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INDIAN SOCIETY OF
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ANNOUNCEMENTS

SUBJECTS SELECTED FOR THE NEXT (36TH) ANNUAL CONFERENCE OF THE SOCIETY

The 36th Annual Conference of the Society will be held under the auspices of the South Gujarat University, Surat (Gujarat) in November/December, 1976. The exact dates of the Conference will be intimated in due course. The following subjects have been selected for discussion at the Conference.

- (1) Impact of Increase in Input Prices on Profitability and Production.
- (2) Changes in the Structural Distribution of Land Ownership and Use (Since Independence).
- (3) Energy Requirements of Different Farm Systems.

The synopses of these subjects are given below. Papers (in triplicate along with summaries) for discussion at the Conference should reach the Society's office not later than *1st August, 1976*.

SYNOPSIS

Subject I

IMPACT OF INCREASE IN INPUT PRICES ON PROFITABILITY AND PRODUCTION

For a systematic consideration of the impact of increase in the prices of agricultural inputs on profitability of using these inputs and agricultural production, a number of complexities, both conceptual and empirical, have to be sorted out. The following outline is aimed at indicating major areas which need attention of the research workers.

1. *Importance of Purchased Inputs in the Cost Structure*

What is the relative importance of purchased inputs in the cost structure of major agricultural commodities under different agro-climatic conditions? How has this been changing over time?

In answering the above questions, it would be useful to distinguish between purchased inputs such as labour, bullocks and organic manure which originate in the agricultural sector itself from those like fertilizers, pesticides, electric power, diesel oil and farm equipments/machinery which are produced in the non-agricultural sector.

2. *Profitability of Inputs*

In the final analysis, the levels of use of different inputs depend on profitability of their use. It is, therefore, necessary to have empirical estimates of profitability of using various inputs on major crop enterprises under different agro-climatic conditions. Also, it would be useful to examine how this has been changing over time.

3. *Trends in the Factors Determining Profitability of Using Different Inputs*

Aside from the ownership status of the operator in relation to land, the profitability of using any input depends on (a) productivity of the input, (b) prices of agricultural commodities, (c) cost of using the input and (d) the level of use of other inputs. While it is common knowledge that these factors have been changing over time, it is necessary to have empirical estimates of the magnitude of changes which have taken place in each factor in different agro-climatic conditions for various agricultural inputs. Specific questions which need to be answered empirically are such as the following : What has been the magnitude of increase in the prices of different agricultural inputs ? To what extent the increase in the prices of inputs have been offset by (a) improvements in the productivity of inputs resulting from factors such as introduction of high-yielding varieties, development of irrigation, and improvements in the extension systems, and (b) rise in the prices of agricultural commodities ?

While examining the trends in the prices of different inputs, it would be useful to see the extent to which the increase in prices has been due to (a) rise in the cost of producing inputs, (b) the inputs being in short supply and (c) various imperfections in the distribution system for inputs.

4. *Relative Importance of Different Factors in Determining the Profitability of Input Use*

Given the fact that the profitability of using any input depends on (a) productivity of the input, (b) prices of agricultural commodities, (c) cost of using the input, and (d) the level of use of other inputs, it is clear that the price of an input is only one factor affecting the profitability of its use. It is, therefore, necessary to examine the relative importance of prices of agricultural inputs vis-a-vis productivity of these inputs and prices of agricultural commodities in determining the profitability of using the inputs under different agro-climatic conditions as well as how this has been changing over time. Such an examination will reveal the scope for raising the levels of input use through input price policy which is favourable to cultivators.

5. *Importance of Price of Inputs in Determining the Levels of Their Use*

On a *priori* grounds one could argue that changes in the prices of agricultural inputs affect the levels of use of different inputs. It is, however,

necessary to examine this empirically. Specific questions which need to be answered are such as the following : How important have the prices of inputs vis-a-vis factors affecting productivity of inputs and prices of agricultural commodities been in determining the levels of use of different agricultural inputs ? Do marginal changes in the prices of inputs affect the levels of their use ? Has the recent increase in the prices of inputs adversely affected the levels of their use ? Under which agro-climatic conditions and on which crop enterprises has there been an adverse effect on the levels of use of different agricultural inputs due to rise in their prices during the recent years? Is the adverse effect on the levels of input use due to slowing down of diffusion process or reduction in the rates of application ? What is the impact of the rise in prices of inputs on the efforts to promote their use ? As a result of the substantial increase in the prices of certain inputs, have the cultivators substituted them by other inputs ?

6. *Impact of the Increase in Input Prices on Agricultural Production*

To what extent is it possible to explain the past production trends of various agricultural commodities by (a) levels of use of various agricultural inputs, and (b) prices of these inputs ? It would also be worthwhile to examine the extent to which the rise in the prices of agricultural inputs was responsible for the poor production performance of the agricultural sector after late 1960s.

7. *Public Policy Issues*

One of the objectives of agricultural development policy should be to encourage the widespread use of modern inputs. Viewed thus, two major questions which need systematic consideration are : (1) What should be the input price policy in achieving this objective in the light of high opportunity cost of certain inputs and the fact that the price of an input is only one of the factors affecting the profitability of its use ? (2) Which public policy measures are required to reduce the prices of agricultural inputs ? Some related questions in this context are such as the following : Is there a case for subsidising agricultural inputs? Which? What would be the cost and benefits of the proposed subsidies? Should the distribution of subsidised inputs be linked up with compulsory procurement of agricultural commodities required for the public distribution system ? What would be the impact of such a scheme on agricultural production and equity within the agricultural sector? What are the merits and demerits of various taxes on agricultural inputs? Is there a scope for rationalising the tax structure on agricultural inputs? What is the scope of reducing the prices of various agricultural inputs by making improvements in the production and distribution systems for agricultural inputs? What would be the differential impact of changes in input prices on different (size) classes of farmers and their production? And the differential impact of changes in input prices on owner-operated holdings and those of the tenants ?

*Subject II*CHANGES IN THE STRUCTURAL DISTRIBUTION OF LAND
OWNERSHIP AND USE (SINCE INDEPENDENCE)

With the release of the World Agricultural Census Report, 1970-71, and the data on Land Holdings collected in the course of the 26 Round (July, 1971—September, 1972) of the National Sample Survey (NSS), we now have comprehensive data on land holdings covering about two decades. The NSS had undertaken a sample survey on land holdings during the 8th Round (July, 1954—April, 1955). Roughly about the same period, on the recommendation of the Planning Commission, a Census of Land Holdings was conducted in certain States where village records were maintained. The second extensive survey on land holdings was conducted in 1960-61 during the 16th Round of the National Sample Survey (July, 1959—June, 1960). This was repeated in the course of the 17th Round of the NSS (September, 1961—July, 1962) extending it to the urban areas. Besides these major sources, there are several surveys and studies on land holdings and on land reforms covering various regions in the country from time to time. These were sponsored by the Research Programmes Committee of the Planning Commission and various other institutions and organizations.

Whereas these various sources provide extensive data on land holdings, a major problem confronting any analyst is the difference in concepts and survey designs underlying these different sources, and between different periods for the same source. Great care has, therefore, to be taken while drawing inferences by comparing the data from different sources or between different periods.

As is clear from the title, the focus of discussion for one of the sessions at the 36th Annual Conference of the Society is on the *changes* in the distribution of land holdings between different periods since Independence. Since the latest data pertaining to 1971 (thrown up by the World Agricultural Census as well as the NSS) has not yet been analysed in depth, it would be useful to study the regional or Statewise variation in the structural distribution of land in 1971, but here again it would be rewarding if attention is focussed on the changes over time in the regional distribution pattern. 'Distribution of Land Ownership and Use' should be interpreted to mean the distribution of land owned and the distribution of land under actual use or land operated. Since many of these sources provide information on irrigation which is a major determinant of the productivity of land, it would be useful to study the distribution of irrigated and unirrigated land together with the distribution of land as such. It is *not* proposed to study for this session certain dimensions of land use such as cropping pattern and the distribution of land among various categories, *e.g.*, net sown area, fallows, culturable waste, etc. These

aspects have been studied extensively in the literature and the information on them is contained in innumerable farm surveys. The study of these aspects would, therefore, widen the scope enormously and would thus detract attention from the major interest of the session, *viz.*, the study of the changes in the distribution of land owned as well as operated in the *rural* area.

Changes in the distribution of land (owned/operated) may be studied at the all-India or individual State or regional level. A region could comprise a few States which are broadly homogeneous or it could be some homogeneous pocket within any State. Changes in the distribution are measured broadly in two ways: (a) changes in the overall distribution measured through changes in variance, coefficient of variation, Gini Coefficient or Lorenz ratio, etc., (b) changes in the number of large, medium, small and marginal holdings and in the area held by them. The norms as to the size of such holdings obviously differ from region to region but it would be necessary to ensure comparability over time. An attempt could be made, wherever possible, to explain the changes in the distribution of land in terms of various factors and to assess the relative importance of these factors *e.g.*, land distributed by the government after acquiring it through the legal ceilings on the ownership of land, market sales and purchases of land by different land holding groups (their net sales and purchases), tenancy legislation (conferment of ownership rights to tenants), sub-division of land holdings among family members, etc. Information on these aspects could be available from the problem oriented village surveys or studies by individual scholars.

An analysis of land area leased out and leased in according to the size of ownership holdings would help, among other things, to identify the size classes who happen to be net leasers-out and those who are net leasers-in at different points of time. This would help to understand the divergence and the changes therein, if any, between the distributions of owned and operated area. Changes in the area leased in according to the size of operational holdings in different regions of the country could be examined as a factor accounting for the observed changes in the distribution of operated land. The changes in the area leased in could be examined according to the form of lease, *e.g.*, crop share, fixed crop rent, fixed cash rent, etc. It would be important to check the estimates of area leased in revealed by the Census and the NSS against the picture revealed by the various village studies with a view to assessing the extent of concealed tenancy. In this context, it would also be interesting to know the changes in the number of holdings and the area leased in by the pure tenants and part tenants. Similarly, the analysis of owned holdings wholly operated and those wholly rented out and partly rented out would be useful for assessing the changes in the extent of absentee ownership and self-cultivation by various holding size-groups.

Subject III

ENERGY REQUIREMENTS OF DIFFERENT FARM SYSTEMS

The papers to be presented at the 36th Annual Conference of the Society should focus discussion on the following aspects: (i) To estimate the level and pattern of energy consumption for major agricultural operations in different farm systems with varying levels of mechanization. (ii) To explain these variations in energy use at the farm or region level in terms of agro-climatic and economic factors. (iii) To determine the extent to which slower growth of agricultural output in some regions can be attributed to non-availability of suitable sources of energy at the appropriate time. (iv) To estimate the 'true resource cost or economic cost' to the society of using various forms of energy.

1.1 The estimation of energy requirements of different farm systems can be attempted at the farm level, at the village level and at the district/region level. The level of energy input in land preparation, irrigation and fertilizer use depends upon the agro-climatic conditions, the intensity of cropping as well as the variety of crops to be grown. The varieties of crops and their yield levels would also determine the energy needs of harvesting, threshing, processing and transportation of agricultural produce. For each of these uses, energy can be provided in various forms ranging from animal power to nuclear energy. In the case of draft power, for example, ploughing can be done either by bullocks or by tractors of different sizes. Fertilizers can be given to the crops in the form of farmyard manure (cow dung or manure from Gobar gas plant) or as chemical fertilizers. Similarly, energy for lifting water can be provided by animals, diesel oil or electricity. The energy needs of harvesting, threshing and transportation can be met either by animals or by machines such as tractors, harvest-combines or mechanical threshers.

1.2 The pattern of energy use in agriculture is intimately linked with the level of mechanization adopted in agricultural operations and has varying requirements of capital, human labour, animal labour and other biological inputs. Each farm system would adopt a pattern of energy use which is most suitable from the point of view of resource availabilities. Small farms with family labour having most or all acreage unirrigated may use human and animal energy sources only. Some farms with most or all acreage irrigated by Persian wheel and canal may use only human and animal source. A farm using an electric motor or a diesel engine to power a pump may continue to use human and animal energy for other operations. At the other extreme, there may be farms using a tractor for tillage and transportation and/or electric motor/diesel engine to power the pump as well as other machines such as harvest-combines, wheat threshers, cane crushers and corn shellers.

For these different types of farm systems one should estimate the level of consumption of various sources of energy for all the major agricultural operations at the farm level, the village level and the district/region level. Preferably, this should be done at a weekly or fortnightly basis for various operations. In case some primary data are to be collected, a daily schedule of operations would be very helpful. Since there would be a possibility of alternative uses for items like cow dung, vegetable waste and bagasse, it may be useful to obtain information on energy requirements of cooking and space heating in the domestic sector.

1.3 The variations in the level and pattern of energy use can then be explained in terms of agro-climatic factors, farm size, cropping pattern, resource availabilities (including groundwater, canal water, etc.), availability of credit and relative prices of different sources of energy.

1.4 One can also attempt to determine the extent to which non-availability of suitable sources of energy at the appropriate time for agricultural operations has been a constraining factor for the growth of output in a particular region. Lack of co-ordination between electrification programmes of State Electricity Boards and minor irrigation development programmes sponsored by the Agricultural Refinance and Development Corporation also has been a constraint. This would require not merely the identification of the bottlenecks but the quantification of their impact in terms of lower intensity of cropping, varieties of crops grown, loss in yield on account of delayed sowing or harvesting and lower yield due to lack of fertilization.

A related aspect of the same issue would be to *isolate* the effect of use of tractors and other machinery on intensity of cropping, level of yields and level of employment. For example, it is not sufficient to show that the tractor farms *have* higher cropping intensity or yield but it must be demonstrated that this higher output can be attributed to the tractor, *per se*, after adjusting for the variations in the quantity and *quality* of irrigation, quality of labour and management, use of seeds and the application of fertilizers. Besides, it is also important to quantify the 'real' savings in cost of human labour and animal labour in those cases where permanent workers and animals are maintained on the farm for operations other than the one in question.

1.5 Attempts can be made to estimate the 'resource costs or economic costs' of using various forms of energy by (i) including the investment and operating costs of *all* the capital assets required for using a particular form of energy and (ii) by re-valuation of the various components of cost (such as capital, foreign exchange, unskilled labour, electricity, diesel, fodder and cow dung, etc.) at shadow prices which reflect 'true social costs' of using these resources.

This would enable the analyst to measure the divergence between the private costs to the farmer and the costs to the society of using different sources

of energy. For example, an electric motor may be considered better than a diesel engine from the viewpoint of a farmer if he is not required to pay a substantial (or full) cost of providing the electric connection to the farm. However, from the society's point of view this may not be the best option in many situations where the investment costs of providing electricity connections are quite significant and the unit costs of providing power are relatively high on account of low load factor of agricultural demand. Similar divergence between private and social profitability may be evident when various items of animal fodder are valued at their opportunity costs and the costs of using tractors also reflect the 'true resource costs.' The papers in this section could include specific studies on private and social benefit-cost analyses of various options such as tractorization, use of mechanical threshers, harvest-combines, electric motor/diesel engine, cane crushers and rice mills.

INTERNATIONAL ASSOCIATION OF AGRICULTURAL
ECONOMISTS (IAAE)
NEWSLETTER

An extract from a letter dated January 6, 1976 received by the Country Representative in India of the International Association of Agricultural Economists from Dr. R. J. Hildreth, Secretary-Treasurer of the IAAE, Chicago, Illinois, U.S.A. is reproduced below for the information of the members of the IAAE and readers of our Journal.

“1. The IAAE/FAO Food-Population Conference was held in early December (1975) in Rome.

- (a) Agricultural economists from over 40 countries participated in the Conference. Invitations from the IAAE to this Conference were based on a list of countries designated by the FAO. The discussions were far ranging and contained much insight. Most of the participants considered the Conference a success.
- (b) At the 1976 Conference in Kenya one day will be devoted to an exploration of the issues raised at the Rome Conference.
- (c) The papers presented at the Rome Conference will be published as a book by McCraw-Hill, India. Dr. Douglas Ensminger, Chairman of the Conference Committee, will edit the book. It is expected the book will be published by the time of the Conference in Kenya.

2. The Executive Committee of the IAAE held a series of meetings at the time of the Food-Population Conference in Rome. Among the items discussed were :

- (a) A detailed programme of the 1976 Conference will be sent to the Country Representatives of the IAAE by Professor Dams shortly. It was decided that there will be an Elmhirst Memorial Lecture series. The first will be presented by Professor T. W. Schultz, University of Chicago, at the Conference in Nairebi.
- (b) There will be discussion groups at the Conference. William Kibler of the USDA will contact the Country Representatives about suggestions for participants in the discussion groups. As notified earlier, the contributed papers should be sent to Dr. Kenneth R. Farrell, Deputy Administrator, Economic Research Service, United States Department of Agriculture, Washington, D. C. 20250, U.S.A.
- (c) The Executive Committee obtained a report from the Kenya Organizing Committee indicating that plans are progressing for the Conference in Nairobi. It was reported that over 200 members have already pre-registered. A second letter will be sent to all members of the Association from Kenya early this year.
- (d) The Executive Committee decided to raise the Conference fee to \$30. Membership fees for the 1975-77 Conference period will be collected at the Conference.
- (e) The membership will receive a mailing from the editor, Kenneth Hunt, in the spring of 1976. This mailing will consist of the theme papers for the 1976 Conference; a supplement to the *International Journal of Agrarian Affairs*, containing certain of the unpublished contributed papers to the 1973 Conference; a membership list; and a report of the IAAE/FAO Food-Population Conference.

3. The Status of Travel Grants for the 1976 Conference:

The Board of Directors for the Fund of the International Conference worked harder than ever before to raise funds, but with less success. The support obtained from corporations increased above that of previous years, but is sufficient only to support people on the programme who need assistance to participate in the 1976 Conference. *Thus no funds for travel grants will be available from this (IAAE) office for the 1976 Conference.*

Many of the Foundations and government agencies which were contacted for funds indicated they would be sending people to the 1976 Conference themselves. The U.S. AID missions may sponsor economists to the 1976 Conference."

INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE

In response to a recommendation of the Technical Advisory Committee of the Consultative Group on International Agriculture Research, the

International Development Research Centre of Canada, the Rockefeller Foundation and the Ford Foundation have jointly financed a new research organization which will concentrate on the policy problems relating to the food needs of the developing countries.

The International Food Policy Research Institute (IFPRI) is organized as a non-profit research and education institution located at 1776 Massachusetts Avenue, N.W., Washington, D.C. The new institute is governed by an International Board of Trustees.

Dr. Dale E. Hathaway, an American agricultural economist, is the first Director of the Institute.

The mandate of the IFPRI is to undertake research on selected policy problems affecting the production, consumption, availability and equitable distribution of food in the world with particular emphasis on the needs of the low income countries and especially the nutrition needs of vulnerable groups within those countries. In order to carry out that mandate, the IFPRI will perform two functions: research and current policy analysis.

The research programme will fall in three broad programme areas:

- (1) General economic policies which influence the production and availability of food to developing countries and the most disadvantaged groups within these countries;
- (2) Policies which influence the rate of technological change and investment and thus the food production potential in developing countries; and
- (3) Policies which affect the trade and concessionary food aid flows of significance to developing countries.

The policy analysis will involve a periodic evaluation of the world food situation and of policy changes at the national and international level which affect the availability of food to developing countries. The IFPRI will not generate new statistics but will concentrate on analysing the statistics available from numerous national and international organizations.

The professional staff of the IFPRI will be drawn from the international community, with the majority from the developing countries.

The Institute plans to release its first research and current analysis at the time of its next trustees' meeting during the second week of February 1976. It will identify more precisely the location and probable magnitude of the food problem in the developing world over the next decade and some of the major policy issues which must be faced by national and international policy-makers in dealing with that problem. Inquiries and suggestions should be sent to Dr. Hathaway directly.