REPORT OF THE SIXTH SESSION OF THE INTERNATIONAL RICE COMMISSION

Held at Tokyo, Japan
3-4 October, 1958

Food and Agriculture Organization of the United Nations

Beginning in January 1955, Reports of FAO Meetings, held as part of the Program of Work of the Agriculture Division, are being issued in the present form. Reports are numbered chronologically within each calendar year.

Earlier Reports of Sessions of the International Rice Commission have een issued as follows:

First Session	Bangkok, Thailand	7-16 March 1949
Second Session	Rangoon, Burma	6-11 February 1950
Third Session	Bandung, Indonesia	12-16 May 1952
Fourth Session	Tokyo, Japan	11-19 October 1954
Fifth Session	Calcutta, India	12-19 November 1956

Meeting Report
No. 1958/20

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FAO/58/10/8168

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INTRODUCTION

1. The Sixth Session of the International Rice Commission was held in Tokyo, Japan, on 3 and 4 October, 1958, at the kind invitation of the Government of Japan. The Session was just before the FAO Regional Conference for Asia and the Far East which was held during 6 - 16 October, 1958, also in Tokyo.

2. The Delegates to the Session reviewed in summary the work already accomplished on rice particularly since the Fifth Session of the Commission, including major points brought forward from the meeting in Vercelli, Italy, in September, 1957 of the Working Parties on Rice Breeding and Fertilizers and the ad hoc Group on Soil-Water-Plant Relationships. They noted with approval the progress made on the many questions and problems that had been given attention. Special emphasis, however, was given to organizational questions and to plans and arrangements for the future activities of the Commission itself and the subsidiary bodies. In this connection, a broad organizational plan was agreed upon.

3. Background papers for the various topics under discussion had been prepared by the FAO Secretariat. The discussion of these and other topics on the agenda of the Sixth Session are summarized in this report, which was unanimously adopted by the Delegates.

4. His Excellency, P. S. Deshmukh, Indian Minister for Cooperation, presided at the opening of the Session in his capacity as Chairman of the Commission pending the election of officers for the ensuing two years.

5. The Session was addressed at the opening by His Excellency, P. S. Deshmukh, who welcomed the Delegates and thanked the Japanese Government for serving as Host, and for providing facilities for the holding of the International Rice Commission Session for the second time in Tokyo. He pointed out that in view of Japan's eminence in the field of rice research, it was particularly suited to be the venue of the Commission's Session. In his speech the achievements of the International Rice Commission since its inception in 1949 were reviewed in some detail and proposals were put forward on the lines on which future work should be oriented. The review covered the Commission's work in the fields of breeding for higher yields, quality and disease resistance; the efficient use of fertilizers and green manures; the application of weedicides for broadcast rice; irrigation and mechanization. He suggested that indica-japonica hybridization work may profitably be continued by the use of japonica parents that had accumulated blast resistance by back crossing. He finally pointed out the wide gap between research and extension and pleaded that extension services in the Member Countries be strengthened to ensure the translation of research advances into farmer practice with the least possible delay.

6. His Excellency, Tomonosuke Shiomi, the Vice-Minister for Agriculture, Japan, welcomed the Delegates and Observers to Japan and to Tokyo, and emphasized the importance of the contributions which the International Rice Commission has made for the improvement of rice production, storage, marketing, consumption, and nutrition. He remarked that the FAO emblem reflects world

peace through agriculture and that Japan was willing to cooperate in the various problems connected with agronomic and other technical aspects of rice production and in this cooperation and contribution in the field of agriculture leading ultimately to world peace, Japan would welcome gratefully the suggestions and the lead given by the International Rice Commission. He indicated that it was significant that the International Rice Commission was holding its Session for the second time in Japan and felt that though the period of the Session was limited to only two days, the agenda provided important matters for consideration regarding the function and direction of the International Rice Commission in which all the Member Countries were interested.

7. Mr. Cummings, the FAO Regional Representative for Asia and the Far East, on behalf of the Director-General, FAO, Rome, welcomed the Federation of Malaya as a new Member of the Commission and said that though he was proud of the achievements of the International Rice Commission there is no room for complacency and expressed the hope that the International Rice Commission would meet effectively the problems of increasing complexity connected with rice production and would continue to grow and develop in strength and efficiency. Mr. Cummings thanked the Host Government for the facilities and elaborate arrangements made for the holding of the Session.

8. On behalf of the Delegates, Dr. Chandraratna, the Delegate from Ceylon, thanked the Government of Japan, and in particular His Excellency Tomonosuke Shiomi, the Vice-Minister for Agriculture, Japan, for the hospitality and cordial message of welcome. He also thanked the Director-General for his message and expressed appreciation for the continued interest of Dr. Deshmukh in the problems connected with rice, for his able direction of the Commission's deliberations and for his opening speech.

PARTICIPATION IN THE SESSION

9. Delegates from Member Countries

Australia

C. S. Christian, Chief, Division of Land Research, C.S.I.R.O., Box 109. Canberra City, A.C.T.

G. C. Lewis, Second Secretary, Australiam Embassy, Tokyo.

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U Hla Ohn, Chief Research Officer, Agriculture Department, Rangoon.

U San Khin, Marketing Officer, Agriculture Department, Rangoon.

U Tun Khin, Manager, S.A.M.B., Rangoon.

Cambodia

Meas Chhuth, Chef Selection et Hybridisation, Secteur agricole, Battambang.

Ho Tong Lip, Acting Director, Department of Agriculture, Phnon Penh.

Sum-Chhum, Chief of Laboratory of Phytopathology, Agriculture Service, Phnon-Penh.

Ceylon

M. F. Chandraratna, Director of Agriculture, Peradeniya.

Cuba

Radolfo Arango, Director, Department of Agriculture, Havana.

Fausto Suarez, Charge d'Affaires, Cuban Embassy, Tokyo.

Dominican Republic

Miguel Roman Perez, Minister, Dominican Embassy, Tokyo.

Ecuador

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France

A. Angladette, Chief of Rice and Food Crops Service (ORSTOM), Office Recherche Scientifique et Technique Outre Mer, 20, Rue Monsieur, Paris 16.

India

P. S. Deshmukh, Union Minister of Cooperation, 12, Janpath, New Delhi.

V. P. Naik, Minister for Agriculture, Bombay State, Sachivalaya, Bombay.

R. N. Poduval, Deputy Economic Adviser, Ministry of Food and Agriculture, New Delhi.

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P. D. Leimena, First Secretary (Commercial), Indonesian Embassy, Tokyo.

Iran

Khalil Bahavar, Rice Breeding Specialist, Ministry of Agriculture, Teheran.

Italy

Alfredo Lenzi, Commercial Counsellor, Italian Embassy, Tokyo.

Japan

Seiichi Tobata, Professor, Tokyo University; Chairman, Agriculture, Forestry and Fisheries Technological Council, Ministry of Agriculture and Forestry, Tokyo.

Goro Watanabe, Director, Food Agency, Ministry of Agriculture and Forestry, Tokyo.

Takehisa Omura, Director, Public Health Bureau, Ministry of Welfare, Tokyo.

Minoru Seijo, Chief, Environmental Sanitation Division, Public Health Bureau, Ministry of Welfare, Tokyo.

Toshio Oiso, Chief, Nutrition Section, Public Health Bureau, Ministry of Welfare, Tokyo.

Japan (Contd)

Takeyoshi Takano, Chief, Food Sanitation Section, Environmental Sanitation Division, Public Health Bureau, Ministry of Welfare, Tokyo.

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Toshitaro Morinaga, Director, National Institute of Agriculture Sciences, Ministry of Agriculture and Forestry, Tokyo.

Akira Kawada, Councillor, Minister's Secretariat, Ministry of Agriculture and Forestry, Tokyo.

Tadaatsu Isayama, Chief, First Operation Division, Food Agency, Ministry of Agriculture and Forestry, Tokyo.

Hideo Nishikori, Chief, Research Division, Development Bureau, Ministry of Agriculture and Forestry, Tokyo.

Daikichi Shiraishi, Director, Kanto Tozan Agricultural Experiment Station, Ministry of Agriculture and Forestry, Tokyo.

Masao Sakamoto, Project Leader Supervisor, Development Bureau, Ministry of Agriculture and Forestry, Tokyo.

Katsumi Amatatsu, Project Leader for Rice Culture Research Division, Development Bureau, Ministry of Agriculture and Forestry, Tokyo.

Tsutomu Mukumot, Staff, Agricultural Products Section, Development Bureau, Ministry of Agriculture and Forestry, Tokyo.

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Thong Khanh, Ministère de l'Agriculture, Vientiane.

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Mexico

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Netherlands

M. J. Meijer, First Secretary, Netherlands Embassy, Tokyo.

Pakistan

M. Afzal, Agricultural Development Commissioner, Ministry of Agriculture, Karachi.

The Philippines

Jose M. Trinidad, Under-Secretary of Agriculture, Department of Agriculture and Natural Resources, Manila.

Eugenio E. Cruz, Director of Plant Industry, Department of Agriculture and Natural Resources, Manila.

Anastasio L. Teodoro, Dean, Institute of Technology, Far Eastern University, Manila.

Moreno Mario, President, Rice and Corn Planters, Philippine Chamber of Agriculture, Gonzaga Building, Manila.

Thailand

Chakrabandu Pensiri Chakrabandu, Director-General, Rice Department, Ministry of Agriculture, Bangkok.

Krui Punyasingh, Chief, Rice Breeding Division, Rice Department, Ministry of Agriculture, Bangkok

Bhakdi Lusanandana, Chief of Technical Division, Rice Department, Ministry of Agriculture, Bangkok

Debridhi Devakul, Chief, Engineering Division, Rice Department, Ministry of Agriculture, Bangkok.

United Kingdom

D. Rhind, Secretary for Colonial Agricultural Research, Colonial Office, Great Smith Street, London, S.W.1.

United States

Leonard B. Ellis, Rice Marketing Specialist, U.S. Department of Agriculture, Washington 25, D.C.

John D. Motz, Assistant Agricultural Attache, American Embassy, Tokyo.

Vietnam

Truong Van Hieu, National Director of Agriculture, 28, Mac dinh Chi, Saigon.

There were 64 individuals participating in the delegations from 24 of the Member Nations of the IRC. There are 27 Nations in the total Membership of the IRC, and Egypt, Paraguay and Portugal were not represented. This was the largest attendance in the history of the IRC, not only with respect to the number of individuals in the delegations, but also with respect to the number of Member Nations represented.

10. FAO Staff

W. H. Cummings, Regional Representative of the Director-General of FAO for Asia and the Far East, Bangkok, Thailand.

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C. W. Chang, Regional Agricultural Adviser, and Executive Secretary, International Rice Commission, FAO Regional Office for Asia and the Far East, Bangkok, Thailand.

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J. P. Huyser, Chief, Program Operations Service, Agriculture Division, FAO, Viale delle Terme di Caracalla, Rome, Italy.

J. F. Dekker, Plant Production Specialist, Plant Production Branch, Agriculture Division, FAO, Viale delle Terme di Caracalla, Rome, Italy.

N. Parthasarathy, Rice Improvement Specialist, FAO Regional Office for Asia and the Far East, Bangkok, Thailand.

H. N. Mukerjee, Soil Fertility Specialist, FAO Regional Office for Asia and the Far East, Bangkok, Thailand.

G. E. Mulgrue, Regional Information Adviser, FAO Regional Office for Asia and the Far East, Bangkok, Thailand.

J. A. Tubb, Regional Fisheries Officer and Executive Secretary of the Indo-Pacific Fisheries Council, FAO Regional Office for Asia and the Far East, Bangkok, Thailand.

J. Kahane, Chief, Rice Section, Commodities Branch, Economics Division, FAO, Viale delle Terme di Caracalla, Rome, Italy.

K. K. P. N. Rao, Chief, Food Consumption and Planning Section, Nutrition Division, FAO, Viale delle Terme di Caracalla, Rome, Italy.

C. H. Biass, Chief Interpreter, Office of the Director-General, FAO, Viale delle Terme di Caracalla, Rome, Italy.

Officers of the Commission

11. The Commission re-elected Dr. P.S. Desmukh of India as its Chairman and Mr. C. S. Christian of Australia and Mr. Truong Van Hieu of Vietnam as Vice-Chairmen. These men will, in accord with the constitution, retain office until new officers are elected at the beginning of the Seventh Session of the Commission. Mr. C.W. Chang of FAO continues to serve as Executive Secretary.

12. The following staff members of FAO served as technical secretaries of the Session when the topics indicated were under consideration:

Organizational matters and Constitutional and Procedural Questions	Mr. T. E. Ritchie
Rice Production and Protection	Mr. J.F. Dekker
Rice Soils, Water and Fertilizer Practices	Dr. H. N. Mukerjee
Agricultural Engineering Aspects of Rice Production, Storage and Processing	Dr. R. Schickele

Acknowledgments

13. The Commission expressed its deep appreciation to the Government of Japan for the excellent arrangements made for the Sixth Session; to the Chairman and Vice-Chairmen for efficiently conducting the Session; and to the FAO Staff for the thorough preparations made and the work carried out during the Session. Appreciation was also extended to the Conference Officer, the Interpreters, the Documents Officer, typists and others who had effectively carried out their duties in connection with the Session.

SUMMARY OF DISCUSSIONS ON ACHIEVEMENTS TO DATE AND WORK TO BE UNDERTAKEN IN THE FUTURE

14. The Commission reviewed in summary form the more important work on rice that has been carried out in the past, and considered the nature and scope of activities that should be undertaken in the future. The principal elements of the review, the discussions and the consequent conclusions are outlined below:

Progress Report by the Executive Secretary of the Commission

15. Mr. C. W. Chang, who serves as Executive Secretary of the International Rice Commission, reported briefly on the activities of the Commission since the Fifth Session held in Calcutta, India, in 1956. He referred to the Joint Meeting of the Working Party on Rice Breeding, the Working Party on Fertilizers, and the ad hoc Working Group on Soil-Water-Plant Relationships that was held at Vercelli, Italy, in 1957; the second Regional Farm Management Development Center held in Tokyo, Japan, in 1957; to the publication of the FAO World Catalogue of Genetic Stocks of Rice, Supplement No. 6; to the issuance of "Agricultural Engineering" as FAO Informal Working Bulletin No. 2; and to the exchange of rice seeds between Member Governments for breeding purposes. Mr. Chang also reported on the International Rice Commission News Letter which has been issued four times a year since 1952. It has been well received by its readers. He further reported that national training centers related to rice, as distinct from FAO Regional ETAP Training Centers, have been encouraged. By the end of this year five such national training centers would have been held with FAO assistance; four on rice improvement and one on farm management.

Past Work on Rice Production and Protection

16. The Working Party on Rice Breeding has held seven meetings since 1950, and has discussed many and diverse problems relating to crop improvement. However, it has been increasingly realized in recent years that the scope of the Working Party should be widened, that the breeding work has been handicapped by a lack of basic information on the physiology of the rice plant, and that consideration of diseases and pests should not be limited to their control through the breeding of resistant varieties. It has also become highly desirable to include agronomic aspects in view of their close relationship with the work on production and protection. The protection of stored rice was considered by the ad hoc Working Group on Rice Storage and Processing in 1956 and is now recognized as of sufficient importance for inclusion as a major activity of the Working Party on Rice Production and Protection.

17. Although the first meeting of the Working Party on Rice Breeding listed such yield-limiting factors as diseases, pests, lodging, shattering, soil salinity, flooding, drought and lack of adaptation to environment, its recommendations were limited to breeding and the use of improved seed. At the subsequent meetings major attention was given to photoperiodic responses, resistance to lodging, breeding for resistance to blast and Helminthosporium, and interaction between varieties and fertilizers. Rice diseases and pests appeared often as important items of discussion at these meetings. In particular, diseases of physiological origin received a thorough review and much information hitherto unpublished has thus become available. Programs of seed multiplication and distribution in Member Countries were examined. Since adequate programs appeared to exist only in relatively few countries, possibilities for intensifying activities in this field were explored.

18. At the request of the Working Party, an international rice hybridization project was organized, with a view to introducing desirable japonica characters in the indica types and to provide a wider range of variability in breeding material. The initial hybridization was performed at the Central Rice Research Institute, Cuttack, India, and participating countries have made effective use of the progenies. The international rice hybridization project was concluded in 1956. Since varieties which possess agronomic characters intermediate between indica and japonica types occur in many areas, it was suggested that such intermediate varieties should be extensively used as breeding materials with a view to improving the fertilizer response of the indica types. FAO was asked to collect and distribute seed of intermediates for this purpose. The satisfactory maintenance of collections of genetic stocks of rice in the five centers (India, Indonesia, Japan, Pakistan and U.S.A.) should provide a permanent source of supply for breeding work.

19. Other activities initiated by or associated with the Working Party include the organization of international training centers on rice breeding in 1952 and 1955, the publication of the World Catalogue of Rice Genetic Stocks, and the arrangement for permanent maintenance of genetic stocks in five centers. In addition, the services of a full-time rice improvement

specialist have been made available to rice-growing countries in South and South East Asia to assist and coordinate the rice improvement work. The Working Party has made a significant contribution in stimulating and accelerating the progress of rice breeding in participating countries.

20. Protection of rice in storage was considered by the ad hoc Working Party on Storage and Processing of Rice which met only once, in 1956. The topics receiving major attention in these discussions included the need for accurate statistics on losses and a standardized technique for estimating losses during storage; improved storage facilities for farm and community use; improved means of reducing losses caused by insects, rodents, and fungi; and the need for training of personnel in improved storage techniques. Since the 1956 meeting, progress has been made in the improvement of techniques for the control of insects and rodents. Among these, promising results have been obtained from further tests on low temperature storage of husked and milled rice, the use of grain protectants, and from tests on new fumigants and fumigating techniques.

Seventh Meeting of the Working Party on Rice Breeding

21. This meeting of the Working Party was held in Vercelli, Italy, in September 1957, in conjunction with the Working Party on Fertilizers, and the ad hoc Group on Soil, Water, Plant Relationships. Representatives of participating governments reported that many new varieties had been released during the two years since the Sixth Meeting of the Working Party, as a result of their accelerated breeding programs. In several countries the breeding programs have advanced from varietal testing and selection to hybridization. While it was the popular belief for a long time that higher response to fertilizers was a typical character of the japonica group, the results of recent feild experiments indicate that a higher fertilizer response is also found in some indica varieties, especially in those with high yielding capacity. In view of the increasing use of nitrogen fertilizers and their aggravating effect on lodging, the need for breeding varieties possessing greater resistance to lodging has become more evident.

22. Preliminary regional tests carried out in India and the Philippines have indicated that there are suitable blast-resistant indica varieties available for breeding purposes. Owing to the importance of blast, it was agreed that all countries concerned should report fully on their breeding work on blast resistance at the next meeting of the Working Party.

23. In view of the need for a more efficient national seed improvement program in some rice-growing countries and to insure the success of breeding work, FAO was requested to furnish such countries with outlines of well-organized seed improvement schemes and specimens of seed laws.

24. The third training center on rice breeding, originally proposed for 1958, had to be postponed until funds for regional projects become available in 1960 or possibly later. In view of the high costs of regional training centers, it was recommended that consideration be given to the holding of national training centers on rice breeding.

25. To meet the great need for trained personnel and experts' advice, the meeting also recommended that countries, in their requests to FAO under the Expanded Technical Assistance Program, should give special attention to the inclusion of fellowships and experts in rice breeding and seed improvement.

Plans for Future Activities on Rice Production and Protection

26. The more important work to be undertaken in the future on rice production and protection was reviewed and discussed by the Commission. The Commission recognized that through the continuation of work started in the past and with the addition of important new elements great progress can be made in Rice Production and Protection, to the early benefit of all who are concerned with this most important and interesting crop.

27. Great advances in Rice Production and Protection can be achieved by giving continued and increased attention to both scientific and practical approaches to a number of aspects. Increased knowledge of the biology, physiology and cytogenetics would provide the basis for a better understanding of crop behaviour, and would help in rice breeding work and in the distribution of breeding material or improved varieites. More immediatereturns can be expected from attention to agronomic and associated questions involving all matters relating to cultivation practices, diversification of cropping, and the whole vast subject of protecting the crop against pests and diseases in the field, in storage and during transit.

28. Varietal Improvement. Althoughin most countries participating in the Commission, rapid progress has been made in rice breeding, an excessively large number of rice varieties, improved and indigenous, is still in cultivation in many countries. These varieties are mostly grown in very restricted areas due to their great sensitivity to environmental conditions. To increase the average yield of rice, it is important that the lower yielding types be eliminated thus reducing the total number of cultivated varieties. For this purpose varieties and selections must be tested under a wide ragne of conditions. Photoperiodic reaction is a character which so far has not been sufficiently emphasized; in order to produce varieties with great adaptability to varying day-lengths, fundamental investigations in rice physiology will be necessary. In view of the limited facilities available for this kind of research on the rice crop, these investigations might be carried out through arrangements with a research institute where the special facilities exist.

29. As has already been indicated, greater response to fertilizer application is one of the highly desirable characters. Even in areas where fertilizers are not commonly applied, the breeders must know the capacity of existing commercial varieties and breeding materials to respond to fertilizers, in the anticipation that the use of fertilizers will become more common.

30. Resistance to lodging will become even more important as the technique of rice growing improves. To breed effectively for this character, it will be necessary to investigate various physiological and anatomical characteristics affecting strength of straw.

31. Earliness and disease resistance must be given attention. Early or medium varieties suitable for a crop rotation scheme are often required, particularly with the introduction of perennial irrigation in some tropical rice areas. Varieties with a high degree of resistance to the more important diseases would increase the assurance of stable yields. In many areas salinity of soil or water constitutes a limiting factor in rice yield, and varieties with high tolerance to salinity, therefore, should be developed. The above questions are selected examples of the many problems which will require further efforts to solve and for which the exchange of information and material would greatly accelerate progress.

32. Production of Seed Rice. The full utilization of an improved variety depends greatly upon the supply of seed, which should be made available not only in adequate amounts and at reasonable prices, but should be also of varietal purity and high quality. A seed program to meet these requirements can be launched only with close cooperation between the government, the seed producers, the seed distributions and the farmers. The basis of an effective seed certification scheme includes the inspection of seed production fields and testing of seed quality. Only a limited number of better varieties should be included in a seed program. As the program develops, inferior varieties will disappear with the resulting increase of the average yield of the crop. In many rice-growing countries there is a need for the establishment or strengthening of the seed program. To this end, many problems concerning seed certification, testing and grading should be considered on a regional basis in order to develop effective procedures and provide for uniformity where this would be particularly valuable.

33. Agronomy. Much of the world's rice is grown by subsistence farmers on extremely small holdings. Their time-honored cultivation methods in many areas have so far remained basically unchanged. On the other hand, in some of the other rice-producing areas such as in parts of Europe, the United States and Australia, labour is so expensive that rice growing is partly or wholly mechanized. Mechanization in itself does not necessarily lead to increased yields. High yields can be obtained with the old implements and tools provided improved varieties, adequate manuring and associated improved practices are used. In this connection, some improvement of the cultural methods, such as transplanting in rows wide enough to permit the use of weeding implements, and intercultivation, contributes to higher yields and deserves wider application.

34. The present limited cropping pattern in the major rice-growing areas of the tropics is virtually a rice monoculture. With the great increase in land under perennial irrigation and with the improvement of drainage and flood control, the possibilities for crop diversification are increasing greatly and crops can be grown in both the wet and the dry seasons. The change from rice monoculture to multiple cropping will require research to determine the best crops, varieties, rotations and methods of cultivation for the new conditions. Intensive land use will stress the need for maintaining and building soil fertility, including the growing of legumes. High yielding rice varieties of short growing periods and least sentistive to daylength will be required so that they can be grown at any time of the year, as the cropping pattern requires.

35. Physiology. Much of the behaviour of rice varieties in agronomic investigations and breeding programs is difficult to explain in the absence of adequate data on the physiology of the plant and its many races and strains. Studies on the important physiological aspects have, of course, been conducted in a number of countries for some time, but it is difficult to obtain an overall picture of, for example, the relation between photoperiodic response, variety and latitude. There is need for a competent review of the information now available, on the basis of which further carefully planned and properly coordinated research should be undertaken by members of the Working Party.

36. Protection of Rice in the Field. As recommended by the IRC at its fifth session, international collaboration would be of particular value for many of the problems involved in the control of diseases and pests affecting growing rice. For instance, the methods used in the evaluation of pesticides and in the estimation of losses caused by various agents should be standardized, in order that results obtained from different countries may be compared on the same basis. Information on new developments, such as on varietal reactions to important diseases and pests, on effective methods of control, and on the parasites and diseases attacking rice insects, should be exchanged for mutual benefit. Coordinated studies should be initiated to solve some common problems, such as the actual causes of diseases which have been attributed to physiological disorders, and the distribution and prevalence of parasitic nematodes in rice fields.

37. Protection of Rice in Storage. Losses in stored rice may occur in quantity, quality, and nutritive value, through attacks of insects, rodents, fungi, birds, pilferers, spillage, or as a result of excessive moisture contents or from other causes. There is a considerable interaction among the factors responsible for losses. Thus, rice with high moisture content heats and moulds, and this may promote the rapid development of the insect populations. On the other hand, heating may result also from insect infestation without excessive moisture in the grain. In order to develop effective methods for preventing losses, therefore, all factors involved must be studied under local conditions; the experience gained from any one country will be of great value to others.

38. Important investigations and the development of means for the reduction of losses in stored rice are now under way in many countries and further progress to promote the exchange of new information and improve storage techniques is urgently needed. In addition, problems concerning the training of technical personnel in reducing losses through improved storage practices often might be treated more effectively on a regional basis.

Past Work on Rice Soils, Water and Fertilizer Practices

39. The Working Party on Fertilizers was formed as a result of a recommendation made by the International Rice Commission at its second session in February, 1950, at Rangoon, Burma. The primary objective of the Working Party, as stated at its first meeting, was to undertake a program of work leading to the improvement of Soil Fertility and to greater rice yields in different countries by the more efficient use of fertilizers, manures, green-manure crops, and soil amendments. In the main, these objectives have remained the same although they have been slightly modified from time to time. For instance, the Working Party agreed that it should assist in the compilation of information (either presently available or to be obtained by further experimentation) which would enable the Governments to develop sound policies concerning the use of fertilizers for increased rice production. The Working Party also felt that it should be associated with problems involved in the implementation of the policy for increased fertilizer usage, in view of the responsibility of agronomists in the rice-producing countries to provide information and guidance on fertilizer practices for extension and demonstration programs, including those associated with providing credit for the purchase of fertilizers.

40. The first meeting of the Working Party was held at Bogor, Indonesia, in April, 1951. In all, six meetings have been held, five in association with the Working Party on Rice Breeding, and the sixth jointly with that Working Party, and withthe ad hoc Working Group on Soil-Water-Plant Relationships (at Vercelli, Italy, in September, 1957).

41. The important problem of Soil-Water-Plant Relationships had been considered by the Working Parties on Fertilizers and on Rice Breeding at their meetings in 1953 and 1954. However, at its Fourth Session (1954), the Commission recommended that an ad hoc Working Group on Soil-Water-Plant Relationships be established. This ad hoc Group, in its report to the Fifth Session of the Commission in 1956, attempted to define the problem, reviewed recent and current research on the subject, and made proposals for future activity. The following countries have participated actively in this Working Group: India, Indonesia, Italy, Japan, Malaya and the United States of America.

42. The Working Party on Fertilizers, as a result of its meetings, has prepared six reports based on discussions at the meetings and on 283 papers submitted to it. The subjects which have been most comprehensively considered are:

(a) Productivity of Paddy Soils in some Rice-Producing Countries.
(b) Relative Efficiency of Nitrogen and of Phosphorus Fertilizers.
(c) Physiological Diseases of Rice.
(d) Interaction between Varieties and Fertilizer Responses.
(e) Design of Rotation Experiments.
(f) The Effect of Crop Rotation on the Growth and Yield of Paddy.
(g) Green Manuring.
(h) Present Knowledge on the Use of Fertilizer for Rice.
(i) Fertilizer Tests on Cultivators' Fields.

43. The Commonwealth Bureau of Soil Science and FAO published, in 1954, an Annotated Bibliography of Rice Soils and Fertilizers in which 952 references are given.

44. Two Training Centers on Soil Fertility have been conducted by FAO in cooperation with the Government of India for Member Countries of the IRC. The two Centers were attended by a total of 49 participants from 13 countries.

45. A Soil Fertility Specialist for Asia and the Far East, Dr. H. N. Mukerjee, was appointed by FAO in March, 1956, and since that time he has visited all but one country in the Region (some of the countries more than once). During his visits, Dr. Mukerjee discusses the soil fertility program of the country, with special reference to the recommendations of the Working Party, with the technical personnel and he attempts to see as much of the work in the field as possible. A report on his visit including his recommendations for improving the soil fertility work are transmitted from FAO Headquarters to the Directors of Agriculture (or Under-Secretary to the Ministry of Agriculture) of the country concerned, and copies are sent to the technical personnel immediately engaged in the soil fertility work. In addition to his visits, Dr. Mukerjee conducts extensive correspondence with technicians in the Member Countries on all technical matters pertaining to soil fertility investigations and fertilizer use. In his contacts with Member Countries, Dr. Mukerjee has been paying particular attention to simple fertilizer tests on cultivators' fields because the importance of this work has been especially stressed by the Working Party.

46. In the last three or four years most countries of the IRC, particularly in Asia and the Far East Region, have initiated or strengthened their work in this particular field and in five of the countries (Burma, Indonesia, Iran, Pakistan and Viet-Nam) the program has been assisted by FAO specialists serving in those countries.

47. The ad hoc Working Group on Soil-Water-Plant Relationships submitted an analytical report to the Fifth Session of the Commission describing the kind of research that is being conducted in various parts of the world, and indicating the type of work which should be undertaken in clarifying the more important soil-water-plant relationships. The main conclusion was that research in this field falls into two broad categories, one relating to the more practical investigations of what constitutes most effective control and utilization of available water supplies in a particular area, the other relating to fundamental research on the chemical and micro-biological changes in rice soils and on the physiology of the rice plant.

Vercelli Meeting of the Working Party on Fertilizers and the ad hoc Group on Soil-Water-Plant Relationships.

48. The recommendations made by the Sixth Meeting of the Working Party on Fertilizers and by the ad hoc Group on Soil-Water-Plant Relationships at the meeting held in Vercelli in September 1957, reflect some of the needs. The more important recommendations of this Meeting are outlined below:

(a) Summaries of NPK fertilizer trials conducted during the last ten years should be presented at the next meeting by those countries which have not yet done so.

(b) As there is still considerable difference of opinion on the efficacy of different plant nutrient carriers and on the best time and method of fertilizer application, all available information on these subjects should be thoroughly reviewed and discussed at the next meeting.

(c) As not much work has yet been reported on the effects or deficiencies of trace elements, the countries which have already conducted work in this field, should report their findings (even though no response has been observed) at the next meeting and that work be initiated in countries where no such investigations are under way.

(d) Although considerable useful information on the use of fertilizers is at hand, specific knowledge for local conditions is not yet precise enough, hence comprehensive experiments should be conducted in the main soil regiona of the different countries under various soil-water regimes. In carrying out the experimentations, due regard needs to be paid to the use of promising varieties of paddy.

(e) Governments should give their increased support for extending the work of simple fertilizer tests along the lines suggested by the Working Party on Fertilizers since its first meeting in 1951.

(f) In view of the desire of Member Governments to continue the study of variety-fertilizer interaction and considering that this inter-action is affected by several other factors, member countries should undertake comprehensive experiments to test simultaneously the effects of these factors and should compile and present the results of the experiments at the next meeting.

(g) The project on physiological diseases in paddy should be continued on a cooperative basis with Dr. Jisuke Takahashi of Japan acting as the coordinator.

(h) Further work should be done by countries on the relative merits of weed control considering all relevant factors and the subject needs to be discussed at the next Meeting.

(i) As very little work in the field of soil and plant analysis has been reported, countries conducting formal field fertilizer trials, either complex tests or simple tests on cultivators' fields, or both, should make an effort to examine soil samples at least representative of the surface soil (15 cm) from as many test sites as possible by analytical methods outlined in the body of the report. Countries should also undertake foliar and plant analysis and soil and plant physiological research work which would help to elucidate some of the many unsolved problems concerning plant nutrient requirements of, and uptake by, the paddy crop and toxic conditions in paddy soils.

(j) Even though fundamental research on chemical and micro-biological changes in paddy soils and on the physiology of the rice plant is of interest and importance to all rice-producing countries of the world, active and comprehensive work on those problems should be left to a few countries where conditions (personnel, finances, facilities, etc.) are especially favorable and most conducive to obtaining results.

(k) Because problems of water supply and utilization vary greatly between countries and between areas within a country, and because a universally applicable solution to those problems does not exist, research workers should be encouraged to continue, or to initiate, studies towards determining the most effective control and utilization of available water supplies in their respective countries.

(l) The Regional Soil Fertility Specialist for Asia and the Far East should continue in close contact with Governments to assist in the implementation of the above program.

Plans for Future Activities on Rice Soils, Water and Fertilizer Practices

49. Suggestions for further action in the field of rice soils, water and fertilizer practices for increasing the per hectare yields of rice were discussed and the Commission recognized that work along the following outlines will be needed in the future:

50. Consideration should be given to the much wider use of simple fertilizer tests on cultivators' fields, the distribution of such tests being carried out on the basis of soil units, because these tests are essential for:

(a) Making recommendations to cultivators for the most economic use of fertilizers;

(b) Obtaining realistic information regarding fertilizer responses under existing conditions;

(c) Providing demonstrations to cultivators for encouraging fertilizer use;

(d) Deriving quantitative information on the potential increase in production that can be brought about by the efficient use of fertilizers, required for the formulation of agricultural development plans.

51. As mentioned earlier, although a considerable amount of valuable information on the use of fertilizers is readily available, specific knowledge for local conditions is not yet precise enough, hence comprehensive experiments should be conducted in the main soil regions of the different countries under various soil-water regimes. In carrying out field experimentation, due regard needs to be paid to the use of promising varieties of rice. Some of the factors which could be tested are given below and the countries should select those which are particularly valuable under their conditions.

(a) Best form of fertilizer material to be used;

(b) Time and method of fertilizer application;

(c) The effect of micronutrients with special reference to physiological diseases;

(d) Fertilizer interaction with varieties and agronomic factors;

(e) Use of fertilizers in reclamation of saline and aluminium toxic soils;

(f) The effect of heavy nitrogenous fertilizer use on the incidence of diseases and pests in certain rice varieties.

52. For better understanding of rice soils and their management, Governments should give more attention to the classification of rice soils and to the most effective methods of management of such soils. The Working Party would assist in this work by developing the most suitable methods of classification and by collecting and disseminating information.

53. With regard to the optimum physical conditions of rice soils, as a first step the Working Party should collect all the available information on the subject, such as:

(a) Optimum moisture content of the soil at which tillage operations are best performed;

(b) The timing and depth of tillage operations;

(c) The state of soil aggregation to be preserved.

In the light of the information thus gained, the Working Party should be prepared to suggest, if necessary, a program of cooperative research to make the knowledge on optimum physical conditions of rice soils more complete and which will be conducive to their better management.

54. As very little work in soil and plant analysis, as related to rice production, has yet been reported, consideration should be given to this field of work with special reference to the correlation of the results of such analyses with field fertilzer experimentation.

55. Further research on the inter-relationship of soil, water and the rice plant should be approached from the standpoint of water control practices and their effects on:

(a) Chemical and microbiological changes in paddy soils;

(b) Physiological and growth responses in the rice plant.

56. Because of the existing variations in soil, climate, availability of water throughout the season, and the extent to which the water supply can be controlled, consideration might be given to the delineation of the rice-producing areas, in relation to the types of research proposed above, into comparable regions or zones. The basis for such classification could be either climate, topography or cultural practices. Another possibility would be to use as a basis distinguishable differences in drainage conditions of the soil as follows:

(a) Areas where the land is water-logged, or nearly so, throughout the year, such as the Bangkok Plain, the Malayan Coastal Area and the Mekong Delta;

(b) Areas where the water table is at, or above, the ground during all, or most of the growing season, but drops sufficiently far below the surface during the non-growing season to permit aeration of the soil such as parts of lower India, parts of Indonesia and parts of the Republic of the Philippines;

(c) Areas where there is free movement of water through the soil and where, in fact, puddling or mudding is necessary to retard the downward movement of water.

Should agreement be reached on a workable plan of classifying the rice-growing areas of the world, available information on research relevant to each of the delineated regions could be summarized and a determination made of the need for, and nature of, new or additional research required in each region.

57. The Regional Soil Fertility Specialist for Asia and the Far East should continue the important function of extending the information gathered and recommendations made by the Working Party on rice soils, water and fertilizer practices to all Member Countries and assisting these countries with their soil fertility programs.

58. Regional and national development or training centers in the field of soil fertility should be organized as funds permit, to keep the technical staffs up-to-date in the techniques of fertility field trials, soil classification, soil and plant analysis, soil and water management, use of fertilizers and manures and the interpretation of experimental results.

59. Governments should include in their programs of technical assistance requests to FAO for followships to enable selected workers in their countries to study in the field of soils in other countries where greater progress has been achieved. More use should also be made of the Technical Assistance Program by countries for obtaining, through FAO, the services of soil specialists to advise countries on improvements in their national soil programs.

60. The Working Party should assist Member Governments in their efforts toward the increase in the use of fertilizers for the rice crop. To this end it should carry out studies on:

(a) The economic factors limiting fertilizer use, e.g. fertilizer price structure (including prices ex works or import prices and those paid by cultivators, railway, interest and other charges), the possibilities, or need for, subsidies, loans and credit facilities.

(b) The most suitable methods of preparing for the extension service, the results of field fertilizer trials and of soil and plant analyses. It is of great importance to have technically accurate information presented in the clearest and most interesting manner.

61. Member Governments should be encouraged to make field studies and economic analyses on the optimum combination of land, labor and water resources, input and output relationship of rice farming, the economics of the use of commercial fertilizers and manures under local farm conditions, the advantage and implications of subsidizing fertilizer use and the levels of fertilizer application under different price and cost conditions based upon fertilizer trials and experiments as well as soil and plant analyses. It is extremely important that good use be made of all available technical and economic information so that concrete and feasible plans can be worked out for the adoption by individual rice growers to increase their net production and earnings, and by the Government agencies for developing their plans for increasing the net agricultural output of the country. FAO may be requested to provide the needed assistance through the appointment of a Regional Farm Management Specialist for training local personnel and initiating and conducting the required field studies and economic analyses.

Past Work on the Agricultural Engineering Aspects of Rice Production, Storage and Processing

62. At its first three sessions held in 1949, 1950 and 1952, the IRC had given some attention to this subject. However, it was not until its fourth session in 1954 that the IRC decided to recommend that definite steps be taken in these fields in order to provide basic information for discussion at its fifth session so as to determine what future action should be taken. The fourth session of the IRC held at Tokyo, Japan, in 1954, recommended that detailed attention be given to five fields of work, included in which was the establishment of ad hoc Working Groups; one on Problems of Mechanization of Rice Production under Wet Paddy Conditions, and the other on Storage and Processing of Rice.

63. The ad hoc Working Group on the Problems of Mechanization of Rice Production under Wet Paddy Conditions met in Ceylon in 1956 to finalize its report which contained a comprehensive analysis of the problems. The ad hoc Group included in its report much useful information, but still found many gaps existed, and therefore made a number of recommendations both to governments and to FAO for further activities in this field. The fifth session, in endorsing these recommendations, further recommended to the Director-General of FAO that the Group be reconstituted to continue its work on the technical aspects of mechanization of rice production under wet paddy conditions. FAO would determine the form of the Group, but should invite five to seven Member Countries of the IRC in Asia and the Far East and two or three Member Countries from outside this region to designate representatives to the Group.

64. The ad hoc Working Group on Storage and Processing of Rice met in 1956 in Calcutta, India, immediately prior to the fifth session of the IRC. This meeting provided the first real opportunity for inter-country consultation by experts who are dealing with the important problem of making adequate supplies of rice available in a satisfactory condition to consumers. The information collected as a result of correspondence between the technical secretaries of the ad hoc Group and its members, as well as during the meeting in Calcutta, clearly indicated the possibilities that existed for reducing losses by a very substantial degree and increasing the amount and quality of rice available from existing production.

65. The report of the meeting of this ad hoc Group was considered by the IRC at its fifth session when it was recommended that FAO should make suitable arrangements to continue the activities which had been initiated by the ad hoc Group since work in this field constitutes one of the major activities of the IRC. In accordance with this recommendation, all member governments of the Commission were invited to designate permanent representatives to the ad hoc Group. Nominations have been received from 15 governments, and the work of this Group is progressing.

66. Correspondence between the Secretariat and members of the ad hoc Working Group on the Problems of Mechanization of Rice Production under Wet Paddy Conditions has taken place since the last session of the IRC. The Secretariat has also prepared, from information obtained both through correspondence and as a result of the first meeting of the ad hoc Group, an informal working bulletin entitled "Equipment for Rice Production under Wet Paddy Conditions."

In this bulletin the various production operations and tools commonly used in different rice producing areas are analyzed in an attempt to determine what equipment might be introduced to improve production efficiency and reduce demands on labour.

67. The work included many relevant aspects of mechanization of rice production under wet paddy conditions, but farm management as a specialized subject is not now dealt with by the ad hoc Group. In this connection, FAO, with the aid of a grant from the Council on Economic and Cultural Affairs, Inc., USA, has organized a series of farm management development centers in countries of Asia and the Far East. A comprehensive approach has been taken to farm management at these centers which have been held in Tokyo in 1956 and in India in 1957, and a center is being held in Vietnam in October-November, 1958.

68. Members of the ad hoc Working Group on Storage and Processing of Rice have continued to exchange correspondence with the Secretariat since appointment by their respective governments. The Secretariat has prepared two articles, both entitled "An International Approach to Problems of Rice Processing," which have been issued in the three official languages of the Organization and distributed to the specialized press on this subject. The following periodicals have agreed to publish the articles:

"The Tropical Agriculturist"	–	Ceylon
"Riz et Riziculture"	–	France
"Il Riso"	–	Italy
"Rice News Teller"	–	India
"The Rice Journal" (International Rice Yearbook)	–	United States of America

Other periodicals have been approached to participate in this activity.

69. The Secretariat has also prepared and printed an "Illustrated Glossary of Rice Processing Machines," which has been issued in the three official languages of the Organization. This glossary includes drawings of the most commonly used types of rice processing machines with relevant terms and designations of the machines and their main components. The glossary should facilitate understanding of the different concepts of rice milling terms used in various countries. This publication has been distributed to members of the ad hoc Group.

70. Documentation on equipment existing in various countries for testing of paddy rice to determine its milling yield has been distributed by the Secretariat to members of the ad hoc Group. Information is being collected on institutes, mills and other facilities existing in the various regions and conducting research and practical work on rice storage and processing. This material will be compiled in the form of maps and tables to facilitate the planning of training courses, study tours and fellowship programs in the future. A rice map of Europe is almost completed and it is planned to prepare similar maps for North America, Latin America, Asia and the Far East, and the Near East.

71. A questionnaire has been distributed to members of the ad hoc Group requesting information on rice research institutes, including their technical staff, main research facilities, projects under study, etc., The information obtained from this questionnaire will be summarized and published in a directory to aid future planning in research work.

72. The Delegates expressed appreciation of the work of these two ad hoc Groups. The need for close cooperation between the engineering aspects and the soils, breeding and cultural practice aspects of rice production was pointed out, and one Delegate especially stressed the need for developing appropriate implements for row seeding of wet paddy as a means for avoiding the labor cost of transplanting.

Plans for Future Activities on Agricultural Engineering Aspects of Rice Production, Storage and Processing

73. The Commission discussed the future work that should be undertaken and concluded that the activities outlined below should be given further attention.

74. As a part of their rice mechanization program, governments in the area should give greater consideration to study of production equipment and methods for utilization, and should provide facilities for the testing and introduction of new machines and associated techniques. Countries having the necessary facilities should cooperate in conducting trials of selected machines and in the correlation and evaluation of results of such trials. Countries in Asia and the Far East region should agree to the exchange of samples of tools and equipment most generally used in rice production for demonstration and trial in other countries.

75. At the fifth session of the Commission, the Secretariat presented a publication entitled "Water Lifting Devices for Irrigation" which had been prepared on the recommendation of the IRC. The Working Party should continue to collect information on improved devices used to lift water for irrigation in rice producing areas and on the development of unconventional sources of energy that may provide efficient power for the operation of water lifting devices in more remote areas.

76. Studies should be continued on field practices which have an effect on storage and processing of rice, especially equipment and methods for threshing, winnowing, and natural or artificial drying.

77. More complete information should be obtained and disseminated to countries on types of construction, systems of ventilation, grain handling methods and equipment, operation costs and any other pertinent aspects related to rice storage. Full consideration should be given to improved design of small storage structures for use on farms and in remote areas, the development of storage facilities on a community basis utilizing locally available materials and incorporating adequate ventilation systems. Information should continue to be assembled both by governments and by FAO on the extent of losses in stored rice and on generally applicable techniques for their accurate determination and prevention.

78. Studies and trials should continue to be carried out on improved methods and equipment for determining quality and potential milling results of paddy for cleaning and grading, and for all other processing operations including parboiling and the utilization of rice by-products. Information should be obtained, correlated and made available on small rice mills for use in rural farming communities.

79. Regional and national development centers should be organized as funds permit in order to provide training and facilities for further information through discussion forums on improved methods and equipment used for the production, storage and processing of rice, and the use of its by-products.

80. Consideration should be given to the allocation of certain research and trial projects to selected IRC countries according to the availability in the countries concerned of particular facilities for conducting such projects.

81. Governments should include in their programs of technical assistance from FAO requests for fellowships to enable selected workers in their countries to study certain operations in these fields in other countries where such operations are more highly developed.

82. The Director-General of FAO is requested to provide the services of a specialist on the agricultural engineering aspects of rice production, storage and processing to assist countries in organizing and conducting trials of improved methods and equipment, and in evaluation and preparing for publication the results obtained, as well as to facilitate the exchange between countries of trial units of equipment and machines which appear to be adaptable for use in other areas. This specialist would also assist governments in organizing regional and national centers for dissemination of information and on their studies of improved methods and equipment used in rice production, storage and processing. This specialist may be provided with ETAP Regional Project Funds, or or within the separate national Programs for technical assistance, on the basis of a number of governments including 2 to 4 months service for such an expert in their requests for technical assistance.

83. Among the issues to be tackled in the mechanization field, the suggestion was made that research on small implements and equipment should be stressed, especially concerning row-seeding of rice and transplanting, as this offers good opportunities for reducing the time and labor required for these tasks.

Overall Issues in Future Work on Rice

84. Several points that were given special emphasis by different Delegations are mentioned as follows:

(a) The suggestion was made that abstracts from publications of direct concern to the IRC might be regularly and systematically presented in the IRC Newsletter.

(b) It was mentioned that there is a certain lack of program planning in the IRC, and its working groups, whichmight result in a dissipation of effort and in a lack of coordination of the work in the various countries. Stress was placed on the need to concentrate on (1) the promotion of research in the member countries, (2) the coordination of such research projects, (3) the dimsemination of the results obtained, and (4) assistance in executing pr projects. As to the selection of specific problems to be dealt with by the working groups, it would be preferable to concentrate on a limited number of the more important issues at a time, rather than to deal with too many problems at once. The Working Parties themselves can help greatly by making careful selections of the aspects that should be given concentrated attention.

(c) Member Countries should send to FAO detailed reports on the work accomplished by them in relation to the different recommendations of the Working Parties. These should be collated and presented at following sessions of the IRC.

(d) In reporting on the activities of the IRC, attention should be focussed also on the actual accomplishments and results growing out of the work of the Commission and the Working Parties.

(e) An additional expert should be made available to promote the work on soil classification and related questions if this could be arranged through either an ETAP Regional or country group project.

85. There was a strong view among several of the Delegates that an international rice research institute should be established to intensify basic research on the rice crop and that the possibilities should be studied for the realization of this proejct: This was considered particularly important in view of the lack of facilities and funds for this purpose in the individual rice producing countries. The Delegate from the Philippines offered for facilities to be made available for this purpose by the Government of the Philippines. This offer was noted with appreciation. Certain of the Delegations urged that the approach be wider and that a number of regional rice laboratories be established and affiliated with the proposed International Rice Isstitute. It was recognized that a number of problems and difficulties would be encountered in any effort to give effect to these proposals. The difficulties particularly would involve establishing an assured long term scource of the necessary funds and developing a clear understanding on the delineation of responsibilities among the many separate nations and other interests that would be directly involved. The Commission wished, however, that the matter be taken under the most careful consideration by the Director-General in an effort to find ways and means whereby this might be made a reality.

86. In the discussion it was noted that through the FAO sponsored World Seed Campaign which will culminate in the designation of a World Seed Year, Member Nations are to be called upon to promote the wider use of improved seed. This was considered to be particularly relevant with respect to rice, and Member Nations were urged to give support and provide publicity for promoting the Campaign and to foster work on improved seed in their own countries, not only for rice, but for other crops as well.

FUTURE ORGANIZATION OF THE INTERNATIONAL RICE COMMISSION AND OF THE TECHNICAL WORKING PARTIES

87. The Commission reviewed the historical development of the IRC and of the Working Parties and the ad hoc Groups and in the discussion arrived at conclusions on what should be the organization for the future and on broad guide lines on schedules and arrangements for future meetings.

Background Information and Historical Developments

88. The work of FAO in relation to the International Rice Commission began more than ten years ago. After earlier preparations, detailed plans for the Commission were developed at the Baguio Meeting in the Philippines in March, 1948, but the Commission did not come into existence formally until January, 1949. The last and Sixth Session of the IRC in Tokyo practically marked a ten year period of formal and very successful existence of the IRC. During the decade, the Commission served with excellent results to promote the purposes for which it was created initially. This includes not only top rice policy consideration, but also a large volume of high quality technical work that has been performed through the medium of technical meetings of the Working Parties and ad hoc Groups under the auspices of the IRC. Attention has been focussed on the needs and opportunities for, and interest in, an even greater volume of technical work. With the completion of the IRC Meeting in Tokyo the scheduled activities have included:

(a) Six Sessions of the IRC itself;
(b) Seven Meetings of the Working Party on Rice Breeding;
(c) Six Meetings of the Working Party on Fertilizers;
(d) One meeting only of the ad hoc Working Group on Problems of Rice Mechanization, including Engineering, Machinery and Tools (Paradeniya, Ceylon, May, 1956). Further working contacts have been promoted by correspondence and by staff visits.
(e) One Meeting only of the ad hoc Working Group on Rice Storage and Processing (Calcutta, India, November, 1956, just prior to and in conjunction with the Fifth Session of the IRC). Further working contacts have been promoted by correspondence and by staff visits;
(f) One Meeting only of the ad hoc Working Group on Soil-Water-Plant Relationships. (Vercelli, Italy, September, 1957).
(g) Rice Protection, particularly with reference to the growing crop has been recognized as of great importance. Preparatory contacts have been established and a great deal of information has been accumulated but no Working Group approach has as yet been developed.
(h) The International Rice Commission Newsletter has been published on a quarterly basis with a total of 25 numbers.

89. A grouping of Working Parties was instituted on a trial basis at the Vercelli Meeting in Italy, in September 1957. The Working Parties on Rice Breeding and Fertilizers and the ad hoc Group on Soil-Water-Plant Relationships met together and produced an integrated single report.

90. The International Rice Commission itself at the Fifth Session was concerned with the future organization and arrangements for meetings. The report of that Session suggested avoiding too great a proliferation of groups leading to expenses which neither governments nor FAO might be in a position to meet and advised keeping at a reasonable level the total number of meetings required to handle the essential work. The report further suggested that simultaneous or consecutive meetings should be arranged whenever this was feasible. The Working Parties and the ad hoc Group that met at Vercelli incorporated similar observations in their meeting report, stating that there is need for reduction in the number of international meetings. The Groups were anxious that their views be taken into consideration concerning the need for keeping the number of sub-commissions, working parties or ad hoc groups to a minimum, as they felt that the proliferation of such bodies imposes an undue burden on Member Countries, and tends to lower efficiency of the meetings.

91. With the passage of years, there has been an increased awareness of the need, in principle, to re-examine the long-term continuing projects in FAO and assure that the approach is adjusted where necessary to meet changing requirements. Recognition has been given on a number of occasions to the need for efficient groupings of subject matter and for arranging schedules of meetings to permit the work to be carried out effectively and at the same time avoid any undue financial hardships or expensive travel and staff demands with respect both to participating governments and the FAO Secretariat. This general view has been advanced strongly on a number of occasions by various FAO bodies in addition to the IRC itself and its Working Parties:

(a) At the third FAO Regional Conference for Asia and the Far East in Bandung in October 1956, there was a long discussion in which a number of Delegates complained of the cost in money and time arising in Member Countries as a result of too many meetings. In its meeting report, the Regional Conference recommended that FAO should undertake more systematic coordination of its activities involving conferences, meetings and training centers.

(b) At the Twenty-Fifth Session of the FAO Council held in Rome in September, 1956, there was a strong debate in which Delegates insisted that continuing activities in the Program of Work be further re-examined and re-adjusted where possible to limit the demands for the time of personnel, and travel and other expenditures with respect both to the FAO Secretariat and Member Governments. The ideas put forward included recognition that as important new projects arise for attention the older projects that have been in operation for several years, and up to ten years in some instances, must be re-arranged where feasible to reduce certain demands. These sentiments were given voice in Council Resolution No. 1/25, Priorities in the Program, which entrusted the Director-General in collaboration with the Coordinating Committee (later the Program Committee) with the task of studying priorities to be set for projects in the Program of Work for the next (and subsequent) years and making the appropriate adjustments.

(c) Comparable sentiments were expressed in the debates in the Third Special Session of the FAO Conference in September 1956 when emphasis was placed on priorities between older established projects and proposed new projects and on maintaining a certain measure of flexibility in the Program, which calls for a periodic reassessment of the older projects.

(d) The Program Committee in March 1958 endorsed the intention to link the biennial meetings of the International Rice Commission with the Regional Conferences for Asia and the Far East in order to effect economies both for Member Governments and for the Organization. It was the Committee's understanding that the technical activities of the Commission would not be reduced in scope but would be carried on actively in the several Working Parties.

Plans for Future Organization and Schedules

92. In the discussion it was noted that the integrity of the IRC should be maintained irrespective of whatever plans and arrangements are to be followed in relation to the future organization of the Commission itself as well as its subsidiary technical Working Parties and Study Groups and in determining the places and times for the various meetings. This arises especially in any correlation with the venue and timing of the FAO Regional Conference for Asia and the Far East. These two FAO activities are quite different in a number of respects that need to be taken into due account. To insure that the integtiry of the IRC is maintained and to avoid any possibilities of confusion or misunderstanding, the measure of correlation of the IRC that may be agreed upon with respect to the FAO Regional Conference for Asia and the Far East should always include provisions along the following lines:

(a) As in the past, separate letters of invitation should be sent for the IRC Session since it is international in character and involves the interests of several member nations who may be less concerned, or may not even be involved in the affairs of the Regional Conference.

(b) No change should be envisaged from the past arrangements whereby Member Nations of the IRC designate the members of their Delegations especially for the Session of the IRC. Incidentally, the concerned Nations may, if they so wish, designate some of their same officials as members also of their Delegations to the Regional Conference.

(c) Sufficient time should be allowed for Sessions of the IRC so that adequate attention can be given to the issues that need to be treated.

(d) The Agenda of the IRC, as in the past, should provide for receiving and reviewing the reports of the technical work carried out by the IRC technical Working Parties. This review not only should be from the technical point of view, but also should include adequate attention to relevant policy matters.

(e) Each Session of the IRC should retain its full identity and integrity and as in the past there will be the Agenda for the Session as well as a published report that will be distributed with special reference to the membership and participation in the IRC. The report as in the past will be to the Director-General of FAO and may be referred by him to the FAO Council and Conference as well as to either one, two or all of the Regional Conferences.

(f) In the light of the above, irrespective of venue and timing, the IRC should not be considered as in a position that is subordinate to any of the FAO Regional Conferences. The international character of the IRC should be maintained and it is not to become a regional body as distinct from an international. Further, due emphasis is to be placed on rice technical matters so that the IRC will not become predominantly non-technical in nature.

93. The International Rice Commission itself would then continue to be concerned with reviewing relevant technical matters and at the same time should focus additional attention on overall rice issues that arise in co-ordinating, planning, and in recommending priorities for such technical work and on the more important policy questions. It should continue to make suggestions to the Director-General on future FAO activities with respect to technical work on rice and continue to serve as a forum for encouraging appropriate action by governments in this field. The IRC also would continue to receive and review summary reports of the technical work accomplished through the Technical Working Parties.

94. The future meetings of the IRC , as a general practice, should be convened by the Director-General at the same place and just prior to the FAO Regional Conference for Asia and the Far East, but would continue to be distinct and separate from the Regional Conference. This general practice, however, would not necessarily be rigidly adhered to and, when the situation warrants, the International Rice Commission might be convened at some other time and in a place quite different from the Regional Conference. This would arise more particularly when an offer to serve as host to the International Rice Commission was received from a Member Nation outside Asia and the Far East. In those instances when the schedules are correlated for the IRC and the Regional Conference, a number of the same government officials could attend both the meeting of the IRC and the Regional Conference. As might be appropriate, certain important issues arising at the IRC could also be considered by the Regional Conference for Asia and the Far East. This, however, would in no way prevent the same issues from being considered by either one or all of the other Regional Conferences or the FAO Program Committee, the FAO Council or the FAO Conference.

95. The Commission recommended that in the future the technical work would be organized within the framework of the three IRC Working Parties. Each scheduled meeting of a Working Party would to the extent necessary concentrate its attention on a selected part of the total subject matter field within the purview of the Working Party. Within the Working Parties there would be formed any study groups that might be necessary for more intense treatment of certain highly specialized questions. It then would be practicable for ad hoc technical meetings of study groups to be convened when required either within the scheduled meeting of the Working Party or separately. In addition to the use of meetings, the technical work would be promoted also by a continuous exchange of correspondence, papers and documents initiated by the specialists who are the government representatives and by a similar exchange initiated by FAO staff specialists and by staff visits and on-the-spot technical consultations by FAO specialists. The three Working Parties should be as outlined below:

96. IRC Working Party on Rice Production and Protection. This Working Party is to promote international collaboration in all problems related to the production and protection of rice, covering:

(a) The study of the physiology of the rice plant, with special reference to photosynthesis, growth and metabolism, light and temperature relationships, reproduction;

(b) The breeding of improved varieties, with special reference to collection, introduction, selection, hybridization, cytogenetics, production of breeder seed and foundation seed;

(c) The production of seed rice, with special reference to multiplication, certification and distribution;

(d) Study of the biology and control of pests, diseases and weeds in the growing rice crop;

(e) Study of effective methods of preventing losses in stored paddy and rice and in this maintaining effective collaboration with the Working Party concerned with the Agricultural Engineering Aspects of rice production, storage and processing;

(f) The study of agronomic problems in rice cultivation, with special reference to methods of cultivation of dryland and wetland rice, weed control, diversification of cropping systems based on rice, introduction of fertility-maintaining rotations incorporating, in particular, legumes for grain, green manure and fodder. It is at this point that this Working Party meets the terms of reference of the IRC Working Party on Soil, Water and Fertilizer Practices, and careful cooperation is to be maintained with that Working Party.

97. IRC Working Party on Rice Soils, Water and Fertilizer Practices. This Working Party is to promote international collaboration in resolving all problems relating to rice soils, water and fertilizer practices, including:

(a) The study of the chemical, micro-biological and morphological properties and characteristics of rice soil;

(b) Analyses of both soil and plants to elucidate plant nutrient up-take, and the use of fertilizers and manures on rice soils;

(c) The use of fertilizers and other amendments to increase production, correct element deficiencies and toxicities and control physiological diseases;

(d) Problems of soil-water-plant relationships and related problems of drainage and the effect of the water supply on the physiological and growth responses of rice plants;

(e) Aspects of rice agronomy relating to soil fertility, such as tillage practices, weed control, and the use of fertility-maintaining rotations, and farm management.

On agronomic problems, as well as on farm management and the prevention of deficiency diseases, the closest cooperation will be maintained with the Working Party on Rice Production and Protection. Similarly, on tillage practices including questions relating to machinery or equipment and on farm management close cooperation will be maintained with the Working Party on Engineering Aspects of Rice Production, Storage and Processing.

98. IRC Working Party on Agricultural Engineering Aspects of Rice Production, Storage and Processing. This Working Party is to promote international collaboration in resolving Agricultural Engineering problems related to rice, including the following:

(a) Agricultural Engineering relating to mechanization of rice production, with special emphasis on improved methods and equipment for cultural practices, and on the engineering, construction and grain handling aspects of storage; all aspects of rice processing including all processes to which rice is normally subjected between threshing and the production of the finished product, such as testing, cleaning, grading, milling, whitening, polishing, parboiling, packaging and the utilization of by-products.

(b) When desirable, the activities of this Working Party will be coordinated with those of the Working Party on Rice Production and Protection, in relation to the protection of rice during storage; and with that Working Party and the Working Party on Rice Soils, Water and Fertilizer Practices when cultural methods and practices involving the use of improved tools, equipment and machines are being treated. Further, due attention will be given to nutritional questions which arise during storage, processing and parboiling, and the FAO staff concerned with these questions will collaborate with the FAO Nutrition Division.

99. Inter-Relationships between Working Parties. It was recognized that with any grouping of subject matter there will be a continuing need for careful co-ordination of certain work within a Working Party and the more closely related work in one or both of the other Working Parties. This can be accomplished through liaison among officials within the countries and between staff members of the FAO Secretariat and through combining meetings of the Working Parties to the maximum extent feasible.

100. The boundaries of each Working Party should not be so rigid as to prevent cognizance being taken when appropriate of closely related agricultural problems arising for crops other than rice. There may be needs, within the context of rice, to recognize such issues as in the following examples; seed certification systems suitable for crops in addition to rice; agricultural chemicals and fertilizer supplies for rice and other crops being grown by the rice farmer; the multipurpose character of certain equipment or facilities such as small engines for various uses or multipurpose spray equipment; soil improvement crops grown in rotation with rice; other crops in rotation on primarily rice soil that replace rice for a season or two such as sugar cane.

101. Scheduling Future Meetings. The timing and frequency of meetings of the Working Parties would depend on progress made, the intensity of government interest and developments that occur as the work proceeds. The maximum amount of flexibility should be envisaged to meet the needs as they arise but meetings of the Working Parties at two-year intervals might be considered as a general guide line. On some occasions, however, the interval might be as short as one year and on other occasions, as long as three years or more. A rigid schedule should not be adopted but for the next few years it should be possible to arrange two-year cycles so that when the IRC itself meets only one Working Party would meet during that year, and the other two Working Parties would meet during the other year, thus resulting in a generally uniform number of two meetings each

year along the lines indicated below:

(a) International Rice Commission, Meetings in 1960, 1962, 1964, 1966;

(b) IRC Working Party on Rice Production and Protection, Meetings in 1959, 1961, 1963, 1965;

(c) IRC Working Party on Rice Soil, Water and Fertilizer Practices, Meetings also in 1959, 1961, 1963, 1965;

(d) IRC Working Party on Engineering Aspects of Rice Production, Storage, and Processing, Meetings in 1960, 1962, 1964, and 1966.

102. With the above arrangement the general practice would be for the Meetings of the Working Parties (or subsidiary study groups within the Working Parties) to be held at times and places that are quite different from the Sessions of the International Rice Commission. This general practice, however, would not necessarily be rigidly adhered to, and whenever the special circumstances should warrant, one or more of the IRC Working Parties (or subsidiary study groups within the Working Parties) might be convened at the same time and place as the Session of the International Rice Commission itself.

103. The schedule of the combined meetings of Working Parties might be arranged so that two Working Parties would meet either consecutively or concurrently, and depending on circumstances, either arrangement would present certain advantages. Sometimes the sittings might have to be arranged concurrently to avoid a combined Session of greater duration than would be convenient. When this is to be done, Member Nations should be provided with full information in advance so they could arrange to have at least two representatives present for simultaneous participation in the two meetings. Two Delegates emphasized the advantage of scheduling the Meetings consecutively so that a single Government Delegate could participate in both Meetings. Other Delegates emphasized that concurrent sittings would be necessary on many occasions such as, for example, when two Working Parties have to complete their agendas in a calendar work week. In either event, some plenary meetings of both Working Parties doubtless would be provided for in any arrangements for combining Meetings.

104. Governments in any event, would be faced with the choice on the number and the particular specialization of senior technicians to attend a single Working Party Meeting. As an example, the Working Party on Rice Production and Protection embraces several fields of further specialization such as rice genetics and plant breeding; seed multiplication, certification and distribution; and plant protection involving the control of pests and diseases in both field and storage. All phases might be treated with a limited degree of depth at a single meeting but in 1959 greater emphasis might be given to plant protection. In 1961, the emphasis might be on seed multiplication, certification and distribution. In 1963, the greater emphasis might be on genetics and rice breeding. In some instances and for some of the Working Parties, it might be advantageous to plan for intensive coverage by two or three different types of specialists. An additional arrangement has already been mentioned whereby, as necessary, technical meetings of study groups might be convened for highly specialized questions.

105. The membership of each of the Working Parties officially would include every Government that is a Member of the IRC. These subsidiary bodies would be "Working Parties of Governments" as distinct from "Working Parties of individuals." Each Government designates its own well qualified representative for each Working Party, preferably including one or two alternates so as to cover the more specialized aspects of the Working Party's terms of reference. The Working Parties would function not only through the technical meetings as indicated above, but also the designated Government representatives would serve as direct contact points. The direct contact points would provide for a continuous interchange of technical information among such Government representatives in the different Countries and between them and Members of the FAO Staff. The methods used could include letters, distribution of papers and documents, and visits for consultation whenever the situation permitted. Each Member Government then might wish to designate not just one, but two, or in special instances, as many as three individuals as the Government representatives on each FAO/IRC Working Party. The Representatives could be so selected that they would bring special technical interest and competence in each major aspect of the subject covered by a Working Party. It then would remain for the Government to decide on any basis it chooses whether one or all of the individuals so designated should then attend a specific meeting of a Working Party, or whether the Governments should be represented by some other individuals or even not be represented.

FAO STAFF FOR WORK ON RICE

106. The Commission noted that a number of FAO Headquarters and regional staff members will devote varying parts of their total effort to furthering the work on rice. At the same time their total responsibilities will call for work on many issues arising outside the context of rice. In addition to the above staff, certain FAO specialists are assigned to work exclusively on rice problems and others have assignments in which work on rice is of great importance. Dr. Parthasarathy, FAO ETAP Rice Improvement Regional Expert, is on a full time assignment in the region with the major emphasis of his work on rice breeding, seed improvement and cultural practices, with attention being given, howevever to other questions on rice production and protection. Dr. Mukerjee, FAO ETAP Soil Fertility Regional Expert, also is on a full time assignment in the Region with the major emphasis of his work on Soil Fertility for Rice Production, with attention being given, however, to other questions on rice soils, water and fertilizer practices. Dr. Stahl, FAO ETAP Plant Protection Regional Expert, is assigned to Plant Quarantine and related work in the countries that have adhered to the Plant Protection Agreement for South East Asia and the Pacific Region. His work is not addressed particularly to rice, but includes Rice Protection within his broader overall assignment. A post was recently established under the regular program for an Irrigation Agronomist to be outposted from the Headquarters to the Far East and stationed in the Far East Regional Office in Bangkok. When this post is filled, the specialist will be largely concerned with the relevant aspects of Rice Production. There also is a need for arrangements either on an ETAP Regional Project basis or through an ETAP Country Group approach for the services of an Expert on the agricultural engineering aspects of rice production, storage and processing, and for another expert on the classification of rice soils. The recurring visits, technical consultations and exchange of information undertaken by the above FAO staff can in some measure reduce the need for certain smaller technical meetings.

CONSTITUTIONAL AND PROCEDURAL CONSIDERATIONS AND RELATED PRINCIPLES.

107. The Commission considered the need for attention to constitutional and related questions in the light of the action taken by the last session of the FAO Conference. In the discussion a number of points were reviewed in this connection.

108. The International Rice Commission is of world wide scope as distinct from regional, and is an FAO body in that the convention establishing it was concluded within the framework of Article XIV of the Constitution of FAO. Certain other FAO bodies have been established by conventions or agreements concluded under Article XIV of the Constitution. In addition, bodies of a similar nature have been set up under Article VI of the Constitution, but these differ from the former in that they were created by a decision of the Conference, Council or by the Director-General without involving a convention or agreement among the Member Governments.

109. The Ninth Session of the FAO Conference, in November 1957, took action that, inter alia, clarified certain constitutional and procedural questions and provided for comparability in terminology and procedures with respect to conventions and agreements concluded under Article XIV of the FAO Constitution and with respect to commissions and committees established under Article VI of the Constitution. The Conference action was preceded by careful preparations by the 23rd, 25th and 26th sessions of the FAO Council starting in November, 1955, and by the work of a special Council Committee. The Conference action took the form of amending the FAO Constitution and Rules and of adopting resolutions that included the establishment of principles to govern conventions and agreements and constituent rules of commissions and committees.

110. The FAO Conference recognized that existing commissions (such as the International Rice Commission) and other bodies do not in all instances have provisions in their constitutions, rules of procedure or relevant terms of reference that are fully in conformity with the results of the Conference action. Consequently, Conference Resolution No. 46/57, inter alia, included the two special points enumerated in the second paragraph below on conforming to FAO standards and revising the statutes.

111. It was not practical for the consequential changes in the IRC Constitution and Rules of Procedure to be undertaken at the Sixth Session of the IRC, since they did not appear to be of a very urgent nature, and would have involved a relatively large number of drafting points. Further, the time would have been somewhat limited for the Government Representatives to become fully familiar with the details involved. There was also a need to avoid an unduly large agenda for the IRC in relation to the overall schedule for the Sixth Session of the IRC. It was considered necessary however for steps to be taken at that Session of the Commission toward regularizing the position on an interim basis, and leading, at the next regular Session of the IRC, to the appropriate revision of the IRC Constitution and Rules of Procedure. The changes that are to arise largely take the form of clarifications with limited shifts in emphasis or minor alterations in channels or procedures but many consequential drafting changes will be involved.

112. In the light of the above the International Rice Commission -

Noting that

(a) The Ninth Session of the FAO Conference, having clarified the situation with respect to conventions and agreements concluded under Article XIV of the FAO Constitution and to the bodies (such as the International Rice Commission) that are established thereby, stated in its Resolution 46/57, inter alia, the following:

"Urges the parties to existing conventions and agreements and the members of the bodies established thereunder to apply as far as possible the rules contained in the present statement of principles and reflected in the amendments to the Constitution and Rules of Procedure of the Organization appearing in the Appendix to this report (of the Ninth Session of the Conference).

"Invites these parties to amend the texts of these conventions and agreements when feasible in order to bring them in line with said principles and amendments."

(b) Additional time and further preparations will be required to effect a revision in the Constitution and Rules of Procedure of the International Rice Commission to bring them fully in line with the recent Conference action.

Recommends that

(a) The International Rice Commission should, as far as possible, be subject to the application of the new principles contained in the FAO Constitution and the Rules adopted by the Conference as well as in Appendix D of the Report of the Ninth Session of the FAO Conference, as regards conventions and agreements concluded under Article XIV of the FAO Constitution and bodies established by such conventions and agreements, and that

(b) Steps be initiated so that in due course the Constitution and Rules of Procedure of the International Rice Commission may be revised in the normal way to bring them in line with the above-mentioned provisions,

Requests

The Director-General to place this question on the Agenda for the next regular session of the International Rice Commission and to prepare and distribute in advance a background paper providing full information on all of the changes that may be appropriate for consideration.

TIMES AND PLACES OF FUTURE MEETINGS

113. (a) IRC Meetings: The Delegate from the Philippines extended an invitation from the Government of the Philippines for the next meeting of the IRC to be held in the Philippines. This invitation was received by the Commission with the greatest of appreciation. It was concluded, however, that as the next IRC Meeting may quite likely be held in 1960 at the same place and just before the next FAO Regional Conference for Asia and the Far East this matter should be taken under advisement by the Director-General pending the working out of plans for both the next Session of the IRC and the next FAO Regional Conference and that the Government of the Philippines as well as other Member Nations of the IRC should be informed just as early as possible on the final decision.

(b) Meetings of IRC Working Parties: The Delegate from Ceylon extended an invitation from the Government of Ceylon for the 1959 Meetings of the IRC Working Parties to be held in Ceylon. It is envisaged that 1959 Meetings will be held of the IRC Working Party on Rice Production and Protection, and of the IRC Working Party on Rice Soils, Water and Fertilizer practices. This invitation was received by the Commission with the greatest of appreciation and with approval. It was endorsed to the Director-General with a request that the Government of Ceylon as well as other Member Nations of the IRC be informed as soon as feasible on the final decision.

SUMMARY OF RECOMMENDATIONS

114. The Sixth Session of the International Rice Commission, having considered the various items on the Agenda, arrived at conclusions and made the recommendations that are summarized below:

115. The Commission reviewed in summary form the more important work carried out on rice in the past, particularly since the Fifth Session of the Commission, and noted with approval the progress made on the many questions and problems that had been given attention.

116. Consideration was given to the large and important volume of work requiring attention in the future from the IRC itself and from the technical working parties. In the plans and arrangements for the future the integrity of the IRC should be maintained when schedules are correlated for Sessions of the IRC and for the FAO Regional Conferences for Asia and the Far East. The IRC should not in any way become or be considered as subordinate to the FAO Regional Conference. In this connection due measures are to be taken to maintain and preserve the IRC as an FAO international body not to be confused with a regional body.

117. The IRC itself, as distinct from the working parties, should, as outlined more fully earlier in this report, continue to be concerned with reviewing relevant technical matters and should focus additional attention on overall rice issues that arise in coordinating, planning, or recommending priorities for such technical work and on the more important policy questions.

118. The Director-General is requested in the years ahead to communicate with Governments that may offer to serve as hosts to result in arrangements that are mutually developed so that normally he will convene future Sessions of the International Rice Commission at two-year intervals with the same venue and just preceding the FAO Regional Conference for Asia and the Far East. This general practice, however, need not necessarily be rigidly adhered to, and, when the situation warrants, the International Rice Commission might be convened at some other time and in a place quite different from the FAO Regional Conference for Asia and the Far East.

119. The more specialized technical work should be continued principally through the subsidiary bodies which in the future should be constituted into three Working Parties as follows:

(a) IRC Working Party on Rice Production and Protection.

(b) IRC Working Party on Rice Soils, Water and Fertilizer Practices.

(c) IRC Working Party on Agricultural Engineering Aspects of Rice Production, Storage and Processing.

120. Within the above IRC Working Parties there may be formed any "Study Groups" that might be necessary for more intense treatment of more specialized questions.

121. The terms of reference of each of the Working Parties and the plans for future activities to be undertaken should be along the lines outlined earlier in this Report.

122. The timing and frequency of Meetings of the Working Parties should depend on progress made, the intensity of government interest, and on developments that occur as the work proceeds. In accepting the future invitations from Governments for Meetings of the Working Parties, and in the light of the plans developed by the Commission itself and by the Working Parties, the Director-General is requested to maintain the maximum amount of flexibility to meet the needs that arise from time to time as he establishes the venue, fixes the time, and convenes the future Meetings of the Working Parties. Meetings at two-year intervals for each Working Party might be considered as a general guide. On some occasions, however, the interval might be as short as one year, and on other occasions, as long as three years or more. A rigid schedule is not recommended, but for the next few years it generally should be possible to arrange two-year cycles so that when the IRC itself meets, only one Working Party would meet during that year, and the other two Working Parties would meet during the other year, thus resulting in a generally uniform number of two meetings each year along the lines indicated below:

(a) International Rice Commission, Meetings in 1960, 1962, 1964, 1966.

(b) Working Party on Engineering Aspects of Rice Production, Storage and Processing, Meetings also in 1960, 1962, 1964, and 1966.

(c) Working Party on Rice Production and Protection, Meetings in 1959, 1961, 1963, 1965.

(d) Working Party on Rice Soil, Water and Fertilizer Practices, Meetings also in 1959, 1961, 1963, 1965.

123. With the arrangements outlined above the general practice would be for the meetings of the Working Parties (or subsidiary Study Groups within the Working Parties) to be held at times and places that are quite different from the Sessions of the International Rice Commission. This general practice, however, would not necessarily be rigidly adhered to, and whenever the special circumstances warrant, one or more of the IRC Working Parties (or subsidiary Study Groups within the Working Parts) might be convened at the same time and place as the Session of the International Rice Commission itself. Another alternate that might sometime be followed would be for all three Working Parties to have a combined meeting, possibly including one or more Study Groups also.

124. Careful coordination should be maintained for the more closely related work arising in the different Working Parties. This should be accomplished through such means as liaison among officials within the countries and between staff members of the Secretariat. Further, sometimes schedules of meetings should be arranged so that two Working Parties would meet concurrently or consecutively at the same place so that there could be any desired joint sittings or overlapping with respect to attendance and participation. In any combined

meeting of two or more Working Parties, whether the sittings should be scheduled concurrently or consecutively should depend on the circumstances of the particular meeting, but some plenary sittings of both Working Parties also should be arranged.

125. The boundaries of each Working Party should have some flexibility with respect not only to questions on rice, but also to other associated problems. Cognizance should be taken when appropriate of closely related agricultural problems arising for crops other than rice. There may be needs to recognize and give attention to such issues as in the following examples: seed certification systems suitable for crops in addition to rice; agricultural chemicals and fertilizer supplies for rice and other crops being grown by the rice farmer; the multipurpose character of certain equipment or facilities such as small engines for various uses or multipurpose spray equipment; soil improvement crops grown in rotation with rice; other crops in rotation on primarily rice soil that replace rice for a season or two, such as sugar cane.

126. The IRC Working Parties are Working Parties of Governments as distinct from Working Parties of individuals. All Member Nations of the IRC automatically are Members of each Working Party, and they should designate their specialist representatives for each Working Party they care to participate in. The Director-General is requested to contact each Member Nation of the IRC for this designation of their long-term representatives for each of the Working Parties and if they so desire these in many instances could well be the same individuals who have been active on IRC matters in the past. Member Nations should be encouraged to consider whether or not they additionally would wish to designate one of their representatives as a general or overall liaison or contact point on IRC matters.

127. The Director-General is requested to continue to make available appropriate parts of the time and efforts of certain FAO staff members in the Headquarters and in the Far East Regional Office so they can continue to include attention to rice problems in their approved program of activities. The Director-General is also requested to take all measures feasible to continue through at least 1961 or 1962 to provide the services of three ETAP Experts in the Far East Region for work on Plant Protection (including rice), Rice Improvement, Rice Soil Fertility, and related problems. The Director-General is requested as soon as feasible to add two additional experts, one for work on the Agricultural Engineering Aspects of Rice Production, Storage and Processing, and one for work on the classification of rice soils and their correlation with fertilizer responses. These two experts might well be on an ETAP Regional Project basis, but if this is not practicable, Member Nations are urged to provide 2 to 3 months in their national programs for technicad assistance in these fields, with the understanding that the project provisions would be pooled to enable continuous service of the experts to be undertaken for the benefit of the Region as a whole.

128. In addition to the use of meetings, not only the Director-General, but also Member Nations are requested to promote technical work on rice by encouraging among concerned officials or technical staff the continuous exchange of correspondence, papers and documents that would be particularly helpful in this connection. Further, the maximum use feasible should be made of recurring visits,

technical consultation and distribution of information by FAO staff working on rice which in some measure should solve the need for certain smaller international technical meetings.

129. The Commission requested that the Director-General take under consideration the need for lending FAO support to the establishment of an International Rice Institute, possibly with affiliated Regional laboratories in other countries, and attempt to find ways and means whereby this could become a reality.

130. Member Nations were urged to give support and provide publicity for promoting the World Seed Campaign, and to foster work on improved seed in their own countries, not only for rice, but for other crops as well.

131. With respect to Constitutional and Procedural considerations and related principles:

(a) The International Rice Commission should, as far as possible, be subject to the application of the new principles contained in the FAO Constitution and the Rules adopted by the Conference as well as in Appendix D of the Report of the Ninth Session of the FAO Conference, as regards conventions and agreements concluded under Article XIV of the FAO Constitution and bodies established by such conventions and agreements;

(b) Steps should be initiated so that in due course the Constitution and Rules of Procedure of the International Rice Commission may be revised in the normal way to bring them in line with the abovementioned provisions;

(c) The Director-General is requested to place this question on the Agenda for the next regular Session of the International Rice Commission and to prepare and distribute in advance a background paper providing full information on all of the changes that may be appropriate for consideration.

132. Time and Place of Future Meetings.

(a) The Commission noted with appreciation the invitation from the Philippines for the Seventh Session of the Commission to be held in 1960 in the Philippines and requested that this be taken under advisement by the Director-General pending the working out of plans for both the next Session of the IRC and the next FAO Regional Conference for Asia and the Far East.

(b) The Commission also noted with appreciation and approval the invitation from the Government of Ceylon for the meetings of the IRC Working Parties to be held in 1959 in Ceylon, and endorsed the invitation to the Director-General for final decision and for the working out of detailed arrangements.

Printed and Published by

Mrs. PRAYAT JATAPUTRA at UDOM PRESS

395-401 New Road, Bangkok.

21/2/2498