REPORT OF THE

FIFTEENTH SESSION OF THE INTERNATIONAL RICE COMMISSION

Freetown, Sierra Leone
11-15 October 1982

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

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Rome, 1982

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SUMMARY OF RECOMMENDATIONS

Long-Term Strategy of Rice Development

The Commission:

(i) recognized that world rice production would have to increase by about 50 percent in the next 20 years to keep pace with demand as projected in the global study Agriculture : Toward 2000 (para. 9); that the total harvested area of the 90 developing countries would have to rise by about 25 percent, and yields be increased from the present average of 1.9 tons, to 3.2 tons of paddy per hectare (para. 10).

(ii) recognized that in many countries, irrigation offered the major possibility of expanding production, and that rapid expansion in the use of improved seeds, chemical fertilizers, pesticides and farm machinery was also required (paras. 10 & 11).

(iii) agreed that high priority should be given to the repair, modernization or completion of existing irrigation works, and that much greater emphasis than in the past should be given to rainfed rice production (paras. 12 & 13).

(iv) recommended that the long-term strategy should promote conditions for fuller use of HYVs, and, for less favourable environments, encourage the development of varieties less demanding in the use of inputs (para. 14).

(v) agreed with the emphasis on institutional factors and stressed that increased emphasis should be given to the training of high-level specialists and managers (para. 15).

(vi) recognized that government services should be better adapted to the needs of small farmers, and recommended that the scope for economic and technical cooperation among developing countries be more fully explored (paras. 16 & 17).

Regional Rice Development Programme

The Commission:

(i) recommended that a systematic assessment be carried out of radiation patterns, rainfall distribution and variability, soil and land suitability and temperature, in relation to the different rice ecologies (para. 20).

(ii) recommended that research should give greater emphasis to the more productive and permanent rice-production systems such as hydromorphic and swamp lands, and that cooperation in research and development should be intensified among countries within the same region (paras. 21 & 22).

(iii) recommended that the economics of herbicide use should be taken into account before promoting their practice (para. 24).

(iv) observed with concern that the adoption of improved productionotechnology was restricted by a number of factors and felt that there was a danger in expecting the small farmer to adopt at one time a complex of innovative practices (para. 25).

(v) recognized the need for an agreed terminology for the various categories of rainfed rice, and invited contributions of relevant information (paras. 26 & 27).

Technology for Rainfed Rice Development in Africa

The Commission:

(i) recognized the need for a balanced application of fertilizer; suggested that due attention be given to other sources of plant nutrients such as organic manures, biological symbiotic nitrogen fixation, Azolla and blue-green algae (paras. 64 & 90); stressed the need for correcting soil toxicities, especially in rainfed lowland rice (para. 64).

(ii) recommended that greater attention be given to the development of improved varieties resistant to stress conditions (para. 65).

(iii) suggested that exchange of advanced breeding lines should be expanded (para. 67).

(iv) recommended that higher priority be given to the development of low-cost technology to increase production of rainfed rice, at minimal risk to small farmers (para. 70).

(v) recommended that greater attention be given to the introduction of breeds of draught animals resistant to trypanosomiasis, and of improved hand tools and animal-draught implements (para. 71).

(vi) recommended that governments identify areas of inland swamp for development (para. 72).

(vii) recognized the need for efficient seed development and distribution programmes (para. 74).

(viii) recommended that every effort be made to avoid quality deterioration and losses of paddy during processing and storage (para. 75).

(ix) agreed that effective marketing, input supply and credit arrangements, together with appropriate price policies, would be incentives for farmers to use improved technology (para. 76).

(x) recognized that without adequate extension services, available technologies could not reach the farming community (para. 77).

Medium-Term Programme for Rainfed Rice Development in Africa

The Commission recommended :

(i) that detailed inventories be made in each country to ascertain the agro-climatically most suitable areas for rainfed rice and to give priority to their development (para. 79).

(ii) that systematic studies on cold tolerance of upland rice be carried out, and that varieties better adapted to tropical humid areas be developed (para. 80).

(iii) that upland rice development projects be undertaken in an integrated fashion in areas where the main constraints could be overcome (para. 81).

(iv) that in promoting upland rice, its interaction with other crops in the farming system should be considered (para. 82).

(v) the rapid transfer of new rice technologies to hydromorphic lowlands (para. 85).

(vi) that the various types of lowland rice be precisely defined in terms of water regime, by field studies (para 86).

(vii) the setting-up of training centres in lowland rice production for women (para. 87).

(viii) the development of rice-cum-fish farming or fish ponds, in lowland areas (para. 88).

(ix) that ongoing research into human diseases associated with lowland rice cultivation be intensified (para. 91).

(x) that wide dissemination be given to practices developed by West African farmers for rice production in mangrove swamps (para. 92).

(xi) that criteria for choosing mangrove soils for rice and other crops be clearly defined (para. 93).

(xii) that water-management teams and engineering-construction brigades be set up at village level (para. 94) and machinery programmes organized (para. 98).

(xiii) more research on crop intensification and diversification (para. 95).

(xiv) that personnel be trained for administration of projects during their implementation (para. 100).

Other business

The Commission :

(i) adopted amendments to Article V, paragraph 4 of the IRC Constitution and to Rule I, paragraph 7 of the Rules of Procedure (para. 105).

(ii) recommended that countries not yet members of the Commission should consider becoming members by accepting the IRC Constitution in accordance with the provision of Article VIII (para. 107).

(iii) suggested "Collaboration between research and production" as a possible theme for its next session (para. 110).

(iv) recommended that a select ad hoc group should meet between the Commission sessions to assist the Secretariat to prepare topics for review in subsequent sessions (para. 111).

(v) requested the Executive Secretary to visit member countries and to report to each session on the Secretariat's activities concerning the follow-up of recommendations (paras. 112 and 113).

(vi) recommended that all Member Nations contribute more actively to the Newsletter (para. 114).

Date and Place of Next Session

The Commission agreed that its 16th Session would be held in 1985 (para. 117).

INTRODUCTION

1. The Fifteenth Session of the International Rice Commission was held in Freetown, Sierra Leone, from 11 to 15 October, 1982. The Session was attended by 38 representatives from 26 of the 47 Member Nations, Members of the Commission, 19 observers from Sierra Leone and 5 observers from 5 other Member Nations of FAO.

2. Eighteen observers from seven international organizations also participated.

3. The list of Members of the Commission is attached as Appendix B and the list of delegates and observers as Appendix C.

ELECTION OF CHAIRMAN AND VICE-CHAIRMEN

4. In accordance with Rule VII of its Rules of Procedure, the Commission elected Mr. C.B. Sesay (Sierra Leone) as Chairman of the Commission; Dr. S.M.H. Zaman (Bangladesh) as First Vice-Chairman and Mr. D. Muñoz (Colombia) as Second Vice-Chairman.

ADOPTION OF THE AGENDA AND TIMETABLE FOR THE SESSION

5. The Agenda as adopted is set out in Appendix A.

ADDRESS BY THE HONOURABLE MINISTER OF AGRICULTURE AND FORESTRY

6. The Commission was addressed by Dr. Abass C. Bundu, Hon. Minister of Agriculture and Forestry, Government of Sierra Leone (Appendix D).

ADDRESS ON BEHALF OF THE DIRECTOR-GENERAL, FAO

7. The Commission heard a statement from Dr. O. Brauer, Director, Plant Production and Protection Division, on behalf of the Director-General of FAO, which is attached as Appendix E.

LONG-TERM STRATEGY OF RICE DEVELOPMENT

8. The Commission reviewed the session document on Long-term Strategy of Rice Development (IRC/82/3) and expressed its satisfaction at the presentation of the document, which provided a comprehensive overview of rice development and strategies over the next twenty years.

9. The Commission noted that the document was largely based on FAO's global perspective study of "Agriculture: Toward 2000", which concentrated on 90 developing countries, which together account for 98 per cent of the total population of the developing world outside China. The Commission agreed that the analysis provided a useful framework for the discussion of the other items on the Agenda. It recognized that the study did not attempt to predict the future course of events, but presented desirable objectives that would indicate what could and should be accomplished. Under the more optimistic of the two "normative scenarios" analysed in the study, it is assumed that population growth in the 90 developing countries would slow down to 2.3 per cent per year between 1980 and 2000, and that the increase in their GDP would accelerate to 7 per cent per year. On this basis the increase in the world demand for rice would average 2.5 per cent per year from 1980 to 2000, while in the 90 developing countries it would average 2.7 per cent. Consequently, world rice production would have to rise from the 412 million tons of paddy produced in 1981 to about 635 million tons by the end of the century.

10. The Commission agreed that because of the shortage of new land that could be readily added to the rice area in the developing countries, the proposed strategy relied heavily on increasing productivity of existing areas by raising yields and cropping intensities. Consequently, the total harvested area of rice in the 90 developing countries would need to be expanded by about one quarter by the year 2000.

The greatest emphasis would be on raising yields which would have to increase by about 70 per cent, from an average of 1.9 to 3.2 tons of paddy per hectare, and contribute some three quarters of the increase in production. The Commission recognized that this would entail a rapid expansion in the use of improved seeds, chemical fertilizers, pesticides and farm machinery.

11. The Commission recognized that in many countries, especially in the most densely populated ones of the Far East, irrigation offered the major possibility of expanding production.

12. The Commission agreed that high priority should be given to the repair, modernization, or completion of existing irrigation works, which would be cheaper and bring higher and quicker returns than the construction of new irrigation schemes. As a result of a combination of new irrigation, the upgrading of partially-irrigated land, and greater cropping intensity, the share of fully irrigated land in the total rice production of developing countries would rise from about 30 per cent in the mid-1970's to about 60 per cent in the year 2000. This would add greatly to the stability of production from year to year, and consequently contribute to world food security.

13. The Commission emphasized that another very important part of the proposed strategy should be a much greater emphasis than in the past on rainfed production, especially as regards research and the introduction of modern technology. The producers of rainfed rice include many of the poorest small farmers, and there are many places where there is little alternative to rainfed rice production, often in one of its more extreme forms of upland or deepwater production.

14. The Commission recommended that the long-term strategy should follow a dual approach. On the one hand, it should seek to provide the conditions for making fuller use of the existing HYVs, and mainly by expanding and improving irrigation, where high yields would repay the heavy costs of irrigation development. On the other hand, for less favourable environments, the strategy should seek to provide new varieties that are less demanding in the use of inputs, give medium and more stable yields and are more resistant to pests and diseases. The Commission recognized that, because of the great diversity of rainfed rice environments, the development of rainfed production systems would be a much more difficult task, both with regard to technological and institutional aspects.

15. The Commission noted that the document covered technological constraints and requirements and specific strategy considerations of the main rice-production systems: irrigated; upland; and rainfed lowland, the latter including deepwater rice. It agreed with the emphasis on institutional factors, including research, extension and training, input delivery, credit, seed multiplication, price policies, marketing, processing and storage. It stressed that increased emphasis should be given to the training of high-level specialists in a wide range of technical fields, and for managers of agricultural development programmes and projects.

16. The Commission recognized that for the introduction of improved rice production technology to play its full part in rural development, it would be necessary to ensure that government services are better adapted to the needs of small farmers and that they effectively reach them.

17. The Commission stressed that most of the efforts to implement a long-term strategy for rice development must come from the governments of the developing countries and the farmers themselves. Governments should place much more emphasis on rice production than in the past, and on agricultural and rural development in general. These efforts would, however, need to be supported by the developed countries both directly by increased financial and technical assistance, and indirectly by liberalizing their markets for rice imports from developing countries.

18. The Commission also recommended that the scope for economic and technical cooperation among developing countries themselves, in such areas as research, pest and disease control, and training, be more fully explored.

REGIONAL RICE DEVELOPMENT PROGRAMME

19. The Commission reviewed document IRC/82/4 relating to rice development activities in the African, Asian and Latin American Regions. The document was based on contributions received from the International Institute for Tropical Agriculture (IITA), the International Rice Research Institute (IRRI) and the International Centre for Tropical Agriculture (CIAT), on tropical Africa, Asia and Latin America respectively. It expressed its satisfaction at the format and content of the document.

20. The Commission reviewed the climatic, soil, biological and management constraints to rice production. In order to achieve a rapid expansion of rice cultivation, the Commission recommended a systematic assessment of radiation patterns, rainfall distribution and variability, soil and land suitability, and temperature in relation to the different rice ecologies. The Commission underlined the need for more research on varieties suited to the variable moisture regimes of hydromorphic and swamp soils; weed control and its economics and the breeding of varieties resistant to pests and diseases and tolerant of soil toxicity.

21. The Commission recommended that research should give greater emphasis than at present to the areas that offer a better opportunity for the development of more productive and permanent rice-production systems such as hydromorphic and swamp lands where the potential level and stability of yields are much higher than for upland (or dryland) rice. The Commission stressed that the key to increased production in these more favourable areas was in improved land and water management. In addition to production packages, emphasis should also be given to post-harvest handling, processing and storage in order to reduce losses and improve quality.

22. The Commission noted with appreciation the impressive expansion of rice research and the efforts made to strengthen the link between research and development. It recommended the intensification of cooperation in research and development among countries within the same region and between regions, in order to promote the exchange of information, experiences and germplasm with a view to accelerating the transfer of improved technology.

23. The Commission recognized that the research problems faced by the various categories of rainfed rice were more complex than those associated with the improvement of irrigated rice. Varietal improvement may be a lengthy process. The deepwater varieties have recently been released in Thailand after 10 years of research. Furthermore, improved rainfed varieties are likely to require further work on regional adaptation for local diseases, pests and other problems. This would be achieved through regional and national collaboration.

24. With regard to weed control, the Commission recommended that the economics of herbicide use should be taken into account before promoting this practice.

25. The Commission observed with concern that generally in all rice-producing countries the adoption of improved production technology, especially by small farmers, had been restricted by a number of factors. These included lack of effective extension, credit and marketing services; inadequate road, transport and storage facilities; lack of agro-inputs; lack of price incentives. The Commission also felt that there was a danger in expecting the small farmer to adopt at one time a complex package of innovative practices, rather than gradually introducing them.

26. The Commission recognized the need for an agreed terminology for the various categories of rainfed rice and noted with satisfaction the initiatives of IRRI and WARDA in this respect. The Commission recognized that it was difficult to devise a universally accepted classification scheme for rice production systems in Africa, and noted that WARDA had recommended a classification scheme distinguishing two major types of rice cultivation, namely upland and lowland. Upland rice cultivation is defined as cultivation on land not subject to flooding apart from exceptional circumstances. Lowland rice cultivation is subdivided into freshwater and mangrove swamp cultivation, with and without water control.

27. The Commission therefore invites Member Countries as well as regional and international organizations to contribute relevant information.

Bouaké Workshop

28. The Commission noted the Upland Workshop on Rainfed Rice held in Bouaké, Ivory Coast, from 4-8 October 1982. The main objectives of the Workshop were:

- to assess existing knowledge and progress in upland rice improvement;
- to review present research on upland rice and particularly that carried out to overcome limitations imposed on upland rice yields;
- to review existing collaboration and develop appropriate collaborative programmes to increase upland rice production.

29. Rainfed rice was defined as "strictly rainfed rice" or "dryland rice" without flooding or supply from an underground water-table apart from exceptional cases. To assess the problems of rainfed rice, five working groups were established. The representatives of France reported that the working groups recommended:

(i) that maps be established showing the areas suitable for the cultivation of rainfed rice, on the basis of climate and soil;

(ii) that international cooperation on blast control be extended;

(iii) that further research on the variability of cultivated species of rice and on varietal resistance to various pests and diseases, be carried out;

(iv) that work on varietal improvement for drought and other stresses be intensified;

(v) that the prevalent cropping systems be studied and an analysis made of their main constraints;

(vi) that training be intensified at three levels: farmers and extension workers, medium-level personnel, high-level scientists.

30. The Commission noted that, arising from the workshop, the international and regional organizations concerned (CIAT, IITA, IRRI and WARDA) as well as national institutions will develop a coordinated action programme for upland rice.

IITA

31. The Commission noted with satisfaction the contribution to rice production in Africa made by IITA's rice programme in varietal development, farming systems, training and international programmes, under upland, hydromorphic and irrigated rice ecologies. The Commission also noted IITA's desire to expand cooperation with national, regional and international institutes in the field of rice research.

IRRI

32. The Commission noted that the first priority in IRRI's future plans was to establish closer collaboration with national rice research programmes, particularly in Africa and South America. The second priority - which coincides with FAO's Long-Term Strategy - is to give greater attention to the problem of increasing the productivity of rainfed rice. IRRI will, however, maintain emphasis on increasing and stabilizing yields of irrigated rice.

33. The Commission also noted that IRRI had devoted about 40 per cent of its budget since 1975 to rainfed rice and that IRRI has developed a strong research base for the improvement of rainfed rice production.

WARDA

34. The Commission noted that WARDA's ultimate objective is sub-regional self-sufficiency in rice production. As a research, training and development organization, it has successfully identified, tested and transferred at least 25 high-yielding and promising varieties to national programmes and farmers, has produced and distributed over 200 tons of foundation seed to its member countries, and has trained over 800 rice technicians and researchers. The Commission further noted with satisfaction that WARDA has, since its inception, placed emphasis on rainfed rice development, and is now placing added emphasis on upland or dryland rice research, with its expanded special regional upland rice research project at Bouaké, Ivory Coast.

Africa

35. The Commission noted with concern that in spite of large increases in rice production in Africa during the past two decades, and owing to the increasing demand for rice, imports had been rising very rapidly. This had caused serious balance-of-payments and foreign-exchange problems. Increased rice production was therefore essential. The Commission considered that the potential for rice production in the Region was very high.

36. The Commission noted that in Sierra Leone in 1980 about 400,000 hectares were utilized for rice production in various agro-ecologies: upland, inland valley swamps, riverain grasslands, bolilands and mangrove swamps. Sierra Leone has a national rice deficit of approximately 80,000 metric tons. With a high population growth rate and income elasticity for rice consumption the demand for food in general and demand for rice in particular will grow faster in the decades ahead. Self-sufficiency in rice production, therefore, is going to dominate the national development strategy.

37. The Commission recognized that there was a need for a critical review of activities in the rice sub-sector with its attendant constraints. Such activities include research, extension services, productivity and marketing. There is also a need for a greater coordination among agencies involved in the rice production in the country.

38. The Commission recognized eight priority areas, viz: policy formulation, implementation and evaluation; increasing productivity per unit area through effective research and extension; increasing the area under cultivation; rural credit and banking; reduction of post-harvest losses; price incentives; nutrition education; and manpower training.

39. The Commission noted that in Kenya rice ranked fifth among the cereals produced behind maize, sorghum/millet, wheat and barley. About 12,000 hectares of rice are planted annually of which about 8,500 are irrigated. Yields range between 4 and 5 tons/ha for irrigated paddy but only 1 ton/ha for rainfed rice. Plans are in hand to expand the area under irrigation and to enlarge the area under rainfed rice.

40. The Commission noted that rice was the staple food in Madagascar. The area under paddy amounts to 1,100,000 ha, with a production of 2,000,000 tons. This does not meet requirements and imports total over 280,000 tons a year. Rice development projects, aimed at meeting requirements by the year 2000 are in progress with aid from international and bi-lateral sources.

41. The Commission noted that in Mali rice ranked second in importance after millet and maize, in the pattern of food consumption. It is cultivated under three types of water regime: natural submersion, controlled flooding and full water control. The total area of rice is about 190,000 ha, with a production of some 230,000 tons, whereas the annual requirement is 350,000 tons. Efforts are being made to improve the cultivation systems of rainfed and lowland rice; to strengthen the structures along the watercourse banks; to consolidate technical infrastructures, and reorganize management and extension networks; and to promote farmers' organizations.

42. The Commission noted that three types of rice cultivation are practised in Upper Volta: strictly rainfed rice (dryland rice); lowland rainfed rice; and irrigated rice with complete water control on about 43,000 hectares of the three million hectares of cultivated land. The area is small because of various constraints - low rainfall in most parts of the country, high cost of installations, slow adoption of

innovations among farmers and lack of a well-structured technical extension service.

43. The Commission noted that the country's Second Five-Year Plan 1972-76 had included among its priorities an expansion and intensification of rice cultivation through the following key objectives: expansion of irrigated areas with complete water control; improvement of traditional rice growing by developing lowlands; establishment of an experiment centre to intensify rice research and introduce rainfed rice cultivation; increase in the production of selected seed by setting up four screening and packaging centres; and construction of rice mills.

44. The Commission noted that in Zaire, where rice was not a staple food, it had gained in importance in recent years because cassava is affected by mosaic disease. The area under rice amounts to 300,000 ha, production to 280,000 tons and imports to about 60,000 tons annually. Measures, being taken to raise production include: purification of local varieties, testing and distribution of new varieties, and extension work among the farmers.

Asia and the Pacific

45. With respect to Asia and the Pacific, the Commission noted that during the 1970's, rice production kept pace with population growth in most countries of the Region. The decade saw substantial changes in rice production practices used in most Asian countries. Irrigation was expanded and modern varieties were widely adopted and the use of fertilizer for rice production became widespread. In most countries rice production increased by more than 2.5 per cent a year during the 1970s due primarily to improvement in yields per unit area and cropping intensity.

46. The Commission noted that in spite of the expansion of irrigated rice, different types of rainfed rice cultivation remained a dominant source of the Region's rice especially in South and South-East Asia. Therefore the Region should make concerted efforts to increase and stabilize productivity of rainfed rice. It drew attention to the fact that in at least two areas of rice research - plant breeding and fertilizer use - there were indications that research results had not yet become fully available to, and applied by, rainfed rice farmers.

47. The Commission noted the statements on the rice situation in their countries made by the delegates of Bangladesh, India, Indonesia, Japan, Republic of Korea, Pakistan, Philippines, Sri Lanka and Thailand in the Asia Region. It expressed its satisfaction at the progress made in the development of improved varieties, production and distribution of good-quality seeds, crop husbandry, water management, fertilizer use, post-harvest technology, pricing policy, training of farmers and technicians, credit and marketing, the transfer of technology and the cooperative action of farmers' groups.

48. In Bangladesh an estimated 16 per cent of the total rice area which was planted with modern varieties contributed to 33 per cent of the total rice production. The transfer of improved production technology had been restricted by organizational, institutional and socio-economic constraints particularly the uncontrolled rice market, high price of inputs and limited supply of credit. To accelerate rice production, the Government has adopted measures to overcome those constraints, including the improvement of extension and marketing services, the supply of inputs, and adequate credit and price support.

49. The Commission noted the steady progress in rice production in India resulting in rice self-sufficiency and some exports. The development of community rice nurseries, large-scale demonstration of improved varieties through minikit schemes, research and training, and a comprehensive seed production programme had played an important role in increasing rice production.

50. The Commission noted with satisfaction that in 1982, Indonesia did not expect to import any rice. This advance towards self-sufficiency in rice results from the implementation of integrated and coordinated programmes involving HYVs, provision and use of modern inputs, supervised credit, greater and more efficient use of irrigation, integrated pest control, the development of Village Unit Cooperatives, marketing- and price-support, sustained extension effort, and the development of cooperatives action through farmers' groups.

51. The Commission noted that Japan had achieved one of the highest rice yields in the world and this was largely attributed to the application of improved varieties, integrated pest management, intensive and efficient use of fertilizers, irrigation of the total rice areas, mechanization, improved post-harvest systems. Price and marketing incentives and farmers' organizations for the supply of inputs and marketing of produce and effective extension services had been instrumental in increasing and stabilizing rice production.

52. The Commission also noted that in the Republic of Korea strategies and achievements in rice production were similar to those of other advanced countries, that in 1981 Korea launched a 7-year programme for increased rice production which greatly contributed to self-sufficiency in rice, that the japonica types which had predominated up to 1970 were replaced by the Tongil variety, resulting in notable yield increases, and that Korea was concentrating all its rice-research efforts on breeding cold-tolerant, blast- and bacterial leaf-resistant varieties.

53. The Commission noted that rice production in Pakistan had risen by 45 per cent in the last decade. The average yield is only 2.4 tons/ha, however, mainly because of biological and physical constraints. Concentrated efforts are being made to increase yields per unit area, particularly by improving the efficiency of water distribution and use.

54. The Commission noted that the Philippines had attained self-sufficiency in rice as a result of implementing integrated programmes involving high-yielding varieties, seed production, certification and distribution, supervisedcredit, irrigation, marketing and extension.

55. The Commission noted with satisfaction that rice production in Sri Lanka had increased considerably during the last decade in spite of adverse weather. In order to increase production more rapidly, a major project is being undertaken to divert the largest river in the country, the Mahaweli, to the main rice area in the Northern dry zone, which comprises 55 per cent of the total rice area.

56. The Commission noted that the increase in rice production in Thailand, which is one of the major rice-exporting countries in the world, was mainly due to increase in rice acreage. Greater attention was being paid to increasing yields per unit area through high-yielding varieties, expansion of irrigation and increased fertilizer use, and to price incentives to farmers, the provision of credit and marketing services.

Latin America

57. With regard to Latin America, the Commission reviewed the irrigated and different types of rainfed rice production systems in the various sub-regions and noted that, while irrigated rice production would continue to receive major attention, upland-rice production under favourable conditions should be emphasized because of its potential and relatively little investment requirement.

58. The Commission noted that 70 per cent of the rice grown in Brazil comprises the upland type, which is sensitive to climatic conditions. In 1981 the Government initiated a national programme for the better utilization of irrigated lowlands in order to help stabilize production. By the fifth year of operation, 1985, one million hectares of irrigable land will have been incorporated into the scheme, reaching 50,000 producers.

59. The Commission noted the present situation regarding the production of rice in Colombia. In recent years rice production had risen at about 8 per cent and now meets domestic demands. The area under rice is nearly 500,000 ha. and average yields of irrigated rice are over 5t/ha.

60. The Commission also noted the objectives of rice research in the country, notably to achieve high yields and disease resistance (mainly rice blast and white-leaf virus), and the improvement of cultural methods. Research is in progress to develop varieties suitable for soils of low fertility in the Eastern plains where 600,000 ha. of potential rice land await development.

TECHNOLOGY FOR RAINFED RICE DEVELOPMENT IN AFRICA

61. The Commission reviewed document IRC/82/5 on Technology for Rainfed Rice Development in Africa and made several observations on the technical content. It fully supported the emphasis given to the generation of technology for rainfed rice production in Africa. The Commission urged that a similar document be prepared for the Asia and Pacific Region which would be useful in formulating appropriate government policy.

62. The Commission appreciated in particular, the systems approach which analysed the constraints and potential for rainfed rice development in Africa for the three main rice production systems covering upland rice, rainfed lowland rice and mangrove-swamp rice.

63. The Commission reviewed the main components of production technology, i.e. land and water utilization; varietal improvement; soils and fertilizers; plant protection; mechanization and crop management, and endorsed the important and vital role that each of the production technologies can play in increasing and stabilizing rainfed rice production in Africa under different systems.

64. The Commission recognized the need for a balanced application of fertilizers, including micronutrients, depending on specific situations. It suggested that due attention be given to exploring other sources of plant nutrients such as organic manures, biological symbiotic nitrogen fixation, Azolla and blue-green algae in the context of an integrated nutrient supply system. It also stressed the need for developing measures to correct soil toxicities, especially in rainfed lowland rice.

65. The Commission recommended that greater attention be given to the development of improved varieties resistant to stress conditions in the wide range of environments in which rainfed rice is grown in Africa, which would ensure higher and more stable yields.

66. The Commission noted the work of WARDA's special research project for irrigated rice in Richard Toll for selecting cold-tolerant varieties, under which a number of promising varieties are undergoing pre-release varietal trials in several African countries.

67. The Commission suggested that exchange of advanced breeding lines should be expanded through programmes such as the International Rice Testing Programme (IRTP).

68. The Commission noted that the disease and insect problems of rainfed rice in Africa differ substantially from those of other rice-producing areas, and assessment of their incidence and economic importance are needed in order to devise appropriate plant protection measures. Special attention should be paid to bird and weed control.

69. The Commission noted with satisfaction that some components of the required improved technology for rainfed rice production already existed in many African countries. Nevertheless, immense efforts still remain to be made by national, regional and international research institutions to provide technologies suited to small farmers. It stressed the need to establish stronger links between research and extension services at all levels.

70. The Commission recommended that higher priority be given to projects leading to the development of low-cost technology to increase production of rainfed rice under different cropping and management systems, with minimal risk to small farmers. International research centres and WARDA should expand their collaborative programmes for varietal improvement, integrated pest control, soil fertility management in problem soils, suitable cropping systems, mixed farming and mechanization.

71. The Commission recognized that there was a labour constraint and lack of mechanical and animal power for cultivated rainfed rice in Africa. It recommended that greater attention be given to the introduction of breeds of draught animals resistant to trypanosomiasis, and of suitable machinery and equipment, including improved hand tools and animal-draught implements. It noted that many of these could be manufactured locally with beneficial results for employment and the development of skills among the rural population.

72. The Commission noted that large areas of inland swamps were suitable for the development of highly productive, permanent crop production systems based on rice, and recommended that governments identify such areas for development. It agreed that fish production could also be developed in these areas in conjunction with rice.

73. The Commission recognized that even with a greatly intensified research effort, technological breakthroughs with rainfed rice are likely to take much longer than with irrigated rice. However, even small advancements in technology would notably raise the income of small farmers.

74. The Commission recognized the need for efficient seed development and distribution programmes to ensure more rapid multiplication and wider use of improved seeds.

75. The Commission recommended that every effort be made to avoid quality deterioration and losses of paddy during processing and storage, through the improvement of traditional threshing and storage methods, introduction of simple threshers, efficient drying, and improvement in milling.

76. The Commission agreed that effective marketing, input supply and credit arrangements together with appropriate price policies, would be incentives for farmers to use improved technology. Private enterprise should be encouraged to integrate more dynamically with public input-distribution and produce-marketing services.

77. The Commission recognized that without adequate and effective extension services and training facilities, available technologies could not reach the farming community. Countries should therefore develop extension approaches tailored to their specific conditions. Emphasis should also be given to training both extension staff and farmers, and the strengthening of input and credit institutions.

MEDIUM-TERM PROGRAMME FOR RAINFED RICE DEVELOPMENT IN AFRICA

78. The Commission reviewed document IRC/82/6 on Medium-term Programmes for Rainfed Rice Development in Africa, and commended FAO for preparing the paper, and for paying particular attention to upland and rainfed lowland rice, including inland and mangrove-swamp rice.

Upland Rice

79. To reduce risks of climatic fluctuations, and owing to competititon by other food crops (maize, sorghum, cassava, yam, taro, plantain, etc.) on these lands, the Commission recommended that detailed inventories be made in each country to ascertain the agro-climatically most suitable areas for rainfed rice, and to develop them as a matter of priority. Preference should be given to areas near large rice-consumption centres, which are usually urban centres, or areas that could promote intra-regional rice trade.

80. The Commission recommended that systematic studies on cold tolerance of upland rice be carried out, especially at higher altitudes in East Africa, and that varieties better adapted to tropical humid areas be developed.

81. Owing to a lack of infrastructures (access roads, rice collection and training points, rural credit, supply of inputs, etc...), resources and personnel, the Commission recognized that upland rice development projects should be undertaken in an integrated fashion in areas where the main development constraints could be overcome.

82. Regarding production, the Commission recognized that farming systems had greatly improved where technological breakthroughs had been applied. This improvement could be enhanced by applying the results of research regarding diversification of farming systems achieved by IRRI, IITA, IRAT/IDESSA and WARDA. However, the wide range of ecologies of the African farming systems calls for their more detailed inventory in each country. These national inventories should benefit from new methodologies developed through regional or international networks. The Commission recommended that wherever upland rice production is promoted, its interaction with other crops in the cultivation and farming system should be taken into consideration.

83. The Commission considered that greater attention in national programmes should be paid to:

- maintenance of soil fertility;
- soil conservation and erosion control;
- shortening of savannah or forest fallow;
- innovations such as use of draught animals or appropriate mechanization to expand the area under cultivation of upland rice alone or in association with other food crops;
- bird and pest control;
- multiplication of selected seed.

Lowland Rice

84. The Commission noted the large potential of lowland areas suitable for rice estimated at more than 150 million hectares.

85. Considering the generally higher yields in lowland rice areas, and the possibility of replacing shifting cultivation in upland areas by more permanent cultivation in lowland areas, the Commission recommended adaptation and rapid transfer of new rice technologies to hydromorphic lowlands or areas with shallow flooding (20-30 cm), as developed by IRRI, IITA, WARDA and other research institutions in Africa.

86. The Commission recommended that field studies on the precise definition of the various types of lowland rice cultivation in terms of water regime (rainfall, depth and duration of flooding) should be undertaken in each country, in addition to the solely pedologic studies made so far. A standardized terminology will facilitate the testing of the different technologies emerging from national and international research.

87. Noting that lowland rice in tropical Africa is largely cultivated by women, the Commission strongly recommended the setting-up of training centres for women.

88. The Commission recommended the development of rice-cum-fish farming or fish ponds in lowland rice areas to improve the nutrition of the local population and provide additional income.

89. Rice farming systems and cultural practices in the African lowlands could benefit from Asian experience in terms of intensification and diversification involving other food crops, tropical fruit and vegetables, and livestock.

90. Considering the increased availability of water in lowland rice production systems and the desirability of reducing expenditure on chemical fertilizers, the Commission recommended further research and application of biological nitrogen-fixation by means of Azolla and blue-green algae, as well as by legumes such as Sesbania rostrata, which is under trial in Casamance, Senegal. The Commission also recommended that organic residues should be more widely used, and that neem (Azadirachta indica) oilcake (which has nitrification-inhibition properties) should be tested under lowland rice conditions.

91. The Commission recommended that ongoing research into human diseases associated with lowland rice cultivation should continue and be intensified.

Mangrove Swamp Rice

92. The Commission recommended that the practices developed by West African farmers in exploiting mangrove-swamp association for rice growing should be studied with a view to their wide dissemination.

93. The Commission recommended that criteria for choosing mangrove soils for rice and other crops should be clearly defined so as to make optimum use of these areas, on the basis not only of sulphate content but also availability of freshwater for leaching out toxicity, and association with hydromorphic soils.

94. The Commission recommended that water-management teams be set up at village level as well as engineering construction brigades for large-scale infrastructural work to protect the fields against sea-water intrusion, and to provide drainage in the event of flooding. Priority should be given to rehabilitation of traditional system.

95. The Commission noted with concern that heavy investment in new infrastructures has often proved unprofitable with a single crop of rice. Therefore, more research is required on crop intensification and diversification, to supplement African farmers' own experiences.

Model Projects

96. The Commission appreciated that the model projects proposed in the annex of the document could serve as a guide to national rainfed-rice development programmes.

97. The Commission agreed that the eleven model projects listed were useful, and pointed out that certain elements of "Integrated Village Development for Shallow and Intermediate Rainfed Lowland Rice" (Model No.3); "Pilot Rice-cum-fish Farming" (Model No.5); "Integrated Development of Village Polders" (Model No.9); "Pilot Perimeters for Innovative Development" (Model No.10) were similar to those projects undertaken by USAID, the World Bank and IFAD.

98. The Commission recommended that mechanization programmes should be organized at village level with the full participation of the farmers, and be adapted to the specific local conditions.

99. The Commission recognized that the launching of a project required two to three years' preparation, and usually called for a multi-disciplinary approach. The lack of competent personnel often made it difficult or impossible to form multidisciplinary teams.

100. The Commission recommended that during project implementation arrangements be made for training personnel for a smooth take-over by the national administration.

OTHER BUSINESS

(i) Amendments to the Constitution and Rules of Procedure of the Commission

101. The Commission had before it document IRC/82/7, dealing with the subject of Amendments to the Constitution and Rules of Procedure of the Commission.

102. The Commission noted that Resolution 10/73 of the Seventeenth Session of the FAO Conference (November 1973), amended inter alia Article XIV, paragraph 3(b) of the Constitution, and paragraphs 1, 3 and 7 of Section B of the Principles relating to the granting of observer status in respect of Nations. Under this Resolution, the eligibility for participation of non-member States in FAO bodies and meetings, which had so far been limited to States that were members of the United Nations, was extended also to States that were members of any of its Specialized Agencies or the International Atomic Energy Agency.

103. The Commission also noted that Resolution 26/75 of the Eighteenth Session of the Conference, Article VI, paragraph 3 of the FAO Constitution was amended by the deletion of the words "subject to confirmation by the Conference of Council, as appropriate". Accordingly, any new Rules of Procedure or amendments to existing Rules of Article VI bodies will require only the approval of the Director-General.

104. In the light of these Conference Resolutions the Commission adopted the following amendments to the IRC Constitution and Rules of Procedure by the majorit- required under Article X.I of the IRC Constitution and Rule XIII.2 of the Rule- Procedure of the IRC, respectively.

105. The texts of the Amendments as adopted by the Commission are as follows:

Article V, paragraph 4 of the Constitution

The Commission may, by a vote of two-thirds majority of the votes cast, provided that such a majority is more than one half of all Members of the Commission, adopt and amend its own Rules of Procedure, which shall be consistent with the General Rules of the Organization. The Rules of the Commission and any amendments thereto shall come into force as from the date of approval by the Director-General of the Organization.

Rule I, paragraph 7 of the Rules of Procedure

States which, while not Members of the Commission, nor Members or Associate Members of the Organization, are Members of the United Nations, any of its Specialized Agencies or the International Atomic Energy Agency, may, upon request, and with the approval of the Council of the Organization and of the Commission, attend sessions of the Commission and its subsidiary bodies in an observer capacity, in accordance with the Statement of Principles adopted by the Conference relating to the granting of observer status to nations.

(ii) IRC Membership

106. The Commission noted with regret that a large number of rice-producing countries in the African region were not yet members of the Commission, including many of the Member Nations of WARDA. It noted with satisfaction that a number of these countries participated as observers at the present session.

107. The Commission recommended that these countries should consider becoming members of the Commission by accepting the IRC Constitution in accordance with the provision of Article VIII thereof, which requires the deposit of an instrument of acceptance with the Director-General of the Organization and takes effect on receipt of such instrument by the Director-General, who shall inform all the Member Nations of the Organization of such receipt.

108. The Commission noted that membership did not carry financial obligation since the activities of the Commission were funded from FAO's biennial Regular Programme of Work and Budget, to which all Member Nations contribute.

109. The Commission stressed that an enlarged membership would strengthen the Commission's activities and impact on rice development in developing countries.

(iii) Agenda

110. The Commission noted that, in accordance with Rule IT of its Rules of Procedure, the Director-General shall prepare a provisional agenda for its 16th Session. It suggested as a possible theme for its next session, "Collaboration between research and production".

(iv) Methods of work

111. The Commission recommended that a select ad hoc group should meet between the Commission sessions to help the Secretariat choose and prepare the topics to be submitted to the next session, and to ensure the Commission's smooth work in general.

112. The Commission requested the Executive Secretary to visit the member countries between sessions, not only to familiarize himself with the rice problems of those countries, but also to maintain better dialogue with them.

113. The Commission requested the Executive Secretary to report to each session on the Secretariat's activities concerning the follow-up of recommendations.

114. The Commission expressed satisfaction at the format and contents of the IRC Newsletter and hoped that greater efforts would be made to distribute it more widely. To this end, it recommended that all Member Nations contribute more actively to the Newsletter and suggested that some country reports submitted to this Meeting be published in the IRC Newsletter.

DATE AND PLACE OF NEXT SESSION

115. The Commission noted that, in accordance with Rule I of its Rules of Procedure, the date and place of its next Session shall be determined by the Director-General in consultation with the Chairman.

116. The Commission expressed appreciation of the invitation extended by the Representative of the Philippines, and supported by the Observer from IRRI, that the 16th Session of the Commission be held in Los Baños, Philippines, in 1985 to coincide with the 25th Anniversary of the International Rice Research Institute.

117. The Commission, noting that in accordance with Rule I,1 of its Rules of Procedure, its regular sessions should be held at four-yearly intervals, unanimously agreed that its 16th Session be held in three years' time (in 1985).

APPENDIX A

AGENDA FOR THE FIFTEENTH SESSION

1. Opening of the Session
2. Election of Chairman and Vice-Chairmen
3. Adoption of the Agenda
4. Long-Term Strategy of Rice Development
5. Regional Rice Development Programmes
6. Technology for Rainfed Rice Development in Africa
7. Medium-Term Programme for Rainfed Rice Development in Africa
8. Other Business
9. Date and Place of Next Session
10. Adoption of the Report

APPENDIX B

LIST OF MEMBERS OF THE COMMISSION

Australia
Bangladesh
Brazil
Burma
Colombia
Cuba
Dominican Rep.
Ecuador
Egypt
France
Gambia
Ghana
Guatemala
Guyana
Haiti
India
Indonesia
Iran
Italy
Japan
Democratic Kampuchea
Kenya
Korea, Rep. of
Lao
Liberia
Madagascar
Malaysia
Mali
Mexico
Nepal
Netherlands
Nicaragua
Nigeria
Panama
Pakistan
Paraguay
Philippines
Portugal
Sierra Leone
Sri Lanka
Thailand
United Kingdom
United States of America
Upper Volta
Uruguay
Venezuela
Viet Nam

APPENDIX C
APPENDICE C

LIST OF DELEGATES AND OBSERVERS
LISTE DES DELEGUES ET OBSERVATEURS

Chairman : C.B. SESAY (Sierra Leone)
Président :

First Vice-Chairman : S.M.H. ZAMAN
Premier Vice-Président : (Bangladesh)

Second Vice-Chairman : D. MUNOZ
Deuxième Vice-Président : (Columbia)

MEMBERS OF THE COMMISSION
MEMBRES DE LA COMMISSION

AUSTRALIA - AUSTRALIE

Representative
G.S. KNOTT — Accra
First Secretary, Australian High Commission

BANGLADESH

Representative
S.M.H. ZAMAN — Dacca
Director, Bangladesh Rice Research Institute

BRAZIL - BRESIL

Representative
J. DARCY DE OLIVEIRA — Rio de Janeiro
Technical Assistant, CACEX
Grains Department, Bank of Brazil

Alternate
V. OLEGARIO DA SILVA — Brasilia
Tecnico Ministerio da Agricultural

COLOMBIA - COLOMBIE

Représentant
DORANCE MUNOZ — Palmira
National Coordinator of Rice Research Programme, Colombian Agricultural Institute

CUBA

Représentant
ALFONSO HERRERA — Freetown
Ambassador of Cuba to Sierra Leone

Suppléant
DIONISIO MOLINA — Freetown
Third Secretary, Embassy of Cuba

EGYPT - EGYPTE

Representative
ABDEL KADER KHALIL — Freetown
Ambassador of Egypt

Alternate
LOTFY IBRAHIM YACOUB — Freetown
Counsellor, Embassy of Egypt

FRANCE

Représentant
M. JACQUOT — Montpellier
Chef du Programme Riz à l'IRAT

Suppléant
Jean-Pierre COLNARD — Freetown
Commercial Attaché, Embassy of France

GHANA

Representative
G.K.A. DARFOOR — Freetown
Chargé d'Affaires, Embassy of Ghana

INDIA - INDE

Representative
V.P. SINGH — Freetown
High Commissioner for India

INDONESIA - INDONESIE

Representative
D.A. ADJID — Jakarta
Director, BIMAS Programme

ITALY - ITALIE

Representative
R. FRANZO — Milan
Presidente, Ente Nazionale Risi

JAPAN - JAPON

Representative
K. YAMASHITA — Tokyo
Official of the Ministry of Foreign Affairs

KENYA

Representative
J.M. KABUGA — Nairobi
Senior Agricultural Officer
Ministry of Agriculture (M.A.)

KOREA - COREE

Representative
J.I. CHOE — Freetown
Ambassador of the Republic of Korea

Alternate
Y.J. BAE — Freetown
Counsellor of the Embassy of the Republic of Korea

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Representative
J.G. MORRIS — Freetown
Ambassador of the Republic of Liberia

MADAGASCAR

Représentant
S. RABEMANANTSOA — Antananarivo
Chef du Service de la Production Végétale

MALI

Représentant
M. DIALLO — Segou
Ingénieur d'Agriculture, Chef du Service Agricole de l'Office du Niger

NIGERIA

Representative
C.E. OJUKWU — Freetown
Third Secretary, Nigeria High Commission

PAKISTAN

Representative
M. AKBAR — Islamabad
National Coordinator (Rice)
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PHILIPPINES

Representative
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Dean, Faculty of Agriculture
Njala University College

Adviser
L. TOMMY — Sierra Leone
Chairman, Torma Bum Rice Development Authority

Adviser
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UPPER VOLTA - HAUTE VOLTA

Représentant
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Agronomiste, Centre d'Expérimentation du Riz et des Cultures Irriguées

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W.W. NZAKIMUENA — Kinshasa
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REPRESENTATIVES OF UNITED NATIONS AND SPECIALIZED AGENCIES - REPRESENTANTS DES NATIONS UNIES ET INSTITUTIONS SPECIALISEES

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R.H. FORSTER — Rome
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R.B. SINGH — Bangkok
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Trinh TON THAT — Rome
Agricultural Offier (Rice Agronomy)
Plant Production and Protection Division

APPENDIX D

OPENING ADDRESS TO THE FIFTEENTH SESSION OF THE INTERNATIONAL RICE COMMISSION

by

Dr. Abass C. Bundu
Honourable Minister of Agriculture and Forestry
Government of Sierra Leone

11 October 1982

Mr. Chairman, Honourable Ministers, My Lords, Your Excellencies, Distinguished Delegates, Ladies and Gentlemen,

We are gathered here today under the auspices of the FAO. Distinguished Delegates, you have travelled from many distant lands. You have come from many countries: as far as Asia, Latin America, the Middle East, the Far East and Europe and from as near as our sister countries in Africa. You have come in order to converge your several minds on one of the gravest problems of our troubled world - the problem of food production. That you have chosen to do so here in our capital bestows upon us all a great sense of honour and pride. And for this, I wish to convey to you all the warmest appreciation and felicitations of his Excellency Dr. Siaka Stevens, President of the Republic of Sierra Leone, as well as those of the Government and people of this country.

Added to that, you have summoned me to open this very important Fifteenth Session of the International Rice Commission. I do so with great pleasure and honour and I now wish to pay my own personal obeisance by bidding all of you a very warm welcome to our capital, Freetown.

Mr. Chairman, Distinguished Delegates, the theme of this Conference is about rice - its production, distribution and marketing. This is also the main preoccupation of the West Africa Rice Development Association (WARDA). There is thus a link and a commonality of purpose between WARDA and the IRC. We, in Sierra Leone, are members of both Organizations, along with six other West African countries. To the other eight WARDA members, some of whom are present in our midst, I wish to bid a special welcome. We hope that by the end of your deliberations later this week, the link would have grown sufficiently stronger to merit a consideration of the value of belonging to these two institutions.

I wish also to extend this special word of welcome to the delegates from the U.K., U.S.A., France and Italy. All countries, except your own, represented here today by delegates hail from developing countries, from the south of the Economic Divide. That you have come to share your thoughts with us in our joint search for lasting solutions to our basic food problem deserves a tribute. But much more important, the IRC and the FAO have over the years been major beneficiaries of the fruits of your efforts and contribution. This, above all, calls for a special salutation. We sincerely hope your participation in this important dialogue among experts and officials will stimulate a climate that will be to our mutual benefit, especially in the context of the transfer of knowledge and technology in rice production marketing and distribution, an area which, for many countries, occupies the highest position on their agenda of priorities.

Mr. Chairman, Distinguished Delegates, this Conference is about rice production and distribution. Its emphasis is on decisive action and implementation of programmes of development. In this context, let me say straitaway that the new emphasis in the Agricultural policy of my country is directed mainly at the attainment of food self-sufficiency and the elimination of foreign rice from its import bill within the shortest possible time. That all the developing countries represented here embrace a similar policy, I know you have no doubt. That this quest for self-sufficiency in food production is a shared responsibility and not an adversary game of countries or international institutions, I know you know; that there is a special urgency about discharging it and evolving a more practical and acceptable prospect for the common good, I know you acknowledge; that your concern to translate these perceptions into policies for change commands the respect of millions of deprived people worldwide, I know you know: but I hasten to confirm. I come to you, therefore, neither to admonish nor to convert: but to share with you the thoughts of a fellow toiler in the vineyard of agriculture. And if to the honour you have bestowed upon me to open your conference had been added, as in ancient feasts, the promise of a wish granted, I would have wished that the flame of enlightenment which such a coterie of

distinguished representatives keeps alive should so illumine the resonances of the suffering masses of the developing world as to enlarge its chances of success.

Mr. Chairman, we are told that the world cereal harvest this year is expected to be higher than last year's and that the world trade in cereals is likely to be close to the record level of 1981 - 82. Production in 1982 is now estimated to reach 1 532 million tonnes compared with 1 525 million in 1981. An increase of 27 million tonnes is expected in exporters' stocks at the end of 1982/83, and the total world cereal stocks could rise to 300 million tonnes by the end of the season. Most of this increase will be in the developed countries and in the U.S. in particular.

This is a remarkable improvement indeed. However, it is becoming pellucidly clear that this wind of progress has somehow overshot the countries of the developing world where food production has continued to lag behind food requirements. This is especially true of the African region where food production has declined from 2.5 per cent in the 1960s to 1.2 per cent in the 1970s and this trend has certainly shown no signs of abatement. In Africa south of the Sahara, the food situation has deteriorated to even more alarming proportions involving unprecedented levels of food imports against a worsening foreign exchange situation afflicting most of our countries.

This situation is totally unacceptable. It should not and cannot be allowed to continue. The more it persists the greater the threat it poses to the political and social stability of the continent as a whole.

We are aware that it is no easy task for FAO, the lead agency in food and agricultural matters in the world, to offer the requisite levels of assistance to a continent like Africa which is as varied in its demands as it is large in size, and where the food and agricultural situation differs from country to country.

However, the common underlying objective in all of Africa is the attainment of food self-sufficiency and self-reliance, on a most urgent basis, by increasing productivity and expanding production. This is the new thrust underlying my Government's approach in reviewing the basic policy issues in food and agriculture, with special emphasis on the production of the country's primary staple food - rice - a commodity which has assumed more than ordinary economic importance. It is now a political commodity as well.

Our national annual shortfall currently stands at 80 000 metric tons which represents 20% of national requirements, and for which we have had to make recourse to external sources of supply, with the added burden this imposes upon the country's meagre foreign exchange reserves. The import bill has been rising as local production has been falling. In 1980 the import bill for rice was Le24.1 M.; in 1981, it rose to Le25.7 M: this year it is projected to rise even further and to exceed Le30 M. If you add to this imports by the private sector, the total might well be over 200 million.

You will no doubt agree with me, Mr. Chairman, that this is too severe a drain on the country's meagre foreign exchange reserves which it could hardly afford, especially at a time of depressed world market prices for the exports of developing countries, a situation no less aggravated by the escalating costs of fuel and other essential agricultural inputs.

Never before has the need to attain self-sufficiency in local production of our staple food become more urgent and more pressing than now. We have therefore set ourselves the task of achieving this all important objective within the shortest possible time by bringing under cultivation a minimum of 152 000 hectares of new land from the different rice producing ecologies in the country as well as improving the yield per acre of existing farms.

We realise Mr. Chairman that the recurring acute shortfall in production in the continent in general and Sierra Leone in particular has roots in a variety of socio-economic factors. These include (a) out-dated patterns and systems of farming with continuing dependence on rainfed cropping with all the attendant uncertainties of the weather; (b) inadequate provision of improved technology, agricultural inputs and services; and (c) untimely and inadequate producer incentives such as the marketing and pricing of staple food crops.

Mr. Chairman, if this situation is to be arrested, then it is imperative that effective and sustained action should be taken at once, both at the national and international levels. We, in Sierra Leone, are already doing this. Existing policies and strategies are being reviewed and new ones developed and fashioned in an integrated and coordinated way in order to maximise benefits. These strategies include:

- the intensification of farm mechanization
- the introduction of irrigation and drainage systems
- the rational application of fertilizers
- a review of marketing and pricing policies
- strengthening of the extension services
- the availability of credit
- the establishment of agro-industries
- crop protection measures,

All aimed at increasing productivity and expanding production both in the short and medium terms.

Inevitably, this approach entails significant changes in agricultural policies designed to sharpen the focus on the direction, methodology, implementation and monitoring of these several processes.

Mr. Chairman, with your indulgence, I should like to sketch very briefly some of the strategies I have mentioned. The mechanization programme proposed will of necessity and from past experience be confined to ecologies with the highest potential. It will also involve the standardization of machinery with the attendant advantage of spare parts availability as well as facilitating the training of operators. Moreover, it will be backstopped by effective maintenance workshop facilities decentralized to the areas of operation. An oxenization programme will also be introduced in appropriate areas of the country.

A major problem affecting food production in Sierra Leone is the weather with all its unpredictable adverse consequences. Consonant with our overall objective of achieving self-sufficiency in as short a time as possible, we are determined to extricate production from the strictures of the weather by introducing systems of irrigation and drainage on an extensive scale. We aim mainly at simple gravity-controlled schemes which are suitable to the environment and can be controlled by the rural farmer at minimum cost, and whose operations do not depend on the periodic importation of spare parts and fuel.

To this end, we propose to strengthen our new division of land and water development for whose initial establishment I wish to pay great tribute to FAO. We also propose to make approaches to external aid agencies, both bilateral and multilateral to assist us in this most important task.

Another area on which attention is being focused is pricing and marketing. Often in developing countries these are areas where it is not easy to achieve the necessary coordination and balance. Both private and public interests compete intensely, each seeking to extract the maximum advantage. Sierra Leone is no exception and we are examining ways in which to overcome these problems.

With this in view, Mr. Chairman, it is proposed to establish a market intelligence/planning unit whose task would be to collect the vital information necessary to determine crop production forecasts, producer market prices with a view to setting appropriate pricing and marketing policies, and to develop expertise in agricultural input marketing. Moreover, it is envisaged that this unit will liaise closely with the FAO's early warning and food security systems.

Fertilizer is another essential input which has strained and will continue to strain the fragile economies of most African countries, since nearly all of their requirements have to be imported. Any country that moves in earnest towards increase production must of necessity rely on external sources for import. Aid agencies have been of great help and for this we wish to record our appreciation. We will naturally continue to look to these organizations for even greater assistance. At the same time, we believe also that every avenue must be explored in the quest for local substitutes.

Mr. Chairman, the integrated approach to our agricultural rural development programmes will be maintained, for they hold out great promise. While the infrastructural aspects have made a good impression on the rural community of the project areas, the production aspect of their operations has yet to make a significant impact. The high overhead costs leave little room for solace either. Remedial steps are therefore necessary and certainly one possibility is to encourage the development of larger farm units than had hitherto been the case, using the farmer as the unit producer, while at the same time providing the necessary infrastructural facilities.

Mr. Chairman, I should like to record, on behalf of my Government, our deep appreciation to FAO for the timely assistance given to our agricultural information and publicity service. The more profound is our gratitude, especially at a time when there is a greater need not only to disseminate agricultural information but also to create public awareness and sharpen public focus on the imperatives of maximising agricultural production.

We are also deeply conscious of the need to intensify the training of technical staff at all levels. A lot is being done locally but our efforts need to be augmented from time to time by external sources especially where local facilities are inadequate or unavailable. In this regard, we will continue to look to outside sources for assistance for both in-service and overseas training programmes.

Let me also at this juncture pay special tribute to the Government of the Federal Republic of Germany for its invaluable contribution to our Agricultural Development Programmes, especially the establishment of a seed multiplication project. At least, our farmers can now boast of high quality improved seed rice, thanks to this project. In collaboration with the Rokupr Rice Research Station, which delegates will be visiting in the course of this week, the United States Government has assisted our Adaptive Crop Research and Extension (ACRE) project in carrying out adaptive crop research on farmers' fields.

Our research and training institutes have ongoing collaborative programmes with international institutions such as WARDA, the International Institute of Tropical Agriculture and the International Rice Research Institute. We also acknowledge with gratitude the role of the British technical assistance in the fields of training and mechanical cultivation of rice.

Notwithstanding these modest achievements, there is still plenty of room for improvement in our infrastructural development for agricultural production, manpower training, accelerated adoption of appropriate technology, supply of basic production inputs, pricing incentives, proper marketing arrangements and farm credit. These are just some of the areas where international assistance is needed and needed urgently.

Mr. Chairman, all of these programmes which I have mentioned are co-incident with the broad objectives outlined in the Lagos Plan of Action. Sierra Leone is fully committed to the implementation of this plan at the domestic, sub-regional as well as regional levels. Special tribute is due to the FAO which has contributed in no small measure to the illumination of the objectives of the Lagos Plan at many international fora, the most recent being the FAO Regional Conference of African Agriculture Ministers held in Algiers a fortnight ago. The link between the work of this Commission and the Lagos Plan is also unmistakable and I implore the Commission and the FAO not to be deflected from this important pursuit.

The Lagos Plan represents Africa's national commitments coalesced. Its centerpiece is preoccupation with action - oriented programmes and its underpinning is self-reliance. But self-reliance does not imply autochry. It does not mean isolationism. It is not a vision of detached self-sufficiency; neither does it mean pulling down the shutters on the world outside. On the contrary, it presumes global co-operation and provides a most secure basis for it. It is a conviction that development must come from within each society - conditioned by its history and its social, cultural and economic strengths, founded on its resources, including its human resources, and committed to the national well-being; self-reliant development is based not on what the world can do for us, but on what we can do for ourselves. It strives to ensure the provision by national effort of the essentials of national subsistence - of food, of habitat, of health, of education. And it seeks fulfilment by exploring new frontiers of co-operation between developing countries inter se as well as between themselves and the developed countries.

It is, above all, development committed to the creation of just societies; for there is no rational basis, there is no morality, in the demand for a more equal world community unless it implies the facilitation of more equal national societies. It is a model for development, therefore, that condemns privilege within developing countries as vigorously as within the world community of states. We in the third world are more than ever determined to translate these perceptions of development into reality. And we do so both by precept and by example to show our committment to national and collective self-reliance; to the dismantling of feudal structures; to the dispelling of pretences of privilege which are even more grotesque in the midst of poverty than they are in conditions of affluence. And we must prove by these advances that the creation of truly just societies, in which basic human values are respected and man's humanity is allowed to develop its potential is the true fulfilment of the promise of development. What are the prospects for advance towards the promise of a new order? Developing countries have no option but to seek an end to poverty and deprivation. For them, they have nothing to lose but their poverty. They could have a world to win. It is important that the developed world understands this psychological reality of the human condition among the deprived of the earth.

The way forward must surely lie in a change of attitude on the part of the developed world. Developed states must frankly acknowledge that the need is pressing for fundamental change in international economic relations. They must abandon petulance, and cease to deceive themselves that serious demands stemming from deep resentment of pervasive injustice are mere rhetoric. How can the developing countries be expected to do otherwise when the world price of their primary produce and mineral exports are sinking as fast as the price of petroleum products and manufactured goods are rocketing? How can our farmers produce more when they are earning less and less each year for their produce? How can we be expected to buy more from the developed world when it denies us the opportunity to earn the right price for our exports?

Surely, Mr. Chairman, the way forward must be that all states, developed and developing alike, must acknowledge a mutuality of interest in change. It is a mutuality that stems from different conditions. For us it is an interest in survival and development. For the developed world, it is an interest in a global environment in which their own development can be sustained and the quality of life within their societies be made increasingly more tolerable. The choice therefore is not between an old order and a new; the choice lies between a new order or sustained disorder. But each year, each month, each day that the world postpones the first step with which the long journey towards a new order must begin - each such delay enlarges the dimensions of disorder and further pollutes the environment within which agreement upon that step must be reached.

The first necessary step for us in the developing world is to achieve self-sufficiency in food production, to be able to feed ourselves. That is truly the first step in the path to real development in Africa.

I will venture to repeat here the appeal I made on that occasion that 1983 be declared the international year for resource mobilization for Africa, with particular emphasis on food production.

Mr. Chairman, Hon. Ministers, Distinguished Delegates, there can be no doubt that we have set ourselves important tasks in the years ahead. We do not by any means underestimate those tasks. Facing up to the reality of our times is not always easy; but it is unavoidable. Using epithets and rhetoric alone will not suffice nor will accepting the benefits of change while rejecting its costs. We must conjointly inspire and generate a new order for agricultural development in Africa and we must together acknowledge that in agriculture lies the future prosperity of this continent. Nor is it the case that structural changes in food production and distribution can be postponed for what are sometimes called "better times". History has one clear lesson: change does not issue from good times, a perception which I am sure all of us will readily acknowledge. As necessity breeds invention, so change is born of crisis. To shut out this reality, to persuade ourselves that change must wait until good times are with us again, is in truth an alibi for inaction ad infinitum.

Those who would postpone action for better days speak not of change but of welfare; speak not of a less unequal world but of palliatives for chronic inequality. The time to make changes in food production is now. All the evidence is that such changes are

sential to an even more prosperous future for the industrialised and developing countries alike. To the acknowledgement of interdependence born out of our singular oneness, herefore, we can add not only motivation and opportunity for responding to its mandate ut hard empirical evidence of a mutuality of interest between Africa and the developed world, between rich and poor, in the evolution of a new agricultural development order.

This is our immediate task in the years ahead and the struggle must continue relentlessly until hunger and malnutrition are banished forever from the face of Africa. We, in Africa, are more than ever determined to move in that direction and we stand ready to quicken our pace if our partners in development show an equal determination to respond to our plea.

Responding to these new challenges in rice production is what this Conference is about. And, apart from being the first of its kind in Sierra Leone and in Africa for that matter, it is being held during the week when the whole world will be commemorating the World Food Day on 16 October. All this makes its holding in Freetown truly historic.

Mr. Chairman, Hon. Ministers, Distinguished Delegates, Ladies and Gentlemen, we know that we can promote food production in this country to the level of self-sufficiency. We also know that we are among the very few in Africa with the potential to do so and we expect therefore that your discussions here this week will further help to inform and shape our several efforts so as to enlarge their chances of success. We are determined to either produce or perish. And with this noble expectation, it gives me the greatest pleasure to formally declare this Conference open and to wish you a fruitful, constructive and successful deliberation.

I thank you all for your attention.

APPENDIX E

ADDRESS ON BEHALF OF THE DIRECTOR-GENERAL, FAO

by

Dr. O. Brauer
Director, Plant Production and Protection Division
FAO, Rome

11 October 1982

Mr. Chairman, Excellencies, Ladies and Gentlemen,

On behalf of the Director-General, I am pleased to welcome you to the Fifteenth Session of the International Rice Commission.

This is the first time the International Rice Commission is meeting in the continent of Africa. This indicates the importance FAO gives to the development of rice production in Africa.

Since 1977, when the last IRC Session was held, many countries in Asia, Africa and Latin America have registered a favourable trend in rice production and yield per hectare. However, for most countries, the increase could hardly keep pace with the population growth.

The demand for rice in Africa has increased sharply as a result of a shift in diets from traditional foods like roots and tubers. In spite of a large increase in production, imports have risen very rapidly. A further increase in production is thus essential to avert a serious balance of payments and foreign exchange problems.

In Asia, paddy yields in Indonesia, the Philippines and Burma have increased steadily and progress in Indonesia and Burma since 1978 has been outstanding. Burma, Pakistan and Thailand have recorded increased sales and have more than offset the decline in Chinese shipments. On the other hand, there was a sharp rise in imports in the Republic of Korea between 1980 and 1981.

In Latin America, production was relatively high in 1981 and indications show that there may be a reduction in imports. Of course this will vary from year to year, particularly in Mexico and Peru, the two largest importers.

The overall global export availabilities would appear to be in excess of likely import requirements in 1982.

World paddy production in 1981 rose to a record 412 million tons, 4 per cent more than in previous years, with production 7 per cent higher in importing countries, this being definitely a very encouraging sign.

Although the above is no mean achievement, it needs to be examined in the long-term prospective. The tempo of production and the annual rate of increase should be at least sustained if not improved to meet the growing requirements for consumption. According to the FAO study "Agriculture: Toward 2000", world rice (paddy) production in 2000 would need to reach 635 million tons. To achieve this projected production level, there is the the need to accelerate our efforts in developing high-yielding and stable varieties and the technologies that will go along with it. Concern for the need of increasing the pace of progress in agriculture was stressed at several international congresses during 1981, such as expressed at the UN General Assembly "hunger and malnutrition must be eliminated as soon as possible and certainly by the end of the century".

At Cancun, Mexico, participants at the summit agreed that "Persistent and widespread manifestations of hunger are entirely incompatible with the level of development attained by the world economy and, in particular, with existing food production

capacity. Within as brief a period as possible, hunger must be eradicated. This objective is clearly an obligation of the international community and constitutes a first priority, both at the national level and in the field of international cooperation".

The UN Congress on least-developed countries concluded LDC's should "propose strategies, plans and policies for the agricultural sector - giving particular attention to food production and distribution".

The FAO took also a serious view of this world food production in general and rice production in particular due to its unique importance to the millions of people of the developing countries and an Inter-departmental Working Group on Rice was set up by the Director-General to review and streamline all FAO activities on rice and to recommend a longer-term programme of activities, including joint activities with financing institutions with a view to providing investment in rice. The Group recommended that increasing rice production and availability will receive increased priority in FAO's programme with particular emphasis on identifying areas and projects for investment leading to higher rice production and improved productivity. In order to have the maximum impact, FAO activities concentrate on selected rice deficit countries where rice is the staple food and where production has been lagging despite potential for increased output.

FAO's technical programme promotes the development of stable and high-yielding varieties and the production and use of high quality seeds; develops suitable rice-based cropping patterns and farming systems and ensures more efficient and safer crop protection; reduces post-harvest losses; and applies appropriate engineering technologies to land and water development, crop production, processing, storage and farm structure.

FAO's institutional support to rice production concentrates on training extension staff, farmers and production scientists; strengthening national research, extension, input and credit institutions; organizing pilot projects in the farmers' fields; and popularizing the cultivation of modern varieties and the appropriate production technologies that go along with them.

Economic and policy assistance by FAO on rice emphasizes training in project analysis and gives planning assistance; reviews world rice situation and short-term and long-term outlook; analyses economic and trade problems and policies affecting rice production and trade; identifies development priorities and investment requirements for rice; and food security projects in rice-consuming and producing countries.

In order to enhance the impact of these programmes, co-operative arrangements with financing institutions and other international bodies concerned with rice are also being strengthened.

Mr. Chairman, the mandate of the Commission is to promote actions in respect of production, conservation, distribution and consumption of rice by monitoring and reviewing the scientific, technical and economic problems. This naturally calls for cooperation at all levels.

The Commission serves as a forum for the exchange of information and experience, the transfer of technology by acceleration of communication, directing the national and international research systems to tackle problems of relevance and demonstrating to member countries the various development options that are available to them to step up production trends.

Looking at the Agenda of the Commission, Mr. Chairman, you would observe that it tries to cover a sequence starting from the Long-term Strategy of Rice Development based on the FAO study "Agriculture Toward 2000". The Long-term Strategy of Rice Development deals with the major rice production systems and analyses the major constraints and potentials for development and outlines the main elements of the strategy for increasing rice production to meet the projected demand. The Regional Rice Development Programmes review rice development activities in Asia and the Pacific,

Africa, the Near East and Latin America regions. The technology for rainfed rice development in Africa analyses the constraints and potentials for rainfed rice development, the main components of production technology and also considers institutional and economic aspects such as extension, education and training, agricultural research, processing and marketing, in particular, input supply and rice policies. The Medium-Term Programme for Rice Development in Africa suggests medium-term policies and focus on action programmes with a potentially high impact on rainfed rice production. It also identifies model projects considered to be typical of the action that can be taken at the country, regional or international levels.

Stress has been given to rice production in Africa due to the fact that great potential lies for the improvement, the very sharp increase in consumption of rice, and except for WARDA countries very little attention has been given to research and development of rice.

In the timetable, one day has been set aside for a field trip which will allow the participants, many of them from outside Africa, to see for themselves the rice ecologies, systems and methods of rice cultivation in tropical Africa which in many respects differ from the rest of the world.

More attention has been given to rainfed rice, as in the past, activities concentrated far too exclusively on irrigated rice. Rainfed rice is at present much greater than the irrigated rice area in the developing countries, and is likely to remain so for some time. There are many places where there is virtually no alternative to rainfed rice production, often in one or other of its extreme forms of upland or deep water production. The producers of rainfed rice include many of the poorest, small farmers who are increasingly the focus of rural development strategies and policies of the kind agreed at the 1979 World Conference on Agrarian Reform and Development.

The major development at research level is the increasing international support for rice research through the Consultative Group on International Agricultural Research (CGIAR), co-sponsored by FAO, which now supports three International Institutions - IRRI, IITA and CIAT, and one International Programme in the West-African Rice Development Association (WARDA) which are committed to the generation of new rice technology. It is gratifying to note their participation in this Commission since these Institutions have not only set up a high standard of innovativeness, but have striven hard to strengthen national research systems in many countries. International collaboration existed through IRRI's research network programmes of International Rice Testing Programme (IRTP), Genetic Evaluation and Utilization (GEU), International Network on Soil Fertility and Fertilizer Evaluation for Rice (INSFEER), Asian Cropping Systems Network (AGSN), cropping systems research, etc... have been further strengthened by development of active cooperation with scientists from the People's Republic of China. Cooperation with China on rice research with IRRI is an important milestone. China is the world's largest rice producer.

Increased cost and non-availability of energy are becoming very limiting factors in agricultural production. It is satisfying to observe that scientists both in the international and national institutes have started orienting their research programmes to develop low-cost technology, maximizing efficiency of both water and fertilizer, harnessing of nitrogen from atmosphere through Azolla and blue-green algae and also through commercial utilization of improved rice varieties and simplified, low-fuel consuming farm tools and machinery.

Since the history of rice production, women are playing a very important role in all the rice-growing countries. In the field of training, very little consideration has been given in the past to train women scientists and extension workers. More attention needs to be given in this respect. Initiatives in relation to this training of women in rice farming are being taken up by FAO and IRRI. IRRI plans to organize a Workshop in this regard.

All these points mentioned above will show that we have a great responsibility to perform and our path is not simple and smooth. We have tools and the know-how and with our collective efforts we shall be able to combat the menace of hunger and

unemployment. May be in the forward journey the tools and know-how may need adjustments and modification for specific purposes.

I sincerely hope that this 15th Session of the International Rice Commission will lead to concrete action proposals to stimulate national programmes and guide international efforts in their support. FAO is ready to assume a major role in this effort.

I wish you every success in your deliberations.

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