

**ESTIMATES COMMITTEE
(1967-68)**

SEVENTH REPORT

(FOURTH LOK SABHA)

MINISTRY OF FOOD AND AGRICULTURE

Action taken by Government on the recommendations contained in the Seventy-sixth Report [of the Estimates Committee (Third Lok Sabha) on Indian Agricultural Research Institute.



**LOK SABHA SECRETARIAT
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CORRIGENDA

to

7th Report of the Estimates Committee
(Fourth Lok Sabha)

Page 3, line 23, for 'entence' read 'sentence'.

Page 16, line 3, for 'revelent' read 'relevant'.

Page 16, line 25, for 'need seed spray' read 'neem seed spray'.

Page 36, add the word 'as' after the word 'soils' in line 1 of the Table.

Page 44, line 8, for 'at' read 'that'.

Page 44, line 9, for 'xperiments' read 'experiments'.

Page 44, line 10, for 'r' read 'for'.

Page 44, line 11, for 'ural' read 'tural'.

Page 45, line 9, for 'cafe' read 'care'.

Page 49, line 17, for 'CLARIFICATION GIVEN TO GOVERNMENT' read 'CLARIFICATION GIVEN BY GOVERNMENT'.

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ESTIMATES COMMITTEE

(1967-68)

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Shri G. D. Sharma—*Under Secretary.*

INTRODUCTION

I, the Chairman of the Estimates Committee, having been authorised by the Committee, present this Seventh Report of the Estimates Committee on the action taken by Government on the recommendations contained in the Seventy-sixth Report of the Estimates Committee (Third Lok Sabha) on the Ministry of Food and Agriculture (Department of Agriculture)—Indian Agricultural Research Institute.

The Seventy-sixth Report of the Estimates Committee was presented to the Lok Sabha on the 26th April, 1965. Government furnished their replies indicating the action taken on the recommendations contained in the Report on the 31st May, 23rd June and 2nd August, 1966. Further information was called for in respect of two recommendations which was furnished by the Ministry on the 4th January and 17th February, 1967.

The draft Report was adopted by the Committee on the 29th May, 1967.

The Report has been divided into the following chapters:

- I. Report.
- II. Recommendations that have been accepted by Government.
- III. Recommendations which the Committee do not want to pursue in view of Government's reply.

An analysis of the action taken by Government on the recommendations contained in the Seventy-sixth Report (Third Lok Sabha) of the Estimates Committee is given in the Appendix. It would be observed therefrom that out of 56 recommendations made in the Report, 54 recommendations i.e., 96.57 per cent have been accepted by Government and the Committee do not desire to pursue two recommendations i.e., 3.43 per cent in view of Government's replies.

P. VENKATASUBBIAH,

Chairman,

Estimates Committee.

NEW DELHI;

16th June, 1967.

26th Jyaishta, 1889 (Saka).

CHAPTER I

REPORT

The Estimates Committee are glad to note that the recommendations contained in the Seventy-sixth Report of the Estimates Committee (Third Lok Sabha) on the Ministry of Food and Agriculture (Department of Agriculture)—Indian Agricultural Research Institute, have been generally accepted by Government.

CHAPTER II

RECOMMENDATIONS THAT HAVE BEEN ACCEPTED BY GOVERNMENT

Recommendation (Serial No. 1, Para No. 9)

Considering the valuable recommendations made by the achievement Audit Committees to improve the quality and content of research work being undertaken in the various Divisions of the Institute, the Estimates Committee would like to recommend that such performance reviews may be made in the third/fourth year of each Five Year Plan period so that the suggestions regarding future line of development can be duly incorporated in the next plan period.

REPLY OF GOVERNMENT

The Government of India accept the recommendation.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 31st May, 1966.*]

Recommendation (Serial No. 2; Para No. 12)

The Committee hope that efforts to acquire the additional acreage needed for the Institute Farm will be speeded up. The Committee suggest that necessary measures should be taken at an early date to prevent waterlogging of any portion of the farm land. They would also like the Government to ensure that the existing and the new land for the farm are put to effective use.

REPLY OF GOVERNMENT

The matter of acquisition of additional land is being pursued vigorously, with the authorities concerned.

A scheme on the prevention of waterlogging in the farm land has been included under the Fourth Plan.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 31st May, 1966.*]

Recommendation (Serial No. 3, Para No. 13)

The Committee recommend that a separate 'servicing cell' may be earmarked in the Institute to attend to the servicing of mechanised equipment in the various Divisions.

REPLY OF GOVERNMENT

The recommendation is accepted. A scheme for the purpose has been included under the Fourth Plan.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)*—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 31st May, 1966].

Recommendation (Serial No. 5, Para No. 15)

The Committee endorse the Audit Achievement Committee's views as to the need to work out the economics of the useful recommendations arising from the Agronomic trials and the proper transmission of such recommendations to the cultivators. They would, however, like to suggest that the Agronomy Committee of the Indian Council of Agricultural Research may review the working of the whole scheme, now in operation for about a decade, and give suitable directions in order that results of practical value to farmers may be obtained from these experiments as expeditiously as possible.

REPLY OF GOVERNMENT

The recommendation is accepted by the Government of India. It may, however, be stated that Item (III) of the broad results mentioned in para 15, sub-para 2 of the Estimates Committee's Report should correctly read "the general impression that Indian soils are not responsive to potash input is not correct." In relation to the last sentence of this sub-para, what was intended to be conveyed to the Estimates Committee during evidence was that while a sufficient number of experiments had been conducted to permit recommendations being made to the cultivators from the crop response angle, the number of experiments so far conducted is not sufficient to make a categorical statement whether a recommendation based on crop response in soils in which experiments have already been conducted will hold good equally in every other type of soil also. This in effect meant that correlation between soil testing and crop response had not been examined in as large a detail as crop response only had been.

Whenever recommendations based on crop response experiments have been made, and these recommendations will apply to a large number of soil types as the experiments have been carried out in 44 different stations, the economics of the recommended practices is

irvariably worked out before it is published for adoption by the farmers.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 31st May, 1966*].

Recommendation (Serial No. 6, Para No. 16)

The Committee consider that the maximisation of production trials conducted by the Agronomy Division demonstrate great potentialities of stepping up farm yields through a proper combination of as many improved production practices as possible. They hope that the results obtained so far from these trials will be evaluated by the Agronomy Committee of the Indian Council of Agricultural Research and the improved practices given wide publicity for the benefit of farmers.

REPLY OF GOVERNMENT

The recommendation is accepted. The pattern of the working and the details of the work so far conducted will be referred to the Agronomy Committee of the Indian Council of Agricultural Research, for their consideration at its next meeting, as suggested.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 31st May, 1966*].

Recommendation (Serial No. 7, Para No. 17)

(i) While noting the encouraging results that have come out of some of the experiments in spray fertilization, the Committee regret to observe that although the scheme has been in operation for over seven years the data available so far, in the case of some important crops, are insufficient for drawing any firm conclusions. For instance, only one year's data is available in regard to wheat and potato. The Committee suggest that the tempo of work on the scheme should be accelerated and proper data should be maintained on a regular basis in respect of all the crops.

(ii) The Committee also note that spray fertilization under rain-fed conditions has so far been undertaken only in respect of barley.

In view of the encouraging results of the experiments on barley, the Committee suggest that the desirability of undertaking spray fertilization of other crops under rainfed conditions may be considered by the institute.

REPLY OF GOVERNMENT

(i) The work on all the experiments for which one year's data was available, has since been completed and recommendations have been formulated, on that basis, for crops like wheat (irrigated), barley (rainfed), oats, potato, tomato and bersheem. Work on other crops like sugarcane, turnips and radish has been or is being taken up.

(ii) The suggestion of the Committee has been noted for compliance.

[Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 31st May, 1966].

Recommendation (Serial No. 8, Para No. 18)

The Committee consider that application of weedicides would help materially in stepping up agricultural production side by side with conserving soil fertility. To popularise the use of weedicides, they would suggest the holding of effective demonstrations in co-operation with State Departments of Agriculture. Government should also take necessary measures to ensure that such weedicides as have been proved to be efficacious and free from toxicological hazards are manufactured increasingly within the country and made available to farmers at reasonable rates.

REPLY OF GOVERNMENT

The recommendations of the Estimates Committee are accepted.

The Directorate of Extension, Department of Agriculture, is taking action to popularise the use of weedicides by holding demonstrations wherever necessary and even by application of weedicides on a large scale in the I.A.D.P. districts, with the cooperation of the State Departments of Agriculture.

The traditional method of weed control, by mechanical means is still being widely followed. The use of chemical weed control is,

however, becoming increasingly popular. The use of various weedicides rose from 24 tons in 1956-57 to 121 tons in 1963-64. In the Fourth Five Year Plan, the use of chemical weed control will receive special attention as it is proposed to treat 2 million acres in 1966-67 and to reach a level of treating 7 million acres in 1968-69. It is expected that the demand for various weedicides is likely to rise from 1000 tons of technical grade materials in 1966-67 to 3180 tons in 1968-69. Because of the increasing demand for weedicides, efforts are under way to considerably enhance the indigenous production from the present 100 tons operation capacity.

[Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 31st May, 1966].

Recommendation (Serial No. 9, Para No. 19)

Since the primary responsibility of research on cattle breeding and cattle nutrition is that of the National Dairy Research Institute, the Committee would suggest that cattle surplus to the research requirements of the Indian Agricultural Research Institute may be transferred to the National Dairy Research Institute, Karnal. The Committee would also wish to emphasize the desirability of close coordination between the Indian Agricultural Research Institute and the National Dairy Research Institute to avoid infructuous overlapping in research programmes of the two Institutes.

REPLY OF GOVERNMENT

The recommendation of the Committee has been noted. The Sahiwal herd at the Indian Agricultural Research Institute has, however, been built up from 20 cows and a couple of pedigree bulls, which were left after the transfer of the rest of the herd at Karnal in 1950-51. At this stage, there is no animal surplus to the requirements of the Institute. The research work of the Institute will be closely coordinated with that of the National Dairy Research Institute, Karnal, so that there may be no infructuous overlapping in the research programmes.

[Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I dated 31st May, 1966.]

Recommendation (Serial No. 10, Para No. 21)

(i) The Committee are gratified to note that the N.P. 800 series of wheats, developed by the Institute, not only possess a high degree of resistance to rusts but are also immune to loose smut. However, in order that the Wheat improvement programme, currently under way in the Institute, may make a greater impact on wheat production in the country the Committee suggest that efforts should be made to breed new varieties of wheat that can stand up to much higher levels of fertilizer application than the existing varieties, and are at the same time resistant to diseases and insect pests, besides possessing the superior quality characteristics of the Indian wheats.

(ii) Considering that nearly 70 per cent of the area under wheat in the country is under 'barani' (unirrigated) cultivation, investigations for breeding wheat varieties resistant or tolerant to drought should be intensified.

(iii) The Committee also suggest that the Indian Agricultural Research Institute may investigate the possibilities of the commercial exploitation of hybrid vigour in wheat—a recent advance in wheat breeding which has helped in raising the average yield of wheat from 3000 kgs. to over 6000 kgs. per hectare in many good lands in California and Mexico.

REPLY OF GOVERNMENT

(i) The work is already under way and some new varieties viz. Lerma Roza and Sonora 64 are now available. The seeds are being multiplied for supply to farmers.

(ii) The work is already in progress at the Indian Agricultural Research Institute. Some of the drought resistant varieties already available for cultivation are N.P. 839, N.P. 404, N.P. 406, Hybrid 65.

(iii) It is not considered desirable to divert the meagre resources available to production of Hybrid Wheat. It has not been produced on a commercial scale anywhere. However, it would be possible to push yields upto 6000 kgs. per ha. by using stiff-strawed, dwarf wheats. As soon as the developmental research needed for breeding hybrid wheat reaches a promising state in other countries, the Gov-

ernment of India would take advantage of the same and start an intensive programme.

[Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 31st May, 1966].

Recommendation (Serial No. 11, Para No. 22)

The Committee appreciate the progress made in the development of hybrid maize and hope that research on this will be intensified for further progress and results.

REPLY OF GOVERNMENT

Research for developing still better maize hybrids is underway.

[Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 31st May, 1966].

Recommendation (Serial No. 12, Para No. 23)

The Committee feel that the progress so far achieved in the evolution of high yielding varieties of sorghum is not quite satisfactory. Inasmuch as researches have conclusively demonstrated that grain yields in many crops can be very substantially increased by using seeds of hybrid varieties, the Committee would like to recommend that research work for evolving new and better hybrids in sorghum should be intensified.

REPLY OF GOVERNMENT

Realising the need for and appreciating the technical possibility of developing high yielding hybrids of sorghum, the Indian Council of Agricultural Research commenced in 1961 work relating to the Accelerated Hybrid Sorghum Project in the country in cooperation with the Indian Agricultural Research Institute, the principal sorghum-growing States of India and the Rockefeller Foundation of the U.S.A. This endeavour has led to the production and release of two outstanding hybrid sorghums, namely CSH-1 and CSH-2, in 1964 and 1965 respectively, which have an enormous yield potential as

compared to the local sorghum varieties and which also have a very wide range of adaptability. The performance of these hybrids has been tested out extensively in the country in the farmers' fields, as a result of which seeds of hybrid sorghums are now in very great demand throughout the sorghum-growing tracts of the country. In addition, numerous farmers have taken to commercial hybrid seed production in cooperation with the National Seeds Corporation thereby deriving considerable financial benefits. The Indian Council of Agricultural Research have now enlarged upon this programme and have formulated the All-India Coordinated Sorghum improvement Project on a country-wide basis. This project is expected to be launched very shortly. It will thus be seen that the Government of India and the Indian Council of Agricultural Research are fully seized of the problem and are taking steps to foster research and development on high yielding hybrids of sorghum in the country.

[Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 31st May, 1966].

Recommendation (Serial No. 13; Para No. 24)

The Committee are unhappy to note that costly equipment of the Cereal Research Laboratory should have remained idle for about two years for want of electric power. This underlines the need for effective coordination between various Departments of the Government. Now that the requisite power has been made available, the Committee hope that researches on nutritional quality of cereals will be intensified.

REPLY OF GOVERNMENT

Work on research on nutritional quality of cereals has been intensified.

[Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 31st May, 1966].

Recommendation (Serial No. 14, Para No. 25)

The Committee are in agreement with the views expressed by the Panel of Agricultural Scientists that 'the time and money spent in

plant breeding research will be a waste, if there is no efficient machinery for multiplying the seeds of new varieties'. The Committee would, therefore, urge the Government to launch without any avoidable delay, a country-wide crash programme for the multiplication of seeds of improved varieties as well as for the proper distribution of such seeds among the farmers. The Committee would also suggest in this connection that the seed production programmes of the agricultural research institutes in general and the Indian Agricultural Research Institute in particular may be thoroughly examined with a view to augment the production of improved nucleus seeds.

REPLY OF GOVERNMENT

The Government of India attaches great importance to the programme of multiplying seeds of improved varieties. To have a quick break-through on this front, the Ministry has decided to launch a centrally-sponsored scheme for the production of "nucleus" seeds of different food and commercial crops. The recently released fertilizer-responsive varieties of wheat and paddy are being given special attention in this programme, so as to spread them on as wide areas as possible within a short period. The nucleus seeds will be supplied to different states for further multiplication on the Government farms and through the agency of registered growers. Steps are also being taken to introduce quality control in seeds so as to ensure supply of seeds of highest germination capacity and purity. To this end, a Seed Law has been drawn up for enforcement on an all India basis and is currently under consideration of the Lok Sabha. Seed testing laboratories have also been established in all the major States with the assistance of U.S.A.I.D. The activities of the National Seeds Corporation established by the Government of India are also being expanded so that hybrid seeds of maize, sorghum and bajra and seeds of paddy, wheat, jute and potato receive special attention.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 31st May, 1966.*]

Recommendation (Serial No. 15, Para No. 26)

In regard to the research on fodder grasses, being conducted in the Botany Division of the Indian Agricultural Research Institute, the Committee would like to reiterate the recommendation made by them in their Eightieth Report (Third Lok Sabha) on the Indian Grassland and Fodder Research Institute, namely that there should be close and

intimate coordination between the various institutes engaged in research on fodder grasses so that the more promising projects may be picked up for further intensified research and duplication and overlapping may be avoided.

REPLY OF GOVERNMENT

The recommendation of the Committee is accepted by the Government of India. An all-India Co-ordinated Project on forage crops, to be started soon, will coordinate research on forage grasses and crops throughout the country.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)*—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 31st May, 1966].

Recommendation (Serial No. 16, Para No. 30)

The Committee are unhappy to note that the maintenance of an important asset like the National Pusa Insect Collection should have been allowed to suffer from want of proper care and attention and that, although the need for augmenting the staff of the Systematic Entomology Section was pointed out by the Achievement Audit Subcommittee as far back as September, 1962, the additional staff required to conduct the work on Systematic Entomology on the right lines is yet to be appointed. The Committee strongly recommend that recruitment of the required additional staff should be expedited and every effort should be made to bring the curating (including preservation, labelling, arrangement, identification, etc.) of the National Pusa Collection up-to-date so as to ensure its safety and scientific utility. They would also like to urge that the utmost care should be taken in carrying out identifications of insects. The Section of Systematic Entomology should also devise ways and means of providing a quick and accurate identification service to all agricultural agencies in the country.

REPLY OF GOVERNMENT

The recommendations of the Committee have been accepted by the Government of India. A scheme for strengthening the Systematics Section has been included under the Fourth Plan and advance action for recruitments has been taken in hand.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)*—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 31st May, 1966].

Recommendation (Serial No. 17, Para No. 31)

The Committee consider that the Institute should have long ago undertaken a systematic effort to investigate the possibilities of controlling through the agency of exotic parasites insect pests, which according to rough estimates are known to destroy between 10 to 20 per cent of the country's total agricultural produce. They hope that Government would expedite decision on the Entomology Division's proposal seeking the necessary reorientation in the activities of the Parasitology Section. The Committee need hardly state that where laboratory experiments on a parasite show promising results it should be tried out in the field to establish whether it could be successfully used for biological control.

REPLY OF GOVERNMENT

The recommendation of the Committee is accepted. The Division is actively investigating the possibilities of biological control of insect pests by the introduction of exotic parasites. A comprehensive scheme for the re-organisation of the activities of the Section of Parasitology is under consideration.

[Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 31st May, 1966.]

Recommendation (Serial No. 18, Para No. 32)

The Committee consider it necessary that the economic utility of the results emanating from researches in the Entomology Division should be fully tested, and that such of the new findings and practices as are found to be of practical value in controlling the pests should be promptly made known to the farmers.

REPLY OF GOVERNMENT

The recommendations of the Committee are being followed.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)*—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 31st May, 1966.]

Recommendation (Serial No. 19, Para No. 33)

In regard to bird pests, the Committee feel that the Entomology Division could at least make a beginning by initiating studies on (a) the biology of birds and (b) methods of control of bird pests. The Division may also undertake studies on the use of birds for biological control of pests.

REPLY OF GOVERNMENT

The recommendations of the Estimates Committee are accepted. A comprehensive scheme on the study of biology and bionomics of useful and harmful birds and the control of bird pests has been included under the Fourth Plan.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)*—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 31st May, 1966.]

Recommendation (Serial No. 20, Para No. 35)

Considering that the Indian exsiccati sets can be a useful aid to mycological studies and investigations, the Committee would like the Indian Agricultural Research Institute to endeavour to supply these sets to such agricultural research and training institutions in the country as may be interested in acquiring them and are in a position to make good use of them.

REPLY OF GOVERNMENT

The recommendation is accepted.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)*—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 31st May, 1966.]

Recommendation (Serial No. 21, Para No. 36)

The Committee would like to suggest that pending a decision on the proposal of the Institute for an expanded wheat Improvement

Programme, every effort should be made to intensify investigations on the problem of wheat rust at the existing wheat research substations of the Institute.

REPLY OF GOVERNMENT

The suggestion of the Committee is accepted. Work is already in progress at Simla, Indore, Pusa and Wellington.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 31st May, 1966*].

Recommendation (Serial No. 22, Para No. 37)

The Committee fail to understand why with all its facilities for research the Indian Agricultural Research Institute should have confined itself to merely routine testing of fungicides. In any case, the Institute, after some preliminary research should have actively pursued the matter with the National Chemical Laboratory. As the availability of efficient fungicides at cheap rates can obviously make a significant contribution to the success of the country's food production programmes, the Committee would like the Government to take appropriate steps for the development and manufacture of fungicides.

REPLY OF GOVERNMENT

The activities of the Indian Agricultural Research Institute are not confined merely to routine testing of fungicides. In recent years, work on serology of viruses and tissue culture has been taken up, which is of fundamental nature. Besides, some other important diseases caused by bacteria such as Bacterial Blight of Paddy and also Virus diseases of Cereals, fruits etc., and Nematode diseases of crop plants are also being investigated.

Regarding the development and manufacture of fungicides, a Coordinated Scheme on Research on fungicides is at present functioning at 5 Centres under the Indian Council of Agricultural Research—one of the Centres being at the Indian Agricultural Research Institute. The objectives of this scheme are to find out cheap and readily available fungicides, which would be most effective against destructive diseases. So far, work on development of fungicides has not been tackled at the Indian Agricultural Research Institute or

even in the Coordinated Scheme mentioned above. This work is, for the present, carried out by Pharmaceutical concerns like Hindustan Antibiotics. Burmah Shell etc. However, in the Fourth Five Year Plan, it is proposed to set up a Division of Agro-Chemical Pesticides at the Indian Agricultural Research Institute, with the following objectives:—

1. Development of pest control and allied Chemicals both synthetic and botanical from indigenous raw materials.
2. Research on problems pertinent to the safe use and the metabolism of the newly developed pesticides when applied to soils and plants for commercial development of these chemicals.
3. Besides synthesis, isolation, formulation and screening, the activities will also include development and standardisation of the techniques for the macro and micro determination of the products, their formulations and residues.

As regards the availability of fungicides at cheap rates, it is doubtful whether the Indian Agricultural Research Institute or even M/s. Hindustan Antibiotics will be able to compete with foreign firms at this stage of development as the work requires very sophisticated instruments in addition to high level teams of micro-biologists, biochemists, and soil and plant scientists, working constantly on the various problems.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)*—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 31st May, 1966].

Recommendation (Serial No. 23, Para No. 39)

The Committee consider that the results emanating from the manurial experiments conducted by the Division of Soil Science and Agricultural Chemistry should be collated and widely publicised among farmers so as to enlighten them on the balanced use of fertilizers and remove any misconception about the effect of chemical fertilizers on the nutritional value of food crops or the fertility of the soil.

REPLY OF GOVERNMENT

The recommendation is accepted.

The results have been published by Ghosh and Kanzaria (Symposium on Fertility of Indian Soils, National Institute of Science, India, 1962). The data along with relevant yield data available with the Agronomy Division of this Institute and data on other permanent manurial trials in the country on this subject will be compiled in the form of an extension bulletin and given publicity to enlighten farmers on the balanced use of fertilizers and to remove any misconception about the use of chemical fertilizers.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 31st May, 1966*].

Recommendation (Serial No. 24, Para No. 40)

(i) The Committee note with distress that in spite of the high level attained in regard to the know-how about pest control, there has been scant progress in regard to the application of the know-how on a large scale in the country. Even the supply of spraying equipments falls far short of the requirements of the farmers. The Committee need hardly stress the necessity of making cheap pesticides available to the farmers. They would like the Government to devise ways and means in consultation with the Hindustan Insecticides Ltd., for production of pesticides and spraying equipment on a scale adequate to meet the country's requirements.

(ii) The Committee also suggest that the Indian Agricultural Research Institute should undertake detailed investigations and trials to assess the economic utility of the need seed spray in regard to different crops. The investigations should be followed up by publicity in regard to the method of producing and using the spray and its economics.

REPLY OF GOVERNMENT

(i) Taking into account the present availability of plant protection inputs, potentials for their increase and availability of technical resources, Government of India are anxious to cover as large an area as possible. The area chemically treated against various pests, diseases and weeds has increased from 6.1 million acres in the last year of the First Five Year Plan to about 43 million acres at the end of the Third Plan and proposals for covering 210 million acres by the third year of the Fourth Plan have been formulated. Estimates of pesticides and application equipment have been worked

out and necessary arrangement for their supply to farmers in adequate quantities through increased indigenous production and where necessary by imports is being made in consultation with the Ministries concerned. The following steps are also being taken to give a dynamic push to the programme:—

1. Strengthening of State Plant Protection Organisations up to the block level.
2. Training of extension staff and farmers in plant protection techniques and methods,
3. Making availability of various plant protection inputs in adequate quantities at cheap rates in the countryside, strengthening of Central Aerial Unit and assisting private operators to expand their activities in the line.
4. Mapping endemic areas with a view to instituting effective control of pests and diseases at the proper time.
5. Organizing plant protection mobile squads for control of pests on area-wise basis.
6. Central assistance to States in the control of epidemic, popularisation of prophylactic treatments and laying out large scale demonstrations on the cultivators' fields.
7. Promoting contracts spraying and dusting operations by private operators.
8. Formulating effective Pest and Disease Control Act in various States for enabling the State Governments to use compulsion when the obstructive attitude of the recalcitrant minority may threaten to endanger the well being of the majority of the farming community. A Model Act prepared in consultation with the Law Ministry has been sent to all the States/Union Territories for guidance in framing/modifying State Pest Acts.

The Government of India agree that availability of pesticides to farmers at reasonable cost should be ensured. Various steps have been taken to bring down their prices. Customs duty has been reduced from 44 per cent. to 11 per cent. in the case of a large number of imported pesticides. Imports are being arranged in bulk to obtain pesticides at competitive and lower rates. The sale of pesticides and manually operated plant protection appliance is also subsidised to the extent of 25 per cent. by the Government of India. Aerial spraying is also being subsidised.

As regards spraying and dusting equipment, Indian industry is sufficiently equipped to produce two lakh units of manually operated equipment per year on one shift and this is considered adequate to meet the present demand. For power operated equipment, arrangements have now been made for indigenous production of engines and it will be possible to meet the requirements in full.

(ii) The recommendation of the Committee has been accepted and is being implemented.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)*—I.C.A.R. O.M. No. 2-15/65-Instt. I dated 31st May, 1966.]

Recommendation (Serial No. 25; Para No. 42)

The Committee are unhappy to note that although the country has been hearing of the cowdung gas plant for nearly two decades, the plant is still essentially in the demonstration stage. They consider it particularly unfortunate that lack of trained personnel should come in the way of installing this device in places where it is in demand.

In view of the difficulties mentioned during evidence, the Committee strongly recommend that future investigations in regard to the cowdung gas plant project at the Indian Agricultural Research Institute should concentrate on bringing down the cost of the plant. The Committee suggest that Government should also make a phased programme for getting trained personnel in adequate numbers and should encourage commercial manufacture of the plant at an economic price. The Committee also suggest that Blocks and Panchayats may be persuaded to put up demonstration plants in their regions so that the rural people may get some idea of the utility of the plant.

REPLY OF THE GOVERNMENT

The recommendations of the Committee are accepted by the Government of India.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)*—I.C.A.R. O.M. No. 2-15/65-Instt. I dated 31st May, 1966.]

Recommendation (Serial No. 26, Para No. 43)

The Committee have been informed that Government intend to set up a National Soil Service with the help of the UN Special Fund within the next two years. The Committee suggest that Government may examine whether, the responsibility for the co-ordination of the work of the Soil Testing Laboratories should in due course be entrusted to the new Organisation proposed to be set up.

REPLY OF GOVERNMENT

The idea of creating a National Soil Service Organisation has since been dropped. Coordination of the work of Soil Testing Laboratories will, therefore, have to continue to be done by the Indian Agricultural Research Institute.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)*—I.C.A.R. O.M. No. 2-15/65-Instt. I dated 31st May, 1966.]

Recommendation (Serial No. 27, Para No. 44)

The Committee suggest that processes patented by the Indian Agricultural Research Institute should be given adequate publicity and be made available for commercial exploitation preferably to more than one party, so that the prices of the finished products are kept at reasonable levels through the operation of healthy competition.

REPLY OF GOVERNMENT

The licences for patents, filed by the Indian Agricultural Research Institute and other Government Organisations are granted, on exclusive or non-exclusive basis by the National Research Development Corporation of India (Ministry of Education), after giving adequate publicity, and keeping in view the considerations mentioned by the Committee. Such licences can be granted to more than one party, depending upon the nature of and demand for the product.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I dated 31st May, 1966.*]

Recommendation (Serial No. 28, Para No. 45)

The Committee regret that all the parts required for Differential Thermal Analysis Unit were not imported initially in 1958 and that there was considerable delay in making available foreign exchange to the tune of Rs. 3,800 for importing the requisite part. The Committee consider that had timely action been taken to obtain the requisite part it should have been possible to commission the Differential Thermal Analysis Unit long ago. The Committee hope that every effort will be made to put the equipment to use as early as possible, and that necessary action will be taken to ensure that such instances of non-utilisation of research equipment do not recur.

REPLY OF GOVERNMENT

The recommendation of the Committee has been accepted for compliance.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I dated 31st May, 1966.*]

Recommendation (Serial No. 29, Para No. 48)

Keeping in view the objectives underlying the setting up of the Division of Agricultural Engineering, the Committee cannot but regard the achievements of the Division during nearly two decades of its existence as meagre. The Committee regret that the work of the Division should have been allowed to suffer for all these years due to various handicaps in regard to accommodation, equipment, etc. To ensure better results in future they would urge the need of speedy action to remove the difficulties faced by the Division, or by any other Division.

The Committee have already suggested in para 13 the earmarking of a separate Servicing Cell to look after the servicing of mechanised equipment in various Divisions of the Institute so that maintenance work does not distract from the main work of research in the Agricultural Engineering Division.

REPLY OF GOVERNMENT

Every effort will be made to remove the difficulties faced by the Division as soon as possible.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I dated 31st May, 1966.*]

Recommendation (Serial No. 30, Para No. 49)

(i) In view of the fact that Indian agriculture is still being conducted with crude and outdated implements and in view of the remarkable success achieved by many countries, notably Japan and Germany in increasing agricultural production through the use of improved agricultural machinery and implements, the Committee consider that there is imperative need to intensify research in agricultural engineering in India so that it may be possible to develop cheap and efficient implements suited to the needs of Indian farmers. The Committee also feel that with the introduction of agricultural engineering in a number of agricultural Universities, the time has come when the training facilities in agricultural engineering, especially at the Post Graduate level, should be coordinated and planned on an all India basis. They would, accordingly, like the Government to formulate and implement, as early as possible, a comprehensive and integrated all-India programme for research and higher studies in agricultural engineering.

(ii) The Committee have suggested in Chapter VI that it would be desirable to introduce a major course in Agricultural Engineering at the Post-Graduate School of the Institute. As a corollary to this, they would recommend that the research facilities in the Agricultural Engineering Division should be suitably strengthened so as to enable the Division to cater to the needs of Post-Graduate instructions in Agricultural Engineering.

REPLY OF GOVERNMENT

(i) The recommendation of the Committee on intensification of research in Agricultural Engineering is accepted by the Government of India. A scheme for imparting Post-graduate training in Agricultural Engineering has been included in the Fourth Plan, embodying the Committee's objectives on Post-Graduate training in Agricultural Engineering.

(ii) The recommendation is accepted. Every effort will be made to strengthen research facilities in Agricultural Engineering. This would, however, depend on the availability of foreign exchange for laboratory equipment needed for the purpose. In fact, some schemes on the different aspects of Agricultural Engineering have already been included in the Fourth Plan.



[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I dated 31st May, 1966.*]

Recommendation (Serial No. 31, Para No. 50)

To avoid duplication of work and to ensure the best use of available talent and resources in the country, the Committee would like to recommend that, as amongst the various agricultural research Institutes in the country, fundamental research work in regard to designs and improvements of agricultural implements may be concentrated in the Agricultural Engineering Division of the Indian Agricultural Research Institute. The Committee suggest that engineering sections of other agricultural research institutes should look mainly to the maintenance and repairs of their own implements, and machineries.

REPLY OF GOVERNMENT

Steps are being taken to see that fundamental research work on design and improvement of agricultural implements is concentrated at the Engineering Division of the Indian Agricultural Research Institute, New Delhi, and the Research Testing Centre, Coimbatore. The Working Group on Agricultural Implements which considered this question felt that as the soil, climatic and crop conditions vary widely between North and South there should be two Centres, one at the Indian Agricultural Research Institute and the other at Coimbatore. The Indian Agricultural Research Institute Centre will deal with wheat and other common crops of North India and the Coimbatore Centre with paddy and other crops of South India. The Scientists' Panel and the Planning Commission also considered this proposal and have accorded their approval. Both these organisations are being suitably strengthened for the purpose under the Fourth Plan.

The Agricultural Engineering Sections of other Institutes, in addition to the maintenance and repairs work of their own imple-

ments, would also have to take up the work of testing of implements in the field and assisting the other Divisions and Sections in laying suitable field experiments involving engineering aspects. Even the designs evolved by the two expanded Centres at New Delhi and Coimbatore and those from manufacturers may have to undergo more intensive field tests at other testing stations. It would, therefore, be desirable that testing of implements (for local crops and regional soil conditions) should also be included for other centres. Fundamental research and design would, however, be the responsibility of only the two Centres mentioned above.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)*—I.C.A.R. O.M. No. 2-15/65-Instt. I dated 31st May, 1966.]

Recommendation (Serial No. 32, Para No. 51)

The Committee consider that the field trials of agricultural implements should be intensified and should cover a wider range of implements particularly those imported from advanced countries like Germany and Japan which have made note-worthy advances in recent years in designing and manufacturing of agricultural machinery.

REPLY OF GOVERNMENT

The recommendation is accepted.

The Indian Agricultural Research Institute has so far carried out field trials of the following imported Japanese and other Agricultural Implements:—

(a) *Japanese Agricultural Implements*

1. Power Operated Iseki Thresher.
2. Low Lift Water Pump.
3. Implements, Break Harrow, Cattle drawn cultivator.
4. Land master tropical tiller L. 150.
5. Komastu Tractor.
6. Hand Power Operated Japanese Maize.
7. Bullock Harness
8. Hand Operated Japanese Maize Sheller.

9. Hay Choper.
10. Tractors with attachments (different types).
11. Akitu Seeder.

(b) *Other equipments.*

1. Austrian Scythes.
2. 'LAZAFRA' Cane Dehusker-International Trading Co.

2. So far as German Implements are concerned, these are being studied by a Machinery Centre established at Mandi with German Collaboration. The following implements have so far been tested:—
German-Proto-type hand tools.

- | | | |
|---|---|--|
| <ol style="list-style-type: none"> 1. Hand Cultivator-2 tine 2. Hand Hoe Plain. 3. Zig Zag Hoe. 4. Push Type Hoe. | } | <p>Newly developed from
German prototype</p> |
|---|---|--|

3. The programme on field trials of the imported implements is proposed to be intensified further, under the Fourth Plan, at the Research Testing and Training Centres both at the Indian Agricultural Research Institute and at Coimbatore.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)*—I.C.A.R. O.M. No. 2-15/65-Instt. I dated 31st May, 1966.]

Recommendation (Serial No. 33, Para No. 52)

The Committee feel doubtful whether the existing scheme of Indian Council of Agricultural Research for awards can provide sufficient incentive for designing and manufacturing improved agricultural implements. They are of the view that an upward revision of the value of these awards is necessary for attracting the best engineering skill in agriculture. The awards should also be given wider publicity. The Committee would also like the Government to consider early a recent proposal made by the Panel of Agricultural Scientists for the award of two prizes by the Government of Rs. 50,000 each to the designer of (1) an improved seed drill for small grains and (2) a thresher useful for wheat or paddy.

REPLY OF GOVERNMENT

The recommendation of the Committee is accepted by the Government of India. In fact, on the basis of the recommendations of

the Panel of Agricultural Scientists, two prizes worth Rs. 10,000 each, for designing (i) Seed-Fertilizer Drill and (ii) Thresher have been announced for 1966.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I dated 31st May, 1966.*]

Recommendation (Serial No. 34, Para No. 53)

(i) The Committee need hardly emphasise that Indian agriculture cannot make any appreciable progress unless improved agricultural implements, of standard quality, are available to the farmers at reasonable prices. The Committee suggest that Government should formulate a definite programme to manufacture cheap but improved agricultural implements suitable for Indian agricultural and then to introduce them through the Community Development Blocks and Panchayats. The programme should also provide for the establishment at the State Government level of suitable machinery to enforce price and quality control in respect of improved agricultural implements.

(ii) In order to popularise improved agricultural implements among the farmers, the Committee would suggest that in addition to holding demonstration trials of such implements the Indian Agricultural Research Institute should make arrangements in collaboration with State Departments of Agriculture for the display and demonstration of new implements developed by the Agricultural Engineering Division at fairs and exhibitions held in different parts of the country, which are largely attended by farmers.

(iii) The Committee also consider it desirable that the Agricultural Implements and Machinery Museum at the Institute, which has already become a storehouse of valuable material for agricultural engineering designs and developments, should be developed into a national information centre for agriculturists and industrialists.

REPLY OF GOVERNMENT

(i) Suitable measures have been taken to make available improved agricultural implements of standard quality to the farmers at reasonable prices. Quality marking schemes are already in operation in a number of States,—namely—Punjab, West Bengal, Uttar Pradesh, Rajasthan and Madras. In the Fourth Plan, schemes for

quality control to be implemented in the other States have been included. The Indian Standards Institution have currently taken up the standardisation of different types of agricultural implements and about 12 implements have already been standardised with reference to the dimensions and also material specifications. The improved implements, after intensive testing, are being introduced through the Community Development Blocks and Panchayats. From April, 1960 to March, 1965, a total of over 15 lakhs of improved steel ploughs and over 31 lakhs of other improved agricultural implements were distributed through the blocks. The manufacture of agricultural implements is being taken up by a number of State Government Workshops and also a number of private workshops. The latter generally adopt the same design features as are being followed by the Government workshops. The implements manufactured by the private workshops are also being tested by the State Government Engineering Wing before they are approved for release to farmers. Only implements which are of good quality are being recommended.

(ii) The Indian Agricultural Research Institute has only a small workshop, sufficient for carrying out research and design work and making a few prototypes for more intensive field trials, to bring out the final model for release to manufacturers. When a particular new implement is evolved by the research wing and is released for manufacture, the State Governments would be requested to buy these from the manufacturers concerned and display them at fairs.

(iii) The recommendations of the Estimates Committee are accepted.

[Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I dated 31st May, 1966.]

Recommendation (Serial No. 35, Para No. 54)

The Committee attach great importance to research on water lifting devices inasmuch as it can if conducted on the right lines, provide effective solutions to one of the most pressing problems of Indian Agriculture, viz., the lack of adequate irrigational facilities. Now that the Ford Foundation Scheme on the subject is again in operation, the Committee urge that the Agricultural Engineering Division should intensify its research and testing activities in this important field so that it may, within a reasonable time, be able to

devise or identify cheap and efficient water lifts suited for adoption under farmers' conditions.

REPLY OF GOVERNMENT

The recommendation is accepted. Work under the scheme has been intensified and will be continued as long as necessary whether assistance from the Ford Foundation is received or not.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I dated 31st May, 1966.*]

Recommendation (Serial No. 36, Para No. 55)

While noting that all the machines and machine-tools in the Agricultural Engineering Division have been in commission since May, 1964, the Committee cannot but feel unhappy over the fact that, for a considerable period, the Division was handicapped for want of adequate electricity in making full use of its machines. As the work of this Division entails the use of various power-operated machines, the Committee hope that in future care will be taken to ensure that the Division is provided with adequate supply of electricity to meet its requirements in full.

REPLY OF GOVERNMENT

The recommendation is noted. Action will be initiated well in advance for additional power load to be earmarked by the Delhi Electricity Supply Undertaking authorities to meet the requirements of additional equipment planned for this and for other divisions of this Institute during the 4th Five Year Plan period.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I dated 31st May, 1966.*]

Recommendation (Serial No. 37, Para No. 57)

The Committee note that after over six years, the Horticulture Division has now been housed in its own building which is being further extended as scheduled under the Third Plan. However, the Division's requirements of additional land is yet to be met. The

Committee in para 12 have already suggested that efforts should be speeded up to acquire another 200 acres needed for the Institute's farm. They hope that the Horticulture Division's needs will be substantially met from the additional acreage to be acquired by the Institute.

REPLY OF GOVERNMENT

The needs for the Horticulture Division, for additional land will be kept in view when additional land is taken over by the Institute and allotted.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)*—I.C.A.R. O.M. No. 2-15/65-Instt. I dated 31st May, 1966.]

Recommendation (Serial No. 38; Para No. 58)

The Committee are of the view that Government should carefully consider whether the functions proposed to be allotted to the National Horticultural Institute could not as well be performed by the Division of Horticulture which has now been in existence for over seven years. In general, the Committee would like to suggest that every attempt should be made to avoid proliferation of research institutes having overlapping or similar functions as in their opinion this leads to duplication of research effort which may not be commensurate with the outlay involved.

REPLY OF GOVERNMENT

The Government of India agree with the general observation that every attempt should be made to avoid proliferation of research institutes having overlapping or similar functions. All proposals for setting up new research institutes are, therefore, scrutinised very carefully from this angle. In the case of Horticulture, it is proposed to set up a research institute near Bangalore for dealing with the problems of the Southern region. This is necessary because basic research on different agro-climatic zones cannot be carried out at one place, just as research on all agricultural crops of the country cannot be carried out satisfactorily at one institute. No overlapping or duplication will be involved as the Horticulture Division of the Indian Agricultural Research Institute will serve as the major horticultural research station for the plains of North India.

Close co-ordination will also be maintained between the two Centres of horticultural research.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)*—I.C.A.R. O.M. No. 2-15/65-Instt. I dated 31st May, 1966.]

Recommendation (Serial No. 39, Para No. 59)

Considering that a plentiful supply of vegetables and fruits can go a long way in improving the nutritional value of the average Indian diet, the Committee would like to suggest that the Horticulture Division may make more intensive efforts to develop high yielding varieties of fruits and vegetables.

REPLY OF GOVERNMENT

The recommendation is accepted.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)*—I.C.A.R. O.M. No. 2-15/65-Instt. I dated 31st May, 1966.]

Recommendation (Serial No. 40, Para No. 60)

(i) While recognising the difficulties in acquisition of land, particularly good agricultural land, the Committee suggest that in case of any delay, the question of acquiring additional land for the Katrain Sub-station of the Institute may be taken up with the concerned State Government at a higher level stressing the importance and urgency of purpose for which the land is to be acquired. In view of the national importance of the research work of this Sub-station, the Committee feel that Government should have made every effort to acquire the additional land required for the Sub-station.

(ii) The Committee feel that as the Katrain Sub-station is the only important centre for research for the improvement of vegetables, like cauliflower, cabbage, etc., every effort should be made to ensure that the nucleus seeds produced at this sub-section are sufficient for meeting the country's requirements. The Committee also suggest that proper arrangements may be made for the distribution of the nucleus seeds, produced by the Sub-station, to progressive farmers and other agencies who may like to multiply them.

REPLY OF GOVERNMENT

(i) The suggestion has been noted. Action to finalise the acquisition of land is already in progress.

(ii) Efforts are being made to produce sufficient quantities of nucleus seeds of temperate zone vegetables at Katrain to meet the country's requirements. As regards multiplication of the nucleus seed, every effort is being made to supply the seeds to progressive farmers etc. But the Government consider that multiplication of nucleus seed should be taken up by the National Seeds Corporation. A decision has, therefore, been taken that after the summer season of 1966, the responsibility should be entrusted to the National Seeds Corporation.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I dated 31st May, 1966.*]

Recommendation (Serial No. 41, Para No. 66)

The Committee suggest that the conclusions drawn from the various studies conducted by the Agricultural Economics Division may be duly utilised for developing teaching material on the different aspects of the subject as also for actual extension work in the Kanjhawala Block.

REPLY OF GOVERNMENT

The suggestions of the Committee are being acted upon.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I dated 31st May, 1966.*]

Recommendation (Serial No. 42, Para No. 69)

(i) While noting the work done by the Indian Agricultural Research Institute in the field of practical extension and propagation of results of research, the Committee would like to urge that Government should, with the co-operation of the State Departments of Agriculture, devise effective machinery to ensure that the results of practical value emerging from the research activities of the Indian

Agricultural Research Institute are systematically and speedily transmitted to farmers on a more extensive and country-wide scale.

(ii) The Committee would also suggest that, to reduce the time-lag between the conclusion of experiments and making the results available to the cultivators, the Institute should seek the assistance of the Indian Council of Agricultural Research in arranging quicker publication of research results in the form of attractive pamphlets in popular style and sending them to State Governments, farmers' organisations and other concerned agencies.

(iii) Further, instructional films depicting improved methods and advances in agriculture and the advantages flowing from them should be prepared and widely displayed in rural areas. Arrangements should also be made for giving publicity to improved agricultural practices, implements, etc., at fairs and exhibitions held in the country side.

(iv) The Committee would also like to suggest that the feasibility of starting a rigorous technical training programme for extension workers at the Indian Agricultural Research Institute may be examined. The training programme may be organised in such a way that the extension workers themselves lay out demonstrations, hold field days, harvest the crops and learn the scientific principles underlying maximised crop production.

REPLY OF GOVERNMENT

(i) The Institute has already published 'Hints on Improved Agricultural Practices' based on the researches carried out in the Institute. This work will be continued to be done and the results will be communicated to the State Departments of Agriculture.

(ii) The suggestion is being implemented.

(iii) Efforts will be made in this direction, with the cooperation of the Films Division of the Ministry of Information and Broadcasting. Besides arranging exhibitions locally, the Institute also takes part in the exhibitions arranged by other agencies and State Governments all over the country.

(iv) The Extension workers at District, Block and Village levels are imparted training through regular institutional training programmes as also through *ad-hoc* training course.

Regular training programmes are organised at Institutions like the Gramsevak Training Centres, Agricultural and Veterinary Colleges, Agricultural Universities, Research Stations, Extension Edu-

cation Institutes etc. *Ad-hoc* training courses are organised at District, Block and Regional levels according to the facilities that are available. These courses are generally of short duration, ranging from two to three days.

The regular Institutional courses include an item of field visits during which, by and large, a programme for visiting some Institute of importance is included. This helps the village level workers to see for themselves the work being done by the Institutes and benefit from their experience.

In addition, special courses are also organised at the Indian Agricultural Research Institute for imparting specialised training to Subject-matter Specialists, e.g. seed testing and seed certification, plant protection, fertiliser and water management and agricultural implements. After attending the same, the Subject-matter Specialists themselves organise such training courses in their areas for the Agricultural Extension Officers, Village level Workers etc.

Refresher training courses have so far been held for the Extension Officers and Village Level Workers. Steps are now being taken to organise such courses for the District Agricultural Officers and the Officers working at the Regional and State levels. under the Fourth Plan.

[Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I dated 31st May, 1966.]

Recommendation (Serial No. 43, Para No. 72)

In view of the heavy demand for admission to the Post-graduate School and the country's growing need for properly trained agricultural scientists, the Committee suggest that the Indian Agricultural Research Institute may consider the feasibility of increasing the annual intake of students for both M.Sc. and Ph.D. courses.

The Committee also note that while on the one hand there has been a pressing demand for admission to the Post-graduate school, on the other hand the number of admissions to M.Sc. course of the School has been going down year by year and has reached the low level of 51 in 1963 as compared to 104 in 1958. The Committee are distressed to note this downward trend and would suggest that detailed reasons for this should be investigated and remedial measures

taken to attract competent students to undertake Post-graduate study in the vital subject of Agriculture.

REPLY OF GOVERNMENT

The question of substantially increasing the annual intake of students for M.Sc. and Ph.D. courses has been engaging the attention of the Government of India.

The Post-graduate School was started in 1958. The initial emphasis was more on admission of M.Sc. students than on the Ph.D. admissions. The position of availability of educational facilities in the country, at M.Sc. level, however, underwent considerable change, within a few years, with the establishment of Agrciultural Colleges/Universities in various parts of the country. Taking note of the expanded facilities in the country at the Masters' level, the emphasis was gradually shifted to Ph.D. courses, in which there had not been any appreciable increase in facilities. Ph.D. students take longer time for completion of their courses as compared to the M.Sc. students. As the number of admissions each year are restricted to the number of vacant rooms available in the hostel, the emphasis on Ph.D. admissions has resulted in shrinking of admissions. With the construction of the proposed 150 room new hostel, intake of both M.Sc. and Ph.D. students is likely to increase.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)*—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 31st May, 1966.]

Recommendation (Serial No. 44, Para No. 73)

The Committee are glad to note that the pattern of instruction followed at the Post-graduate School leaves little room for wastage of educational effort on the part of the students.

In view of this, the Committee would like the Government/University Grants Commission to consider the feasibility of extending the credit course system to other scientific research-cum-teaching institutions and agricultural universities in the country.

REPLY OF GOVERNMENT

The recommendations of the Estimates Committee have been communicated, for consideration, to all the Agricultural Universities as well as the University Grants Commission.

The question of extending the credit course system to other scientific research-cum-teaching institutions under the control of the Department of Agriculture is being considered by Government.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)*—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 23rd June, 1966].

Recommendation (Serial No. 45, Para No. 74)

(i) The Committee note that Agricultural Engineering does not form a major course of post-graduate instruction at the Post-graduate School of the Institute. In view of the fact that Bachelor's Courses in Agricultural Engineering already exist in some institutions in the country, such as the Indian Institute of Technology, Kharagpur, and similar courses are proposed to be introduced in the Agricultural Universities established recently, the Committee feel that Agricultural Engineering should be recognised as a major subject at the Indian Agricultural Research Institute.

(ii) The Committee also wish to emphasise the desirability of focussing the attention of the students of the Post-graduate School upon the actual problems facing the Indian cultivators and encouraging them to take up for their study and investigation problems of greater practical value from the point of view of increasing food production.

REPLY OF GOVERNMENT

(i) It is proposed to start a major course of Post-graduate Instruction in Agricultural Engineering at the Indian Agricultural Research Institute during the 4th Plan.

(ii) As far as possible, this is already being done.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)*—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 31st May, 1966].

Recommendation (Serial No. 46, Para No. 75)

The Committee feel that there is scope for expansion in the number of short/refresher courses organised at the School. They would like the Institute to make arrangements, for imparting intensive

practical training, of short duration, in improved agricultural practices to the actual tillers of the soil.

REPLY OF GOVERNMENT

The recommendation is accepted. The Indian Agricultural Research Institute has been conducting Short/Refresher Courses for the benefit of members of research, training and extension staff of the various State Departments of Agriculture and Universities in the country. This aspect is considered to be as important a function of the Institute as training for M.Sc. and Ph.D. Courses. Besides regular specialised training courses, special training programme are also arranged at the Institute for individuals from different States and for foreigners, as and when required. Shortage of hostel accommodation at the Institute has, however, been responsible for the absence of any appreciable expansion in the number of short/refresher courses. To meet this situation, a proposal for the construction of Visiting Farmers' Hostel has been included as one of the Fourth Five Year Plan Schemes of the Institute. With the construction of this hostel, it would be possible to provide facilities to progressive farmers to come to this Institute for short periods of 1-2 weeks, when field demonstrations and lectures on practical aspects of agriculture, including improved agricultural practices, would be arranged for them. This would meet the objective of imparting intensive practical training to those farmers.

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 31st May, 1966*].

Recommendation (Serial No. 47, Para No. 82)

The Committee feel that the location of the Soil Correlation Centres on the basis of the quality of soil alone is not quite sound, inasmuch as each and every region contains different qualities of soil which a soil correlator should take note of. The Committee think that it would have been better if the Centres were set up on a regional basis. The Committee suggest that in the light of the above, the position may be reviewed.

REPLY OF GOVERNMENT

The position has been reviewed. Each of the four Regional Centres has been covering all the soils in its region even though a parti-

cular soil group constitutes the major group in the region. Broadly speaking, each Centre has been catering to the soils in a homogeneous region comprising several adjoining States and the four Centres, among themselves, cover all the States as follows:

<i>Regional Centres</i>	<i>States covered</i>
Delhi	Northern region which includes the alluvial soils a major group, comprising the States of Punjab, Himachal Pradesh, Uttar Pradesh, Rajasthan and Jammu & Kashmir.
Calcutta	Eastern region which includes the red and laterite soils as a major group, comprising the States of Bihar, Orissa, West Bengal, Assam, NEFA, Nagaland, Manipur, Tripura and Andaman & Nicobar Islands.
Bangalore	Southern Region which includes the red and laterite soils as a major group in the States of Madras, Andhra Pradesh, Mysore, Kerala and Goa.
Nagpur	Central Region which includes the black soils as a major group, comprising the States of Maharashtra, Madhya Pradesh and Gujarat.

In such view of the matter, the object which the Committee have in view, viz. a region-wise distribution of Centres is already well served.

[Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 2nd August, 1966].

Recommendation (Serial No. 48, Para No. 84)

The Committee regret to note that in spite of the recommendations of experts scant attention has so far been paid by Government to the improvement of the service conditions of the technical staff and especially of the field staff in the Soil Survey Organisation. The Committee recommend that Government should take urgent measures to improve the pay scales, allowances and service conditions of the staff in this Organisation so as to bring them at par with those working in the Geological Survey of India and other Organisations doing field work.

The Committee also recommend that in case suitable Scheduled Castes and Scheduled Tribes candidates are not available to fill up the posts reserved for them, the posts of Soil Survey and Research Assistants should be filled up by other candidates.

REPLY OF THE GOVERNMENT

The following steps have since been taken for improving the service conditions of technical staff of the Organisation:

(a) The staff of the field parties is being allowed full daily allowance upto a period of 90 days during their tours subject to a scrutiny of each individual case by the Officer-in-charge of the Organisation.

(b) Necessary steps have been initiated to give the field staff a "field establishment allowance", on the analogy of similar allowance allowed to the field staff of the Geological Survey, etc.

(c) The Surveyors in the Organisation were in the scale of Rs. 110-4-150-EB-4-170-5-180-EB-5-200. Their scale of pay has since been revised to Rs. 150-5-175-6-205-EB-7-240 with effect from 1st July, 1966.

2. With regard to improving the pay scales of other categories of technical staff, a review has been made which has shown that the pay scales of the various categories of staff are more or less at par with similar posts in other Organisations requiring similar qualifications and duties.

With a view, however, to giving incentive to the existing staff, the recruitment rules have since been revised and the promotion quota which was not available in their earlier Rules has been provided. Accordingly, the position now is as below:

<i>Designation of posts</i>	<i>Method and source of promotion</i>
1. Junior Soil Surveyor (Rs. 210—425).	25 per cent of the vacancies by promotion from Field Assistants with five years service in that grade.
2. Senior Soil Surveyor (Rs. 325—575).	Cent per Cent by promotion from Junior Soil Surveyors with five years' service in that grade.
3. Asstt. Soil Survey Officers (Rs. 400—950) (Junior Class I).	50 per cent by promotion from Senior Soil Surveyors with 5 years' service in that grade.

Till recently all the posts in the Organisation were temporary but now 32 per cent of the posts are permanent and action is in hand to convert the further requisite number of temporary posts into permanent ones.

Vacancies in the grades of Soil Survey Assistants (now redesignated as Junior Soil Surveyors) and Research Assistants, reserved for Scheduled Castes/Scheduled Tribes, are "de-reserved" in accordance with the procedure laid down in the Ministry of Home Affairs O.M. No. 1/2/61-SC(T), dated 27th April, 1962 whenever such candidates are not available to fill up the reserved posts.

[Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65—Instt. I, dated 2nd August, 1966].

Recommendation (Serial No. 49, Para No. 85)

The Committee feel that the present arrangement under which the Chief Soil Survey Officer is under the Administrative Supervision of one authority and under the technical control of another authority is neither sound nor expedient. The Committee would like to urge that the question of bringing the All India Soil and Land Use Survey under the technical and administrative control of one expert authority should be considered by Government at an early date.

REPLY OF THE GOVERNMENT

Government accept the recommendation that the All India Soil and Land Use Survey Organisation should be brought under the technical and administrative control of a single authority. Whether it should become part of the Indian Council of Agricultural Research or revert to the Ministry is a matter which will be decided shortly.

[Ministry of Food, Agriculture, Community Development and Cooperation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65—Instt. I dated 2nd August, 1966].

Recommendation (Serial No. 50, Para No. 86)

The Committee regret to note that no satisfactory arrangements have been made for the repair and servicing of the jeeps, purchased

or secured for the various Centres. Even the post of driver-cum-mechanic which has been created for each Centre has not been filled up. The Committee would like to stress the need to keep the vehicles in good working condition and would suggest that proper servicing and maintenance facilities be provided at each Centre.

REPLY OF THE GOVERNMENT

In view of the small number of vehicles attached to each Soil Correlation Centre, it would not be economical to have a repair workshop-cum-service Station in each Centre. One out of four sanctioned posts of Driver-cum-Mechanic has since been filled up and offers of appointment for other two posts are being issued. These Driver-cum-Mechanics will ensure day-to-day maintenance of vehicles.

[*Ministry of Food, Agriculture, Community Development and Cooperation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 2nd August, 1966*].

Recommendation (Serial No. 51, Para No. 87)

The Committee are glad to note that the All India Soil and Land Use Survey Organisation has compiled a Handbook of Soil Series which is in use in the various Correlation Centres and some State Departments also.

The Committee would, however, like to suggest that the Handbook of Soil Series should be periodically revised and brought up-to-date as and when more data are collected and new soil series are identified and distinguished. The Handbook should be supplied to all the State Governments who should undertake translations thereof in the regional languages. Copies of the Handbook may also be supplied to Rehabilitation Centres where new migrants are proposed to be settled.

REPLY OF GOVERNMENT

Revision of the Soil Series Handbook is a continuous process, involving additions of new soil series and also rectification, to provide for the assessment of the characteristics of others. Since the Estimates Committee met in November, 1964, 22 additional soil series have been included in the Handbook, which now contains 312 series. Copies of this publication have been supplied to the Union Ministry of Rehabilitation and also to the State authorities. It may, however, be added that since the information contained in the Handbook

is largely of a technical nature, it can be used mainly by the soil scientists. Anyhow, the State Governments have been requested to consider the question of undertaking translation of the Handbook into regional languages.

[*Ministry of Food, Agriculture, Community Development and Cooperation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 2nd August, 1966*].

Recommendation (Serial No. 52, Para No. 88)

(i) The Committee feel that it is not enough if soil survey reports are merely sent to State Governments. What is necessary is close coordination with the State Departments of Agriculture as also intimate contact with progressive farmers who should be assisted through education and interpretation to use the soil maps, legends, descriptions and reports. Until the user can interpret the information contained in the reports, Agricultural projects cannot be properly planned.

(ii) The Committee also suggest that the Soil Survey Organisation should keep in touch with the various Commodity Committees and help them in mapping out areas suitable for production of crops with which they are concerned.

(iii) The Committee would also like to impress upon Government the urgent need for a rapid soil survey of areas which are being developed for resettlement of new migrants.

REPLY OF THE GOVERNMENT

(i) Close coordination with the State Departments of Agriculture is maintained right from the time a soil survey is initiated till the report on it is finalised. A Standing Technical Sub-Committee of the All India Soil and Land Use Survey Organisation formulates the annual technical programme of Soil Survey Organisation and reviews the progress annually. This Committee meets at least twice a year. In addition to the technical officers concerned of the Central Government it consists of the Chief Conservators of Forests and the Directors of Agriculture or an officer of the rank of Joint Director of Agriculture incharge of Soil Conservation in the States.

Every effort is also being made to educate B.D.Os. Zila Parishad Officers and others concerned with the development programmes in the use of soil maps, land capability maps and the soil survey reports so that they are better equipped to understand the technical reports

and interpret them and also to guide the farmers in their turn. It is accepted that proper interpretation of the information contained in the soil survey reports, which is usually of a technical nature, is very necessary to make the reports useful to farmers and others for proper planning of agricultural projects. Increased attention is, therefore, being paid to add adequate interpretative sections in these reports.

(ii) Recently a soil survey in Guntur district had been taken up by the All India Soil and Land Use Survey Organisation at the request of the Tobacco Committee to advise on suitability of soils for tobacco cultivation. Requests from such Commodity Committees for soil survey are always considered on priority basis.

These Commodity Committees have since been replaced by regional development offices for different commodities under this Ministry, and they will be kept informed of the soil potentialities for various commodities.

(iii) This recommendation has been forwarded to the State Governments and the Union Ministry of Rehabilitation and all possible assistance is afforded by the All India Soil and Land Use Survey Organisation to them, when called for. The Ministry of Rehabilitation recently desired that a soil survey of some of the areas in Assam, Orissa, Uttar Pradesh and Madhya Pradesh, where it is proposed to settle new migrants should be undertaken by the Organisation. Their proposal has been accepted and steps are being taken to complete the survey.

[Ministry of Food, Agriculture, Community Development and Cooperation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 2nd August, 1966].

Recommendation (Serial No. 54, Para No. 90)

The Committee do not think that the administrative difficulties in the way of drawing up a 'Memorandum of Understanding' in regard to the work of soil surveys between the States and the Centre are such as cannot be overcome by discussion, consultation and persuasion. Now that the Government are thinking in terms of a National Soil Service, the Committee suggest that the question of drawing of a Memorandum of Understanding may be considered at a conference with the representatives of the States and the River Valley Projects concerned.

REPLY OF THE GOVERNMENT

The Draft Memorandum of Understanding has since been prepared and is being forwarded to the State Governments for acceptance. The general approach was discussed in the conference of Chief Ministers and the State Agriculture Ministers held in Delhi on April 8-9, 1966.

[*Ministry of Food, Agriculture, Community Development and Cooperation (Department of Agriculture)*—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 2nd August, 1966].

Recommendation (Serial No. 55, Para No. 91)

Having regard to the fact that the Indian Agricultural Research Institute has been conferred the status of a University, the Committee would suggest that Government may undertake a review of the existing procedure for sanctioning expenditure in order to ascertain whether it would be advisable to delegate more financial and administrative powers to the Institute.

REPLY OF THE GOVERNMENT

With the transfer of the control of the Indian Agricultural Research Institute to the re-organised I.C.A.R., it is proposed to raise the status of the Institute to that of National Research Institute and to delegate the maximum possible financial and administrative powers.

[*Ministry of Food, Agriculture, Community Development and Cooperation (Department of Agriculture)*—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 31st May, 1966].

Recommendation (Serial No. 56, Para No. 92)

The importance of closer co-ordination between the Indian Agricultural Research Institute and other agricultural research institutes and Agricultural Universities in the country hardly needs any emphasis. Such coordination will not only help in eliminating unnecessary duplication of effort but also promote fruitful exchange of knowledge and experiences. The Committee feel that as the premier institution for agricultural research and education in the country, the Indian Agricultural Research Institute is eminently fitted to play a leading role in this matter. They would like the Institute to make a positive contribution towards developing greater co-ordination in the field of agricultural education and research by arranging, in co-operation with other Institutes and Universities, extension and

foundation lectures in which selected scientists and specialists from all over the country may participate.

REPLY OF THE GOVERNMENT

The recommendations of the Estimates Committee are accepted. The need for closer coordination between the Indian Agricultural Research Institute and other Agricultural Research Institutes and Agricultural Universities, is paramount. The Institute has already taken up this venture in a number of ways and a few of them are indicated below:—

(i) The Institute has organised extension lecture series with the above objective in view and senior persons from the Agricultural Universities, State Departments of Agriculture, etc., are intended to be invited by the Institute to deliver lectures.

(ii) The Institute has been regularly organising short training courses for research workers in specialised fields.

(iii) The Institute has, over the years, gained a position of leadership in the organisation and execution of a number of symposia with National and International participation, under the auspices of a number of Learned Societies, which have their Headquarters at the Indian Agricultural Research Institute and International bodies like the Unesco. Some of the Divisions of the Indian Agricultural Research Institute publish a number of Journals on behalf of these Societies.

(iv) The Institute has been serving as a Coordination Centre for a number of Coordinated All-India research projects such as those for the improvement of crops like maize, jowar, wheat, bajra etc. It has thus been a medium of participation between research scientists from the Centre and the States.

[Ministry of Food, Agriculture, Community Development and Cooperation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/45—Instt. I, dated 31st May, 1966].

CHAPTER III

RECOMMENDATION WHICH THE COMMITTEE DO NOT DESIRE TO PURSUE IN VIEW OF THE GOVERNMENT'S REPLIES

Recommendation (Serial No. 4, Para No. 14)

(i) While the Committee appreciate the difficulties in apportioning the costs in the case of developing research, they strongly feel that there is scope for introducing cost accounting in the case of those experiments the objective of which is to recommend new practices for extension purposes. They consider that before any new agricultural practice is recommended for being passed on to the cultivator, the cost of production should always be estimated with a view to ascertain whether the recommended practice would be economical.

(ii) In regard to the Karnal Sub-station, the Committee are of the view that its two principal activities, viz. seed production and experimental work, should be clearly demarcated and separate accounts should be maintained for that part of the Sub-station farm which is used for seed production. The Committee suggest that attempts may be made to organise the seed multiplication operations of the Sub-station on commercial lines.

REPLY OF GOVERNMENT

(i) Full details of the input in each experiment and of the output therefrom are always maintained. Recommendations on the basis of the results obtained from field experiments conducted at the Institute are invariably formulated after examining the profitability of the recommendations. In each case, the economics of the recommended practice is worked out by comparing the input and output figures and the benefits are clearly indicated before the recommendation is given out to the farmers for adoption. The Government of India, therefore, feel that introduction of cost accounting would not be necessary in the circumstances.

(ii) It will be extremely difficult to make a clear separation between the seed production and experimental work at the agricultural Research Sub-station, Karnal, as the seed multiplication programme

is superimposed over experimental plots. In many cases, seeds of varieties not exactly adapted to Karnal conditions have to be multiplied in the initial stages for distribution to other States for experimental purposes. Such multiplication from nucleus seeds will have to be done at the Karnal Station irrespective of the cost of production of the seeds. The cost of production of seeds multiplied at A.R.S., Karnal need not necessarily form a norm for the cost of production of the crops as the production of 'nucleus' or 'Foundation' seeds requires stringent care and careful supervision at extra cost.

It will not be possible to make fairly good estimates of the economics of seed multiplication from data collected at A.R.S., Karnal, by taking into account the average standard cost of input and average yield, but such a course is not necessary as all our seed multiplication at Karnal is only for experimental or initial introduction purposes.

[*Ministry of Food, Agriculture, Community Development and Co-operation. (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 31st May, 1966*].

FURTHER INFORMATION CALLED FOR BY THE COMMITTEE

In implementation of the recommendation No. 4 (Para 14-1) it has been stated "... In each case, the economics of the recommended practice is worked out by comparing the input and output figures and the benefits are already indicated before the recommendations is given out to the farmers for adoption...."

Please furnish an illustrative statement comparing the input and output figures of the recommended practice, so as to give an idea about the benefits that would accrue to the farmer as a result of the recommended practice.

FURTHER REPLY OF GOVERNMENT

The research findings are passed on to the farmers by way of publishing popular articles in non-technical journals like 'Indian Farming', 'Intensive Agriculture', and 'Kheti' etc. besides other methods of extension. This Division has been sending out articles for publication in the 'Indian Farming' for the benefit of the farmers in which economics have been worked out so as to show the benefits likely to accrue by adopting the recommended practices.

Titles of articles communicated for publication together with their economics are given below in the tabulated form, as desired.

TITLES OF THE ARTICLES

(1) *Impact of chemical weed control in cultivator's wheat crop in Nangal Thakran.*

Recommendation : Use 2, 4-D to control weeds in wheat.

Economics :

Cost of chemical weed control	Cost of manual weeding	Profit due to chemical weeding
Rs./ha	Rs./ha	Rs./ha
15.43	40.00	24.57

(2) *Improved agronomic practices for raising the yield of crops.*

Recommendation :

(a) *Peas* : It pays more to sell green pods of peas than to mature the crop for seed.

Economics:

Treatment	Yield	Gross returns
	Rs./ha	Rs./ha
(A) (i) Green pods	87.44	3615.2
(ii) Grain (Green pods which matured and were left for grain)	1.68	
(B) Grain	18.18	1272.6

(b) *Wheat* : An application of 120 kg N/ha is recommended for wheat Lerma Rojo for economically high returns.

Economics :

Input		Output		
N kg/ha	Cost of N	Grain yield	Value of extra produce due to N	Net profit due to N
	Rs./ha	Rs./ha	Rs./ha	Rs./ha
No nitrogen	..	18.1	..	..
40	80.00	34.0	954.00	874.00
80	160.00	45.6	1650.00	1490.00
120	240.00	48.1	1800.00	1560.00
160	320.00	50.3	1932.00	1612.00
200	400.00	52.3	2052.00	1652.00

- (c) *Wheat* : one extra irrigation to wheat Sonora 64 at crown-root initiation stage resulted in an extra yield of 9 Q/ha. This gives a net profit of Rs. 480/ha.

Economics :

Input			Output		
No. of irrigations	Cost of irrigations Rs./ha	Grain yield Q/ha	Extra produce due to one extra irrigations Q/ha	Value of extra produce Rs./ha	Net profit Rs./ha
3	180.00	42.3	..	..	..
4	240.00	51.3	9.00	540.00	480.00

3. *Intensive Cropping needs high levels of management.*

Recommendation : Apply 150 kg of N to maize and 50 kg N to wheat in maize-wheat rotation. Incorporation of maize stalks enhances soil productivity.

Economics of nitrogen fertilization—Maize-Wheat-rotation :

Input		Output	
N kg/ha to maize and wheat	Cost of fertilizer Rs./ha	Grain yield of maize wheat Q/ha	Net profit from N Rs./ha
50	100	60.3	..
125	250	65.3	180
200	400	73.2	474
275	550	73.0	312

[*Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 4th January, 1967*].

Recommendation (Serial No. 53; Para No. 89)

The Committee hope that the proposed National Soil Service would not only ensure better coordination of soil survey work bet-

ween the Centre and the States but also coordination among Central Organisations doing various kinds of soil surveys and soil testing work.

REPLY OF THE GOVERNMENT

It was contemplated to set up a National Soil Service Organisation with the financial assistance of U.N.S.F. This did not find favour with that authority and finally it was decided to drop this.

A close coordination of soil survey work between the Centre and the States and also among the Central Organisation undertaking soil survey work is proposed to be achieved largely through the Memo. of Understanding, a draft of which has been worked out and is being forwarded to State Governments for their acceptance. The coordination of soil testing work being undertaken by the States is being done by the Indian Council of Agricultural Research. The functional coordination necessary for soil testing and soil survey is proposed to be secured through a mutual free exchange of soil testing and soil survey data among the agencies undertaking these functions.

[*Ministry of Food, Agriculture, Community Development & co-operation, (Department of Agriculture)—I.C.A.R. O.M. No. 2-15/65-Instt. I, dated 2nd August, 1966.*]

FURTHER INFORMATION CALLED FOR BY THE COMMITTEE

Kindly communicate the reactions of the State Governments to the Memorandum of understanding regarding coordination of Soil Survey work between the Centre and the States forwarded to the various State Governments.

FURTHER REPLY OF GOVERNMENT

The Ministry of Food and Agriculture have since reviewed the question of drawing up a Memorandum of understanding as contemplated earlier. The proposal was considered in the Conference of State Chief Ministers held on 9th and 10th April, 1966 and they welcomed the idea of having some sort of understanding between the Centre and State Governments in respect of important programmes and agreed that an arrangement should be made for the preparation of the break-up of important programmes into specific tasks and the assignment of specific responsibilities and a time-table for the performance of those tasks. It was also appreciated that such an

assignment of tasks and responsibilities would be to mutual advantage of the State and Central Governments though whether the form should be a Memorandum of agreement or an exchange of letters embodying a schedule of operations was left for consideration by Minister F.A.&C.D.C.

[Ministry of Food, Agriculture, Community Development & Co-operation, (Department of Agriculture)-I.C.A.R. O.N. No. 2-15/65-Instt. I, dated 4th January, 1967].

CLARIFICATION ASKED FOR BY THE COMMITTEE

The final decision reached in the matter of bringing about a close co-ordination of soil survey work between the Centre and the States and also among the Central Organisations, which was considered in the Conference of State Chief Ministers in April, 1966, may be communicated. A copy of the memorandum of Agreement if any, or copies of the letters exchanged between the Centre and the States embodying a schedule of operations may also please be furnished.

CLARIFICATION GIVEN TO GOVERNMENT

The State Governments have been informed that it is important that each State Government prepare a programme of action for 1967-68 in respect of all important Agricultural Production Programmes. For this purpose, it has been suggested that the Agriculture Departments in the Central and State Governments should at the official level jointly undertake an exercise (separately for each State) on certain lines including *inter-alia* the preparation of schedule of Operations for 1967-68 for important schemes. A schedule of Operations would include (a) relationship between a particular State Scheme and a corresponding scheme of the Central Sector, (b) identification of the major tasks for the implementation of that scheme, (c) the placing of responsibility on various authorities and personnel for each different task under a scheme, beginning from the Central Government down to the field level, (d) a time table for the performance of these tasks by the various authorities and personnel considered to be responsible for their performance.

In order to enable the State Governments to undertake the above mentioned joint exercise, Teams of officials from the Central Government are visiting the States to discuss with them the relevant issues involved.

2. Copies of the letters addressed to the State Governments in this respect may be seen at Annexure Nos. I and II.

[*Ministry of Food, Agriculture, Community Development and Co-operation, (Department of Agriculture)—I.C.A.R. O. M. No. 2-15/65-Instt. I, dated the 17 February, 1967.*]

ANNEXURE I

No. 9-1/67-Plan Coordn.

GOVERNMENT OF INDIA

MINISTRY OF FOOD, AGRICULTURE, C.D. & COOPERATION:

(Department of Agriculture)

New Delhi, dated 3rd January, 1967.

From

Shri B. Sivaraman,
Secretary to the Government of India.

To

The Chief Secretaries of all State Governments and the Union Territory of Himachal Pradesh.

SUBJECT:—*Programme of action for Agricultural Plan Schemes for 1967-68.*

Sir,

I am directed to say that the Government of India in the Department of Agriculture consider it important that every State Government should prepare a programme of action for 1967-68 in respect of all important Agricultural Production Schemes in the Plan. Immediate steps in this connection are necessary for two reasons; first, droughts in 1965 and 1966 should be a warning to all of us for taking preparatory action for quick and increased agricultural production. Secondly, this being the election year, the first budget for 1967-68 will be an interim budget in which there may be a tendency to make *ad hoc* provisions for new items of work. Such *ad hoc* provisions may not adversely affect work in other sectors, but in the agricultural sector, the crop seasons and the rain-fall trends do not wait for the interval between the provisional budget and the final budget. Agricultural production for 1967-68 has to be planned right now and, therefore, even in the *ad hoc* budget, realistic

provisions have to be made, based upon a careful identification of priority programmes, their feasibility and the time-table of action.

2. It is, therefore, suggested that the Agriculture Departments in the States and in the Centre, should at the official level, jointly undertake an exercise (separately for each State) on the following lines:—

- (i) Identification of schemes which can effectively contribute to increased production in 1967-68 and should, therefore, be given higher priority than the others.
- (ii) Making of adequate and realistic provisions for these priority schemes in the 1967-68 budget, keeping in mind technical feasibility, availability of inputs, organisational measures, staff, buildings etc.
- (iii) Over and above the normal plan resources, budgetted under the Agricultural heads of accounts in the State budget, there are other resources available for agricultural programmes. These would include not only the provisions on account of Central and Centrally sponsored schemes, but also the finances likely to be available from the co-operative sector, the land mortgage banks, the Agricultural Refinance Corporation, short term loans, provision for rural electrification in the Power Sector. The formulation of the agricultural programmes, should take an integrated view of all these resources which aid the production.
- (iv) Preparation of Schedules of Operations for 1967-68 for important schemes. A schedule of operations would include
 - (a) relationship between a particular State Scheme and a corresponding scheme of the Central sector
 - (b) identification of the major tasks for the implementation of that scheme
 - (c) the placing of responsibility on various authorities and personnel for each different task under a scheme, beginning from the Central Government down to the field level
 - (d) a time-table for the performance of these tasks by the various authorities and personnel considered to be responsible for their performance.

3. In order to enable the Agriculture Departments of the State Governments to undertake this joint exercise, it is proposed to send to each State Headquarters a team of officials within the next few weeks in accordance with the enclosed time-table, if the State Governments have no objection. The teams which will be headed by senior officers of this Department will hold discussions with the

limited objective of preparing the programmes of action for every State on the lines indicated in Para 2 above. The discussions will be both at the level of technical officers and officers responsible for the coordination of the programme and the making of budget provisions in the Agricultural and Finance Departments of the State Governments. Plan Schemes for 1967-68 will be discussed in the categories of agricultural production (including land development, ayacut development and agricultural marketing), minor irrigation, soil conservation, animal husbandry and dairying, forestry and fisheries. I have asked the various Technical Divisions in this Department concerned with the above categories of programmes to address directly their counter-parts in your agricultural department. In those letters they will give a detailed specific guide lines for the proposed discussions by the teams, to enable your officers to undertake preparatory work for the programme of action.

4. A list of team leaders who would be visiting various States and the period when they are likely to visit is enclosed. The visits are to be confined to the State Headquarters. The actual dates of the visits will be confirmed by the team leaders directly.

5. I would request that, if the State Governments have no objection, (a) necessary arrangements may be made for undertaking this joint exercise for the programme of action. In particular, I would be grateful if a preparatory work is undertaken on the guide lines which our Technical Officers will be sending to the various officers in your Agricultural Department; (b) the teams when they visit States are enabled to have discussions with the officers responsible for the implementation of the programme in the State Headquarters followed by a discussion with the officers concerned of the Finance and Planning Departments and the Chief Secretary so as to ensure necessary budget provisions; (c) facilities could be accorded to the team when it visits your State.

Yours faithfully,

Sd/- B. SHIVARAMAN,
Secretary to the Govt. of India.

MINISTRY OF FOOD, AGRICULTURE, C. D. & COOPERATION
(Department of Agriculture)

**PROGRAMME OF ACTION FOR AGRICULTURAL PLAN
SCHEMES FOR 1967-68—SCHEDULE OF VISITS OF
TEAMS**

<i>Leader of the Team</i>	<i>Name of state</i>	<i>Period of Visit</i>
1. Shri B. Sivaraman, Secretary	1. Bihar	Last week of January 1967
	2. Uttar Pradesh	Last week of January 1967.
2. Shri P. P. I. Vaidyanathan Additional Secretary.	1. Madhya Pradesh	First week of February 1967.
	2. West Bengal	Last week of January 1967.
3. Shri S. J. Majumdar Additional Secretary	1. Assam	Third week of January 1967.
	2. Orissa	Second week of February 1967.
	3. Gujarat	Last week of January 1967.
4. Shri J. C. Mathur Additional Secretary	1. Rajasthan	First week of February 1967.
	2. Jammu & Kashmir	First week of February 1967.
5. Shri I. J. Naidu Joint Secretary	1. Andhra Pradesh	First week of February 1967.
6. Shri Saran Singh Joint Secretary	1. Punjab	Third week of January 1967.
	2. Haryana	Third week of January 1967.
	3. Himachal Pradesh	Third week of January 1967.
7. Shri K. Rama Murthi Joint Secretary	1. Madras	Last week of January 1967.
	2. Maharashtra	Third week of January 1967.
8. Joint Secretary (Liaison) (name to be communicated later).	1. Mysore	First week of February 1967.
	2. Kerala	First week of February 1967.

ANNEXURE II

No. 3/1/67-Soil Cons.(PL)

GOVERNMENT OF INDIA

MINISTRY OF FOOD, AGRICULTURE, C.D. & COOPERATION

(Department of Agriculture)

KRISHI BHAWAN,

New Delhi, the 9th|10th January, 1967.

From

Shri Saran Singh,
Joint Secretary.

To

The Secretary,
Agriculture/Forest/P.W.D./Irrigation Department.

SUBJECT:—Programme of action for Agricultural Plan Schemes for 1967-68—Soil Conservation.

Sir,

I am directed to invite your attention to this Ministry's letter No. 9-1/67-Plan Coord. dated 3rd January, 1967, addressed to the Chief Secretaries of all State Governments and Union Territory of Himachal Pradesh (copy enclosed for ready reference) and suggest for your consideration the following guide-lines for formulating 1967-68 programme of Soil Conservation. Broadly, the Soil Conservation Programme can be grouped into two major categories of schemes:—

- (i) Schemes involving land treatment measures: This category includes soil conservation measures necessary for a watershed (Soil Conservation measures both on agricultural land and non-agricultural land on watershed basis), land levelling and related soil and water management practices for the efficient use of irrigation water, field drainage, reclamation of saline, alkaline and waterlogged lands and the reclamation of ravine areas.

- (ii) Schemes to support the above programme of land treatment: This would include organisational set up, necessary soil surveys, training of personnel, related research and steps for the eventual evaluation of the measures adopted.

In formulating the programme for 1967-68 it is desirable that the approach of 'area saturation' has to be adopted in place of scattered individual approach; for example, much reliance was placed earlier on contour bunding, graded bunding and terracing on individual farmers field under agricultural lands, and afforestation and pasture development in other areas. It would be desirable now to adopt an integrated approach to agricultural development, extending the principle of concentration of efforts area-wise. The developmental programme to be undertaken would, no doubt, vary from region to region. It is, therefore, desirable that during 1967-68 the States should undertake steps to demarcate the areas of operation most likely to produce immediate benefits. To illustrate: in low rainfall areas, the programmes of minor irrigation and contour-bunding should precede measures for the popularisation of fertilisers and improved seeds. Soil surveys should precede land development programmes as far as possible. In short, it should be considered for in each area as to what should be the proper sequence of various conservation measures. The objective should be to demarcate the areas into broad categories taking into account the potentialities, feasibility and the economics of each area for different types of programme to be undertaken.

In the selection of areas of operation for 1967-68, following guidelines are suggested for your consideration:—

- (1) Areas which are suitable for growth of staple food crops and where soil conservation measures are expected to result in appreciable increase in production on sustained basis should be given the highest priority.
- (2) In arid and semi-arid tracts which are subject to frequent drought, the minor irrigation programme may be dovetailed with soil and water conservation. Where the soil conservation programme is expected to result in an appreciable recharging of ground water, the linked programme of wells construction should be undertaken.
- (3) In drought affected areas with inadequate rainfall where dry farming conditions prevail, intensive water conservation measures should be adopted.

- (4) In ravinous areas, priority may be given to the treatment and protection of agriculturally productive table-lands and to the stabilisation of marginal lands in the vicinity of ravines.
- (5) In the reclamation of saline, alkaline and water-logged areas, works may be taken up on easily reclaimable areas to the extent justified by the feasibility reports and economic considerations. Further, the present agriculturally productive land likely to be affected either by the development of salinity or water-logging should be protected from going out of cultivation, by suitable measures.
- (6) In river valley project, the area of operation will be the sub-catchments which require immediate attention. Such priorities are to be determined with reference to the aerial photo interpretation. In addition, supporting data of sedimentation hazard will help locate the priority catchments. All the necessary basic data needs to be collected for priority sub-catchments and the sequence of operation before the master-work-plan is made.
- (7) For undertaking effective measures of soil and water conservation programme in general, the training of personnel will have to be programme orientated.
- (8) Afforestation and grassland development work has to be restricted in areas which may form a component part of the watershed taken for agricultural development.

With regard to the contour bunding on slopy lands under agriculture, it is suggested that the levelling between the bunds may be taken up for increasing the agricultural production. For such programme of levelling in the bunded areas, financial credit facilities will be a helpful step in bringing the production on a sustained basis.

For soil conservation programme, over and above the normal resources under the head "Soil Conservation", finances may also be available from such other sources as rural man-power schemes, backward area programme, community development programme, re-finance corporation and the land mortgage banks. The overall size of the programme for 1967-68 may, it is suggested, take into consideration the financial resources available under all the above heads. In executing the programme, it is expected that the available organisational capacity will be, more or less, fully built up in the remaining period of the current year.

In the light of the above, it is suggested that the programme of 1967-68 may be finalised with the following details for further discussion with the Central Team visiting your State during the later part of January or early February:

- (a) Physical targets under various priority schemes.
- (b) Demarcation of priority areas.
- (c) Organisational requirement for implementation of the proposed programme.
- (d) Present organisational set-up.
- (e) Training programme.
- (f) The details of the various schemes may be formulated as far as possible indicating the schedule of operation which should include:
 - (i) sequence of measures to be adopted by different departments.
 - (ii) relationship between a particular State scheme and the corresponding schemes of the Central sector, and
 - (iii) identification of major tasks for implementation of the schemes.
- (g) Sequence of operation and the responsibility of various Officers and personnel for each individual task in the scheme down to the level of field be worked out.
- (h) A time-table for completion of the task by different departments and divisions may be worked out.

Yours faithfully,
Sd/- SARAN SINGH,
Joint Secretary.

APPENDIX

Analysis of the action taken by Government on the recommendation contained in the 76th Report of the Estimates Committee (Third Lok Sabha)

1. Total number of recommendations	. . . . .	56
2. Recommendations that have been accepted by Government (<i>vide</i> recommendations No. 1-3, 5-52, 54-56, referred to in Chapter II).		
Number . . . . .	. . . . .	54
Percentage to total	. . . . .	96.57%
3. Recommendations which the Committee do not desire to pursue in view of the Governments' reply (<i>vide</i> recommendations No. 4 and 53 referred to in Chapter III).		
Number	. . . . .	2
Percentage to total	. . . . .	3.43%