption
- = Gross value added at market prices
- + Subsidies
- Taxes linked to production
- = Gross value added at factor cost
- Depreciation
- = Net value added at factor cost
- Labour costs
- = Net operating surplus
- Rent
- Interest
- = Net farming income

The SOEC is only able to produce Community totals as far as gross value added at factor cost since data for the remaining items are not available from all nine countries.

COLLECTION AND PROCESSING OF ACCOUNTS DATA BY SOEC

Each spring questionnaires are sent to member states asking for estimates for the immediately preceding year and for revisions to earlier years. The data requested have to be supplied by member states both at current

prices and at constant (1970) prices expressed in national currencies and related to calendar years. On receipt (usually in late summer) the data have to be checked for internal consistency, and then converted into a common unit of account in order to allow the creation of totals for the whole Community and to permit comparisons between countries. The data have then to be prepared for the tables which appear in the SOEC annual agricultural accounts publication and in the DG VI annual report on the "Agricultural Situation in the Community". This involves the calculation of moving averages, percentage shares, annual rates of change, indices and, for selected products, unit values. In the SOEC annual publication, for example, data are presented in four main ways:

- (i) at current prices in national currencies;
- (ii) at current prices converted into common units of account at current exchange rates;
- (iii) at constant prices in national currencies; and
- (iv) at constant base year prices converted into common units of account at the exchange rates of the base year.

THE SECTORAL INCOME INDEX CALCULATION

As is apparent from the foregoing, there is, of necessity, a considerable delay between the end of the year to which a particular set of accounts relates and the date on which the SOEC can make available in printed form the consolidated accounts for individual countries and for the whole Community. This lack of timeliness is especially irritating to those working within the Commission on the annual price fixing exercise where really up-to-date figures on income trends in agriculture would be an invaluable element for inclusion in the annual Commission report on the state of Community agriculture and for the debates in the Council of Ministers on agricultural prices.

To attempt to overcome this lack of up-to-date information, the SOEC is trying to derive a satisfactory method for updating the economic accounts for agriculture so that an estimate of net farming income per worker for a current year can be available by the end of that year.

The method is to obtain from member states early estimates of the main aggregates of the agricultural accounts and the agricultural labour force expressed as percentage changes on the preceding year. Unfortunately, as already mentioned, it is not yet possible to obtain meaningful estimates from all nine countries for aggregates which appear in the account below the level of gross value added at factor cost; since, however, this aggregate is not an unimportant component of net income, it is not considered unreasonable to use the year-to-year percentage changes in gross value added at factor cost per worker as an indicator of the corresponding movement in farming net income per worker.

Real changes for each country are next obtained by deflating the nominal changes by the price index implicit in the calculation of national gross domestic product (at market prices), and the year-on-year real change in gross value added at factor cost per worker for the whole Community is then computed as a weighted average of the nine national real changes. (The weights used here are the member states' individual shares of gross value added at factor cost in Community agriculture). The corresponding nominal Community figure is then obtained from the real figure by inflating the latter using the price index for the whole Community implicit in the Community GDP.

DISCUSSION AND QUESTIONS

An explanation was sought for the relationship between the Sectoral Income Index and the Objective Method of fixing prices. It was explained that the SOEC contributes to the latter calculation which seeks to determine that level of prices for CAP-covered products which will, on "modern" farms (as defined by Directive 159 of 1972), and after making due allowance for improving efficiency, provide, over an average three-year period, an earned income per annual labour unit from agricultural work that is comparable to earned income from non-agricultural work. The Sectoral Income Index, in contrast, is an indicator of average farming income per worker across all farms in the Community.

On a query about the comparability of "final production" as defined by SOEC and "total output" as defined by the UK, Mr. Snowdon highlighted the fact that some countries value inter-farm transfers (i.e. non third-

party transfers) and include them as "production", although they subtract them again, along with intermediate consumption, to reach a figure for gross value added at market prices (GVAMP). The SOEC is hoping that these countries will adopt the UK's system of excluding such transfers (which are, in any event, difficult to measure) from both sides of the accounts. A rigorous application of the "national farm" concept would certainly demand this.

On the other hand, the UK convention of assuming the national farm is entirely tenanted would probably have to be changed to align with most other EEC members who take due account of the proportion of owned and tenanted land, and calculate interest on loans and depreciation on buildings (i.e. "landlord" capital) in their accounts.

Mr. Snowdon emphasised that for the purpose of assisting in the formulation of policies to raise farming income to the level of non-agricultural incomes in each region, the SOEC accounts operate on the "production branch" approach; that is, they measure the income from agricultural production only rather than from all economic activity on farms. One participant questioned whether a more truly "sectoral" approach would succeed in its objective of accurately measuring farmers' wealth anyway, because of the existence of non-recorded remittances. A measure of farmers' relative poverty would require a general cross-section income and expenditure survey to identify these transfers.

A number of minor issues were then discussed. The salient features were as follows:

- 1) The UK still constructs its agricultural accounts on a "crop year" basis, but will shortly adopt the harmonised "calendar year" approach.
- 2) VAT is included in all SOEC's accounts, on a "gross" basis, i.e. VAT payable is balanced against VAT charged.
- 3) Only those subsidies which affect product prices are taken into account when calculating gross value added at factor cost from gross value added at market prices.
- 4) The "value added" resulting from the work of agricultural contractors is included in the SOEC's definition of "agriculture".

GENERAL DISCUSSION

In view of the failure of the CAP to narrow regional differentials in farm incomes many participants thought that intensive studies of agricultural statistics on a regional basis should be given high priority. At present, agricultural statistics relating to regions are not correlated with corresponding industrial statistics. Statistics would need to be collected from samples which included agricultural and industrial businesses in areas which, for reason of high unemployment, for example, were of special interest to policy makers; the European Farm Accountancy Data Network¹ could be the vehicle for such studies. A plea was made for more questions relating to, and more analyses of, enterprise diversification by farm size and type in problem areas. Mr. Heath assured the meeting that such analyses are being made from the Farm Structure Surveys and will soon be available on demand. He was still unclear on the ways in which commercial organisations use structural statistics. An ICI spokesman considered that they are useful as a "first screen" in defining possible market areas. This spokesman thought that questions about family links were important in some regions of small-scale farming where joint decisions are often made by close relatives otherwise farming on their own accounts. Professor Louwes referred to the Commission's possession of linear programming matrices constructed for modal mixed farms in seven countries of the Community which would yield structural information.

One participant pointed out the advantage of linking together the results of separate income and structure surveys but saw disadvantages in using rather arbitrary and objective size classifications in a structure survey, and in forcing the interviewer to ask complex questions of a farming nature at the same time as questions on financial expenditure and sources in order to define the farm. In reply it was pointed out that the need for the farm classification system to produce accurate comparisons in the Farm Structure Survey made this problem insurmountable. The questioner, however, was more concerned with surveys at regional level and the need to classify farms on a regional basis according to some common characteristic running through the region. As far as the uses of structure statistics are concerned, recent trends in farm size and specialisation by farm type and

1. From a coverage of some 14,000 farms in 1974, the FADN sample size is being progressively increased; by 1978 the intention is to cover between 25 and 30 thousand farms.

region were considered of great importance to politicians formulating tax policies, and to commercial interests, in so far as they defined areas where economic and technical efficiency were greatest and where processing plants could profitably be located. Professor Louwes said that since no common unit of enterprise comparison (such as the Standard Man Day used in the UK) had been in use in the rest of the EEC, long time-series on structural change were not available. Academic participants said that they would welcome some indication of comparative standards of living set alongside comparative income statistics each expressed in a common unit of currency based on purchasing power parities. The SOEC stated that it has already published the results of surveys of retail prices and consumer purchasing power parities but took note of the new suggestion while pointing out that at the present it was committed to using EUA's as exchange rates.

Some discussion centred on the level of observational error in agricultural data collected from postal surveys, but no alternatives to postal surveys as methods of collecting vast quantities of data were put forward.

In his final summing up Professor Louwes said that the SOEC would try to meet the following demands raised in the seminar:

- 1) Greater speed of collection and publication of statistics even at some loss in accuracy.
- 2) Longer time-series eliminating definitional changes.
- 3) Fuller explanations of definitional differences between SOEC and national statistics.
- 4) The possibility of asking survey questions about levels of income, and other financial matters.
- 5) More regional data, at least on structural questions.
- 6) The improvement of computer access in response to specialised "ad hoc" enquiries for data.

Looking ahead, he saw a need for the SOEC to collect and process sociological and cultural data alongside the economic and physical, and pointed to the MMB's panel surveys as a step in this direction. Finally he thanked all present for their contribution towards a very successful seminar.

APPENDIX:
LONGITUDINAL ANALYSIS OF FARM STRUCTURE

John R. Medland

In addition to their day-to-day work as described earlier in this report, the members of the Statistical Office of the European Communities are also involved in stimulating and financing research projects. The Centre for European Agricultural Studies has recently been involved jointly with SOEC on such a project concerned with the development of methods used in the collection, analysis and presentation of agricultural statistics. More specifically the project has been a study investigating the possibilities of introducing a technique known as longitudinal analysis ('Optic L') into EEC farm structure statistics.

This study was conceived as a modification of the original plan for the 1977 EEC Farm Structure Survey (FSS). The original intention for this survey was that it should follow a significantly different pattern to the three previous EEC surveys by introducing the 'Optic L' technique of following a representative sample of holdings through time. Instead of collecting data on agricultural holdings at a specific point in time, thereby providing only a static or 'frozen' picture of farm structure, the 'Optic L' approach gives a much better indication of how changes are taking place. However, since experience of the longitudinal approach to farm structure analysis was limited, it was decided that its introduction on a fully operational basis was rather ambitious. Consequently the original proposal was modified and it was agreed that the 1977 FSS would consist of two parts:

- (i) a traditional type of survey following the 1977 FSS pattern but on a smaller scale, and
- (ii) a series of experiments conducted by member states in association with SOEC designed to investigate the possibilities and methodological problems of the longitudinal approach.

Part (i) is being organised by SOEC in the normal way. Part (ii) is being carried out by SOEC staff with assistance from the CEAS and is the subject of the remainder of this appendix.

The traditional method of collecting and presenting farm structure statistics provides a number of static pictures at different points in time which can be compared. However such comparisons only show the net changes between aggregate figures for the different years observed. By following changes at the level of the individual farm holding from one time period to the next a far more detailed and instructive picture of farm structural change emerges. For example, while it is interesting to know that the total number of holdings in the range 20-50 hectares in a country has fallen by 5% between one survey and the next, it could be more interesting to know how that 5% fall has occurred. It could have been the result of holdings from that group increasing in size and moving into a larger size group. Alternatively the fall could have resulted from a reduction in the size of some holdings and their consequent move to a smaller size group. Generally, of course, any such fall (or increase) would be the net result of moves to and from the group. Longitudinal methods show the underlying changes which go to produce the net changes shown by traditional methods. The usual way of presenting such data is by means of a two-way table (see Table 1) with the data for the initial year set out in one direction and cross-classified with corresponding data for the later year set out in the other direction. In this way holdings for example that had not changed their size grouping between the two years would remain on the principal diagonal of the table; those having undergone major changes in size would be shown as elements at some distance from the diagonal.

The basic requirement for a longitudinal study is the ability to identify individual holdings at different points in time i.e. different survey dates. In this way the data relating to an individual holding, say in 1975, can be directly linked and compared to the corresponding data to the same holding in 1977. This linking process can be done with the total population of holdings when total census information is available (e.g. as in Sweden¹) or by the selection of a representative sample (see for example work carried out in France² and Germany³). In either case holdings have to be reidentified at the second point in time. Using a full census means that the movement of every holding can be traced. The use of a sample can produce certain problems. When, for example, holdings in the sample become absorbed by amalgamation with holdings outside the sample they 'disappear'. However using a sample may be cheaper and is frequently the only possibility.

Table 1: Holdings by Agricultural Area

		1977												
		EXITS	0	>0-<1	1-<5	5-<10	10-<15	15-<20	20-<30	30-<40	40-<50	50-<100	100+	Total '75
1975	ENTRIES													
	0													
	>0-<1													
	1-<5													
	5-<10													
	10-<15													
	15-<20													
	20-<30													
	30-<40													
	40-<50													
	50-<100													
	100+													
		Total '77												

Other difficulties include working out a set of logical rules to decide whether a holding changes its identity between surveys; if, for example, ownership changes, amalgamation occurs or buildings are radically altered. The specific size groups selected for classifying holdings can also be a key factor; too few groups resulting in the tables showing little change and too many involving excessive work and possible loss of clarity. In addition because of the variety of circumstances and methods in which and by which agricultural statistics are collected in different Community countries, it was necessary to establish what was feasible in each country and what degree of comparability would result. Consequently a series of meetings was held with those bodies responsible for agricultural statistics in member countries.

Meetings were held during 1976/7 with the following member countries: Ireland, Denmark, United Kingdom, Netherlands, France and West Germany. Luxembourg was 'excluded' as it had already been the subject of a pilot 'Optic L' study. Administrative difficulties prevented the inclusion of Belgium and Italy.

Definite interest was expressed in a development of longitudinal analysis by statisticians at each of the meetings. However since it became clear that in both France and the Netherlands a considerable amount of this kind of work had either already taken place or was in progress, it was thought pointless to duplicate such effort. Contracts have now been signed with four member countries, these being Denmark, Ireland, United Kingdom and West Germany. As a result a number of sets of two-way tables of the type shown in Table 1 will be produced, cross-classifying a sample of holdings included in the 1975 farm structure survey with the same holdings in 1977 for a range of variables.

It was agreed that the emphasis was to be on investigating methodological problems rather than producing significant results. The choice of variables differs slightly for each of the four countries involved but in general covers the following areas:

1. Area of the holding:
 - (a) number of holdings by size group
 - (b) total area of holdings by size group

2. Cropping pattern:
 - (a) total cereals
 - (b) permanent pasture and meadow

3. Livestock:
 - (a) holdings by livestock units
 - (b) holdings by numbers of livestock in selected categories
(dairy cows, breeding sows, laying hens)

4. Labour input:

holdings by numbers of workers (some sub-division into male/female, part-time/full-time, etc.)

5. Tenure:

classified into wholly owned, rented or other.

In addition to these general areas, each country has been asked to provide for additional items. For example, Denmark will attempt to use two alternative methods of identification, the first based on the holding number and the second using the personal number of the holder. Ireland will investigate the possible influence of individual enumerators (there is no postal survey in Ireland) on the identification process. West Germany will include an item to highlight the changes in the part-time/full-time farming split and the United Kingdom has agreed to provide a detailed breakdown on labour input. It is hoped that it will be possible for some countries to produce a more complex type of table involving two variables on each axis. (See for example Table 2 which combines tenure with farm size).

In order to record the experiences of those producing tables each country has been asked to provide a description of the procedure used for identifying holdings and to outline the major problems encountered in the production of the tables. Also as it is intended that longitudinal analysis should be incorporated into future EEC structure surveys on a regular basis each country has been asked to make an appraisal of its operational practicality.

Table 2: Holdings by Tenure and Farm Size

		1977												TOTAL 1975	
		0-<5			5-<20			20-<50			50+				
		O	T	M	O	T	M	O	T	M	O	T	M		
1975	0-<5	O													
		T													
		M													
	5-<20	O													
		T													
		M													
	20-<50	O													
		T													
		M													
	50+	O													
		T													
		M													
TOTAL 1977															

(Numbers of Holdings)

O = Owner occupied
 T = Tenanted
 M = Mixed tenure

Once the methodological problems of introducing 'Optic L' on an EEC wide basis have been overcome, tables on a wide range of structural variables could be included as a regular feature of farm structure surveys. In addition to using the tables as a method of presentation in their own right, it is intended that they should also be used as the basis for making projections about future changes in farm structure.

The initial part of this study, i.e. arranging for the national experiments to be carried out, has now been completed. The results of the experiments will become available over the next year or so as the statistics become available from the 1977 survey. The first set of tables, showing structural changes on a sample of some 20,000 United Kingdom holdings between 1975 and 1976, has already been completed and delivered to SOEC.

References:

1. Statistiska Meddelanden. Nr.J. 1975:37. (Structural Changes in Agriculture in 1971-72, 1972-73 and 1973-74. Longitudinal Data). National Central Bureau of Statistics, Stockholm. 1975.
2. Projections du Nombre d'Exploitations Agricoles pour 1975, 1980 et 1985 par Departement, Region et France. Avril 1975. SCEES. Ministère de l'Agriculture, Paris.
3. Die einzelbetreibliche Entwicklung von Fläche, Kuhhaltung und sozial-ökonomischen Betriebstyp in Nordrhein-Westfalen von 1969/70 bis 1973. W. Dirksmeyer. 1977. Institut für Structurforschung. Braunschweig-Völkenrode.

REPORTS

1. 'The Common Agricultural Policy: A Synthesis of Opinion'. Rosemary Fennell. Price £1.25.
2. 'Livestock Marketing Systems in E.E.C. Countries: Belgium/Luxembourg'. Anne McLean Bullen and David H. Pickard. Price £1.50.
3. 'Livestock Marketing Systems in E.E.C. Countries: Italy'. Anne McLean Bullen and David H. Pickard. Price £1.50.
4. 'Livestock Marketing Systems in E.E.C. Countries: Denmark'. Anne McLean Bullen and David H. Pickard. Price £2.00.
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