INAUGURAL ADDRESS

By

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Mr. President, Professor Chakravarty, Dr. Sukhatme, Dr. Singh, distinguished delegates and friends:

It gives me great pleasure to be amidst you today to inaugurate the Ist Annual Conference of the Agricultural Research Statisticians and the 27th Annual Conference of the Indian Society of Agricultural Statistics. I am particularly happy to find that the Institute of Agricultural Statistics has convened. for the first time, a Conference of statisticians attached to the different Institutes of the I.C.A.R., Agricultural Universities, State Governments, etc., for an exchange of ideas on the latest developments in statistical techniques. I am also glad that the Indian Society of Agricultural Statistics has rendered, for the past 27 years, useful service for the cause of agricultural and animal husbandry statistics. It is heartening to know that through the organisation of annual conferences and symposia and seminars from time to time as also publication of a journal of its own, the Society has helped in the advancement of research in the field of agricultural statistics. I may recall that this society was very fortunate in having the late Dr. Rajendra Prasad as its founder President. I am sure that the Society will continue its march of progress through the active association of eminent scholars – Dr. Swaminathan—and Dr. Sukhatme and also the joint efforts of all the statisticians.

I am not a statistician but I do believe that statistics provide an important tool in the process of policy making and formulation and execution of development plans. I can say on the basis of my own experience that the more one uses statistics, the greater becomes his need for more comprehensive and refined statistics. I am aware of the great strides that have been made in the collection of agricultural

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statistics in the recent past. However, as development programmes progress, fresh data are required for assessment, evaluation and formulation of programmes and policies and to tide over operational difficulties. There is also a continuing need for improving the range, quality and content of the data. Timeliness in the availability of data assumes added importance.

I would like to illustrate my point with a comment on statistics of area and production of crops. In India, scientific procedures have been evolved for estimation of acreage and production of different crops. The estimates of production become available after the crops have been harvested—in some cases even after they have been marketed. Such data, howsoever reliable, cannot help us in taking timely policy decisions. As you know, we have to plan for imports and exports even while the crop is maturing. Decisions on procurement policies including the level of procurement prices as well as on arrangements for procurement at the market and field level have to be taken ahead of the harvesting of crops. I know that to expect production estimates before the harvest of crops is a tall order. But you will appreciate the difficulty of the policy makers in formulating policies in the absence of reliable estimates at that stage. I concede that the estimates prepared from the time the crop is sown until it is harvested, will keep on changing depending on weather and crop conditions. But I do hope that the statisticians would evolve procedures which would provide objective estimates from time to time on the basis of weather and crop conditions prior to the time of estimation, and assuming normal weather thereafter. This may involve studies on the possible quantitative assessment of the effect of weather and development programmes on crop output and the loss therein due to the incidence of pests and diseases. I would also very much like sound forecasting techniques deployed through the measurement of suitable biometrical characteristics.

On crop production, it is not enough to have estimates for the aggregate crop. For formulation of policies, we need break-down of estimates into different varieties. With the introduction of high yielding varieties, the need for separate figures for high yielding and traditional varieties has particularly increased. Similary, we also require separate estimates of production for irrigated lands and unirrigated lands. Such detailed information is indicative of that part of production which we can consider more or less certain even in year of adverse weather conditions.

While I have indicated the data needs in regard to crop production I must hasten to say that in doing so I do not minimise the

importance of some of the development work already undertaken for improving the estimates of area and production of crops. The scheme for timely reporting of estimates of area and production of crops undertaken by the Ministry of Agriculture in cooperation with the State Governments has no doubt improved the timeliness and liability of the data. I wish that this scheme is taken up by all States, without any further delay. I would also very much like that in the States of Kerala, Orissa and West Bengal, where at present there is no arrangement for complete area enumeration, the scheme on the model of timely reporting is introduced expeditiously. The decision to implement the scheme for improvement of crop statistics under which area enumeration for 10,000 villages and crop cutting experiments on 30,000 plots would be supervised by the senior staff of Central and State Government is welcome. We also look forward to the successful implementation of this scheme in the interest of improving the quality of data as well as filling up the gaps in information on the application of inputs at the field level.

The methodologies adopted for collection of agricultural statistics in India have been evolved by our own statisticians. They have not only been engaged in effecting improvements in the methodologies and procedures for collection of current statistics but have also been collaborating with agricultural scientists in their attempts at evolving new varieties and improving agricultural systems and practices. I have no doubt that statisticians and economists will continue to join hands with the agricultural scientists in evolving new agricultural technology as well as in devising methods of transferring such technology to millions of farmers in the countryside. Their expertise is particularly needed for studying the various aspects of agro-climatic, technical and economic conditions obtaining in the country.

The distribution of rainfall in our country is skewed—of the sown area 34 per cent receives less than 75 cm of rainfall in a year, 36 per cent between 75 and 115 cm and 30 per cent above 115 cm. Agricultural production is affected very much from time to time by natural hazards such as droughts, floods, hail-storms and cyclones. Statistical methods are, therefore, needed to make forecasts, with reasonable degree of confidence, of the occurrence of rainfall and other natural phenomena, which would be useful for area planning and for selection of appropriate agricultural development programmes for different areas. For example, the information on the frequency of occurrence of drought in different parts of the country would help in identifying areas where dry-farming techniques and groundwater management systems need to be developed. Such information can

be collected and analysed by agricultural statistician in collaboration with agricultural meteorologists. As a matter of fact, a cross-fertilisation of ideas in agro-meteorological and statistics would generate an inter-disciplinary area of agro-meteorological statistics.

Another important field which needs to be attended to by agricultural statisticians relates to the optimum use of fertilisers in relation to crop production. This is particularly relevant in the present context on constraint on the availability of fertilisers, which has threatened to retard agricultural growth in our country. Fertiliser shortages have emerged at a time when our farmers have become enthusiastic in applying nutrients to plants. While emphasising the role of vertical growth in agriculture, Dr. Swaminathan has pointed out recently that we should improve the efficiency of the use of available fertilisers and other inputs by suitable management. For achieving this objective there is need for collecting scientific data on fertiliser use and its effect on output, both for Agricultural Research Stations and cultivators' fields and analysing them systematically. I hope the team of statisticians of the Institute of Agricultural Research Statistics will discuss this and other problems with their colleagues from the other institutions during their session on "Design and Analysis of Experiments."

In our country there is considerable variation in the yield rates of crops in different areas and even among diffcrent farmers in the same area. Results of crop-cutting experiments and crop competition have shown that agriculturists in India are capable of producing very high yields with appropriate management. Still, the per hectare yields of crops in the country are amongst the lowest in the world. This is not merely due to shortage of physical inputs but also due to a large number of technological, economic and social factors, the interacting effects of which are not adequately known. I strongly feel that it will be useful to undertake in depth studies utilising all available data from multifarious sources in order to have a proper understanding of the constraints operating on agricultural growth. Your Society is in a better position in taking lead by making use of the vast and varied types of quantified information collected through agricultural census, crop cutting experiments, national index of field experiments, experiments conducted in cultivators' fields, surveys on high yielding varieties and Intensive Agricultural District Programme, etc.

In view of the hetrogeneity of farming conditions in different part of the country, I attach considerable importance to planning at

the micro-level. Unlike industry, agriculture is carried on in numerous small holdings. The achievement of national or regional targets, in fact, depends upon the decisions taken by millions of farmers in regard to their farming operations and crops to be grown, and their capacity to implement these decisions with their own resources and help from institutional and governmental agencies. Thus, apart from building up estimates of area and production of crops, land utilisation, etc., at different geographical levels, it becomes esseatial to have data for different types of operational holdings, classified according to resources and potentialities. Our object in collecting these detailed data should be to make an optimum use of available resources in land, labour and other inputs not only at the country level, but also at the level of State, district, block and even village. As you know, we have recently completed the agricultural census in the country and comprehensive data have been tabulated on individual farm basis. These data, in conjunction with the technological information available either with the Institute of Agricultural Research Statistics or with the agricultural universities and other research stations could be profitably utilised for formulating optimum agricultural development programmes even for the smallest administrative areas. I learn that the Indian Council of Agricultural Research has formulated an area development plan on a pilot basis. I would request the statisticians present here to assist the research work on agricultural planning.

We are all deeply concerned at the difficult economic situation of our country at the present time in the wake of price rise of essential commodities. This price rise has resulted in widespread public unrest. The organisers of this Conference have, therefore, aptly chosen to hold a symposium on "Prices of agricultural products." I look forward to a fruitful discussion on this subject. The recommendations of this symposium would have implications for policy making in the field of agricultural prices.

I take it that you will discuss different aspects of price policy, keeping in view the interests of all concerned, specially those of the consumer, the producer and the economy as a whole. This is very necessary because in the matter of prices and price policy, sectional interests often clash. For instance, in the context of current difficult price situation, there could be, and indeed is, a strong demand and need for holding the price line generally and the prices of commodities of mass consumption such as foodgrains in particular. But if we fix the price of a crop in disregard of its remunerativeness for the farmer, the whole policy of price stabilisation may become self defeating.

It is in this context that the collection of systematic data on cost of production of agricultural commodities assumes importance. I am glad that a comprehensive scheme for studying the cost of cultivation of principal crops has been undertaken by the Directorate of Economics and Statistics in collaboration with Agricultural Universities, etc. I consider this scheme to be very important. Thought has been given to many methodological problems pertaining to the surveys and studies to be made under this scheme. I am sure that continuing review will be made of any new methodological or operational problems that may arise from time to time.

I have given my views on some of the areas which might engage the attention of agricultural statisticians from different institutions. As the process of development proceeds, need for new investigation and statistical analysis arises. The new tasks are no doubt challenging in their nature to some extent, but I am sure that they would provide to a statistician a new sense of satisfaction. The statistician can no longer afford to remain content with compiling descriptive statistics, but has to work in close association with experts in other disciplines. He has to evolve new methodologies that would suit the changing requirements. I am sure that you will be able to discuss in the next few days the ever changing role of statisticians. With these words, I inaugurate the Joint Conference of Agricultural Research Statisticians and the Indian Society of Agricultural Statistics, and wish you all success in your deliberations.