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THE PRESENT STATE OF AGRICULTURAL STATISTICS IN EUROPE

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FROM its inception, F.A.O. has emphasized the need for detailed statistics compiled with a view to comparability, since it held, and still holds the view that success would attend its activities in the fields of food and agriculture only if such activities were based on sound information.

Hence, the First Session of the F.A.O. Conference, held in 1945, stressed the need for establishing a 'strong central statistical unit' and for resuming and broadening the work of the International Institute of Agriculture, since any statistics collected in future would have to embrace nutrition and food consumption, rural welfare, agricultural production, fisheries, forestry and forest products, and also marketing.

Persistent efforts have been made for four years, and valuable results have been obtained both in the centralization and dissemination of statistical information and in the improvement of statistics, which demonstrates that F.A.O. regards its activity in the statistical field as one of its most important functions.

Agricultural economists, too, clearly feel the need in their work for increasingly comprehensive statistical data. The present state of agricultural statistics in Europe is a problem which holds the same interest for F.A.O. as for the agricultural economists.

Perhaps the best way of describing this problem to users of statistics is to deal with the following two points consecutively:

1. The conditions governing the compilation of agricultural statistics in Europe and the value of the documentary material at present available.
2. The measures to be taken, nationally and internationally, to improve agricultural statistics.

In other words, we have to show how this raw material, which is what statistics represent for agricultural economists, is produced and how it can be improved. But, to begin with, we must agree on the meaning of the expression 'agricultural statistics'. We take it to mean

all the figures which enable the state of agriculture to be ascertained and its development to be followed. With a view to narrowing a very wide field we shall therefore exclude everything concerned not only with forests and fisheries but also with food, at the same time stressing that agricultural statistics should be read in conjunction with consumption statistics. The compilation of food balance-sheets showing figures for agricultural production checked against figures for utilization and consumption is not only a valuable mode of economic investigation but also an excellent method of checking the value of agricultural statistics.

In the light of the foregoing, agricultural statistics, for the purposes of our study, may be said to comprise (1) basic data on the agricultural structure (number and size of holdings, land utilization, equipment, labour, &c.), which change little from year to year, and (2) data on areas under cultivation, animal and vegetable production and prices, &c., which, on the contrary, are subject to rapid change. This is the classic distinction made by statistical services between basic information, which is often collected by censuses, and current information, which is information centralized on the basis of estimates and samplings previously made. Nevertheless, it cannot be too strongly emphasized that this distinction is a somewhat arbitrary one since there is a close relationship between the two categories of statistics.

Assuming that this definition is accepted, let us first of all endeavour to determine the conditions governing the compilation and the present value of agricultural statistics in Europe.

It is a truism to say that European agriculture does not constitute a homogeneous whole. Considerable differences exist, for example, between agriculture in the Mediterranean countries and that in the countries of northern Europe. It is therefore natural that the expression 'agricultural statistics in Europe' should not be used without some reservations. Each country has its own agricultural statistics, the characteristics of which reflect its personality. But it is none the less true that agricultural statistics have a number of common denominators, just as there are certain characteristics common to agriculture in all European countries. Nevertheless, hasty generalizations must be avoided both in analysing the conditions governing compilation and in studying the available documentary material.

The conditions governing compilation are determined by a number of factors which we shall briefly consider.

We should like to be able to agree with certain statisticians that the comparative complexity of the agricultural structure has but little

influence on the compilation of statistics, since suitable methods enable all problems to be readily solved. But such optimism is exaggerated, and experience shows that difficulties in the collection of statistical information are closely dependent on the agricultural background.

Generally speaking, the agricultural structure in Europe may be said to be inimical to the compilation of statistics; for there are few large areas with extensive holdings practising a simple system of cultivation. On the contrary, most European countries are made up of small agricultural areas of a few thousand hectares, with numerous small farms, tiny holdings, and a wide variety of crops.

This complex agricultural structure is particularly marked in the Mediterranean zone. One need only travel through the country districts of Italy to realize that the compilation of agricultural statistics for Italy will be a difficult matter. For instance, the 1930 agricultural census shows that Italy has 4.2 million holdings for an area of 26 million hectares, i.e. an average area of 6 hectares per holding, which means that in many parts of the peninsula villages can be found containing several hundreds of very small undertakings. That being the case, a census of agriculture will be a costly and difficult business since a large number of investigators will have to be recruited, trained, and paid.

This difficulty is further complicated by interplanting or mixed-crop farming, that is, the growing of two crops together on the same land, with the result that it is difficult to assess the proportion taken up by each; for example, beans and maize grown as mixed crops, or forage crops planted between the vines. In Italy these types of farming apply to several hundred thousand hectares in very fertile areas. Similar remarks may be made with regard to catch-crops, that is, crops grown in such a way that the same land bears two successive harvests in the same year; for example, the growing of cattle turnips immediately after the harvesting of a cereal.

Supplying trained investigators with precise definitions will enable the difficulties arising from the complexity of farming methods to be reduced, but none the less it will always be difficult to obtain very accurate information as to areas under cultivation and crops.

There is no lack of examples. In Portugal and Greece there are districts where the average area of cultivated strips does not exceed a few hundred square metres. It is obvious that in such districts it is more difficult to estimate crops, even by sampling methods, than in districts where each field covers a few hectares.

Hence, in certain cases there is a kind of environmental resistance

to the compilation of agricultural statistics to which the statistician must pay careful attention.

Whatever may be the agricultural structure, the statistician requires the farmer's support in order to obtain information; of course, the new statistical methods, as we shall see, make it possible to minimize the farmer's participation in the compilation of statistics, but not to eliminate it. When surveys and more particularly censuses are being carried out operations are facilitated in cases where the farmers willingly supply correct information. This help from farmers largely depends on their standard of education and on their attitude to statistics.

It cannot be too strongly emphasized that there are still countries in Europe where illiterates account for over 40 per cent. of the total population, and the percentage is still higher in the case of the agricultural population. Uneducated farmers not only fail to appreciate the value of statistics, they also have difficulty in answering the questions asked them, either because they are not accustomed to counting or because they are not acquainted with the official units of measurement used in the country, and use units the conversion of which often involves errors.

Another consequence of inadequate education among certain communities is the impossibility of recruiting a sufficient number of investigators able to carry out their work efficiently without a long, and hence costly, training.

But the lack of education among farmers is not the only obstacle. It often happens that farmers are able but unwilling to supply proper information, since they are afraid that the statistics might be used against them, either as a means of determining their liability to taxation or of fixing contributions in kind from their farms. The remedy for this difficulty is obviously that the public authorities should assure the farmers, by means of legislative provisions, that their declarations will not be used for fiscal or other purposes. Such a guarantee has not been granted to farmers in many European countries (despite recommendations from F.A.O.) and that situation is undoubtedly a source of statistical error which is very difficult for the statistician to correct.

The economic policy pursued by governments has a direct bearing on agricultural statistics. In cases where the public authorities require farmers to cultivate certain crops, oblige them to deliver their produce under certain conditions, and allot seed, equipment, and fertilizers to them on the basis of a prepared plan, very accurate agricultural statistics supplying information concerning each farm

are required. It is obvious that in countries where a planned economy policy of this kind was practised during the war years and has been continued in the post-war period agricultural statistics have made considerable progress.

We might point in this connexion, however, to a misconception which is fairly widespread in many European countries, namely, that agricultural statistics are used only by the public authorities. In point of fact such information should also be of use to farmers in determining their production policy, selling their produce, or buying products essential for farming; to merchants who buy agricultural produce; to carriers who handle such produce; to bankers who lend money to farmers; and even, more generally, to all who are interested in economic life, of which agriculture is only one section.

Even under a system of free economy the public authorities would undoubtedly be more resolute in taking steps to improve agricultural statistics if they were being urged to do so by representatives of the various economic interests which make use of such information.

There are few countries in Europe in which official agricultural statistics are as widely used as are the publications of the Bureau of Agricultural Economics in the U.S.A. It may be that the statistical services in a number of European countries have not made strenuous enough efforts to have their information made speedily available to users through the press and radio. If they reached a wider public they would certainly have more support from public opinion in their endeavour to obtain the raw material they require for their work.

It is no exaggeration to say that one of the greatest handicaps to the European agricultural statistics services is their lack of resources. There are, of course, a few countries whose agricultural statistics services are perfectly organized and can be cited as models; but there are too many where the statisticians have not been allotted sufficient funds to enable them to perform their functions. In such countries, staff (we mean headquarters staff and local staff responsible for collecting information) is inadequate, premises are not always suitable for the efficient organization of work, equipment (calculating and tabulating machinery, and transport) is of such a nature that the work is slow and the time taken to publish results so long that the information has lost some of its interest by the time it becomes available.

Let us quote one example in illustration of the inadequacy of the resources available to European agricultural statistics services. In the case of the 1950 World Census of Agriculture, to which we shall have occasion to refer at greater length later, eight countries out of twenty-two from which F.A.O. received information had statistical

services which experienced great difficulty in obtaining the necessary credits from the public authorities to carry out the task.

Whatever the funds at the disposal of the statistical services, it is obvious that they will not achieve good results unless they have a qualified staff applying satisfactory methods.

The Statistical Commission of the United Nations recently pointed out that there is a world shortage of statisticians at the present time. Europe is of course better served than other continents, but it nevertheless remains true that some countries do not have all the qualified personnel they need.

It follows that the statistical methods used in many countries have not been modernized. As is well known, these methods may be summarized under three main heads: the estimate method, which consists in having investigators prepare estimates covering comparatively large administrative districts; the census method, under which all the elements of the field surveyed are enumerated; and, finally, the sampling method, under which scientifically accurate information is obtained from only a part of the field surveyed.

The last method, which is the most recent, is less costly, enables the survey to be carried out more rapidly and therefore shortens the time taken to publish results, causes less inconvenience to farmers since only a few of them are interrogated, involves less work (fewer investigators and less tabulating equipment), makes it possible to have better-trained investigators because fewer are needed, and, finally, enables the degree of accuracy of results to be checked. Against these numerous advantages a few drawbacks must be pointed out: the impossibility of having a complete inventory of each element of the field surveyed, the possibility of certain errors in sampling, and, finally, the need for a specially trained staff.

These different methods are, in fact, applied very unevenly in Europe. The estimate method is still used almost exclusively in southern Europe. The census method is the most common in the whole of northern and central Europe, but the estimate method is widely used for evaluating crops. Finally, the sampling method is still in its infancy, in certain cases because of the lack of specialist staff, and in others because complete counts are essential for the application of a planned economy policy.

It should be pointed out that even where statistical services require detailed information on every farm the sampling method may be very useful, either for collecting certain additional information or for checking the accuracy of the results of the count.

The advantages of a combination of the different methods adapted

to the background do not appear to have been realized in all countries. But it is to be noted that in recent years a very large number of countries have initiated experiments in sampling methods as applied to agricultural statistics and that the results of these experiments will bear fruit in the near future.

Differing methods of compiling agricultural statistics in the various European countries obviously give rise to widely divergent results. Just as the average yield of wheat per hectare for the period 1934-8 varied between 9 and 30 quintals according to country, so also the value of the statistical documentation of the various European countries ranged between wide limits. In other words, all countries have not managed to overcome the obstacles hampering the improvement of agricultural statistics, obstacles which vary in nature according to the area in question. That, to a certain extent, explains why the statistics for the countries of southern and eastern Europe, where the greatest difficulty is experienced in compilation, are less satisfactory than those of the rest of Europe.

In the light of this statement, let us try, without passing final judgement, to give some indication of the value of available statistical documentation.

Let us first of all examine the data relating to the agricultural structure since they are of fundamental importance and remain relatively constant.

One of the most important types of information is that on the distribution of national territory among the major categories of land (arable land, pasturage, fruit growing, waste land, forests, and non-agricultural land). Such data offer one of the most useful means of ascertaining the state of agriculture, making it possible to estimate its potentialities and to study the respective importance of its various branches.

On the whole, the information relating to arable land and forests is good. For the other types of land, however, although accurate information is available in a number of countries, the information for other countries leaves much to be desired. The fact that the terms 'waste land' and 'pasturage' are often differently defined in a number of countries, offers a very slender basis for comparison. Undoubtedly, in this field, there is room for clarification.

Nor can a very optimistic view be taken of the value of another equally essential type of information, namely, the number and size of holdings. It is a well known fact that this type of information is of utmost importance to the agricultural economist, because of its bearing on technical, economic, and social matters. Although a few

countries are in a position to supply very accurate annual information on this subject, there are other European countries in which no census based on individual declarations of farmers has yet been made, with the result that the acreage distribution of farms has to be ascertained only by approximate estimates which would undoubtedly undergo profound modification if a thorough enumeration were made. It is further to be noted that, in the absence of a uniform definition of an agricultural holding, it is not always possible to compare satisfactorily even those statistics which are available.

Linked with the data on the number of holdings is the information on form of tenure. This is even less accurate, particularly in the south of Europe, where the fact that many farmers have several holdings under different forms of tenure makes statistics particularly difficult to compile.

When speaking of statistics relating to farming equipment, a distinction must be drawn between tractors and other farm machinery. Generally speaking, the number of tractors is fairly well known, because the tractor park has been recently renewed and also because many countries have a fuel rationing system involving a periodical census. In the case of other agricultural machinery, information varies greatly according to country and, for Europe as a whole, only very rough estimates are available. However, the equipment of farming co-operatives (co-operative wine presses, co-operative silos, &c.) is more accurately known.

As regards agricultural manpower, data is available in many countries on the total number of agricultural workers and their sex distribution. Such information has not much value, however, since it rarely distinguishes between the agricultural worker proper and the person who devotes part of his time to agricultural activity. For instance, the wife of a large-scale farmer is chiefly engrossed in household duties but is shown in statistics as a full-time agricultural worker. There are very few countries, like Denmark, in which statistical analysis has been developed to the extent of obtaining the facts required for ascertaining not only the total agricultural labour force but also the figures for the different classes of agricultural workers. The possession of such information makes it possible to estimate the number of working hours per year, an indispensable datum for studies of productivity.

We shall dwell only briefly on agricultural population statistics since they are really only a subdivision of population statistics. It must be pointed out, however, that the concept of 'agricultural population' was not clearly defined until quite recently, so that any

attempts at international comparison must be treated with some caution.

As a whole, then, it may be said that, with the exception of the countries of northern and central Europe, the statistics on the agricultural structure are very incomplete. Fortunately, a more favourable judgement may be made on the information relating to agricultural production.

As a result of the improvement in cereal supplies in Europe last year, the incentive for the farmers of certain countries to supply incorrect figures in order to keep down the quantity of their deliveries has largely ceased to exist. It can therefore be hoped that this year it will be possible to assess the production of wheat with a satisfactory degree of accuracy and that the information on other cereal crops will be of a utilizable kind.

As for other food crops, the information relating to potatoes, dried vegetables, and oil-bearing plants is, with some reservations for certain countries, on the whole quite good. In general, the statistics for sugar beet and tobacco are excellent, as a special check is usually kept upon them.

Vine growers possess an accurate knowledge of their output but there is some difficulty in ascertaining the precise area under cultivation in regions where interplanting is practised.

Information on forage crops leaves much to be desired. Probably only a very small number of countries would be in a position to give data of sufficient accuracy for an animal-feeding-stuff balance-sheet to be so drawn up that the figures relating to availabilities were not in contradiction to those for livestock numbers.

Except in a few countries, such as Denmark, the Netherlands, and the United Kingdom, the information for fruit and fresh vegetables is of a mediocre standard. Clearly, such statistics are very difficult to obtain but it would be desirable for many countries to pay more attention to the study of such products since their consumption is bound to grow and international trade in them is continually expanding.

Progress has certainly been made since the last war in statistics on animal production. The number of farm animals is more accurately known. It is, however, to be noted that generally the value of the statistics varies inversely with the size of the beasts. Statistics for large livestock are fairly accurate but those for small animals are less so. As for farmyard stock, it is no exaggeration to say that the figures in the great majority of countries are more or less useless.

Many countries use slaughterhouse statistics for determining meat

production. Such a system is effective only when the great majority of animals pass through controlled slaughterhouses, i.e. when domestic consumption on the farm is not too important a factor. Generally the slaughterhouse figures are supplemented by surveys on the number of animals actually slaughtered on farms, but this method does not always yield very good results.

In the case of dairy products, eggs, and poultry, it must unfortunately be admitted that a large number of countries are able to furnish only very rough approximations.

The compilation of statistics on wholesale trade and retail prices does not fall within the field of agricultural statistics. The study of the prices paid to the farmer, on the other hand, is an important type of statistical information which many countries tend to neglect. Only five or six countries in Europe publish statistics on such prices. Certainly the drawing up of such statistics is a delicate matter, but an effort must be made in that direction since they constitute one of the most useful classes of information for all those studying the agricultural situation.

This hasty and incomplete survey of agricultural statistical information in Europe has nevertheless enabled us to point out a certain number of deficiencies which require to be remedied: information on the agricultural structure, on feed production, on fruit and vegetables, on animal production, and on prices paid to farmers.

Before studying the measures which might be taken to improve such statistics, it should be pointed out that, however inaccurate European agricultural statistics may be, they are nevertheless of some value. In the course of 1948, F.A.O. was able to draw up food balance-sheets for a number of European countries, giving both national production, availabilities, use made of those availabilities, and finally the number of available calories per person per day. That information was published in April 1949 after governments had been invited to submit their observations. No doubt the various tables were not above criticism but they did show that by cross-checking the different groups of data it is possible to produce documentation which not only is useful but also points the way to future improvements.

From the foregoing analysis of the conditions governing the compilation of agricultural statistics in Europe, the obvious conclusion may be drawn that to improve those statistics, the favourable factors must be allowed full play and the harmful ones eliminated.

Such action must be undertaken both at the national and at the international level. International bodies cannot, however, take the

place of governments. The main effort must be made in each individual country. Sociologically speaking, statistics are part and parcel of a civilization and must therefore be in harmony with other social institutions. It would therefore be somewhat dangerous to suggest the application of a uniform plan for the improvement of statistics to all countries. Although general guiding lines can be laid down at the international level, each country must adapt them to its particular conditions after suitable research has been carried out.

Furthermore, it cannot be too strongly emphasized that both on the national and international scale, the improvement of statistics is a long-term process requiring great perseverance. Statistics is a science of series, and its value, consequently, lies not in the results obtained at a given moment, but in those gathered over a long period of time.

As we have said before, many European countries have excellent statistics and methods of work which have stood the test of time. Such countries will continue their efforts in the future in close co-operation with the competent international bodies. We should like therefore only to outline the main measures which appear to be required in those countries whose agricultural statistics at the present moment suffer from certain deficiencies.

There is no need to dwell at length on the measures concerned since they have already been mentioned during our study of the conditions governing the compilation of statistics. It will be enough to enumerate them :

Granting adequate funds to statistical services.

Improving the training of staff, particularly by instruction in statistics.

Creating an atmosphere favourable to statistics by guaranteeing secrecy of declaration.

Ensuring the speedy diffusion of information obtained in order to enhance its usefulness.

Launching a programme for raising the standard of agricultural statistics, the general lines of which would be adapted both to national and to international requirement.

For the implementation of this programme, the setting up of quite small statistical laboratories in which a few technicians, freed from day-to-day administrative duties, are able to undertake systematic research into methods is a measure which cannot be too strongly recommended. In the United States of America, at Ames and Raleigh, such agricultural statistical laboratories have been in

existence for some ten years and have made a remarkable contribution to the perfection of sample survey methods. Of course, all European countries cannot be expected to devote such large sums as the United States of America to this type of research but it is quite conceivable that each country should have a few experimental centres for the perfecting of census and sample survey methods. In Italy and France, for example, such a system has yielded very good results.

Such, then, are the main measures which can be undertaken in countries where agricultural statistics are inadequately developed. In addition, however, it is necessary for all countries contemplating changes in statistical policy to take such decisions in consultation with the competent international bodies.

Before the Second World War, the International Institute of Agriculture achieved good results in this field and, as we have seen, F.A.O., from the time of its foundation, has proclaimed the need for a large and efficient statistical service.

The F.A.O. programme in the field of statistics can be summed up as follows:

The collection and distribution of statistical information drawn up on comparable bases.

Encouraging countries to carry out comprehensive statistical operations using identical methods and definitions.

Giving technical assistance to countries with a view to improving their statistics.

We will deal with these three points one by one.

F.A.O. has taken over the publications of the International Institute of Agriculture in Rome. It publishes a monthly *Bulletin* and a *Yearbook of Food and Agricultural Statistics*, a *Fisheries Bulletin* and a *Yearbook of Fisheries Statistics*, a quarterly *Bulletin of European Timber Statistics* and a *Yearbook of Forest Products Statistics*.

Sustained efforts are being made to obtain information from governments as early as possible so as to enable it to be speedily distributed and used in the various economic publications which, although we cannot enumerate them here, naturally contain many references to statistical data.

By comparing the *Yearbook of Food and Agricultural Statistics* for the two years, 1947 and 1948, it is possible to judge the progress achieved; the coverage of the publication is continually expanding and the material is frequently checked in collaboration with national statistical services to ensure the greatest possible accuracy.

We have already referred to the incompleteness of the data

possessed by a certain number of European countries on their agricultural structure and to the fact that the information at present obtained in the various countries is rarely on a comparable basis. It is obvious that if all European countries agreed to carry out a simultaneous census based on identical principles, a great step would have been made towards the improvement of agricultural statistics.

In 1930 and in 1940, the International Institute of Agriculture organized world censuses which yielded some interesting results. In 1930, thirty-seven countries took part in the operation but, in 1940, the Second World War prevented the majority of countries from executing the plans prepared by the Rome Institute.

F.A.O. has taken up the work interrupted by the War. The proposal to hold a world census was accepted in principle in 1945, and preparatory work begun in 1946. After meetings of experts held both regionally and under the auspices of the F.A.O. Standing Advisory Committee on Statistics a draft census programme was drawn up, communicated to governments for their views and finally published after modification in the light of observations made by governments.

The object of the census can be quite simply stated. In the World Census of Agriculture it is intended that each government will obtain accurate and comparable information on its agriculture, including information on :

- (a) the number of agricultural holdings and their principal characteristics such as size, form of tenure, utilization of the area, utilization of labour, implements, and mechanical power, &c. ;
- (b) the number and characteristics of the people who secure their livelihood from agriculture;
- (c) areas under crops and numbers of livestock;
- (d) the volume of production of all important agricultural products.

In other words, each country is invited to collect a certain body of fundamental data, which will not only allow the agricultural structure of the various countries to be ascertained but also enable a general view to be formed of their agriculture.

The suggested questionnaire comprises a short list of census items recommended to all governments and an expanded list which embodies the items in the short list together with a number of other items of which governments will include as many as they can according to the degree of difficulty involved in the statistical operation. Naturally, F.A.O. has not sought to lay down a uniform method of carrying out the census and merely points out that the operation

'is in principle conceived of as a direct enumeration of individual holdings in each country', adding 'but it is anticipated that other means of obtaining the desired information may be preferable or necessary in some areas or countries'.

It is impossible for us, in this paper, to dwell on all the aspects of the census. We should like, however, to say a few words on the results to be expected and on the progress so far made.

It would be somewhat naïve to assume that the countries carrying out the census will have thereby solved all their statistical problems. The census of agriculture is only a stage, although a very important stage, in the process of improving statistics. In the first place, it will make it possible to obtain more comprehensive information drawn up on a basis ensuring comparability in respect of a larger number of countries. The definitions embodied in the census programme afford a solution to some of those problems we raised in the first part of this paper. Secondly, the results of the census will provide a reliable frame for future sample surveys. Thirdly, the census will serve to bring out the state of European agriculture at a particularly important moment, i.e. at a time when, as will be generally admitted, the agriculture of a large number of countries, although not having completely regained its pre-war level, is none the less in a much more satisfactory position. Finally, and this result is a most important one, the census will enable the majority of European countries with agricultural development plans to establish their schemes on a sound basis.

Denmark, Norway, the Bizone and the French Occupation Zone of Germany have already carried out census operations this year. The majority of other countries have begun preparatory work and propose to carry out the census in 1950.

In general, the technical preparation of the operations is well advanced. Almost all countries will carry out a complete enumeration of holdings, in some cases even including holdings of less than 1 hectare, in the census. Some of them will supplement that operation with sample surveys, either with a view to obtaining more detailed information on particular questions which if included in the general census would overload the individual questionnaires, or else as a means of checking the results. F.A.O. has drawn the particular attention of statistical services to the presentation of the results and has proposed a number of tables in which information will be tabulated in relation to the size of the holding. It is to be hoped that all countries will agree to conform to the proposed plan, as otherwise it will not be possible to sketch the general outline of the structure

of European agriculture. The period of time required for completion of the analysis of the results will vary considerably owing to the fact that a number of countries are short of mechanical calculating and tabulating equipment. It appears that many provisional results will be available at the beginning of 1951, but the complete and final results for all countries cannot be expected before the end of 1951 or even in 1952.

Finally, as we have already pointed out, the statistical services of several countries are experiencing difficulty in obtaining funds for carrying out the operations. The best argument that can be used to persuade the public authorities to make the necessary sacrifices is to point out that the census is a genuine investment which will yield returns in the same way as the erection of an irrigation dam, since it will make possible the adoption of a judicious agricultural policy. If the financial obstacles are overcome, there is every reason to hope that the census of agriculture will be carried out in almost all European countries and will make a real contribution towards the improvement of both documentation and statistics.

F.A.O. is not content simply to draw up programmes of work. It seeks also to furnish technical assistance to countries to enable them to improve their agricultural statistics.

In preparation for the world census of agriculture, several conferences of experts were organized at which a number of technical questions were thrashed out. In the course of the next few years, it is planned to hold meetings of European statisticians to discuss certain problems and to decide on the methods to be applied, for example, in statistics of animal production. In that way it will be possible progressively to remedy the statistical deficiencies already pointed out.

Furthermore, F.A.O. is preparing methodological studies which will supply national services with valuable information to help in the improvement and standardization of methods. A handbook on the preparation of food balance-sheets and food composition tables has been published. A handbook on the presentation of statistics and other works are now being prepared.

Finally, F.A.O. has organized centres of applied statistics at which technicians from the national statistical services can undertake further training, it having been observed that, in many countries, the officials of statistical services had experienced some difficulty in adapting themselves to new methods and that this difficulty was one of the main obstacles to the improvement of statistics. In 1948, F.A.O. organized training centres for statisticians at Mexico City and Bagdad,

and, in view of the encouraging results obtained at those centres, it has been decided to set one up in Paris.

The Centre, which will function from September 26 to December 22, 1949, is set up and financed by F.A.O. in collaboration with the United Nations Statistical Office and U.N.E.S.C.O. The French Government has kindly provided accommodation for the Centre in Paris and has contributed funds for its operation, which have been added to those of the international organizations. The training at the Centre will be both theoretical and practical. The students will study the problems which arise in the operation of a modern statistical service. Particular attention will be given to the preparation of the world census of agriculture and of the population censuses which are to take place around 1950.

The Director of the Centre will be Professor Darmois, Director of the Institute of Statistics, Paris, and member of the United Nations Statistical Commission. The lecturers have been recruited from among the best European specialists and, in particular, from the higher ranks of national statistical services.

A large number of countries have agreed to send students to the Centre and there is every reason to believe that the theoretical and practical training received and also the personal contact made with fellow students will enable the participants, on returning to their own countries, to make a considerable contribution to the promotion of accurate and internationally comparable statistics.

In the long and exacting task of raising the standard of agricultural statistics, the International Association of Agricultural Economists can render most valuable assistance.

In the first place, economic studies inevitably involve a thorough analysis of statistical material and thereby afford an opportunity of pointing out its deficiencies. It is most important that the weak points in statistical documentation should be accurately known so that they can be corrected in order of priority.

Secondly, agricultural economists must let no opportunity pass of emphasizing the need for sound agricultural statistics so that the authorities may be persuaded to give statistical services the means to work satisfactorily.

Thirdly, agricultural statistics must be given their place in national educational programmes and the Association of Agricultural Economists, whose membership includes a large number of lecturers and teachers, must stress this important aspect of the problem of improving agricultural statistics.

Finally, agricultural economists should work as far as possible in

close liaison with those responsible for producing agricultural statistics. Too often on our visits to countries we have found the officials of statistical services isolated in their offices and in insufficient contact with the outside world. It is clear that co-operation between agricultural economists and agricultural statisticians (that is to say, between producers and users of statistics) is eminently desirable in all the countries of Europe. We hardly need add that such co-operation is equally essential at the international level and that the statistical services of F.A.O. will always be pleased to work in close collaboration with your Association.

W. KLATT

Mr. Chombart de Lauwe's excellent survey has enabled us to realize that the F.A.O. in the field of agriculture, recovered the ground lost during the War and has reached at least the stage where the International Institute in Rome left off at the outbreak of war. In addition the F.A.O. has added to the statistical work the estimate of food balances on which I would like to make a brief comment.

The work of the F.A.O. started with the view that food consumption in the world might be doubled in ten years' time, and we now have reached the point where we speak of world surpluses. My question is whether the F.A.O. really feels confident that the food balances are sufficiently accurate by now. I have studied the three sets of food balances brought out in the course of the last three years, and I find discrepancies of 20 to 25 per cent. in some countries, not only in calories but in individual commodities. I would like to have an assurance that the latest set which the F.A.O. has brought out is now considered reasonably foolproof, and so much improved compared with their predecessors that they can be relied on. Another question is this: the F.A.O. has now begun to publish the first set of prices and price relationships and has introduced two very valuable tables in the monthly bulletin, one giving the ratio between agricultural prices and the general price index of all commodities, and the other the ratio between food retail prices and the cost of living. It seems to me that the student of prices would gain considerably if they would try to introduce also, monthly or yearly, the very important comparison between the prices of animal produce and those of vegetable produce. It is possible for a good many countries, and where there are difficulties indexes could be prepared by a central agency just by weighting the various commodities for which individual prices or price indexes are produced. Does the F.A.O. contemplate extending the work of price statistics in such

a way that in future a student of price relations will also have summarized tables of interrelation between vegetable produce and animal produce in various countries?

J. B. CHOMBART DE LAUWE

Two questions have been put to me. The first relates to food balance-sheets, and the second relates to prices. The food balance-sheets which have recently been published by the F.A.O. represent an experiment, and in point of fact they are clearly of very unequal value, according to the country. For certain countries they are an excellent piece of documentation and can be used with confidence. But for other countries they are, as it were, rather conjectural. Little by little these figures will be improved. The main method of improving them has to be sought not so much in the F.A.O. as in the countries themselves. For international organizations quite clearly can only give what they receive. If they receive statistics from the various countries which leave much to be desired, the international publication can only reflect what was originally provided. In any case the F.A.O. has definitely decided to continue the publication of these food balance-sheets.

On the matter of prices I am completely in agreement with the questioner as to the need for publishing more complete information about the prices of agricultural products. I would point out, however, that there are other international organizations which publish price statistics. Most of you will know the *Bulletin of the United Nations Statistical Bureau* and the great quantity of statistical information relating to prices which that publication gives. Even so, there is still a case for the F.A.O. to publish this information as well, since it is more convenient to have all the relevant statistical information about agriculture in the same volume. I particularly appreciate the observations which have been made as to the necessity of publishing information about the relationships between the price of animal products and the price of vegetable products, and we intend to publish such information. We cannot claim that we will do so quickly, because very often the information is slow in coming to us; but at all events the countries for which the documentation is available can count on us to place it at their disposal as rapidly as possible.

J. HESPEL, *Institut de L'État à Gembloux, Belgium*

Mr. Chombart de Lauwe has suggested checking statistics of production by relating them to statistics of consumption. I have little confidence in a device of that sort, because, as everyone

knows, whereas production statistics are quite frequently derived from positively ascertained facts, consumption statistics are, in reality, estimated rather than statistically ascertained.

Mr. Chombart de Lauwe complains that many national censuses give approximate results only, and he is right. I had the task in Belgium of directing the last general agricultural census, and I realized on that occasion that one could estimate the statistical error at at least 10 per cent. To Mr. Chombart de Lauwe I would make the following suggestion for those countries sufficiently developed in statistical affairs, and for that part of the problem which is concerned with the determination of cultivated area (which I imagine is the essential element in agricultural censuses). In Belgium we have set up in each village a *fichier cadastral*. That is to say, each piece of land is listed, with the name of its proprietor and the names of the occupiers. This makes it possible for census enumerators to avoid missing any piece of land and also to avoid making errors in respect of their areas. I especially draw the attention of Mr. Chombart de Lauwe to this point. In Belgium we have found it to be an innovation of remarkable interest.

Mr. Chombart de Lauwe has spoken of the difficulties in obtaining accurate information from cultivators, and this is indeed the case. On this point, I feel that the promises made to farmers about the confidential nature of the information they provide are generally inadequate. In my country we have found it to be an effective method to point out to farmers, whenever the occasion offers, the consequences of not being conscientious in their declarations. Thus, for example, when our farmers complain about excessive imports of, say, butter, we explain to them in the agricultural press that this is simply the result of inexact declarations made by them of the numbers of livestock. This method seems to me to be very effective.

The minimum areas included in a census must be known by anyone consulting the resulting statistics. In order to permit satisfactory interpretation it would be a good thing to publish the instructions given to the enumerators at the same time as the figures themselves. It also seems to me to be extremely useful if in certain types of cultivation a distinction was made between those plots which one might call commercial (i.e. whose products are destined to be sold on the market) and those whose products are going to be consumed by the cultivators and their families. This is particularly important for market-garden crops.

On the point of work performed by casual labour we adopt the system which Mr. Chombart de Lauwe has indicated, namely, the estimation of the hours of work. It is then possible to translate these

hours of work into man units which are then added to the numbers of permanent workers.

Mr. Chombart de Lauwe complains of the resistance of certain countries to the form of presentation of statistical tables. In this connexion, the most important factor is the ensuring of comparability between successive censuses. That is the reason why one is obliged, when constructing tables for a world-wide census, to take note not only of the models which have been provided, but also of the forms of tables which have been used in previous international or national censuses.

J. B. CHOMBART DE LAUWE

In reply to the extremely interesting observations of Professor Hespel about consumption statistics or, more exactly, as to the use of consumption statistics in the construction of production statistics, I maintain that one can achieve, more often than not, reputable tables. At the same time I would draw your attention to the sampling inquiries into consumption which have been developed in certain countries and which have provided a documentation more and more detailed on this subject which would make it possible to dispense with the estimates which we have hitherto used. As to cadastral methods, I am entirely in agreement with Professor Hespel that it is a very fine method of facilitating the carrying out of censuses. I would make only one qualification, namely, that it is an extremely costly method. Many countries would hesitate before involving themselves in so much expense. As to the confidential nature of statistical information, we are again entirely in agreement with Professor Hespel, and the F.A.O. has several times insisted that the various countries should provide legislation giving agriculturalists a guarantee that the information will not be used for taxation or other purposes. As to the census regulations and instructions, that is well understood, and the F.A.O. has given recommendations that instructions for censuses ought to be published in the census reports. I understand the anxiety of Professor Hespel about the presentation of results. Statistics is a science of perils. In every individual country one tries to make each census comparable with those which have gone before, but while clearly there is a need for national comparability, there is also a need for international comparability. It remains to be seen whether some sort of priority should be accorded to international comparability, it being understood of course that such priority could not be achieved immediately but by progressive attempts in each country, until eventually the whole range of statistical documentation could be presented on a comparable basis.