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PRESIDENTIAL ADDRESS*

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SARDAR DATAR SINGH, LADIES AND GENTLEMEN,

It is a matter of great satisfaction to me that I have been able to associate myself with this Conference. As you know, I have been taking interest in the Society from the very beginning, although I cannot claim myself to be a Statistician in any sense of the term. My interest has grown as the Society has grown, and I am glad to note that already to-day, after only a few years that the Society has been in existence, it has made considerable progress and its services to the cause of agricultural statistics have received generous appreciation. I am glad to note also that the value of your work, as published in your journal, has been recognised not only in this country but in foreign countries as well. It is indeed a matter of gratification that a large number of scientists and others who are in any way connected with agriculture are taking interest in the activities of the Society.

We know that the whole question of planning is dependent on the collection of statistical data and in a big country like India, with wide variations of climate, quality of soil and other agricultural conditions, we have to be careful that the statistics we collect would give us a firm basis for formulating plans for the future. Last year I drew your attention to some aspects of agricultural statistics. I mentioned to you for example that I would welcome accurate statistics regarding cost of production of different crops on which depend the prices that should be fixed for the various controlled articles, such as sugar; and the Government has to fix prices as long as control of commodities continues. Similarly we need accurate data for the total production of

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different crops so that Government may carry out successfully its programme of supplying the requirements of the vast population of this country. You have been following the method of random sample surveys and I understand that you have been able to evolve a technique which can provide necessary data on the basis of which to form sound conclusions. You have, however, been confining your attention upto now mainly to two food crops, namely, rice and wheat. My feeling is that our information regarding food production will not be complete until we cover all the other foodgrains. Our activities have ultimately to embrace the entire field of agricultural production; but we must immediately extend our programme to the collection of comprehensive statistics of our food requirements and our food supplies. It is, therefore, a matter of gratification that a plan has been prepared in the form of a five-year co-ordinated scheme through the execution of which you will be able to collect information in respect of many of these things.

You have, I am glad to learn, tackled the problem of estimating yield per acre successfully; but accurate information in regard to the areas under different crops is equally important; because unless we know the exact area under various kinds of crops, we cannot get complete figures of production of these crops. The difficulties in the way of collecting information regarding the area under cultivation are considerable, on account of the diversity of conditions existing in different parts of the country. We have areas which are more or less fully surveyed and where we have also got a land recording administration which makes some individual or other responsible for the collection of field-to-field information in each village. The information that is collected in this manner is expected to be accurate, if the person concerned does his work efficiently and honestly. But this work requires proper supervision and, I suppose, some kind of supervision is exercised, although it may not always be as efficient as one would wish it to be. The application of the random sample survey method for ensuring the accuracy of the data collected under this system will be, I am sure, of great help, and I should like that such a check should be extended to all those areas where patwaris collect area statistics by field-to-field enumeration, in order to make the information that is collected by them as accurate as it could possibly be. There is another class of areas where the work is more difficult, *e.g.*, the areas which are cadastrally surveyed, but where there is no agency to collect statistics, that is to say there are no village patwaris and I do not know how long it will take to have the same kind of rural organisation for collecting information in these regions as we have in other parts. I,

therefore, hope that by the application of the random sampling method you will be able to give us information regarding such areas also. But the most difficult areas are those where there has been neither the survey nor the agency. The problem of such areas deserves your urgent attention; because our statistical information regarding food production will not be complete unless we cover the whole country and obtain data both as regards area as well as yield, not merely for a few crops, but for all food crops.

There is another aspect of the statistics of food production which has also to be investigated. The Government have for some years been laying great emphasis on a campaign for growing more food and we have been expending large sums of money on such a campaign. We are given certain results which are stated to have been the outcome of this campaign; but I do not know how far these data are accurate. It is, of course, well known that production will increase by the introduction of improved seed, better manure, more irrigation or better methods of cultivation; but the way in which such increases are calculated at present is, I believe, by multiplying the total quantity of a particular aid distributed to the farmers by the extra yields which are assumed to be produced by the application of each unit of such aid. Now I am not sure whether this is a very correct method, because the application of any of these items of agronomic practice, for example, better seed or more potent manure, depends upon several factors of which the human factor is a very important one. Questions arise as to how far the individual cultivator does actually employ the better seed given to him for sowing it in the right quantity, whether the particular field in which that seed is sown is really best fitted for that kind of seed and whether the recommended manure is applied at the prescribed rate. Thus there are so many factors which condition agricultural production that calculation of additional production by a simple process of multiplication as mentioned earlier may frequently give grossly misleading information. It is necessary to determine what the actual increase has been. I do not think it is possible to get hold of every agriculturist to whom aid is given and to find out from him as to what the yields of his crops were before and after better facilities for production were made available to him. I do believe, however, that correct estimates can be made by the application of suitable statistical methods, and I am glad to learn that such methods are being employed already for this purpose on a pilot scale. I trust that by a wider application of these methods you will be able to help the Government in making a more realistic assessment of the value of this campaign than what is done to-day.

There is one other matter to which I would like to draw your attention and that is with regard to the effect on production of transfer of land from one crop to another. The most pressing problem in this country to-day is that of meeting our food requirements. We have also to face the problem of supplying adequate quantities of raw materials to our industries. The transfer of land from millet to cotton should be responsible for a certain deficit in food production. We have, however, no data to show what actual change in production is effected by the transfer of land from rice to jute and from millets to cotton or *vice versa*. Even if the figures for area involved in such changes are correctly known, it should not necessarily follow that any deficit which occurs in food can wholly be attributed to diversion of land to other crops. I know, for example, that a great deal of land was taken out of cotton cultivation particularly in Bombay State since the last war; but I do not know whether there was a corresponding increase in food production in that area. Similarly, at the present time, when there is a drive for the cultivation of more cotton and jute, we have to see how far this effort really augments our cotton or jute supplies. I am not concerned here with the question whether it is a good policy to attempt to increase the production of commercial crops at the cost of food crops. Here we are concerned only with the necessity of estimating accurately how far diversion of land from food crops to other crops actually affects the food supply. In this connection again a sound statistical method is required to arrive at reliable conclusions.

One more important problem which I would like to suggest for your consideration is to study how far improvements in the level of agricultural production can be effected by following particular farming methods. For example, it has often been said that if the holding is large in size, you can expect larger yields. If that is really so, then any controversy regarding the value of consolidation of holdings or increasing the size of holdings would be unnecessary. Before pronouncing a final verdict on this grave issue, however, it is necessary to judge statistically the results of consolidation and to examine carefully to what extent increase in the size of holdings helps in increasing the yield per acre.

These are some of the questions which call for immediate attention and which could be solved by statisticians devoted to the study of agricultural statistics. I, therefore, welcome the work your Society has been doing and I hope it will get more and more encouragement from all those who are concerned with our agriculture and will be able to render more service to the country. I set a high value on the work which you have already accomplished and I wish you success in extending your activities to wider fields.