E. C. No. 517

ESTIMATES COMMITTEE (1967-68)

TWENTY-FOURTH REPORT

(FOURTH LOK SABHA)

MINISTRY OF FOOD, AGRICULTURE, COMMUNITY DEVELOPMENT AND COOPERATION

(DEPARTMENT OF AGRICULTURE)

Action taken by Government on the recommendations contained in the Seventy-Seventh Report of the Estimates Committee (Third Lok Sabha) on the erstwhile Ministry of Food and Agriculture (Department of Agriculture)— Central Rice Research Institute Cuttack

LOK SABHA SECRETARIAT
NEW DELHI

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to

Twenty-Fourth Report of the Estimates Committee (Fourth Lok Sabha) on the Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture).

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14. Shri Chintamani Panigrahi
15. Shri Rajdeo Singh.

INTRODUCTION

I, the Chairman of the Estimates Committee, having been authorised by the Committee to submit the Report on their behalf, present this Twenty-Fourth Report on action taken by Government on the recommendations contained in the 77th Report of the Estimates Committee (Third Lok Sabha) on the erstwhile Ministry of Food and Agriculture (Department of Agriculture)—Central Rice Research Institute, Cuttack.

2. The 77th Report of the Estimates Committee was presented to the Lok Sabha on 21-4-1965. Government furnished replies indicating action taken on the recommendations contained in the Report on 18-6-1966, 31-5-1967 and 9-6-1967. The Study Group 'E' of the Estimates Committee (1967-68) considered the replies received from the Ministry at their sitting held on the 1st August, 1967. The draft Report was adopted by the Committee on the 7th December, 1967.

3. 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 desire to pursue in view of Government's reply.

4. An analysis of the action taken by Government on the recommendations contained in the 77th Report of the Estimates Committee (Third Lok Sabha) is given in Appendix II. It would be observed therefrom that out of 45 recommendations made in the 77th Report, 37 recommendations, *i.e.* 82 per cent have been accepted by Government. The Committee do not desire to pursue 8 recommendations, *i.e.* 18 per cent in view of Government's reply.

NEW DELHI-1;

P. VENKATASUBBAIAH,

Chairman,

Estimates Committee.

December 15, 1967.

Agrahayana 24, 1889 (Saka).

CHAPTER I

REPORT

The Committee are glad to observe that the recommendations contained in their Seventy-seventh Report (Third Lok Sabha) on the erstwhile Ministry of Food and Agriculture (Department of Agriculture)—Central Rice Research Institute, Cuttack, have been generally accepted by the Government.

While noting the action taken by Government on certain recommendations, the Committee desire that further information on the progress made in the implementation of some of the recommendations (included in Chapter II) may be furnished to the Committee before the end of the current financial year.

CHAPTER II

RECOMMENDATIONS THAT HAVE BEEN ACCEPTED BY GOVERNMENT

Recommendation (Serial No. 2) Para No. 10

Comparing the various rice growing States in India inter se, *the yield per hectare in some States is even less than 50 per cent of the yield in Madras, Mysore and Kerala. It is note worthy that States like Bihar, Madhya Pradesh, Orissa, Uttar Pradesh, Gujarat etc. are lagging behind. Apart from the urgent need for a substantial increase in the average yield per hectare in the country as a whole the Committee feel that the question of low yield per hectare in particular States needs special attention.*

REPLY OF GOVERNMENT

The recommendation is accepted.

A small Committee of Scientists had already been set-up to find out the causes of low yields of rice in Madhya Pradesh, Uttar Pradesh, Bihar and Orissa and its report is awaited. Similar action will be taken in respect of other States also.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Deptt. of Agriculture ICAR)—O.M. No. 2-2/65-Instt. II, dated* 18-6-1966].

COMMENTS OF THE COMMITTEE

A progress report on the action taken on the findings of the Committee of Scientists may be sent by the end of the year 1967-68.

Recommendation (Serial No. 3) Para 11

The Committee suggest that the feasibility of introducing some of Japonica, *Chinese etc. varieties in the areas where days are longer may be considered.*

REPLY OF GOVERNMENT

The feasibiliy of introducing some of the *Japonica* and Chinese varieties in India is being studed. Steps are beng taken to cover

rapidly as much area as possible with high yielding Taiwan varieties like Taichung Native—I (Indica), Taichung—65 (Japonica), Tainan-3 (Japonica) etc.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Deptt. of Agriculture ICAR)—O.M. No. 2-2/65-Instt. II, dated* 18-6-1966].

Recommendation (Serial No. 4) Para. No. 11

The Committee suggest that the technological processes evolved in Japan for overcoming natural and physical difficulties, like artificial control of the temperature of water for maintaining the crop growth, may also be studied by Indian agricultural scientists and some of the exotic strains requiring shorter period for maturing may be introduced in the predominantly rice producing areas of the country so that 2 to 3 paddy crops may be widely cultivated.

REPLY OF GOVERNMENT

The recommendation is accepted. The services of two experts from Japan on physiological and pathological diseases of rice are being obtained. It is proposed to procure later on the services of a Japanese expert on utilisation of a chemical for raising the temperature of irrigation water in rice fields in hilly areas.

Exotic Strains requiring shorter period for maturing are already being introduced to enable the cultivation of 2 to 3 paddy crops in addition to obtaining high yields.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Deptt. of Agriculture ICAR)—O.M. No. 2-2/65-Instt. II, dated* 18-6-1966].

Recommendation (Serial No. 5) Para. No. 12

The Committee feel that the progress made during the last 18 years in the evolution of high yielding strains and in testing the varieties from other countries useful for introduction in India has been slow and halting. They suggest that vigorous efforts should be made to step up the research activities of the Central Rice Research Institute and other rice research centres in this behalf.

REPLY OF GOVERNMENT

A co-ordinated Rice Research Scheme has been initiated with foreign collaboration for carrying out intensive research in order to achieve results of practical utility in increasing production as soon as possible. This foreign collaboration will enable us to introduce improved varieties evolved in other rice growing countries and to test them under Indian conditions. Already three varieties introduced from Philippines, namely, Taichung Native-1 and Tainan-3 and Taichung 65, have given promising results in different parts of India and steps are now underway to multiply their seeds on a large scale with a view to developing their cultivation in as big an area as possible.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Deptt. of Agriculture ICAR)—O.M. No. 2-2/65-Instt. II, dated* 18-6-1966].

COMMENTS OF THE COMMITTEE

The details of researches undertaken by the Central Rice Research Institute and other rice research centres during the past two years to evolve more high yielding strains including cross-breeding with foreign strains may be indicated by the end of the year 1967-68.

Recommendation (Serial No. 6) Para. No. 13

The Committee are distressed to note that no substantial results have so far emanated from the experiments conducted under Japonica-Indica rice hybridization scheme which has been in operation for more than a decade. In view of the present imperative need for increasing the food resources of the country even at a higher cost, the Committee would strongly urge that the work of multiplication of such varieties as are expected to give at least 25 per cent extra yield may be undertaken and the economics of their cultivation worked out alongside.

REPLY OF GOVERNMENT

The Indica-Japonica breeding programme was taken up at the Central Rice Research Institute and the resultant hybrid materials were passed on to the States for testing and selecting fertilisers responsive strains suited to the agroclimatic conditions. Out of the material received under this programme the following varieties have been selected. ADT. 27 in Madras, IJ. 52 in Andhra Pradesh and S. 2222 in Mysore. Of these, ADT.27 had given an average yield of 4000 lb/acre in pilot projects tested on an area of about 200

acres. The Government of Madras had already taken up the multiplication of this strain in a big way and has proposed to cover 2 lakh acres by the next Kuruvai season. The other two varieties have proved very promising in the States of Andhra Pradesh and Mysore in the first year of their trial and the trials are being continued for the second year. Multiplication of these varieties will be taken up after the pilot trials taken up now have conclusively proved the superiority of the new strains. The first year's data from Mysore State have shown that S. 2222 has yielded on an average 3500 lb/acre.

In addition, a programme for the multiplication of some of the superior foreign introductions like Taichung Native 1, Tainan 3 and Taichung 65 has been formulated for implementation during the first year of the Fourth Plan.

The economics of the new strains will be fully kept in view, as suggested by the Committee.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Deptt. of Agriculture ICAR)—O.M. No. 2-2/65-Instt. II, dated* 18-6-1966].

Recommendation (Serial No. 7) Para. No. 14

The Committee are glad to note that the Institute has made a study of multiple cropping and has also worked out the economics of different patterns of cropping. They suggest that the results of the study should be published and also made available to the Departments of Agriculture in the States who may be asked to put them into practical use so that the benefits of the multiple cropping may eventually be passed on to cultivators.

REPLY OF GOVERNMENT

Results of multiple cropping have already been published. Based on the results obtained, a project is already functioning at the Deras Farm of the Department of Agriculture, Orissa, with a view to maximise production per unit area. Selected cultivators around the Farm are also associated with this programme.

The results of multiple cropping have also been passed on to different States of North and North-East India through a training programme conducted at the Central Rice Research Institute for the extension Officers from I.A.A. and I.A.D.P. areas:

[*Ministry of Food, Agriculture, Community Development & Co-operation (Deptt. of Agriculture ICAR)—O.M. No. 2-2/65-Instt. II, dated* 18-6-1966].

COMMENTS OF THE COMMITTEE

A progress report about the practical use made of the multiple cropping methods may be furnished by the end of the year 1967-68.

Recommendation (Serial No. 9) Para No. 16

The Committee would suggest that the question of distribution of some quantity of seeds produced in the Institute's farm to each rice growing State for further multiplication in their respective farms may be examined so that the quality of seeds produced in these States may be improved.

REPLY OF GOVERNMENT

Action is being taken to arrange for the multiplication of breeders stock of some of the high-yielding varieties of rice evolved at the Institute as well as other centres, under the Coordinated Rice Research Project which is being operated in the various regions in the country. The breeders' seed thus produced will be supplied to the State Departments of Agriculture of rice growing States for further multiplication on their State farms.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Deptt. of Agriculture ICAR)—O.M. No. 2-2/65-Instt. II. dated* 18-6-1966].

COMMENTS OF THE COMMITTEE

A progress report regarding the multiplication of breeders stock of high-yielding varieties of rice and their supply to State Departments of Agriculture may be furnished by the end of 1967-68.

Recommendation (Serial No. 10) Para. No. 17

The Committee are surprised that though enough publicity has been given to this technique of clonal propagation, no efforts have been made so far to acsertain the cost of production of paddy by adoption of this technique.

The Committee would emphasise that the economics of this technique should be worked out as early as possible through extensive trials in different States before it can be recommended to the farmer and steps taken for its adoption.

REPLY OF GOVERNMENT

The Government are reviewing results received from different places and the cost of production is being taken into consideration.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Deptt. of Agriculture—ICAR) O.M. No. 2-2/65—Instt. II, dated 18-6-1966*]

Recommendation (Serial No. 12) Para No. 19.

The Committee are unhappy to note that although the posts of a Rice Technologist and two Research Assistants were sanctioned in 1961-62, *the Division of Rice Technology started functioning in December,* 1963 i.e. *after a time-lag of over two and a half years. The Committee cannot too strongly urge the need for proper planning so as to eliminate delays in setting up an organisation after necessary sanction therefor has been obtained. Now that the Division has been set up, the Committee hope that positive results leading to the selection and evolution of better quality-cum-better yielding paddy will emanate from the studies undertaken by it.*

REPLY OF GOVERNMENT

All out efforts are being made to get positive results from the work undertaken in the Division of Rice Technology of the Institute. In fact, some good results on storage, milling and cooking quality of various varieties of rice are now available.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Deptt. of Agriculture—ICAR) O.M. No. 2-2/65—Instt. II, dated 18-6-1966*]

Recommendation (Serial No. 13) Para. No. 20

The Committee suggest that concerted efforts should be made in collaboration with the Departments of Agriculture of the concerned States to educate the cultivators in the matter of improved processing and proper storage of crops.

REPLY OF GOVERNMENT

The recommendation of the Committee is accepted. Necessary action will be taken in the matter.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Deptt. of Agriculture—ICAR) O.M. No. 2-2/65—Instt. II, dated 18-6-1966*]

Recommendation (Serial No. 14) Para No. 20.

The Committee suggest that adequate steps should be taken in consultation with the State Governments concerned to impress the advantages of new parboiling technique on Rice Mill Owners.

REPLY OF GOVERNMENT

Necessary action is being taken.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Deptt. of Agriculture—ICAR) O.M. No. 2-2/65—Instt. II, dated* 18-6-1966]

Recommendation (Serial No. 16) Para. No. 23

The Committee suggest that Government may examine how far it would be desirable for the Indian Council of Agricultural Research to establish separate service stations in various rice growing States for country-wide propagation of pest and disease control and whether the work cannot be undertaken by each of the 11 Indo-Japonica Units which are under the administrative control of the Institute.

REPLY OF GOVERNMENT

The Indian Council of Agricultural Research does not propose to establish such service stations.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Deptt. of Agriculture—ICAR) O.M. No.* 2-2/65—*Instt. II, dated* 18-6-1966]

Recommendation (Serial No. 17) Para No. 23.

The Committee cannot but regret that so little should have been done all these years to bring home to the cultivators in general the importance of pests and diseases control, and to propagate among them the methods and devices to be adopted to secure substantial results.

The Committee cannot over emphasise the need to take urgent and comprehensive steps to rectify the present state of affairs, keeping in view the great contribution these steps are capable of making in the direction of augmenting the food supplies in the country.

REPLY OF GOVERNMENT

The suggestion of the Committee is noted.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Deptt. of Agriculture—ICAR) O.M. No. 2-2/65-Instt. II, dated* 18-6-1966]

Recommendation (Serial No. 18) Para. No. 26

The Committee feel that the visits by the Research Workers of the Institute to the affected rice fields in different States for on-the-spot study of local pest problems and demonstration of the control measures would go a long way in the extension of results of research, besides solving immediate pest problems of cultivators. They suggest that the visits to rice growing areas by the research workers of the Institute for on-the-spot study of pest problems should be undertaken irrespective of any specific request being made in this behalf.

REPLY OF GOVERNMENT

This suggestion is being implemented. The Mycologist and the Entomologist of the Central Rice Research Institute have been appointed as the Principal Investigators in the all-India Coordinated Rice Improvement Project in which developmental schemes like forecasting followed by spraying, which are of immediate benefit to the cultivators, are being included. In connection with the implementation of this project, visits will be undertaken also by other staff at the Central Rice Research Institute. They will also visit the States for an on-the-spot study of pest and disease problems even without any specific request made by the States in this behalf.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Deptt. of Agriculture—ICAR) O.M. No. 2-2/65—Instt. II, dated* 18-6-1966]

Recommendation (Serial No. 19) Para. No. 28

The Committee hope that the coordinated trials on the 'Antibiotic' and the 'Extract' for controlling 'Blast' and 'Helminthosporium' diseases respectively will be completed as early as possible. They would suggest that after successful field trials, the question of commercial manufacture of the 'Antibiotic' and the 'Extract' should be examined in consultation with the Hindustan Antibiotic Factory and the National Research Development Corporation.

REPLY OF GOVERNMENT

The recommendation is accepted. The question of the production of the 'Antibiotic' has been taken up with the Hindustan Antibiotic Factory. Preparation of the 'Extract' is also being taken up with the Organisations mentioned.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Deptt. of Agriculture—ICAR) O.M. No. 2-2/65—Instt. II, dated* 18-6-1966]

Recommendation (Serial No. 20) Para No. 28

The Committee suggest that the details of the proposed pilot project for demonstration of the techniques should be worked out simultaneously with coordinated trials to avoid any delay in their propagation, as soon as they are established.

REPLY OF GOVERNMENT

The recommendation of the Committee is accepted.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Deptt. of Agriculture-ICAR) O.M. No. 2-2/65-Instt. II, dated* 18-6-1966]

Recommendation (Serial No. 21) Para No. 29

The Committee suggest that since the preliminary investigations of the herbicides, Stam F-34 and Phenoxylene-30 have established their efficacy as weedicides, the question of their production on a mass scale in the country should be examined urgently. They also recommend patenting of the products and their commercial exploitation by the National Development Corporation. If it is found useful, the question of subsidising its scale at the initial stage should also be examined.

REPLY OF GOVERNMENT

The results of trials conducted so far with Stam F-34 and Phenoxylene-30 are not considered conclusive and need further confirmation. The question of production of these weedicides on a mass scale within the country will be considered after conclusive results become available.

[*Ministry of Food and Agriculture (I.C.A.R.) O.M. No. 2-2/65-Instt. II, dated* 20-9-1966]

FURTHER INFORMATION CALLED FOR THE COMMITTEE

Please state the present position in the matter.

[*Lok Sabha Secretariat O.M. No. 5/9(1)ECII/67, dated* 31-3-1967]

FURTHER REPLY RECEIVED FROM GOVERNMENT

The results of experiments since conducted have conclusively proved the efficacy of these chemicals in controlling weeds in rice fields. Accordingly, the Government of India are actively exploring the possibility of their manufacture in the country.

[*Ministry of Food and Agriculture* —(*I.C.A.R.*) *O.M. No.* 2-2/65—*Instt. II, dated* 31-5-1967].

Recommendation (Serial No. 22) Para No. 31

The Committee suggest that in view of the present inadequate production of Ammonium Sulphate in the country, concerted efforts should be made by the Government in conjunction with the State Departments of Agriculture for demonstrating the use of fertilizers like foliar spray of urea and Palm Gur Molasses to the cultivators.

REPLY OF GOVERNMENT

The demonstration of the usefulness of foliar spray of urea is being taken up on an all-India basis in collaboration with the State Department of Agriculture.

As regards the use of Palm Gur Molasses, it is felt that further confirmatory tests are necessary before steps to popularise this practice through demonstrations are taken.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Deptt. of Agriculture—ICAR) O.M. No.* 2-2/65—*Instt. II, dated* 18-6-1966]

Recommendation (Serial No. 23) Para. No. 32

As green manuring is cheap and its efficacy is comparable to chemical fertilisers, the Committee suggest that the research on common green manure crops like Dhaincha for rice should be intensified and the results obtained therefrom disseminated among the cultivators through the extension centres.

REPLY OF GOVERNMENT

The recommendation is accepted.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Department of Agriculture—ICAR) O.M. No. 2-2/65-Instt. II, dated* 18.6.1966].

COMMENTS OF THE COMMITTEE

A progress report on new areas covered by these green manure crops may be sent by the end of the year 1967-68.

Recommendation (Serial No. 24) Para. No. 33

The Committee suggest that the results of experiments conducted in Japan on the utilisation of blue-green algae as manure in rice fields should be closely studied by agricultural scientists with a view to their practical application in India.

REPLY OF GOVERNMENT

The recommendation is accepted.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Department of Agriculture—ICAR) O.M. No. 2-2/65-Instt. II, dated* 18.6.1966].

COMMENTS OF THE COMMITTEE

A progress report about the practical utilisation of the results of experiment on blue-green algae as manure may be sent by the end of the year 1967-68.

Recommendation (Serial No. 25) Para. No. 33

The Committee suggest that paddy soils in different regions should be surveyed for their indigenous 'algal flora' and formulae developed to bring out the full manifestation of nitrogen fixing species with benefit to rice crop.

The Committee feel that after the successful completion of the coordinated trials etc. of blue green algae, mass culture of nitrogen fixing species may have to be taken up.

REPLY OF GOVERNMENT

The suggestion that paddy soils in different regions should be surveyed for their indigenous algal flora is accepted. Preliminary studies have already been carried out with samples of soil brought from different state farms. Further, coordinated trials of algal inoculation are in progress since 1964 at Chinsurah (West Bengal), Aduturai and Tirurkupam (Madras), Nagenahalli (Mysore), Pattambi (Kerala), Karjat (Maharashtra) and Maruteru (Andhra Pradesh).

Hopeful indications regarding the usefulness of algal inoculation are available. These trials will be carried out in as many centres as possible in the coming two years so that the full benefit of nitrogen fixing species to rice crop could be exploited.

Technique for large scale mass culture of blue-green algae will be developed after the successful completion of the coordinated trials.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Department of Agriculture—ICAR) O.M. No. 2-2/65-Instt. II, dated* 18.6.1966].

Recommendation (Serial No. 26) Para. No. 34

The Committee feel that the present inadequate supplies of chemical fertilizers predicates that special efforts should be made to see that the available manurial raw material is put to maximum use.

REPLY OF GOVERNMENT

All possible efforts are being made to increase the production and utilisation of indigenous organic manures.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Department of Agriculture—ICAR) O.M. No. 2-2/65-Instt. II, dated* 18.6.1966].

Recommendation (Serial No. 27) Para. 34

The Committee suggest that the research and the coordinated trials on basic slag should be intensified and its economics worked out alongside so that no time is lost in popularising it after the successful completion of the trials.

REPLY OF GOVERNMENT

The recommendation is accepted.

[*Ministry of Food, Agriculture, Community Development & Co-operation O.M. No. 2-2/65-Instt. II, dated* 18.6.1966].
Inst. II, dated 18.6.1966].

Recommendation (Serial No. 28) Para. 34

The Committee suggest that Government should take up the question of pulverising of slages with the Steel Industry.

REPLY OF GOVERNMENT

The recommendation is accepted.

Basic slag has to be ground to 100 mesh size before it can be used as a fertiliser. The Fertiliser Corporation of India has, therefore, been asked to conduct trials on the slag from Jamshedpur and design a suitable grinding mill. The Fertilisers and Chemicals Travancore Ltd., have also been requested to do similar work on slag available at Bhilai.

The General Managers of Steel Plants have also been requested to indicate whether they are willing to set up and operate grinding mills.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Department of Agriculture—ICAR) O.M. No. 2-2/65-Instt. II, dated* 18.6.1966].

COMMENTS OF THE COMMITTEE

A progress report regarding setting up an operation of grinding mills by the steel plants may be sent by the end of the year 1967-68.

Recommendation (Serial No. 29) Para. No. 35

In view of the shortage of chemical fertilisers and the foreign exchange difficulty, the Committee recommended that the Central Rice Research Institute should direct its research towards alternative indigenous sources of manure, e.g. compost, green manure, algae, slag, cowdung etc.

REPLY OF GOVERNMENT

These studies will be further intensified as suggested by the Committee.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Department of Agriculture—ICAR) O.M. No. 2-2/65-Instt. II, dated* 18.6.1966].

Recommendation (Serial No. 30) Para. No. 37

The Committee are unhappy to note that the functions of the Agricultural Engineering Division of the Institute have not been properly defined. Besides servicing and maintenance of the agricultural machinery and equipments, which are its primary functions, the Division also is expected to undertake testing of various agricultural implements for rice cultivations and suggesting modifications to increase their performance and utility. The Committee feel that the functions and limitations of the Engineering Division of this Institute as also of other commodity research institutes should be precisely laid down and it should be made clear that all research work in regard to designs and improvements of agricultural implements should be undertaken by the Agricultural Engineering Division of the Indian Agricultural Research Institute. The Committee also suggest that the Agricultural Engineering Division of the Central Rice Research Institute should be properly equipped in machineries and personnel to enable it to discharge efficiently its functions to be specifically defined by the Government.

REPLY OF GOVERNMENT

Necessary action is being taken to define the functions of the Agricultural Engineering Division of the Central Rice Research Institute. Steps are also being taken to see that fundamental research work on design and improvement of Agrl. implements is concentrated at the Agricultural Engineering Division of the Indian Agricultural Research Institute, New Delhi and the Research Testing Centre, Coimbatore. Agricultural Engineering Division of the Central Rice Research Institute in addition to the maintenance and repairs work of its own implements, 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 of Indian Agricultural Research Institute, New Delhi and Research Testing Centre, Coimbatore and those from manufac-

turers might have to undergo more intensive field tests under local crops and soils conditions at the testing stations of the Central Rice Research Institute, Cuttack.

The suggestion of the Estimates Committee for proper equipment in machinery and personnel of the Agricultural Engineering Division of the Central Rice Research Institute is accepted and necessary action is being taken in the matter.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Department of Agriculture—ICAR) O.M. No. 2-2/65-Instt. II, dated* 18.6.1966].

Recommendation (Serial No. 31) Para. No. 38

The Committee suggest that in future where substantial improvements in the designs of implements are effected, the Institute should take steps to get them patented so that the financial benefits of the research of an institute may not be exploited solely by private interests.

REPLY OF GOVERNMENT

Recommendation accepted.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Department of Agriculture—ICAR) O.M. No. 2-2/65-Instt. II, dated* 18.6.1966].

Recommendation (Serial No. 32) Para. No. 39

The Committee suggest that Government may get the efficiency of the Leveller fabricated by the Central Rice Research Institute, tested by Indian Agricultural Research Institute with a view to explore the possibility of its manufacture on a commercial scale.

REPLY OF GOVERNMENT

The recommendation is accepted and necessary action is being taken.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Department of Agriculture—ICAR) O.M. No. 2-2/65-Instt. II, dated* 18.6.1966].

Recommendation (Serial No. 33) Para No. 40

The Committee feel that the National Training Course started by the Institute in 1960 is of great utility in the context of the need to increase food production. They regret to note that full capacity of the Institute for this training course has not been availed of since its introduction. In 1964 only 1/6th of the total capacity was utilised.

The Committee suggest that the Central Government should impress upon the State Governments the importance of this training course and they should be persuaded to depute their staff regularly for this course.

REPLY OF GOVERNMENT

The recommendation is accepted. The State Governments have been addressed in the matter.

[*Ministry of Food, Agriculture, Community Development & Co-operation) O.M. No. 2-2/65-Instt. II, dated* 18-6-1966].

Recommendation (Serial No. 34) Para. No. 41

The Committee are glad to note that the Central Rice Research Institute is imparting post-graduate training in various disciplines of agricultural science in collaboration with the Utkal Krishi Mahavidayalaya, Bhubaneswar and the Indian Agricultural Research Institute. They feel that the training programme should be augmented so that more and more students take advantage of the facilities afforded by the Institute. Incidentally, the training programme will also be beneficial to the teachers inasmuch as, this will keep them posted with the latest scientific developments in India and abroad.

REPLY OF GOVERNMENT

The suggestions of the Committee are accepted.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Deptt. of Agriculture ICAR)—O.M. No. 2-2/65-Instt. II, dated* 18-6-1966].

Recommendation (Serial No. 35) Para. No. 42

The Committee have noted that the flight of trained personnel from one institute to another and from one discipline to another is a feature which is to be noticed in all agricultural research institutes. The Committee would urge that the question of providing suitable incentives to the deserving research workers should be examined so

that they may look for future prospects within the Institute itself. In this context the Committee feel that the reservation of 10 per cent of the permanent posts of Research Assistants for the Selection Grade is not adequate, and they would suggest that Government should consider the desirability of a suitable increase in this percentage.

REPLY OF GOVERNMENT

To provide incentives to research workers, the scheme of merit promotions and advance increments has been introduced. Government are also considering the constitution of an Agricultural Research Service in which deserving Scientists will be allowed higher scales of pay while continuing the research work being done by them.

It is not correct to say that reservation of 10 per cent of the posts of Selection Grade in the Central Rice Research Institute is not a sufficient incentive for Research Assistants, because out of 25 permanent incumbents only four are actually working in that capacity and the rest have been appointed to higher posts, so that there has been no occasion to consider promotion from the ordinary grade to the selection grade.

[*Ministry of Food, Agriculture, Community Development & Cooperation (Deptt. of Agriculture—ICAR) O.M. No. 2-2/65-Instt. II, dated* 18-6-1966.]

Recommendation (Serial No. 38) Para. No. 44

The Committee urge that steps may be taken to improve the recreational facilities available for the employees of the Institute and their families in the Institute Campus.

REPLY OF GOVERNMENT

The recommendation of the Committee is accepted and all possible steps will be taken.

[*Ministry of Food, Agriculture, Community Development & Cooperation (Deptt. of Agriculture—ICAR) O.M. No. 2-2/65-Instt. II, dated* 18-6-1966]

Reiommendation (Serial No. 41) Para. No. 46

While the Committee appreciate the efforts of the Institute to publicise the results of the research undertaken, they feel that much remains to be done in the matter of dissemination and popularisation of the results of research. For this purpose, Government may devise a proper coordinated plan in consultation with the State Governments, the extension organisation at the Centre, and the Institute.

REPLY OF GOVERNMENT

The recommendation of the Committee is accepted.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Deptt. of Agriculture ICAR)—O.M. No. 2-2/65-Instt. II, dated* 18-6-1966].

Recommendation (Serial No. 42) Para No. 48

The Achievement Audit Committee (1960) *which assessed the work of the Central Rice Research Institute, did not go into the working of this saline water Sub-station presumably because it was then only in its formative stage. Now that a period of five years has elapsed since the setting of the Sub-station, the Committee feel that it would be worthwhile to conduct a critical appraisal of its work with a view to see as to what extent the objectives for which the Sub-station was set up, have been achieved.*

REPLY OF GOVERNMENT

Another Achievement Audit Committee was appointed in 1965 and its report, which has since been received, is being examined by the Government.

[*Ministry of Food, Agriculture (Deptt. of Agriculture—ICAR)—O.M. No.* 2-2/65-*Instt.* II, *dated* 20-9-1966].

FURTHER INFORMATION CALLED FOR BY THE COMMITTEE

Please state if the Second Achievement Audit Committee went into the working of this Saline Sub-station.

[*Lok Sabha Secretariat O.M. No.* 5/9(1)*ECII/67, dated* 31-3-1967.]

FURTHER REPLY RECEIVED FROM GOVERNMENT

The Achievement Audit Committee could not, as a body, visit the Saline Sub-station at Port Canning, and, as such, the Committee has not made any specific recommendation on this Station in its report. However, a member of the Committee visited the station for making a detailed study. He has been requested to expedite his report.

[*Ministry of Food and Agriculture (ICAR)—O.M. No.* 2-2/65-*Instt. II, dated* 31-5-67.]

COMMENTS OF THE COMMITTEE

The report of the member of Achievement Audit Committee visiting the Station may be made available.

Recommendation (Serial No. 43) Para No. 49

The Committee are unhappy to note that in spite of recommendations of the Achievement Audit Committee (1960) and other foreign experts, Government have not decided the question of setting up sub-station for studying problems relating to cultivation of rice under flooded conditions and high altitudes. As there are large areas in the country which are susceptible to floods but are suitable for rice cultivation under certain conditions and there are also high altitude areas growing rice and presenting problems peculiar to them, the Committee are of the opinion that there is a need for research on these special problems for increasing the rice production. They suggest that arrangements should be made for studying them, in case no such arrangement exists at present.

The Committee feel that if research on these special problems is conducted by any State Government at its research centres, the Central Rice Research Institute should coordinate with such research centres in this behalf.

REPLY OF GOVERNMENT

Research on problems relating to cultivation of rice under flooded/deep water conditions is being carried on in the State Research Stations. An Ad-hoc Committee had been set up by the Indian Council of Agril. Research in 1961 to study the work being done at that time and suggest further lines of action. The recommendations of the Committee which covered selection from local varieties, exchange of varieties between States for trials, hy-bridization, manurial *cum* cultural experiments, etc., were considered by the Rice Committee of the Indian Council of Agril. Research and the State Governments were requested to take necessary action. Arrangements, therefore, already exists for studying the problems of rice cultivation under flooded and deep water conditions.

As regards research on problems relating to cultivation of rice at high altitudes, some work is already being done at a State Research Station at Palampur in the Western Himalayas. This Station is proposed to be strengthened under the All India Coordinated Rice Improvement Project. Similar facilities are proposed to be created at suitable centre in the hill areas of Uttar Pradesh as well as in the Eastern Himalayas.

The All India Coordinated Rice Improvement Project, which is implemented in close coordination with the Central Rice Research Institute, Cuttack, is responsible for the integration of the work in progress in the field of rice research in the country in such a way that rapid progress becomes possible in the development of varieties and cultural, fertiliser and plant protection practices conducive to high yields. Coordination of research work on cultivation of rice in flooded areas and at high altitudes will also, therefore, be carried out under that Project.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Deptt. of Agriculture ICAR)—O.M. No. 2-2/65-Instt. II, dated* 18-6-1966].

COMMENTS OF THE COMMITTEE

A progress report relating to co-ordination of research work on cultivation of rice in flooded areas and high altitudes may be furnished by the end of the year 1967-68.

Recommendation (Serial No. 44) Para No. 50

The Committee are surprised to note that the paddy yield of the Institute's demonstration farm, which is expected to serve as a model, has been going down and the loss increasing every year. They regret that even after a lapse of 4 years of the Achievement Audit Committee Report, no tangible action has been taken to improve the irrigation and drainage system the lack of which has been responsible for decreasing yield in the farm. The Committee would urge that the matter may be attended to urgently so that the recurring losses incurred by the farm may be eliminated.

REPLY OF GOVERNMENT

Action is being taken to improve the irrigation and drainage system of the Institute's Farm on priority basis.

[*Ministry of Food, Agriculture, Community Development & Cooperation (Deptt. of Agriculture—ICAR) O.M. No. 2-2/65-Instt. II, dated* 18-6-1966.]

COMMENTS OF THE COMMITTEE

A progress report on the elimination of loss in the Institute's farm may be furnished by the end of the year 1967-68.

Recommendation (Serial No. 45) Para No. 51

The Committee feel that the present situation where the yield of rice per hectare in India continues to be one of the lowest in the world, should be taken as a challenge and should spur us on to more vigorous and intensified efforts both in the Research Institutes and

the field. If these efforts are commensurate enough, the Committee see no reason why it should not be possible to remove before long the stigma that India, the largest paddy growing country in the world, ranks amongs the countries lowest in productivity.

The Committee would like particularly to stress the fact that, besides intensifying the research on various problems of paddy cultivation. Government should give special attention to devise a suitable machinery which would ensure that extension work does not lac behind research and that the results of research reach the farmers in the fields and are fully utilised by them.

REPLY OF GOVERNMENT

The recommendation is accepted.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Deptt. of Agriculture O.M. No. 2-2/65-Instt. II, dated* 18-6-1966].

COMMENTS OF THE COMMITTEE

A progress report on extension work of the research done, may be furnished by the end of the year 1967-68.

CHAPTER III

RECOMMENDATIONS WHICH THE COMMITTEE DO NOT DESIRE TO PURSUE IN VIEW OF GOVERNMENT'S REPLY

Recommendation (Serial No. 1) Para No. 9

The Committee note that the average yield of rough rice per hectare in India is the lowest. It is only about 30 percent of the average yield in Japan, the most advanced country in the East.

The Committee are unhappy to note that despite years of production of rice and systematic researches conducted in our agricultural research institutes, the yield of rice per hectare in India should continue to be so low.

In view of the present pressing need for augmenting food resources, the Committee would strongly urge that the problem of low yield of rice should be viewed with a sense of urgency and that coordinated and concerted efforts should be made to increase the yield of rice per hectare by the application of the latest scientific techniques and more intensive cultivation of the varieties already evolved.

- REPLY OF GOVERNMENT

It is true that the yield of rough rice per hectare in India is only about 30 per cent of the average yield in Japan.

In Japan 95 per cent of the area under rice is irrigated while in India it is only about 40 per cent. The irrigated areas in the deltaic tracts in India produce as high yields as in Japan. The un-irrigated tracts and marginal lands in India bring down the average production considerably. Besides, the input of fertilisers is also very low as compared to Japan. Japan uses as much as 110.23 lbs. of nitrogen per acre on an average while India uses only 2.56 lbs.

The Government have taken up the introduction of highly fertiliser responsive varieties of paddy like Taichung Native I, Tainan 3 and Taichung 65 from Taiwan in India with considerable success. It is proposed to cover 12.5 million acres by the end of Fourth Five Year Plan with seeds of these varieties which have given an average yield of 5000 lbs. per acre and upto 7000 lbs. in some cases.

A co-ordinated Scheme for rice research has also been initiated by the ICAR for intensifying research on important problems with a view to achieve results in the shortest possible time.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Deptt. of Agriculture) O.M. No. 2-2/65—Instt. II, dated* 18-6-1966]

COMMENTS OF THE COMMITTEE

The co-ordinated and concerted efforts to increase the yield of rice should apply as far as possible to the whole area (irrigated and un-irrigated).

Recommendation (Serial No. 8) Para No. 15

The Committee consider that it would be desirable if the areas where three crops of paddy can be successfully raised in a year are surveyed and methods devised in consultation with the concerned State Governments for educating the cultivators of those areas in the techniques of tripple cropping so that increase in yield can be effected without a corresponding increase in acreage.

REPLY OF GOVERNMENT

The survey suggested by the Committee will be undertaken after the varietal aspect, *i.e.*, availability of varieties suitable for sowing in different seasons in succession, has been satisfactorily tackled.

[*Ministry of Food and Agriculture (I.C.A.R.) O.M. No. 2-2/65-Instt. II, dated* 20-9-1966.]

FURTHER INFORMATION CALLED FOR BY THE COMMITTEE

Please state the present position in the matter.

[*Lok Sabha Secretariat O.M. No.* 5/9(1)*ECII/67 dated* 31-3-1967.]

FURTHER REPLY RECEIVED FROM GOVERNMENT

Earlier trials undertaken at the Central Rice Research Institute, Cuttack, have shown the feasibility of taking three crops of rice with *Indica* rice variety under intensive manuring and adequate irrigation facilities. The trials are still in progress to explore the possibility further by utilizing the high yielding varieties.

[*Ministry of Food and Agriculture (I.C.A.R) O.M. No. 2-2/65-Instt. II, dated* 31-5-1967.]

Recommendation (Serial No. 11) Para No. 18.

The Committee are glad to note that the Central Rice Research Institute has devised its own method i.e., *recommended method, of rice cultivation which is not only economical but also gives higher yields per acre than other known methods of rice cultivation. The Committee would suggest popularisation of this method among the cultivators and its intensive application.*

REPLY OF GOVERNMENT

Government have examined the available data regarding the recommended method and do not find that it represents a significant improvement over other methods like the 'Japanese' method. It is not, therefore, proposed to popularise the method—among the cultivators.

[*Ministry of Food and Agriculture* (*I.C.A.R.*) *O.M. No.* 2-2/65-*Instt. II, dated* 20-9-1966.]

FURTHER INFORMATION CALLED FOR BY THE COMMITTEE

Please state the economics of cultivation by the 'recommended' method vis-a-vis *the Japanese method of cultivation as also the figures of yields per acre.*

[*Lok Sabha Secretariat O.M. No.* 5/9(1)*ECII/67, dated* 31-3-1967.]

FURTHER REPLY RECEIVED FROM GOVERNMENT

The cost of cultivation and the yield per acre for the Japanese and the "recommended" methods are given below:—

	cost of cultivation/acre	*Yield in lb./A*
Recommended method	Rs. 411.88	2925
Japanese method	Rs. 474.77	2287

Although in the "recommended method", the yield was 638 lbs. more than that in the Japanese method, it was not statistically significant. Thereore, the "recommended method" does not represent a significant improvement over the Japanese method, but may be said to be only on par with the latter.

[*Ministry of Food and Agriculture* (*I.C.A.R.*) *O.M. No.* 2-2/65-*Instt. II, dated* 31-5-1967.]

COMMENTS OF THE COMMITTEE

The cost of the recommended method is less and the yield is higher. Hence the Committee are unable to accept the contention.

that the recommended method is not an improvement over the Japanese method.

Recommendation (Serial No. 15) Para No. 21.

The Committee are glad to note that the system of commercial classification of rice evolved by the Institute has been accepted by the Government of India and adopted on an all-India basis. They suggest that steps should be taken for its early implementation through the State Department of Agriculture.

REPLY OF GOVERNMENT

The system of commercial classification of rice evolved by the Central Rice Research Institute has not been accepted by the Government of India as it does not meet with the requirements of the trade and others engaged in the buying and selling of rice.

[*Ministry of Food, Agriculture (Deptt. of Agriculture—ICAR) O.M. No. 2-2/65-Instt. II, dated* 20-9-1966.]

FURTHER INFORMATION CALLED FOR BY THE COMMITTEE

The recommendation of the Committee contained in para 21 was based on the evidence tendered by the representative of the Ministry before the Committee on 5-12-1964. *The reasons for the discrepancy in the statement made by the representative of the Ministry before the Committee and the reply now furnished may be stated.*

[*Lok Sabha Sectt. O.M. No.* 5/9(1)*ECII/67, dated* 27-3-1967.]

FURTHER REPLY RECEIVED FROM GOVERNMENT

Due to some misunderstanding the officers of this Ministry who tendered evidence before the Committee in connection with the system of commercial classification of rice evolved by the Central Rice Research Institute, could not, unfortunately, place the correct position before the Committee. It appears that a certain report given by the Economic Botanist of Punjab on this subject, was mistaken by the officers concerned as an acceptance by the Marketing Adviser of the Government of India. The correct position is that the commercial classification of rice evolved by the Central Rice Research Institute was not found generally acceptable and further work is now being done in this regard. The Government of India have set up an *Ad-hoc* Committee, consisting of Dr. K. Ramiah, Rice Specialist as its Chairman and 4 others to:

(1) examine the quantitative, qualitative, morphological and other characteristics of the different varieties of paddy grown in the country, and

..

(2) to evolve a uniform standard, and make recommendations on that basis, for classification of these varieties for the purpose of procurement, distribution, price-fixation etc.

The report of this Committee is likely to be made available by the end of this month.

The inconvenience caused to the Estimates Committee on this account is very much regretted.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Deptt. of Agriculture—ICAR) O.M. No. 2-1/66—Instt. II dated* 9-6-1967].

Recommendation (Serial No. 36) Para No. 43

The Committee suggest that the question of setting up of a Higher Secondary School in the vicinity of the Central Rice Research Institute may be taken up with the State Government at an early date.

REPLY OF GOVERNMENT

The matter was taken up with the State Government but they have not agreed to the establishment of a Higher Secondary School in the vicinity of the Institute.

[*Ministry of Food, Agriculture, Community Development & Co-operation (Deptt. of Agriculture—ICAR) O.M. No. 2-2/65-Instt. II, dated* 18-6-1966]

Recommendation (Serial No. 37) Para No. 43

The Committee suggest that pending the establishment of a Higher Secondary School in the vicinity of the Institute, Government should consider the question of reducing or subsidising the transport charges of the school-going children of the staff working in the Institute.

REPLY OF GOVERNMENT

The recommendation is under the consideration of Government.

[*Ministry of Food and Agriculture (I.C.A.R.) O.M. No. 2-2/65-Instt. II, dated* 20-9-1966.]

FURTHER INFORMATION CALLED FOR BY THE COMMITTEE

Please state if Government have since taken any decision in the matter.

[*Lok Sabha Secretariat O.M. No.* 5/9(1)*ECII/67 dated* 31-3-1967.]

FURTHER REPLY RECEIVED FROM GOVERNMENT

The matter is still under consideration of the Government.

[*Ministry of Food and Agriculture* (*I C A R*) *O.M. No.* 2-2/65-*Instt. II, dated* 31-5-1967.]

Recommendation (Serial No. 39) Para No. 45

The Committee feel that the research made at the Central Rice Research Institute would be barren if it is not simultaneously exploited by the States. They agree with the proposal of Government to treat the existing eleven Japonica x Indica Units as Liaison Units of the Institute.

REPLY OF GOVERNMENT

Japonica x *Indica* Units of the Central Rice Research Institute are being abolished in view of the fact that an All India Rice Co-ordinated Project has been implemented from 1.4.1965. This project will have zonal centres in various States and the coordination and liaison work in the States will be taken care of by this project. The staff of the *Japonica* x *Indica* Units is being transferred to the coordinated project.

[*Ministry of Food and Agriculture* (*I C A R*) *O.M. No.* 2-2/65-*Instt. II, dated* 20-9-1966.]

FURTHER INFORMATION CALLED FOR BY THE COMMITTEE

Please state the circumstances leading to the abolition of the Japonica x Indica *units and the launching of the All India Rice Co-ordinated Project. Please also state the name of the authority who would administer the project.*

[*Lok Sabha Secretariat O.M. No.* 5/9(1)*ECII, dated* 31-3-1967.]

FURTHER REPLY RECEIVED FROM GOVERNMENT

A detailed note indicating the circumstances leading to the launching of the All India Coordinated Project on Rice, is enclosed. (Appendix).

As regards the circumstances leading to the abolition of the *Japonica* x *Indica* Units, it may be stated that it was done on the recommendation of the Achievement Audit Committee of the Central Rice Research Institute for 1960—65, which came to the conclusion that the project had not produced any outstanding results and recommended the integration of its work under the All India Coordinated Research Project on Rice.

The All India Coordinated Research Project on Rice is being administered by the Indian Council of Agricultural Research.

[*Ministry of Food and Agriculture (ICAR) O.M. No. 2-2/65-Instt., II, dated* 31-5-1967.]

Recommendation (Serial No. 40) Para 45

The Committee would suggest that till such time the proposal regarding conversion of eleven Indo-Japonica Units as Liaison Units is implemented, some stop-gap arrangement should be made for liaison between the State Departments of Agriculture and the Institute so that the benefits of the research may be reflected in practice without any delay.

REPLY OF GOVERNMENT

This is covered by reply to Recommendation No. 39.

[*Ministry of Food, Agriculture, Community Development & Cooperation (Deptt. of Agriculture—ICAR) O.M. No. 2-2/65-Instt. II, dated* 18-6-1966].

NEW DELHI;
December 15, 1967
Agrahayana 24, 1889 (*Saka*)

P. VENKATASUBBAIAH,
Chairman,
Estimates Committee.

APPENDIX I

(*Vide* reply to recommendation No. 39 in Chapter III)

Note indicating the circumstances leading to the launching of the All-India Coordinated Project on Rice.

Rice is the most important and extensively grown food crop in India. It is the staple food of more than half the population. Among the food crops of India rice accounts for the largest acreage, the total area under it being 83 million acres in 1962-63. It is expected that the area under this crop would reach 89 million acres by the end of the Fourth Plan period. On an average, the area under rice forms 36 per cent of the total acreage under all cereal crops and 28 per cent of the total area under all food crops and 21 per cent of the total cropped area. The production of rice in the country accounts for roughly 48 per cent of the total cereals production and 40 per cent of the food grains.

Since the establishment of the Departments of Agriculture in the different States, researches were undertaken for the improvement of the rice crop, particularly its yield. In order to undertake both basic and applied research on rice in all its aspects the Central Rice Research Institute was established at Cuttack about twenty years ago. The Institute was also provided with a small number of Sub-Stations for research work under specialized situations. Although these attempts were uncoordinated some good results were achieved.

Research on rice so far carried out in the country aimed at breeding of improved varieties to suit the different agronomic conditions prevailing at that time when chemical fertilizers were not produced and were not applied in any tangible quantity. It has now been realised that the traditional farming practices with our present improved varieties cannot give the large yields per acre which are needed to meet the growing demands of the country. The new concept of changing the plant type to obtain high yields has proved successful in this country too as is evidenced by the phenomenal yields obtained in the cultivator's fields with such types obtained from the Philippines. Attempts made in India to evolve such plant types which could stand high fertilizers levels have yielded a few hybrids like ADT-27, IJ. 52.

The new hybrids evolved in India as well as the successful foreign introductions, though high yielding, lack some of the essential features for successful crop production, like resistance to diseases, seed dormancy, etc. Attempts have, therefore, to be made in a concerted way to combine the high yielding traits of these foreign strains with some of the *Indica* characteristics like disease resistance and dormancy, if a break-through in agricultural production is to be achieved within the Fourth Plan. In order to obtain the high yields with these new strains, newer agronomic techniques have to be worked out. Our fertilizer practices have to change and so also ideas about the quantum and method of water control. Weed control and plant protection would assume greater importance under the high fertilizers regime. Hence research on rice has to be re-oriented to meet the challenge of the newer problems by drawing up a single, comprehensive, problem-oriented all-India project on a coordinated basis for the entire country. Accordingly, the Council sanctioned from 1.4.1965 a nucleus scheme for rice improvement in the country with headquarters at Rajendranagar, Hyderabad (Andhra Pradesh), with provision for enlarging it to cover all the rice-growing regions of the country. The expansion of the existing unit would promote basic and adaptive research in all the disciplines throughout the rice-growing regions of the country with a view to release in a very short time dwarf, erect-leaved, photo-period-non-sensitive paddy strains of early maturity which would be highly fertilizer responsive, and possess good grain quality and resistance to pests and diseases of the paddy crop. With the simultaneous release of such varieties, optimum agronomic practices for obtaining the high yields such varieties are capable of yielding would have also been worked out at the different centres to suit the different agro-climatic conditions of the country.

Since the Council would endeavour to avoid duplication of this work at any of the State/Agricultural University research centres, a number of *ad-hoc* schemes financed by the Council in the rice-growing States would also merge with the Coordinated Project. The work of this Coordinated Project will be carried out in close cooperation with the Central Rice Research Institute at Cuttack where one of the Zonal Centres under the Project will be located. The Central Rice Research Institute will also actively participate in the training programme.

APPENDIX II

Analysis of the action taken by Government on the recommendations contained in the 77th Report of the Estimates Committee (Third Lok Sabha).

1.	Total Number of recommendations	45
2.	Recommendations which have been accepted by Government (*vide* recommendations Nos. 2, 3, 4, 5, 6, 7, 9, 10, 12, 13, 14, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 38, 41, 42, 43, 44, 45)	
	Number	37
	Percentage to total	82%
3.	Reconmmendations which the Committee do not desire to pursue in view of Governments reply (*vide* recommendation Nos. 1, 8, 11, 15, 36, 37, 39, 40)	
	Number	8
	Percentage to total	18%

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